

# SECTION **DAS**

## DRIVER ASSISTANCE SYSTEM

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PRECAUTION

PRECAUTIONS

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

INFOID:000000012939085

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

**WARNING:**

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

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

**WARNING:**

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

Precaution for Work

INFOID:000000012939086

- When removing or disassembling each component, be careful not to damage or deform it. If a component may be subject to interference, be sure to protect it with a shop cloth.
- When removing (disengaging) components with a screwdriver or similar tool, be sure to wrap the component with a shop cloth or vinyl tape to protect it.
- Protect the removed parts with a shop cloth and prevent them from being dropped.
- Replace a deformed or damaged clip.
- If a part is specified as a non-reusable part, always replace it with a new one.
- Be sure to tighten bolts and nuts securely to the specified torque.
- After installation is complete, be sure to check that each part works properly.
- Follow the steps below to clean components:
  - Water soluble dirt:
    - Dip a soft cloth into lukewarm water, wring the water out of the cloth and wipe the dirty area.
    - Then rub with a soft, dry cloth.
  - Oily dirt:
    - Dip a soft cloth into lukewarm water with mild detergent (concentration: within 2 to 3%) and wipe the dirty area.
    - Then dip a cloth into fresh water, wring the water out of the cloth and wipe the detergent off.
    - Then rub with a soft, dry cloth.
- Do not use organic solvent such as thinner, benzene, alcohol or gasoline.
- For genuine leather seats, use a genuine leather seat cleaner.

Precautions For Harness Repair

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ITS communication uses a twisted pair line. Be careful when repairing it.

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## PRECAUTIONS

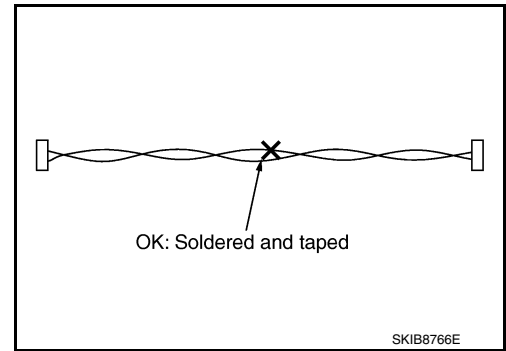
[ADAS CONTROL UNIT]

### < PRECAUTION >

- Solder the repaired area and wrap tape around the soldered area.

**NOTE:**

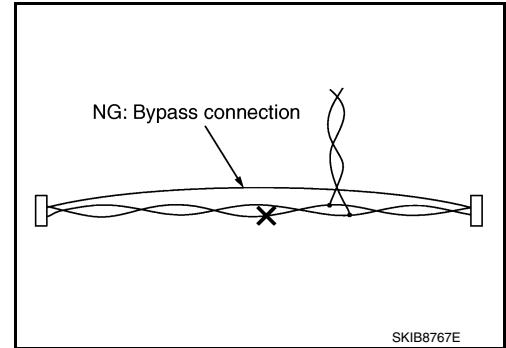
A fray of twisted lines must be within 110 mm (4.33 in).



- Bypass connection is never allowed at the repaired area.

**NOTE:**

Bypass connection may cause ITS communication error. The spliced wire becomes separated and the characteristics of twisted line are lost.

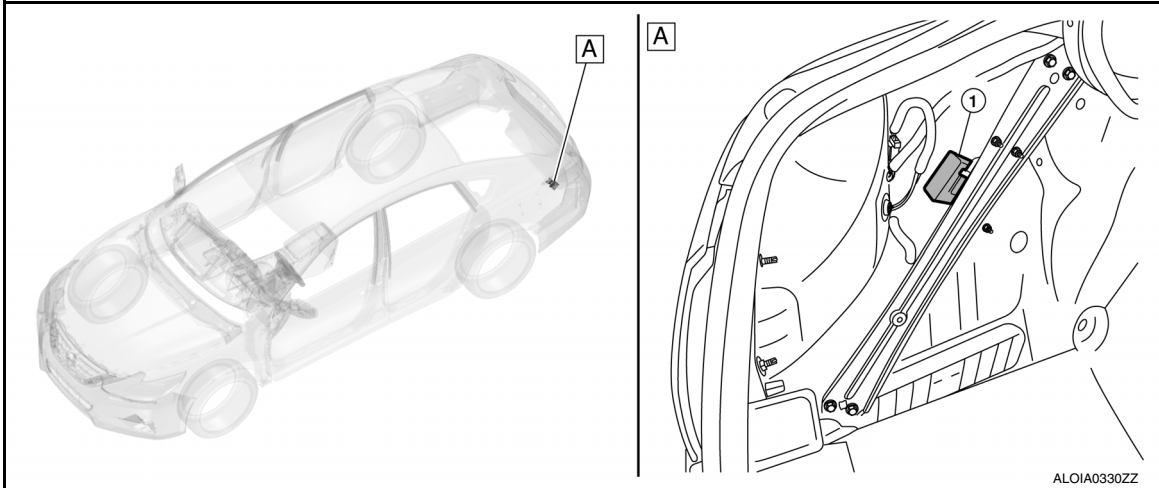


SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location

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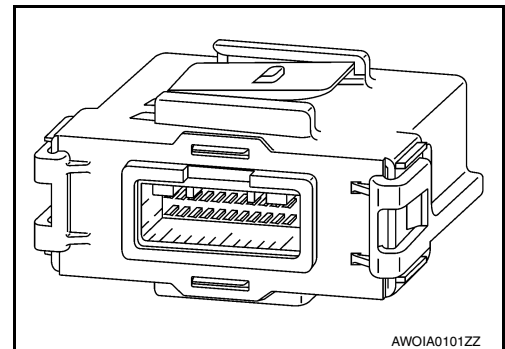
A. View with trunk side finisher LH removed.

| No. | Component         | Description   |
|-----|-------------------|---|
| 1.  | ADAS control unit | <ul style="list-style-type: none"> <li>Controls each system, based on CAN communication and ITS communication signals received from each control unit.</li> <li>Transmits signals necessary for control between CAN communication and ITS communication.</li> </ul> |

ADAS Control Unit

INFOID:0000000012939089

- ADAS control unit is installed in the trunk LH side.
- Communicates with each control unit via CAN communication and ITS communication.
- ADAS control unit with gateway function is for system control signals that are transmitted to each control unit between CAN communication and ITS communication by the ADAS control unit.
- ADAS control unit controls each system, based on ITS communication signals and CAN communication signals from each control unit.



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# SYSTEM

< SYSTEM DESCRIPTION >

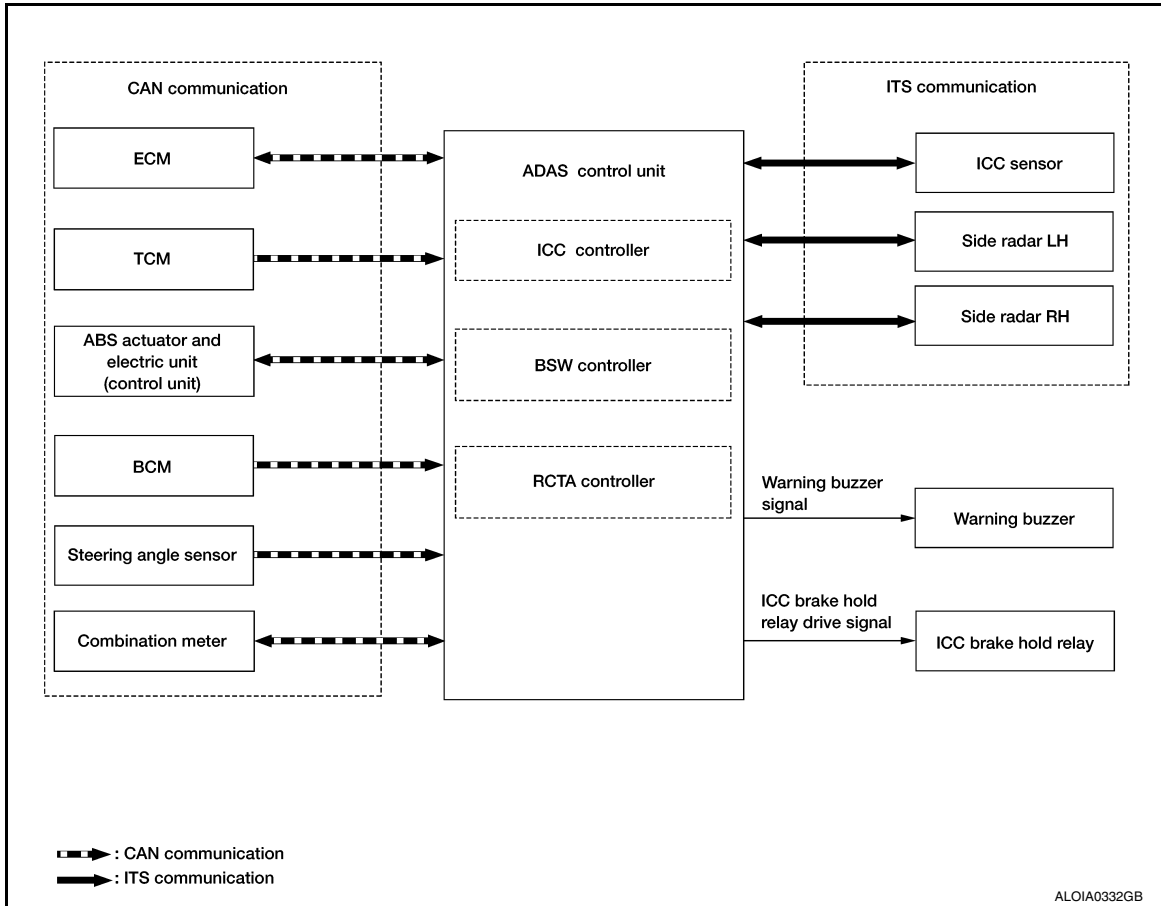
[ADAS CONTROL UNIT]

## SYSTEM

### System Description

INFOID:000000012939090

### SYSTEM DIAGRAM



### ADAS CONTROL UNIT INPUT/OUTPUT SIGNAL ITEM

#### Input Signal Item

| Transmit unit          | Signal name       |                                    | Description  |  |
|------------------------|-------------------|------------------------------------|--|--|
| ECM                    | CAN communication | Closed throttle position signal    | Receives idle position state (ON/OFF).                   |  |
|                        |                   | Accelerator pedal position signal  | Receives accelerator pedal position (angle).             |  |
|                        |                   | ICC prohibition signal             | Receives an operable/inoperable state of the ICC system. |  |
|                        |                   | Engine speed signal                | Receives engine speed.                                   |  |
|                        |                   | ICC steering switch signal         | MAIN switch signal                                       | Receives the operational state of the ICC steering switch. |
|                        |                   |                                    | SET/ - switch signal                                     |  |
|                        |                   |                                    | CANCEL switch signal                                     |  |
|                        |                   |                                    | RES/ + switch signal                                     |  |
| DISTANCE switch signal |                   |                                    |  |  |
|                        |                   | Stop lamp switch signal            | Receives an operational state of the brake pedal.        |  |
|                        |                   | Brake pedal position switch signal | Receives an operational state of the brake pedal.        |  |



# SYSTEM

< SYSTEM DESCRIPTION >

[ADAS CONTROL UNIT]

| Transmit unit                                 | Signal name       |  | Description   |
|---|-------------------|--|---|
| TCM   | CAN communication | Input speed signal                       | Receives the number of revolutions of input shaft.  |
|   |                   | Current gear position signal             | Receives a current gear position.   |
|   |                   | Shift selector position signal           | Receives a shift selector position.   |
|   |                   | Output shaft revolution signal           | Receives the number of revolutions of output shaft.   |
| ABS actuator and electric unit (control unit) | CAN communication | Vehicle speed signal (ABS)               | Receives wheel speeds of four wheels.   |
|   |                   | Yaw rate signal                          | Receives yaw rate acting on the vehicle.  |
|   |                   | Stop lamp switch signal                  | Receives an operational state of the brake pedal.   |
| Combination meter                             | CAN communication | Parking brake switch signal              | Receives an operational state of the parking brake.   |
|   |                   | System selection signal                  | Receives a selection state of each item in "Driving Aids" selected with the integral switch of the information display. |
| BCM   | CAN communication | Turn indicator signal                    | Receives an operational state of the turn signal lamp and the hazard lamp.  |
|   |                   | Dimmer signal                            | Receives ON/OFF state of dimmer signal.   |
| Steering angle sensor                         | CAN communication | Steering angle sensor malfunction signal | Receives a malfunction state of steering angle sensor   |
|   |                   | Steering angle sensor signal             | Receives the number of revolutions and turning direction of the steering wheel.   |
|   |                   | Steering angle speed signal              | Receives the turning angle speed of the steering wheel.   |
| ICC sensor                                    | ITS communication | ICC sensor signal                        | Receives detection results, such as the presence or absence of a leading vehicle and distance from the vehicle.         |
| Side radar LH, RH                             | ITS communication | Vehicle detection signal                 | Receives vehicle detection condition of detection zone.   |

## Output Signal Item

| Reception unit                                | Signal name       |                                     | Description   |
|---|-------------------|-------------------------------------|---|
| ECM   | CAN communication | ICC operation signal                | Transmits an ICC operation signal necessary for Intelligent Cruise Control. |
| ABS actuator and electric unit (control unit) | CAN communication | Brake fluid pressure control signal | Transmits a brake fluid pressure control signal to activate the brake.      |

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< SYSTEM DESCRIPTION >

[ADAS CONTROL UNIT]

| Reception unit       | Signal name                       |  | Description  |
|----------------------|-----------------------------------|--|--|
| Combination meter    | CAN communication                 | Meter display signal                       | Transmits a signal to display a state of the system on the information display.  |
|                      |                                   | Vehicle ahead detection indicator signal   |  |
|                      |                                   | Set vehicle speed indicator signal         |  |
|                      |                                   | Set distance indicator signal              |  |
|                      |                                   | SET switch indicator signal                |  |
|                      |                                   | ON/OFF switch indicator signal             |  |
|                      |                                   | FEB system display signal                  |  |
|                      | PFCW system display signal        |  |  |
|                      |                                   | BSW system display signal                  |  |
|                      |                                   | FEB warning lamp signal                    | <ul style="list-style-type: none"> <li>• Transmits a signal to turn ON the lamp.</li> <li>• Transmits an ON/OFF state of the Forward Emergency Brake.</li> </ul> |
| ICC sensor           | ITS communication                 | ADAS control status                        | Transmits ADAS status.   |
| Side radar LH, RH    | ITS communication                 | Vehicle speed signal                       | Transmits a vehicle speed calculated by the ADAS control unit.   |
|                      |                                   | Blind Spot Warning indicator signal        | Transmits a Blind Spot Warning indicator signal to turn ON the Blind Spot Warning indicator.   |
|                      |                                   | Blind Spot Warning indicator dimmer signal | Transmits a Blind Spot Warning indicator dimmer signal to dim Blind Spot Warning indicator.  |
| ICC brake hold relay | ICC brake hold relay drive signal |  | Activates the brake hold relay and turns ON the stop lamp.   |

## DESCRIPTION

- ADAS\* control unit controls the following systems based on ITS communication signal and CAN communication signal from each control unit.

**NOTE:**

\*: Advanced Driver Assistance Systems

- Intelligent Cruise Control (ICC)
- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)

| System                                      | Reference   |
|---|---|
| Intelligent Cruise Control (ICC)            | <a href="#">CCS-10. "System Description"</a>        |
| Forward Emergency Braking (FEB)             | <a href="#">BRC-184. "System Description"</a>       |
| Predictive Forward Collision Warning (PFCW) | <a href="#">DAS-80. "PFCW : System Description"</a> |
| Blind Spot Warning (BSW)                    | <a href="#">DAS-82. "BSW : System Description"</a>  |
| Rear Cross Traffic Alert (RCTA)             | <a href="#">DAS-84. "RCTA : System Description"</a> |

## Fail-safe (ADAS Control Unit)

INFOID:000000012939091

If a malfunction occurs in each system, ADAS control unit cancels each control, sounds a beep, and turns ON the warning or indicator lamp.

# SYSTEM

< SYSTEM DESCRIPTION >

[ADAS CONTROL UNIT]

| System                                      | Buzzer            | Warning lamp/Warning display | Description |
|---|-------------------|------------------------------|-------------|
| Intelligent Cruise Control (ICC)            | High-pitched tone | ICC system warning           | Cancel      |
| Forward Emergency Braking (FEB)             | High-pitched tone | FEB warning lamp (Yellow)    | Cancel      |
| Predictive Forward Collision Warning (PFCW) | High-pitched tone | FEB warning lamp (Yellow)    | Cancel      |
| Blind Spot Warning (BSW)                    | Low-pitched tone  | BSW system warning           | Cancel      |
| Rear Cross Traffic Alert (RCTA)             | —                 | BSW system warning           | Cancel      |

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# DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[ADAS CONTROL UNIT]

## DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

### CONSULT Function (ICC/ADAS)

INFOID:000000012939092

#### APPLICATION ITEMS

CONSULT performs the following functions via CAN communication using ADAS control unit:

| Diagnosis mode           | Description   |
|--------------------------|---|
| Configuration            | <ul style="list-style-type: none"><li>The vehicle specification that is written in ADAS control unit can be displayed or stored.</li><li>The vehicle specification can be written when ADAS control unit is replaced.</li></ul> |
| Work support             | Displays causes of automatic system cancellation that occurred during system control.   |
| Self Diagnostic Result   | Displays the name of a malfunctioning system stored in the ADAS control unit.   |
| Data Monitor             | Displays ADAS control unit input/output data in real time.  |
| Active Test              | Enables an operational check of a load by transmitting a driving signal from the ADAS control unit to the load.   |
| ECU Identification       | Displays ADAS control unit part number.   |
| CAN Diag Support Monitor | Displays a reception/transmission state of CAN communication and ITS communication.   |

#### CONFIGURATION

Configuration includes functions as follows:

| Function                 | Description   |
|--------------------------|---|
| Read/Write Configuration | Before Replace ECU<br>Allows the reading of vehicle specification written in ADAS control unit to store the specification in CONSULT. |
|                          | After Replace ECU<br>Allows the writing of the vehicle information stored in CONSULT into the ADAS control unit.                      |
| Manual Configuration     | Allows the writing of the vehicle specification into the ADAS control unit by hand.   |

#### WORK SUPPORT

| Work support items     | Description  |
|------------------------|--|
| CAUSE OF AUTO-CANCEL 5 | Displays causes of automatic system cancellation that occurred during control of the Intelligent Cruise Control (ICC). |

#### NOTE:

- Causes of the maximum five cancellations (system cancel) are displayed.
- The displayed cancellation causes display the number of the ignition switch ON/OFF up to 254. It is fixed to 254 if it is over 254. It returns to 0 when the same cancellation cause is detected again.

Display Items for the Cause of Automatic Cancellation 1

| Cause of cancellation | Intelligent Cruise Control (ICC) | Description   |
|-----------------------|----------------------------------|---|
| CAN COMM ERROR        | ×                                | ADAS control unit received an abnormal signal with CAN communication. |
| NO RECORD             | ×                                | —   |

#### SELF DIAGNOSTIC RESULT

Refer to [DAS-21, "DTC Index"](#).

# DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

[ADAS CONTROL UNIT]

## < SYSTEM DESCRIPTION >

### NOTE:

- The details of time display are as per the following:
- CRNT: A malfunction is detected now.
- PAST: A malfunction was detected in the past.
- ODO/TRIP METER (Mileage) and VOLTAGE (IGN voltage) are displayed on FFD (Freeze Frame Data).

### DATA MONITOR

| Monitored item<br>[Unit]         | ALL SIG<br>(ICC) | MAIN SIG<br>(ICC) | MAIN SIG<br>(BSW) | Description   |
|----------------------------------|------------------|-------------------|-------------------|---|
| MAIN SW<br>[On/Off]              | ×                | ×                 | ×                 | Indicates [ON/OFF] status as judged from ICC steering switch.   |
| SET/COAST SW<br>[On/Off]         | ×                | ×                 |                   | Indicates [ON/OFF] status as judged from ICC steering switch.   |
| CANCEL SW<br>[On/Off]            | ×                | ×                 |                   | Indicates [ON/OFF] status as judged from ICC steering switch.   |
| RESUME/ACC SW<br>[On/Off]        | ×                | ×                 |                   | Indicates [ON/OFF] status as judged from ICC steering switch.   |
| DISTANCE SW<br>[On/Off]          | ×                |                   |                   | Indicates [ON/OFF] status as judged from ICC steering switch.   |
| CRUISE OPE<br>[On/Off]           | ×                | ×                 |                   | Indicates whether controlling or not (ON means "controlling").  |
| BRAKE SW<br>[On/Off]             | ×                | ×                 | ×                 | Indicates [ON/OFF] status as judged from ICC brake switch signal (ECM transmits ICC brake switch signal through CAN communication).   |
| STOP LAMP SW<br>[On/Off]         | ×                | ×                 | ×                 | Indicates [ON/OFF] status as judged from stop lamp switch signal (ECM transmits stop lamp switch signal through CAN communication).   |
| IDLE SW<br>[On/Off]              | ×                |                   |                   | Indicates [ON/OFF] status of idle switch read from ADAS control unit through CAN communication (ECM transmits ON/OFF status through CAN communication).   |
| SET DISTANCE<br>[Short/Mid/Long] | ×                | ×                 |                   | Indicates set distance memorized in ADAS control unit.  |
| CRUISE LAMP<br>[On/Off]          | ×                | ×                 |                   | Indicates [ON/OFF] status of MAIN switch indicator output.  |
| VHCL AHEAD<br>[On/Off]           | ×                |                   |                   | Indicates [ON/OFF] status of vehicle ahead detection indicator output.  |
| ICC WARNING<br>[On/Off]          | ×                |                   |                   | Indicates [ON/OFF] status of ICC system warning lamp output.  |
| VHCL SPEED SE<br>[km/h] or [mph] | ×                | ×                 | ×                 | Indicates vehicle speed calculated from ADAS control unit through CAN communication [ABS actuator and electric unit (control unit) transmits vehicle speed signal (wheel speed) through CAN communication]. |
| SET VHCL SPD<br>[km/h] or [mph]  | ×                | ×                 |                   | Indicates set vehicle speed memorized in ADAS control unit.   |
| BUZZER O/P<br>[On/Off]           | ×                |                   |                   | Indicates [ON/OFF] status of ICC warning chime output.  |
| ENGINE RPM<br>[rpm]              | ×                |                   |                   | Indicates engine speed read from ADAS control unit through CAN communication (ECM transmits engine speed signal through CAN communication).   |
| WIPER SW<br>[OFF/LOW/HIGH]       | ×                |                   |                   | Indicates wiper [OFF/LOW/HIGH] status (BCM transmits front wiper request signal through CAN communication).   |
| BA WARNING<br>[On/Off]           | ×                |                   |                   | Indicates [ON/OFF] status of FEB indicator lamp output.   |
| STP LMP DRIVE<br>[On/Off]        | ×                | ×                 |                   | Indicates [ON/OFF] status of ICC brake hold relay drive output.   |

# DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[ADAS CONTROL UNIT]

| Monitored item<br>[Unit]       | ALL SIG<br>(ICC) | MAIN SIG<br>(ICC) | MAIN SIG<br>(BSW) | Description  |
|--------------------------------|------------------|-------------------|-------------------|--|
| D POSITION SW<br>[On/Off]      | ×                |                   |                   | Indicates [ON/OFF] status of “D” or “M” positions read from ADAS control unit through CAN communication; ON when position “D” or “M” (TCM transmits shift selector position signal through CAN communication).   |
| NP RANGE SW<br>[On/Off]        | ×                |                   |                   | Indicates shift selector position signal read from ADAS control unit through CAN communication (TCM transmits shift selector position signal through CAN communication).   |
| PKB SW<br>[On/Off]             | ×                |                   |                   | Parking brake switch status [ON/OFF] judged from the parking brake switch signal that ADAS control unit receives via CAN communication is displayed (combination meter transmits the parking brake switch signal via CAN communication).                     |
| PWR SUP MONI<br>[V]            | ×                | ×                 |                   | Indicates ignition voltage input monitored by ADAS control unit.   |
| VHCL SPD AT<br>[km/h] or [mph] | ×                |                   |                   | Indicates vehicle speed calculated from CVT vehicle speed sensor read from ADAS control unit through CAN communication (TCM transmits CVT vehicle speed sensor signal through CAN communication).  |
| THRTL OPENING<br>[%]           | ×                | ×                 |                   | Indicates throttle position read from ADAS control unit through CAN communication (ECM transmits accelerator pedal position signal through CAN communication).   |
| GEAR<br>[1, 2, 3, 4, 5, 6, 7]  | ×                |                   |                   | Indicates CVT gear position read from ADAS control unit through CAN communication (TCM transmits current gear position signal through CAN communication).  |
| NP SW SIG<br>[On/Off]          | ×                |                   |                   | Indicates [ON/OFF] status as judged from park/neutral position switch signal (ECM transmits park/neutral position switch signal through CAN communication).  |
| MODE SIG<br>[OFF, ICC, ASCD]   | ×                |                   |                   | Indicates the active mode from ICC or ASCD [conventional (fixed speed) cruise control mode].   |
| SET DISP IND<br>[On/Off]       | ×                |                   |                   | Indicates [ON/OFF] status of SET switch indicator output.  |
| DISTANCE<br>[m]                | ×                |                   |                   | Indicates the distance from the vehicle ahead.   |
| RELATIVE SPD<br>[m/s]          | ×                |                   |                   | Indicates the relative speed of the vehicle ahead.   |
| SIDE G<br>[G]                  |                  |                   | ×                 | Indicates lateral G acting on the vehicle. This lateral G is judged from a side G sensor signal read by ADAS control unit via CAN communication. (The ABS actuator and electric unit (control unit) transmits a side G sensor signal via CAN communication). |
| FUNC ITEM (FCW)<br>[On/Off]    | ×                | ×                 | ×                 | Indicates system which can be set to ON/OFF by selecting “Driver Assistance” ⇒ “Emergency Brake” of the integral switch: Forward Emergency Braking.  |
| FUNC ITEM (BSW)<br>[On/Off]    | ×                | ×                 | ×                 | Indicates system which can be set to ON/OFF by selecting “Driver Assistance” ⇒ “Blind Spot” of the integral switch: Blind Spot Warning.  |
| FCW SELECT<br>[On/Off]         | ×                | ×                 | ×                 | Indicates an ON/OFF state of the PFCW system. The PFCW system can be set to ON/OFF by selecting “Driver Assistance” ⇒ “Emergency Brake” of the integral switch.  |
| BSW SELECT<br>[On/Off]         | ×                | ×                 | ×                 | Indicates an ON/OFF state of the BSW system. The BSW system can be set to ON/OFF by selecting “Driver Assistance” ⇒ “Blind Spot” of the integral switch.   |
| BSW/BSI WARN LMP<br>[On/Off]   |                  |                   | ×                 | Indicates [ON/OFF] status of Blind Spot warning malfunction.   |
| BSW SYSTEM ON<br>[On/Off]      |                  |                   | ×                 | Indicates [ON/OFF] status of BSW system.   |
| WARN SYS SW<br>[On/Off]        |                  |                   | ×                 | Indicates [ON/OFF] status of warning system switch.  |

# DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[ADAS CONTROL UNIT]

| Monitored item<br>[Unit]                                    | ALL SIG<br>(ICC) | MAIN SIG<br>(ICC) | MAIN SIG<br>(BSW) | Description   |
|---|------------------|-------------------|-------------------|---|
| FCW SYSTEM ON<br>[On/Off]                                   | ×                | ×                 |                   | Indicates [ON/OFF] status of PFCW system.                               |
| SYSTEM CANCEL<br>MESSAGE<br>[NOREQ/SLIP/VDC<br>OFF]         | ×                | ×                 | ×                 | Indicates [ON/OFF] status of system cancel display output.              |
| BSW ON INDICATOR<br>[On/Off]                                |                  |                   | ×                 | Indicates [ON/OFF] status of BSW system ON display output.              |
| SIDE RADAR BLOCK<br>COND<br>[On/Off]                        |                  |                   | ×                 | Indicates [ON/OFF] status of side radar with dirt or foreign materials. |
| BSW IND BRIGHT-<br>NESS<br>[Nothing/Bright/Normal/<br>Dark] |                  |                   | ×                 | Indicates status of brightness of Blind Spot Warning indicator.         |

## ACTIVE TEST

### CAUTION:

- Never perform “Active Test” while driving the vehicle.
- The “Active Test” cannot be performed when the following systems malfunction is displayed.
- ICC system
- Blind Spot Warning/RCTA
- PFCW/FEB
- The “Active Test” cannot be performed when the FEB warning lamp is illuminated.
- The “Active Test” cannot be performed when the ICC System is ON.

| Test item        | Description  |
|------------------|--|
| METER LAMP       | The FEB warning lamp can be illuminated by ON/OFF operation as necessary.  |
| STOP LAMP        | The ICC brake hold relay can be operated by ON/OFF operation as necessary, and the stop lamp can be illuminated. |
| ADAS BUZZER      | Sounds a buzzer used for BSW, RCTA by arbitrarily operating ON/OFF.  |
| METER BUZZER     | Sounds a buzzer used for ICC, PFCW, FEB by arbitrarily operating ON/OFF.   |
| BRAKE ACTUATOR 1 | Activates the brake by an arbitrary operation.   |
| BRAKE ACTUATOR 2 |  |
| BRAKE ACTUATOR 3 |  |

## METER LAMP

### NOTE:

The test can be performed only when the engine is running.

| Test item  | Operation | Description   | FEB warning lamp |
|------------|-----------|---|------------------|
| METER LAMP | Off       | Stops sending the FEB warning lamp signal to exit from the test.                      | OFF              |
|            | On        | Transmits the FEB warning lamp signal to the combination meter via CAN communication. | ON               |

## STOP LAMP

| Test item | Operation | Description   | Stop lamp |
|-----------|-----------|---|-----------|
| STOP LAMP | Off       | Stops transmitting the ICC brake hold relay drive signal to end the test. | OFF       |
|           | On        | Transmits the ICC brake hold relay drive signal.                          | ON        |

## METER BUZZER

# DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[ADAS CONTROL UNIT]

| Test item    | Operation | Description  | Operation sound |
|--------------|-----------|--|-----------------|
| METER BUZZER | Off       | Stops buzzer output to the combination meter via CAN communication.  | OFF             |
|              | On        | Starts buzzer output to the combination meter via CAN communication. | ON              |

## ADAS BUZZER

| Test item   | Operation | Description           | Operation sound |
|-------------|-----------|-----------------------|-----------------|
| ADAS BUZZER | On        | Starts buzzer output. | OFF             |
|             | Off       | Stops buzzer output.  | ON              |

## BRAKE ACTUATOR

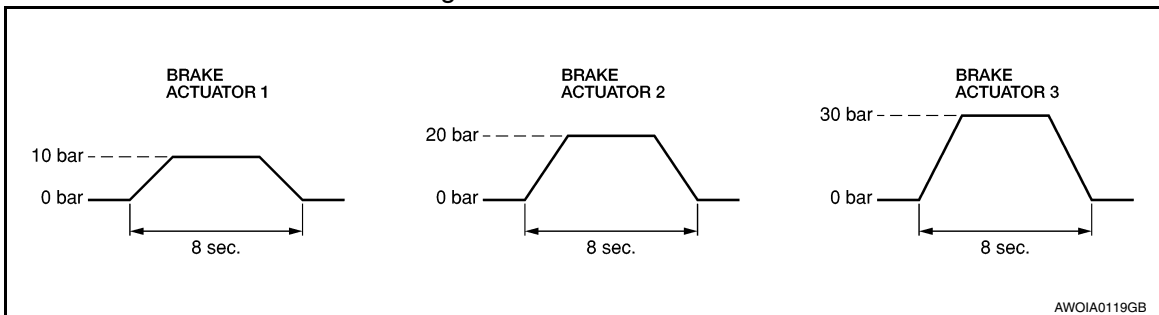
**NOTE:**

The test can be performed only when the engine is running.

| Test item        | Operation | Description  | "PRESS ORDER" value |
|------------------|-----------|--|---------------------|
| BRAKE ACTUATOR 1 | Off       | Stops transmitting the brake fluid pressure control signal to end the test.    | —                   |
|                  | On        | Starts transmitting the brake fluid pressure control signal to start the test. | 10 bar              |
| BRAKE ACTUATOR 2 | Off       | Stops transmitting the brake fluid pressure control signal to end the test.    | —                   |
|                  | On        | Starts transmitting the brake fluid pressure control signal to start the test. | 20 bar              |
| BRAKE ACTUATOR 3 | Off       | Stops transmitting the brake fluid pressure control signal to end the test.    | —                   |
|                  | On        | Starts transmitting the brake fluid pressure control signal to start the test. | 30 bar              |

**NOTE:**

The test is finished 10 seconds after starting.



## ECU IDENTIFICATION

Displays ADAS control unit part number.



# ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[ADAS CONTROL UNIT]

## ECU DIAGNOSIS INFORMATION

### ADAS CONTROL UNIT

Reference Value

INFOID:0000000012939093

#### VALUES ON THE DIAGNOSIS TOOL

| Monitor item  | Condition   |   | Value/Status   |
|---------------|---|---|--|
| MAIN SW       | Ignition switch ON  | When MAIN (ON/OFF) switch is pressed.   | On   |
|               |   | When MAIN (ON/OFF) switch is not pressed.                                     | Off  |
| SET/COAST SW  | Ignition switch ON  | When SET/COAST switch is pressed.   | On   |
|               |   | When SET/COAST switch is not pressed.   | Off  |
| CANCEL SW     | Ignition switch ON  | When CANCEL switch is pressed.  | On   |
|               |   | When CANCEL switch is not pressed.  | Off  |
| RESUME/ACC SW | Ignition switch ON  | When RESUME/ACCELERATE switch is pressed.                                     | On   |
|               |   | When RESUME/ACCELERATE switch is not pressed.                                 | Off  |
| DISTANCE SW   | Ignition switch ON  | When DISTANCE switch is pressed.  | On   |
|               |   | When DISTANCE switch is not pressed.  | Off  |
| CRUISE OPE    | Drive the vehicle and activate the ICC system   | When ICC system is controlling.   | On   |
|               |   | When ICC system is not controlling.   | Off  |
| BRAKE SW      | Ignition switch ON  | When brake pedal is depressed.  | Off  |
|               |   | When brake pedal is not depressed.  | On   |
| STOP LAMP SW  | Ignition switch ON  | When brake pedal is depressed.  | On   |
|               |   | When brake pedal is not depressed.  | Off  |
| IDLE SW       | Engine running  | Idling  | On   |
|               |   | Except idling (depress accelerator pedal)                                     | Off  |
| SET DISTANCE  | <ul style="list-style-type: none"> <li>• Start the engine and turn the ICC system ON</li> <li>• Press the DISTANCE switch to change the ICC system</li> </ul> | When set to "long"  | Long   |
|               |   | When set to "middle"  | Mid  |
|               |   | When set to "short"   | Short  |
| CRUISE LAMP   | Start the engine and press MAIN switch  | ICC system ON (MAIN switch indicator ON).                                     | On   |
|               |   | ICC system OFF (MAIN switch indicator OFF).                                   | Off  |
| VHCL AHEAD    | Drive the vehicle and activate the ICC system   | When a vehicle ahead is detected (vehicle ahead detection indicator ON).      | On   |
|               |   | When a vehicle ahead is not detected (vehicle ahead detection indicator OFF). | Off  |
| ICC WARNING   | Start the engine and press MAIN switch  | When ICC system is malfunctioning (ICC system malfunction ON).                | On   |
|               |   | When ICC system is normal (ICC system malfunction OFF).                       | Off  |
| VHCL SPEED SE | While driving   |   | Displays the vehicle speed calculated by ADAS control unit |
| SET VHCL SPD  | While driving   | When vehicle speed is set.  | Displays the set vehicle speed                             |

# ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[ADAS CONTROL UNIT]

| Monitor item  | Condition                                     |  | Value/Status                                    |
|---------------|---|--|---|
| BUZZER O/P    | Engine running                                | When the buzzer of the following system operates:<br>• ICC system<br>• PFCW system<br>• FEB system         | On  |
|               |   | When the buzzer of the following system does not operate:<br>• ICC system<br>• PFCW system<br>• FEB system | Off   |
| ENGINE RPM    | Engine running                                |  | Equivalent to tachometer reading                |
| WIPER SW      | Ignition switch ON                            | Wiper not operating.   | Off   |
|               |   | Wiper LO operation.  | Low   |
|               |   | Wiper HI operation.  | High  |
| BA WARNING    | Engine running                                | FEB OFF indicator lamp ON.<br>• When FEB system is malfunctioning.<br>• When FEB system is turned to OFF.  | On  |
|               |   | FEB OFF indicator lamp OFF.<br>• When FEB system is normal.<br>• When FEB system is turned to ON.          | Off   |
| STP LMP DRIVE | Drive the vehicle and activate the ICC system | When ICC brake hold relay is activated.  | On  |
|               |   | When ICC brake hold relay is not activated.  | Off   |
| D POSITION SW | Engine running                                | When the shift selector is in "D" position or manual mode.   | On  |
|               |   | When the shift selector is in any position other than "D" or manual mode.                                  | Off   |
| NP RANGE SW   | Engine running                                | When the shift selector is in "N" or "P" position.   | On  |
|               |   | When the shift selector is in any position other than "N" or "P".  | Off   |
| PKB SW        | Ignition switch ON                            | When the parking brake is applied.   | On  |
|               |   | When the parking brake is released.  | Off   |
| PWR SUP MONI  | Engine running                                |  | Power supply voltage value of ADAS control unit |
| VHCL SPD AT   | While driving                                 |  | Value of CVT vehicle speed sensor signal        |
| THRTL OPENING | Engine running                                | Depress accelerator pedal.   | Displays the throttle position                  |
| GEAR          | While driving                                 |  | Displays the gear position                      |
| NP SW SIG     | Ignition switch ON                            | When the shift selector is in neutral position.  | On  |
|               |   | When the shift selector is in any position other than neutral.   | Off   |
| MODE SIG      | Start the engine and press MAIN switch        | When ICC system is deactivated.  | Off   |
|               |   | When ICC system is activated.  | ICC   |
| SET DISP IND  | Press SET/COAST switch                        | SET switch indicator ON.   | On  |
|               |   | SET switch indicator OFF.  | Off   |

# ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[ADAS CONTROL UNIT]

| Monitor item          | Condition                                     |  | Value/Status                                     |
|-----------------------|---|--|--|
| DISTANCE              | Drive the vehicle and activate the ICC system | When a vehicle ahead is detected.                                | Displays the distance from the preceding vehicle |
|                       |   | When a vehicle ahead is not detected.                            | 0.0  |
| RELATIVE SPD          | Drive the vehicle and activate the ICC system | When a vehicle ahead is detected.                                | Displays the relative speed.                     |
|                       |   | When a vehicle ahead is not detected.                            | 0.0  |
| FCW SYSTEM ON         | Ignition switch ON                            | When the PFCW system is ON.                                      | On   |
|                       |   | When the PFCW system is OFF.                                     | Off  |
| SIDE G                | While driving                                 | Vehicle turning right.   | Negative value                                   |
|                       |   | Vehicle turning left.  | Positive value                                   |
| FUNC ITEM (FCW)       | Engine running                                |  | On   |
| FUNC ITEM (BSW)       | Engine running                                |  | On   |
| FCW SELECT            | Ignition switch ON                            | "Forward Emergency Braking" set when the integral switch is ON.  | On   |
|                       |   | "Forward Emergency Braking" set when the integral switch is OFF. | Off  |
| BSW SELECT            | Ignition switch ON                            | "Blind Spot Warning" set when the integral switch is ON.         | On   |
|                       |   | "Blind Spot Warning" set when the integral switch is OFF.        | Off  |
| BSW WARN LMP          | Engine running                                | When the BSW system is malfunctioning.                           | On   |
|                       |   | When the BSW system is normal.                                   | Off  |
| BSW SYSTEM ON         | Ignition switch ON                            | When the BSW system is ON.                                       | On   |
|                       |   | When the BSW system is OFF.                                      | Off  |
| FCW SYSTEM ON         | Engine running                                | When the FEB/PFCW system is ON.                                  | On   |
|                       |   | When the FEB/PFCW system is OFF.                                 | Off  |
| SYSTEM CANCEL MESSAGE | Engine running                                | System cancel display ON.  | On   |
|                       |   | System cancel display OFF.                                       | Off  |
| BSW ON INDICATOR      | Engine running                                | BSW system display ON.   | On   |
|                       |   | BSW system display OFF.  | Off  |
| WARN SYS SW           | Ignition switch ON                            | When warning system switch is pressed.                           | On   |
|                       |   | When warning system switch is not pressed.                       | Off  |
| SIDE RADAR BLOCK COND | Engine running                                | Front bumper or side radar is dirty.                             | On   |
|                       |   | Front bumper and side radar are clean.                           | Off  |
| BSW IND BRIGHTNESS    | Ignition switch ON                            | BSW system OFF.  | Nothing  |
|                       |   | Blind Spot Warning indicator brightness bright.                  | Bright   |
|                       |   | Blind Spot Warning indicator brightness normal.                  | Normal   |
|                       |   | Blind Spot Warning indicator brightness dark.                    | Dark   |

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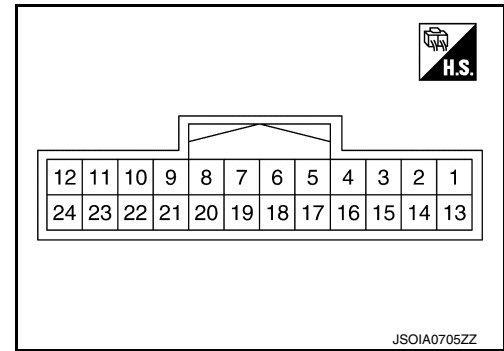
# ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[ADAS CONTROL UNIT]

TERMINAL LAYOUT

PHYSICAL VALUES



| Terminal No.<br>(Wire color) |        | Description                       |                  | Condition                |                              | Value<br>(Approx.) |
|------------------------------|--------|-----------------------------------|------------------|--------------------------|------------------------------|--------------------|
| +                            | -      | Signal name                       | Input/<br>Output |                          |                              |                    |
| 1<br>(B)                     | Ground | Ground                            | Input            | —                        |                              | 0 V                |
| 2<br>(L)                     |        | ITS communication high            | —                | —                        |                              | —                  |
| 3<br>(LG)                    |        | Ignition power supply             | Input            | Ignition switch ON       |                              | Battery voltage    |
| 4<br>(V)                     |        | Warning buzzer signal             | Output           | Ignition<br>switch<br>ON | Warning buzzer operation     | Battery voltage    |
|                              |        |                                   |                  |                          | Warning buzzer not operating | 0 V                |
| 5<br>(Y)                     |        | ITS communication low             | —                | —                        |                              | —                  |
| 6<br>(Y)                     |        | CAN Low                           | —                | —                        |                              | —                  |
| 9<br>(L)                     |        | CAN high                          | —                | —                        |                              | —                  |
| 10<br>(P)                    |        | CAN low                           | —                | —                        |                              | —                  |
| 14<br>(L)                    |        | ICC brake hold relay drive signal | Output           | Ignition<br>switch<br>ON | —                            | Battery voltage    |
| 18<br>(L)                    |        | CAN High                          | —                | —                        | —                            | 0 V                |

## Fail-safe (ADAS Control Unit)

INFOID:0000000012939094

If a malfunction occurs in each system, ADAS control unit cancels each control, sounds a beep, and turns ON the warning or indicator lamp.

| System                                      | Buzzer            | Warning lamp/Warning display | Description |
|---|-------------------|------------------------------|-------------|
| Intelligent Cruise Control (ICC)            | High-pitched tone | ICC system warning           | Cancel      |
| Forward Emergency Braking (FEB)             | High-pitched tone | FEB warning lamp (Yellow)    | Cancel      |
| Predictive Forward Collision Warning (PFCW) | High-pitched tone | FEB warning lamp (Yellow)    | Cancel      |
| Blind Spot Warning (BSW)                    | Low-pitched tone  | BSW system warning           | Cancel      |
| Rear Cross Traffic Alert (RCTA)             | —                 | BSW system warning           | Cancel      |

# ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[ADAS CONTROL UNIT]

## DTC Inspection Priority Chart

INFOID:000000012939095

If multiple DTCs are detected simultaneously, check them one by one depending on the following DTC inspection priority chart.

| Priority | Detected items (DTC)   |
|----------|--|
| 1        | <ul style="list-style-type: none"> <li>• U1507: LOST COMM (SIDE RDR R)</li> <li>• U1508: LOST COMM (SIDE RDR L)</li> </ul>   |
| 2        | <ul style="list-style-type: none"> <li>• U1000: CAN COMM CIRCUIT</li> <li>• U1321: CONFIGURATION</li> </ul>  |
| 3        | <ul style="list-style-type: none"> <li>• C1A17: ICC SENSOR MALF</li> <li>• C1B53: SIDE RDR R MALF</li> <li>• C1B54: SIDE RDR L MALF</li> </ul>   |
| 4        | <ul style="list-style-type: none"> <li>• C1A01: POWER SUPPLY CIR</li> <li>• C1A02: POWER SUPPLY CIR 2</li> <li>• C1A13: STOP LAMP RLY FIX</li> <li>• C1A14: ECM CIRCUIT</li> <li>• C1A34: COMMAND ERROR</li> <li>• U0121: VDC CAN CIR 2</li> <li>• U0235: ICC SENSOR CAN CIRC 1</li> <li>• U0401: ECM CAN CIR 1</li> <li>• U0402: TCM CAN CIR 1</li> <li>• U0415: VDC CAN CIR 1</li> <li>• U0433: ICC SENSOR CAN CIRC 2</li> <li>• U1503: SIDE RDR L CAN CIR 2</li> <li>• U1504: SIDE RDR L CAN CIR 1</li> <li>• U1505: SIDE RDR R CAN CIR 2</li> <li>• U1506: SIDE RDR R CAN CIR 1</li> </ul> |
| 5        | <ul style="list-style-type: none"> <li>• C1A03: VHCL SPEED SE CIRC</li> </ul>  |
| 6        | <ul style="list-style-type: none"> <li>• C1A00: CONTROL UNIT</li> </ul>  |

## DTC Index

INFOID:000000012939096

### Systems for fail-safe

- A: Intelligent Cruise Control (ICC)
- B: Forward Emergency Braking (FEB)
- C: Predictive Forward Collision Warning (PFCW)
- D: Blind Spot Warning (BSW)
- E: Rear Cross Traffic Alert (RCTA)

| DTC   | CONSULT display                                     | Fail-safe     | Reference              |
|---|---|---------------|------------------------|
|   |   | System        |                        |
| NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED | NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED | —             | —                      |
| U1507   | LOST COMM (SIDE RDR R)                              | D, E          | <a href="#">DAS-69</a> |
| U1508   | LOST COMM (SIDE RDR L)                              | D, E          | <a href="#">DAS-70</a> |
| U1000 <sup>NOTE</sup>                               | CAN COMM CIRCUIT                                    | A, B, C, D, E | <a href="#">DAS-62</a> |
| U1321   | CONFIGURATION                                       | A, B, C, D, E | <a href="#">DAS-64</a> |
| C1A17   | ICC SENSOR MALF                                     | A, B, C       | <a href="#">DAS-52</a> |
| C1B53   | SIDE RDR R MALF                                     | D, E          | <a href="#">DAS-54</a> |
| C1B54   | SIDE RDR L MALF                                     | D, E          | <a href="#">DAS-55</a> |
| C1A01   | POWER SUPPLY CIR                                    | A, B, C, D, E | <a href="#">DAS-41</a> |
| C1A02   | POWER SUPPLY CIR 2                                  | A, B, C, D, E | <a href="#">DAS-41</a> |

# ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[ADAS CONTROL UNIT]

Systems for fail-safe

- A: Intelligent Cruise Control (ICC)
- B: Forward Emergency Braking (FEB)
- C: Predictive Forward Collision Warning (PFCW)
- D: Blind Spot Warning (BSW)
- E: Rear Cross Traffic Alert (RCTA)

| DTC     | CONSULT display       | Fail-safe     | Reference              |
|---------|-----------------------|---------------|------------------------|
| CONSULT |                       | System        |                        |
| C1A13   | STOP LAMP RLY FIX     | A, B, C       | <a href="#">DAS-44</a> |
| C1A14   | ECM CIRCUIT           | A, B, C       | <a href="#">DAS-50</a> |
| C1A34   | COMMAND ERROR         | A, B, C       | <a href="#">DAS-53</a> |
| U0121   | VDC CAN CIR 2         | A, B, C, D, E | <a href="#">DAS-56</a> |
| U0235   | ICC SENSOR CAN CIRC 1 | A, C, D, E    | <a href="#">DAS-57</a> |
| U0401   | ECM CAN CIR 1         | A, B, C, D, E | <a href="#">DAS-58</a> |
| U0402   | TCM CAN CIR 1         | A, B, C, D, E | <a href="#">DAS-59</a> |
| U0415   | VDC CAN CIR 1         | A, B, C, D, E | <a href="#">DAS-60</a> |
| U0433   | ICC SENSOR CAN CIRC 2 | A, B, C       | <a href="#">DAS-61</a> |
| U1503   | SIDE RDR L CAN CIR 2  | D, E          | <a href="#">DAS-65</a> |
| U1504   | SIDE RDR L CAN CIR 1  | D, E          | <a href="#">DAS-66</a> |
| U1505   | SIDE RDR R CAN CIR 2  | D, E          | <a href="#">DAS-67</a> |
| U1506   | SIDE RDR R CAN CIR 1  | D, E          | <a href="#">DAS-68</a> |
| C1A03   | VHCL SPEED SE CIRC    | D, E          | <a href="#">DAS-42</a> |
| C1A00   | CONTROL UNIT          | A, B, C, D, E | <a href="#">DAS-40</a> |

**NOTE:**

With the detection of “U1000” some systems do not perform the fail-safe operation.

A system controlling based on a signal received from the control unit performs fail-safe operation when the communication with the ADAS control unit becomes inoperable.

< WIRING DIAGRAM >

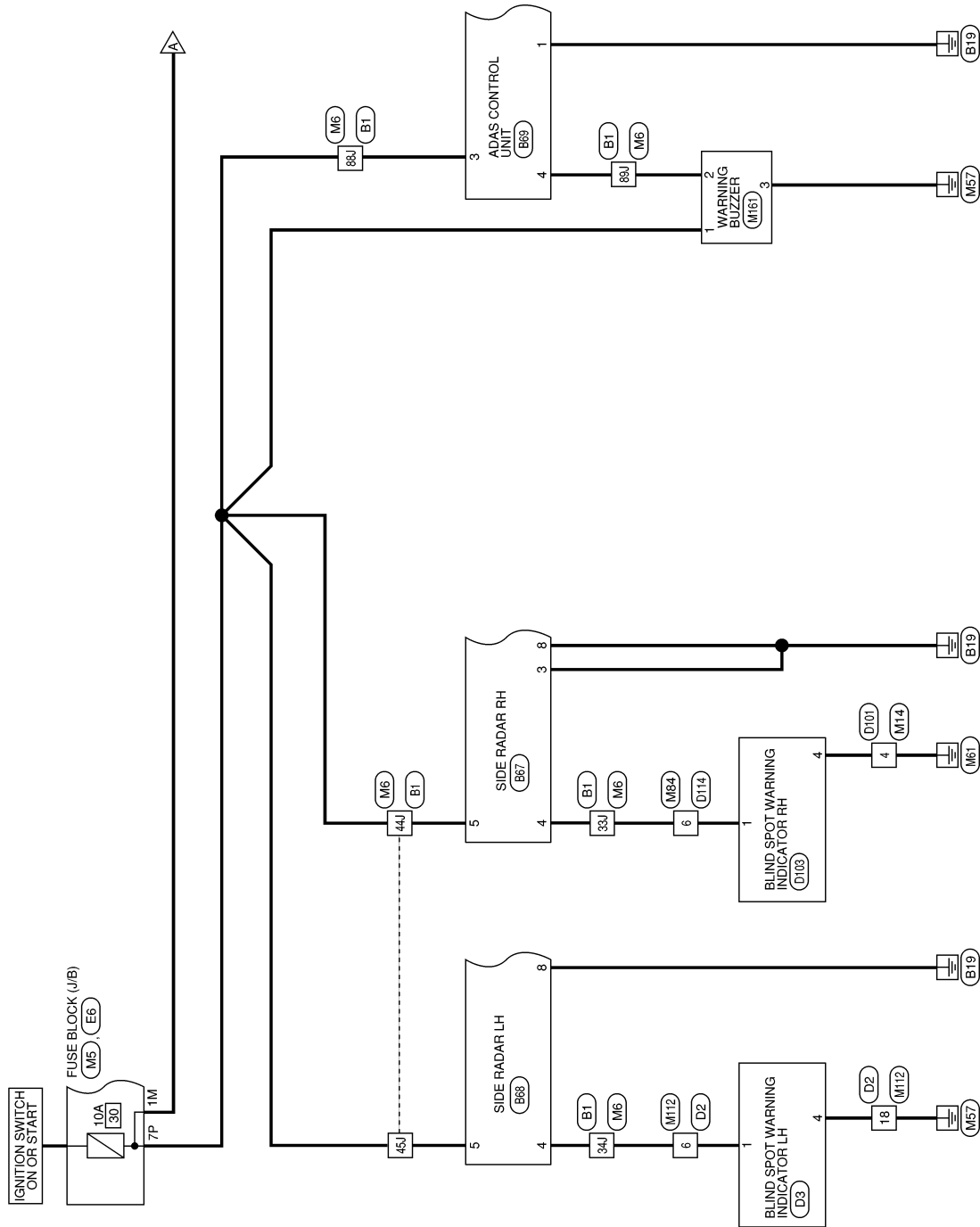
# WIRING DIAGRAM

## DRIVER ASSISTANCE SYSTEMS

### Wiring Diagram

INFOID:000000012939097

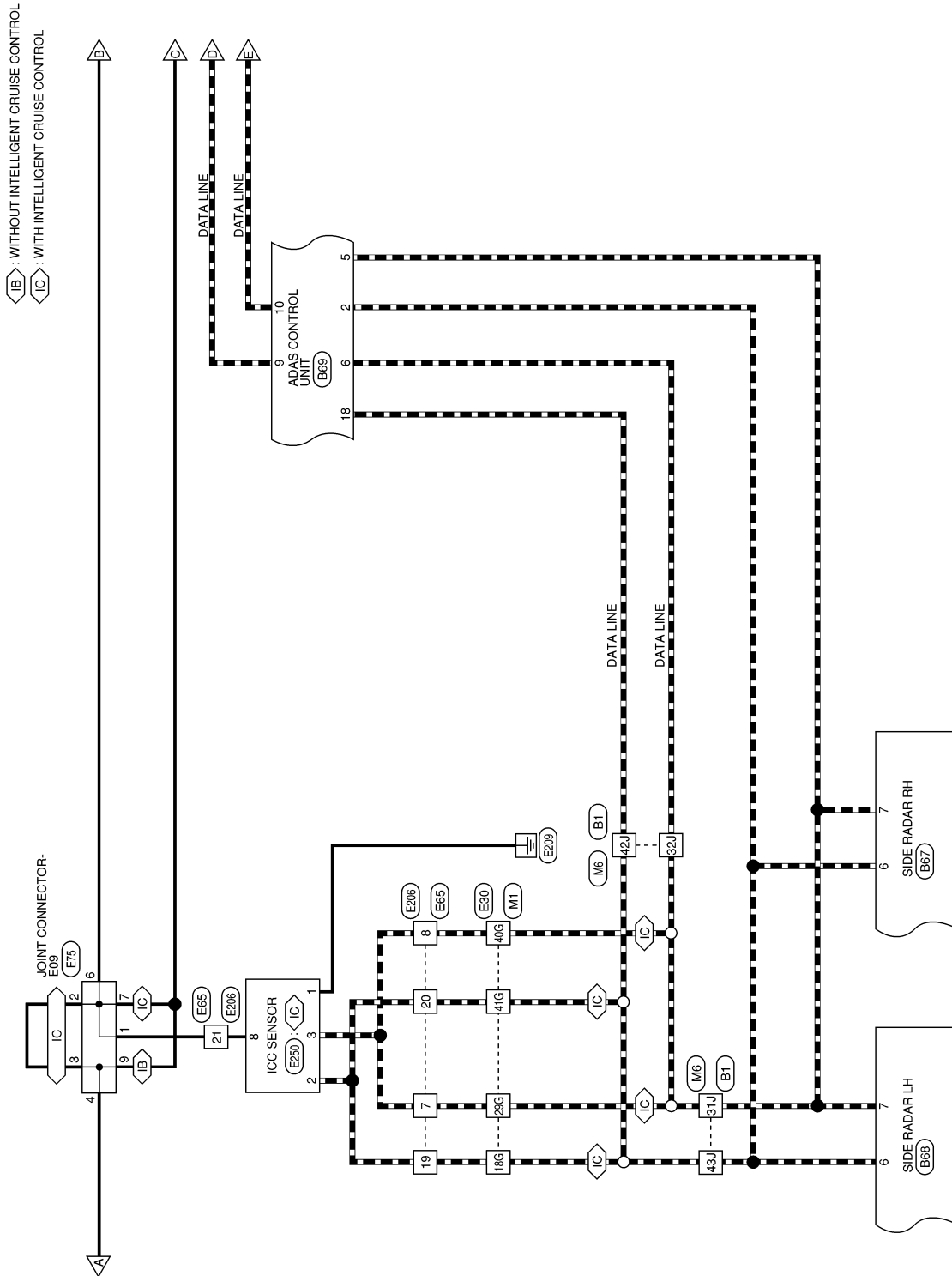
#### DRIVER ASSISTANCE SYSTEM



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IB : WITHOUT INTELLIGENT CRUISE CONTROL  
IC : WITH INTELLIGENT CRUISE CONTROL

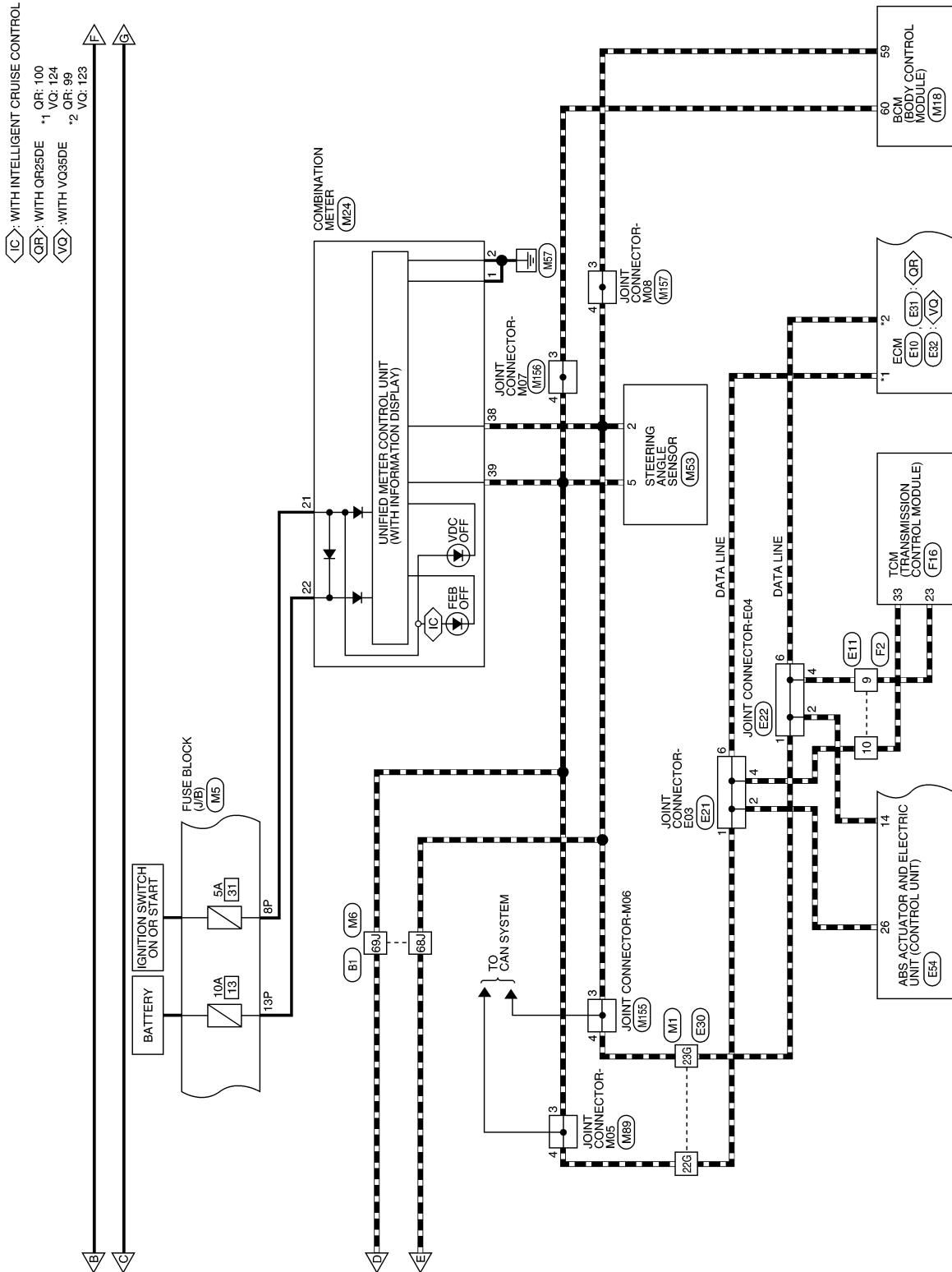
AAOWA0142GB



# DRIVER ASSISTANCE SYSTEMS

< WIRING DIAGRAM >

[ADAS CONTROL UNIT]



AAOWA0143GB

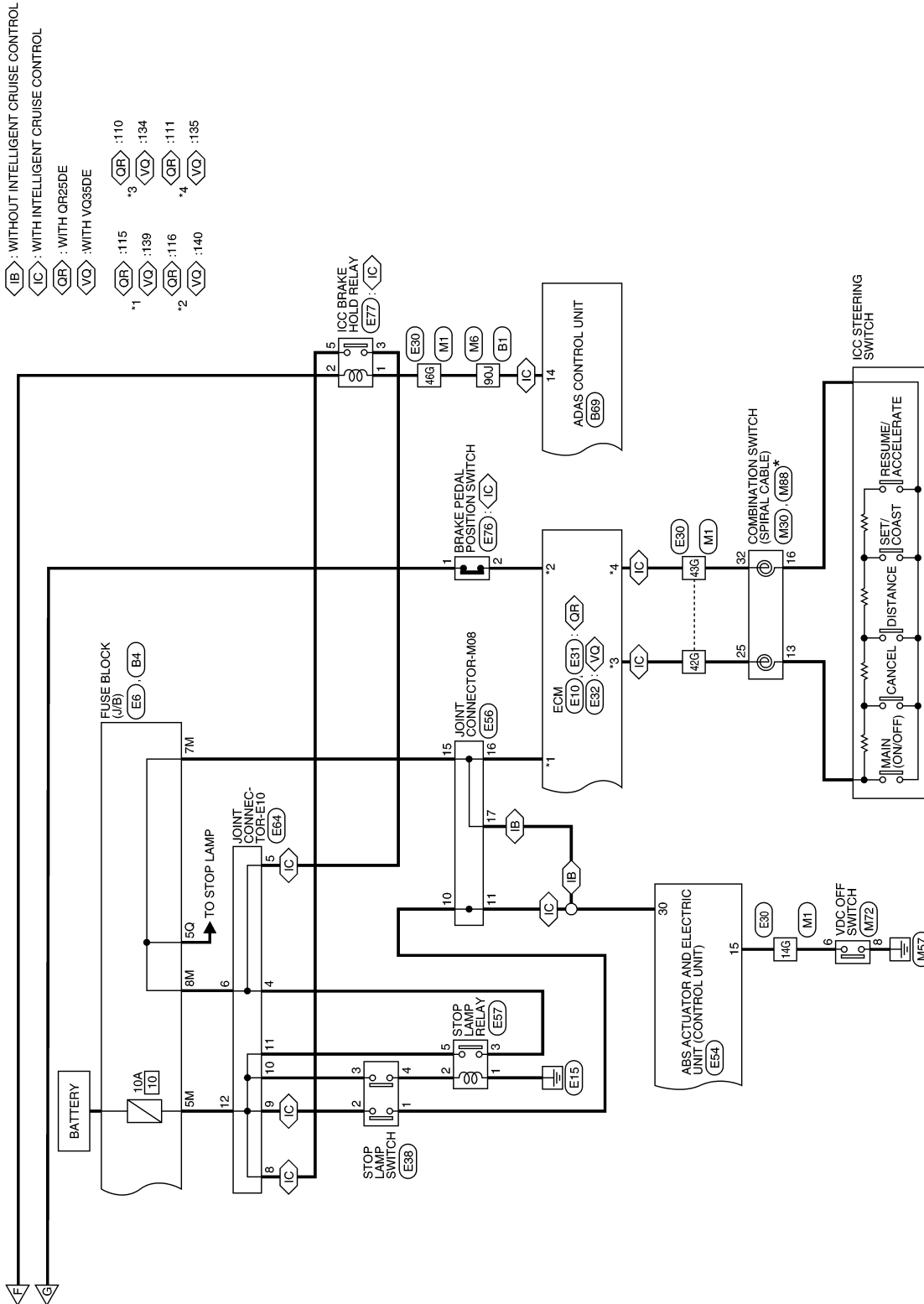
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# DRIVER ASSISTANCE SYSTEMS

< WIRING DIAGRAM >

[ADAS CONTROL UNIT]

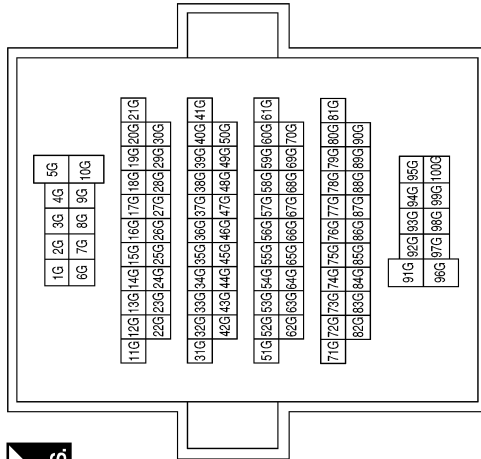


\* : This connector is not shown in "Harness Layout"

AAOWA0144GB

DRIVER ASSISTANCE SYSTEM CONNECTORS

|                 |              |
|-----------------|--------------|
| Connector No.   | M1           |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



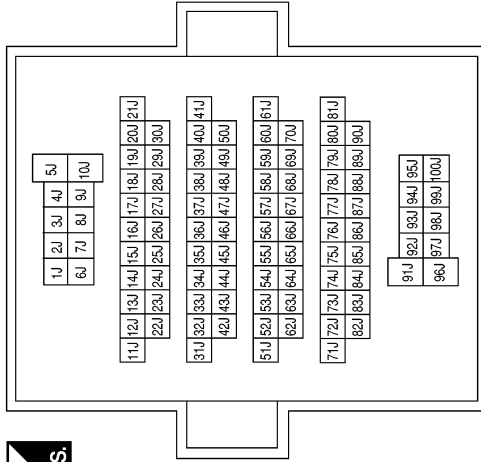
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 14G          | LG            | -           |
| 18G          | L             | -           |
| 22G          | L             | -           |
| 23G          | P             | -           |
| 29G          | Y             | -           |
| 40G          | Y             | -           |
| 41G          | L             | -           |
| 42G          | BG            | -           |
| 43G          | G             | -           |
| 46G          | L             | -           |

|                 |                  |
|-----------------|------------------|
| Connector No.   | M5               |
| Connector Name  | FUSE BLOCK (J/B) |
| Connector Color | WHITE            |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 7P           | G             | -           |
| 8P           | BR            | -           |
| 13P          | G             | -           |

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



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 31J          | Y             | -           |
| 32J          | Y             | -           |
| 33J          | G             | -           |
| 34J          | W             | -           |
| 42J          | L             | -           |
| 43J          | L             | -           |
| 44J          | R             | -           |
| 45J          | LG            | -           |
| 68J          | P             | -           |
| 69J          | L             | -           |
| 88J          | LG            | -           |
| 89J          | V             | -           |
| 90J          | L             | -           |

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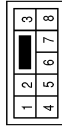
DAS

# DRIVER ASSISTANCE SYSTEMS

< WIRING DIAGRAM >

[ADAS CONTROL UNIT]

|                 |              |
|-----------------|--------------|
| Connector No.   | M14          |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 4            | GR            | -           |

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



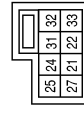
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 59           | P             | CAN-L       |
| 60           | L             | CAN-H       |

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



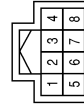
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | B             | GND1        |
| 2            | B             | GND2        |
| 21           | BR            | IGN         |
| 22           | G             | BAT         |
| 38           | P             | CAN-L       |
| 39           | L             | CAN-H       |

|                 |                                   |
|-----------------|-----------------------------------|
| Connector No.   | M30                               |
| Connector Name  | COMBINATION SWITCH (SPIRAL CABLE) |
| Connector Color | GRAY                              |



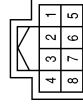
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 25           | BG            | -           |
| 32           | G             | -           |

|                 |                       |
|-----------------|-----------------------|
| Connector No.   | M53                   |
| Connector Name  | STEERING ANGLE SENSOR |
| Connector Color | WHITE                 |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 2            | P             | CAN-L       |
| 5            | L             | CAN-H       |

|                 |                |
|-----------------|----------------|
| Connector No.   | M72            |
| Connector Name  | VDC OFF SWITCH |
| Connector Color | BLACK          |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 6            | LG            | -           |
| 8            | B             | -           |

# DRIVER ASSISTANCE SYSTEMS

< WIRING DIAGRAM >

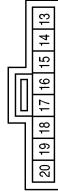
[ADAS CONTROL UNIT]

|                 |                     |
|-----------------|---------------------|
| Connector No.   | M89                 |
| Connector Name  | JOINT CONNECTOR-M05 |
| Connector Color | WHITE               |



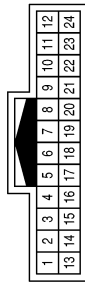
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 3            | L             | -           |
| 4            | L             | -           |

|                 |                                   |
|-----------------|-----------------------------------|
| Connector No.   | M88                               |
| Connector Name  | COMBINATION SWITCH (SPIRAL CABLE) |
| Connector Color | GRAY                              |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 13           | V             | -           |
| 16           | GR            | -           |

|                 |              |
|-----------------|--------------|
| Connector No.   | M84          |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



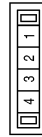
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 6            | G             | -           |

|                 |                     |
|-----------------|---------------------|
| Connector No.   | M156                |
| Connector Name  | JOINT CONNECTOR-M07 |
| Connector Color | WHITE               |



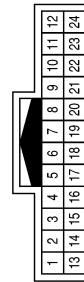
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 3            | L             | -           |
| 4            | L             | -           |

|                 |                     |
|-----------------|---------------------|
| Connector No.   | M155                |
| Connector Name  | JOINT CONNECTOR-M06 |
| Connector Color | WHITE               |



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

|                 |              |
|-----------------|--------------|
| Connector No.   | M112         |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 6            | W             | -           |
| 18           | B             | -           |

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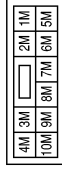
AAOIA0425GB

# DRIVER ASSISTANCE SYSTEMS

< WIRING DIAGRAM >

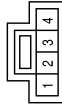
[ADAS CONTROL UNIT]

|                 |                  |
|-----------------|------------------|
| Connector No.   | E6               |
| Connector Name  | FUSE BLOCK (J/B) |
| Connector Color | WHITE            |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1M           | BG            | -           |
| 5M           | G             | -           |
| 7M           | L             | -           |
| 8M           | W             | -           |

|                 |                |
|-----------------|----------------|
| Connector No.   | M161           |
| Connector Name  | WARNING BUZZER |
| Connector Color | BROWN          |



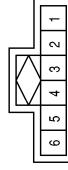
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | LG            | -           |
| 2            | V             | -           |
| 3            | B             | -           |

|                 |                     |
|-----------------|---------------------|
| Connector No.   | M157                |
| Connector Name  | JOINT CONNECTOR-M08 |
| Connector Color | WHITE               |



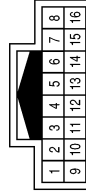
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 3            | P             | -           |
| 4            | P             | -           |

|                 |                     |
|-----------------|---------------------|
| Connector No.   | E21                 |
| Connector Name  | JOINT CONNECTOR-E03 |
| Connector Color | GRAY                |



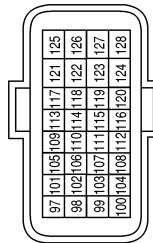
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | L             | -           |
| 2            | L             | -           |
| 4            | L             | -           |
| 6            | L             | -           |

|                 |              |
|-----------------|--------------|
| Connector No.   | E11          |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 9            | P             | -           |
| 10           | L             | -           |

|                 |                                    |
|-----------------|------------------------------------|
| Connector No.   | E10                                |
| Connector Name  | ECM (OR25DE EXCEPT FOR CALIFORNIA) |
| Connector Color | GRAY                               |



| Terminal No. | Color of Wire | Signal Name   |
|--------------|---------------|---------------|
| 99           | P             | CAN-L         |
| 100          | L             | CAN-H         |
| 110          | O             | ASCD SW       |
| 111          | R             | GND A ASCD SW |
| 115          | L             | BRAKE         |
| 116          | BR            | BNC SW        |

AAOIA0426GB

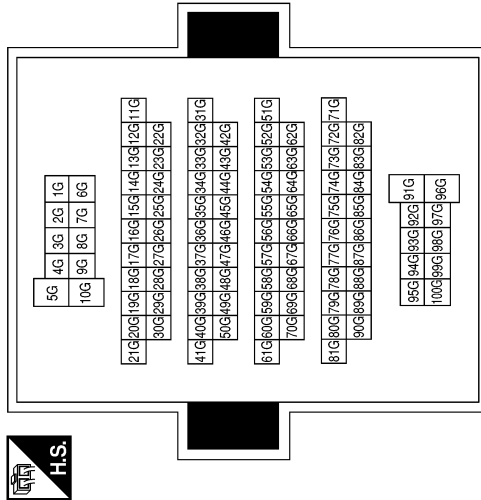
# DRIVER ASSISTANCE SYSTEMS

< WIRING DIAGRAM >

[ADAS CONTROL UNIT]

| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 14G          | V             | -           |
| 18G          | L             | -           |
| 22G          | L             | -           |
| 23G          | P             | -           |
| 29G          | Y             | -           |
| 40G          | Y             | -           |
| 41G          | L             | -           |
| 42G          | O             | -           |
| 43G          | R             | -           |
| 46G          | L             | -           |

|                 |              |
|-----------------|--------------|
| Connector No.   | E30          |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



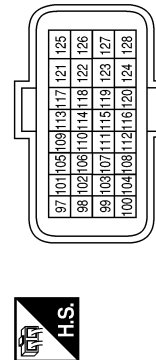
|                 |                     |
|-----------------|---------------------|
| Connector No.   | E22                 |
| Connector Name  | JOINT CONNECTOR-E04 |
| Connector Color | GRAY                |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | P             | -           |
| 2            | P             | -           |
| 4            | P             | -           |
| 6            | P             | -           |

| Terminal No. | Color of Wire | Signal Name                 |
|--------------|---------------|-----------------------------|
| 99           | P             | CAN-L                       |
| 100          | L             | CAN-H                       |
| 110          | O             | ASCD STEERING SWITCH        |
| 111          | R             | SENSOR GROUND               |
| 115          | L             | STOP LAMP SWITCH            |
| 116          | BR            | BRAKE PEDAL POSITION SWITCH |

|                 |                             |
|-----------------|-----------------------------|
| Connector No.   | E31                         |
| Connector Name  | ECM (OR25DE FOR CALIFORNIA) |
| Connector Color | GRAY                        |

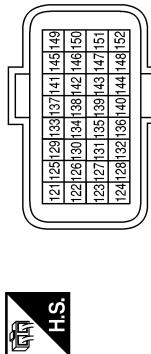


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|-----------------|-------------------|
| Connector No.   | E32               |
| Connector Name  | ECM (WITH VQ35DE) |
| Connector Color | BLACK             |



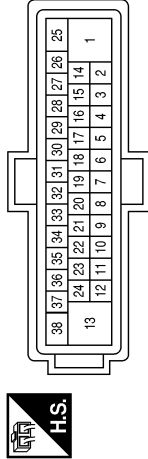
| Terminal No. | Color of Wire | Signal Name                    |
|--------------|---------------|--------------------------------|
| 123          | P             | CAN COMMUNICATION LINE (CAN-L) |
| 124          | L             | CAN COMMUNICATION LINE (CAN-H) |
| 134          | O             | ASCD STEERING SWITCH           |
| 135          | R             | SENSOR GROUND                  |
| 139          | L             | STOP LAMP SWITCH               |
| 140          | BR            | BRAKE PEDAL POSITION SWITCH    |

|                 |                  |
|-----------------|------------------|
| Connector No.   | E38              |
| Connector Name  | STOP LAMP SWITCH |
| Connector Color | WHITE            |



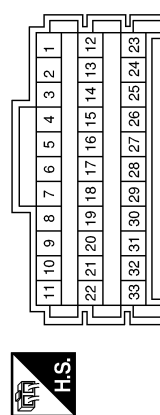
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | BR            | -           |
| 2            | P             | -           |
| 3            | G             | -           |
| 4            | R             | -           |

|                 |   |
|-----------------|---|
| Connector No.   | E54   |
| Connector Name  | ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) |
| Connector Color | BLACK   |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 14           | P             | CAN-L       |
| 15           | V             | VDC OFF     |
| 26           | L             | CAN-H       |
| 30           | L             | BLS         |

|                 |                     |
|-----------------|---------------------|
| Connector No.   | E56                 |
| Connector Name  | JOINT CONNECTOR-E08 |
| Connector Color | WHITE               |



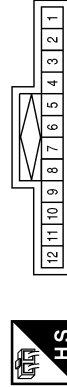
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 10           | BR            | -           |
| 11           | L             | -           |
| 15           | L             | -           |
| 16           | L             | -           |
| 17           | L             | -           |

|                 |                 |
|-----------------|-----------------|
| Connector No.   | E57             |
| Connector Name  | STOP LAMP RELAY |
| Connector Color | BLUE            |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | B             | -           |
| 2            | R             | -           |
| 3            | W             | -           |
| 5            | G             | -           |

|                 |                     |
|-----------------|---------------------|
| Connector No.   | E64                 |
| Connector Name  | JOINT CONNECTOR-E10 |
| Connector Color | BLUE                |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 4            | W             | -           |
| 5            | P             | -           |
| 6            | W             | -           |
| 8            | W             | -           |
| 9            | P             | -           |
| 10           | G             | -           |
| 11           | G             | -           |
| 12           | G             | -           |



# DRIVER ASSISTANCE SYSTEMS

< WIRING DIAGRAM >

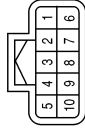
[ADAS CONTROL UNIT]

|                 |                             |
|-----------------|-----------------------------|
| Connector No.   | E76                         |
| Connector Name  | BRAKE PEDAL POSITION SWITCH |
| Connector Color | BROWN                       |



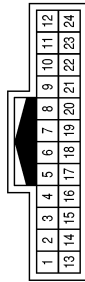
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | R             | -           |
| 2            | BR            | -           |

|                 |                     |
|-----------------|---------------------|
| Connector No.   | E75                 |
| Connector Name  | JOINT CONNECTOR-E09 |
| Connector Color | BLACK               |



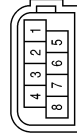
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | R             | -           |
| 2            | L             | -           |
| 3            | L             | -           |
| 4            | BG            | -           |
| 6            | R             | -           |
| 7            | R             | -           |
| 9            | R             | -           |

|                 |              |
|-----------------|--------------|
| Connector No.   | E65          |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 7            | Y             | -           |
| 8            | Y             | -           |
| 19           | L             | -           |
| 20           | L             | -           |
| 21           | R             | -           |

|                 |            |
|-----------------|------------|
| Connector No.   | E250       |
| Connector Name  | ICC SENSOR |
| Connector Color | BLACK      |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | B             | GND         |
| 2            | L             | ITS CAN-H   |
| 3            | R             | ITS CAN-L   |
| 8            | W             | IGN         |

|                 |              |
|-----------------|--------------|
| Connector No.   | E206         |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 7            | Y             | -           |
| 8            | Y             | -           |
| 19           | L             | -           |
| 20           | L             | -           |
| 21           | W             | -           |

|                 |                      |
|-----------------|----------------------|
| Connector No.   | E77                  |
| Connector Name  | ICC BRAKE HOLD RELAY |
| Connector Color | BLUE                 |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | L             | -           |
| 2            | R             | -           |
| 3            | P             | -           |
| 5            | W             | -           |

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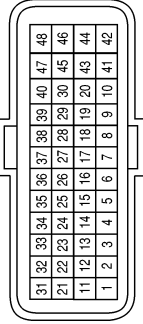
DAS

# DRIVER ASSISTANCE SYSTEMS

< WIRING DIAGRAM >


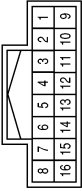
[ADAS CONTROL UNIT]

|                 |                                   |
|-----------------|-----------------------------------|
| Connector No.   | F16                               |
| Connector Name  | TCM (TRANSMISSION CONTROL MODULE) |
| Connector Color | BLACK                             |


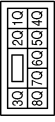
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 23           | P             | CAN-L       |
| 33           | L             | CAN-H       |

|                 |              |
|-----------------|--------------|
| Connector No.   | F2           |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |

| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 9            | P             | -           |
| 10           | L             | -           |


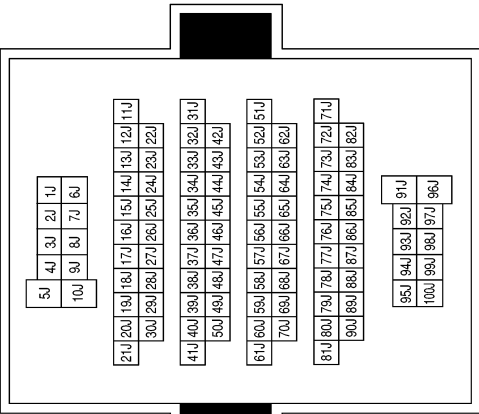
|                 |                  |
|-----------------|------------------|
| Connector No.   | B4               |
| Connector Name  | FUSE BLOCK (J/B) |
| Connector Color | WHITE            |

| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 5Q           | L             | -           |

| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 31J          | Y             | -           |
| 32J          | Y             | -           |
| 33J          | G             | -           |
| 34J          | G             | -           |
| 42J          | L             | -           |
| 43J          | L             | -           |
| 44J          | R             | -           |
| 45J          | R             | -           |
| 68J          | P             | -           |
| 69J          | L             | -           |
| 88J          | LG            | -           |
| 89J          | V             | -           |
| 90J          | L             | -           |

|                 |              |
|-----------------|--------------|
| Connector No.   | B1           |
| Connector Name  | WIRE TO WIRE |
| Connector Color | GRAY         |

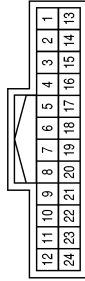
AAOIA0430GB

# DRIVER ASSISTANCE SYSTEMS

< WIRING DIAGRAM >

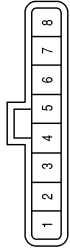
[ADAS CONTROL UNIT]

|                 |                   |
|-----------------|-------------------|
| Connector No.   | B69               |
| Connector Name  | ADAS CONTROL UNIT |
| Connector Color | WHITE             |



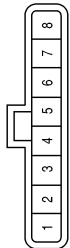
| Terminal No. | Color of Wire | Signal Name              |
|--------------|---------------|--------------------------|
| 1            | B             | GND                      |
| 2            | L             | ITS CAN-H                |
| 3            | LG            | IGN                      |
| 4            | V             | BUZZER OUTPUT            |
| 5            | Y             | ITS CAN-L                |
| 6            | Y             | CAN-L                    |
| 7            | -             | -                        |
| 8            | -             | -                        |
| 9            | L             | CAN-H                    |
| 10           | P             | CAN-L                    |
| 11           | -             | -                        |
| 12           | -             | -                        |
| 13           | -             | -                        |
| 14           | L             | STOP LAMP<br>RELAY DRIVE |
| 15           | -             | -                        |
| 16           | -             | -                        |
| 17           | -             | -                        |
| 18           | L             | CAN-L                    |
| 19           | -             | -                        |
| 20           | -             | -                        |
| 21           | -             | -                        |
| 22           | -             | -                        |
| 23           | -             | -                        |
| 24           | -             | -                        |

|                 |               |
|-----------------|---------------|
| Connector No.   | B68           |
| Connector Name  | SIDE RADAR LH |
| Connector Color | BLACK         |



| Terminal No. | Color of Wire | Signal Name  |
|--------------|---------------|--------------|
| 1            | -             | -            |
| 2            | -             | -            |
| 3            | -             | -            |
| 4            | G             | ALERT SIGNAL |
| 5            | R             | POWER (IGN)  |
| 6            | L             | ITS CAN-H    |
| 7            | Y             | ITS CAN-L    |
| 8            | B             | GND          |

|                 |               |
|-----------------|---------------|
| Connector No.   | B67           |
| Connector Name  | SIDE RADAR RH |
| Connector Color | BLACK         |



| Terminal No. | Color of Wire | Signal Name  |
|--------------|---------------|--------------|
| 1            | -             | -            |
| 2            | -             | -            |
| 3            | B             | ADDRESS      |
| 4            | G             | ALERT SIGNAL |
| 5            | R             | POWER (IGN)  |
| 6            | L             | ITS CAN-H    |
| 7            | Y             | ITS CAN-L    |
| 8            | B             | GND          |

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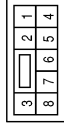
AAOIA0431GB

# DRIVER ASSISTANCE SYSTEMS

< WIRING DIAGRAM >

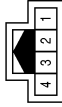
[ADAS CONTROL UNIT]

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



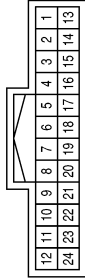
|              |   |               |   |             |   |
|--------------|---|---------------|---|-------------|---|
| Terminal No. | 4 | Color of Wire | B | Signal Name | - |
|--------------|---|---------------|---|-------------|---|

|                 |                                 |
|-----------------|---------------------------------|
| Connector No.   | D3                              |
| Connector Name  | BLIND SPOT WARNING INDICATOR LH |
| Connector Color | WHITE                           |



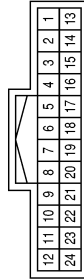
|              |   |               |     |             |   |
|--------------|---|---------------|-----|-------------|---|
| Terminal No. | 1 | Color of Wire | W/L | Signal Name | - |
|              | 4 |               | B   |             | - |

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



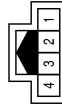
|              |    |               |     |             |   |
|--------------|----|---------------|-----|-------------|---|
| Terminal No. | 6  | Color of Wire | W/L | Signal Name | - |
|              | 18 |               | B   |             | - |

|                 |              |
|-----------------|--------------|
| Connector No.   | D114         |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



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

|                 |                                 |
|-----------------|---------------------------------|
| Connector No.   | D103                            |
| Connector Name  | BLIND SPOT WARNING INDICATOR RH |
| Connector Color | WHITE                           |



|              |   |               |   |             |   |
|--------------|---|---------------|---|-------------|---|
| Terminal No. | 1 | Color of Wire | R | Signal Name | - |
|              | 4 |               | B |             | - |

AAOIA0432GB

# ADDITIONAL SERVICE WHEN REPLACING ADAS CONTROL UNIT

< BASIC INSPECTION >

[ADAS CONTROL UNIT]

## BASIC INSPECTION

### ADDITIONAL SERVICE WHEN REPLACING ADAS CONTROL UNIT

#### Description

INFOID:0000000012939098

Always perform the ADAS control unit configuration after replacing the ADAS control unit.

#### Work Procedure

INFOID:0000000012939099

#### 1. ADAS CONTROL UNIT CONFIGURATION

##### ⓂCONSULT

Perform the ADAS control unit configuration. Refer to [DAS-38, "Description"](#).

>> GO TO 2.

#### 2. PERFORM SELF-DIAGNOSIS

##### ⓂCONSULT

1. Turn ignition switch ON.
2. Select "Self Diagnostic Result" mode of "ICC/ADAS".
3. Check DTC.

##### Is DTC detected?

- YES >> Perform the trouble diagnosis for the detected DTC. Refer to [DAS-21, "DTC Index"](#).  
NO >> Inspection End.

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# CONFIGURATION (ADAS CONTROL UNIT)

< BASIC INSPECTION >

[ADAS CONTROL UNIT]

## CONFIGURATION (ADAS CONTROL UNIT)

### Description

INFOID:0000000012939100

- Since vehicle specifications are not included in the ADAS control unit after replacement, it is required to write vehicle specifications using CONSULT.
- Configuration has three functions as follows:

| Function                 |                       | Description   |
|--------------------------|-----------------------|---|
| Read/Write Configuration | Before ECU            | Allows the reading of vehicle specification written in ADAS control unit to store the specification in CONSULT. |
|                          | After ECU replacement | Allows the writing of the vehicle information stored in CONSULT into the ADAS control unit.                     |
| Manual Configuration     |                       | Allows the writing of the vehicle specification into the ADAS control unit by hand.                             |

### Work Procedure

INFOID:0000000012939101

#### CAUTION:

- Use “Manual Configuration” only when “TYPE ID” of ADAS control unit cannot be read.
- If an error occurs during configuration, start over from the beginning.

#### 1. CHECKING TYPE ID (1)

Use FAST (service parts catalogue) to search ADAS control unit of the applicable vehicle and find “Type ID”.

Is “Type ID” displayed?

YES >> Print out “Type ID” and GO TO 2.

NO >> “Configuration” is not required for ADAS control unit. Replace in the usual manner. Refer to [DAS-72. "Removal and Installation"](#).

#### 2. CHECKING TYPE ID (2)

ⓂCONSULT Configuration

1. Select “Before Replace ECU” of “Read/Write Configuration”.
2. Check that “Type ID” is displayed on the CONSULT screen.

Is “Type ID” displayed?

YES >> GO TO 3.

NO >> GO TO 7.

#### 3. VERIFYING TYPE ID (1)

ⓂCONSULT Configuration

Compare a “Type ID” displayed on the CONSULT screen with the one searched by using FAST (service parts catalogue) to check that these “Type ID” agree with each other.

#### NOTE:

For the “Type ID” searched by using FAST (service parts catalog), use the last five digits of the “Type ID”.

>> GO TO 4.

#### 4. SAVING TYPE ID

ⓂCONSULT Configuration

Save “Type ID” on CONSULT.

>> GO TO 5.

#### 5. REPLACING ADAS CONTROL UNIT (1)

Replace ADAS control unit. Refer to [DAS-72. "Removal and Installation"](#).

>> GO TO 6.

#### 6. WRITING (AUTOMATIC WRITING)

## CONFIGURATION (ADAS CONTROL UNIT)

< BASIC INSPECTION >

[ADAS CONTROL UNIT]

### ⓂCONSULT Configuration

1. Select "After Replace ECU" of "Re/programming, Configuration" or that of "Read / Write Configuration".
2. Select the "Type ID" agreeing with the one stored on CONSULT and the one searched by using FAST (service parts catalogue) to write the "Type ID" into the ADAS control unit.

**NOTE:**

For the "Type ID" searched by using FAST (service parts catalog), use the last five digits of the "Type ID".

>> GO TO 9.

### 7.REPLACING ADAS CONTROL UNIT (2)

Replace ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

>> GO TO 8.

### 8.WRITING (MANUAL WRITING)

#### ⓂCONSULT Configuration

1. Select "Manual Configuration".
2. Select the "Type ID" searched by using FAST (service parts catalogue) to write the "Type ID" into the ADAS control unit.

**NOTE:**

For the "Type ID" searched by using FAST (service parts catalog), use the last five digits of the "Type ID".

>> GO TO 9.

### 9.VERIFYING TYPE ID (2)

Compare "Type ID" written into the ADAS control unit with the one searched by using FAST (service parts catalogue) to check that these "Type ID" agree with each other.

**NOTE:**

For the "Type ID" searched by using FAST (service parts catalog), use the last five digits of the "Type ID".

>> GO TO 10.

### 10.RESTART ADAS BY IGN OFF/IGN ON

1. Turn the ignition switch OFF.
2. Turn the ignition switch ON.

>> GO TO 11.

### 11.PERFORMING SUPPLEMENTARY WORK

1. Perform "Self Diagnostic Result" of all systems.
2. Erase "Self Diagnostic Result".

>> End of work.

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# DTC/CIRCUIT DIAGNOSIS

## C1A00 CONTROL UNIT

### DTC Logic

INFOID:0000000012939102

### DTC DETECTION LOGIC

| DTC No. | CONSULT screen terms<br>(Trouble diagnosis content) | DTC detection condition                |
|---------|---|--|
| C1A00   | CONTROL UNIT<br>(Control unit)                      | ADAS control unit internal malfunction |

### POSSIBLE CAUSE

ADAS control unit

### FAIL-SAFE

The following systems are canceled:

- Intelligent Cruise Control (ICC)
- Forward Emergency Braking (FEB)
- Predictive Forward Collision Warning (PFCW)
- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)

### DTC CONFIRMATION PROCEDURE

#### 1. PERFORM DTC CONFIRMATION PROCEDURE

##### Ⓟ CONSULT

1. Start the engine.
2. Select "All DTC Reading" mode.
3. Check DTC.
4. Check if "C1A00" is detected as the current malfunction in "Self Diagnostic Result" mode of "ICC/ADAS".

##### Is "C1A00" detected as the current malfunction?

- YES >> Refer to [DAS-40. "Diagnosis Procedure"](#).
- NO-1 >> To check malfunction symptom before repair: Refer to [GI-44. "Intermittent Incident"](#).
- NO-2 >> Confirmation after repair: Inspection End.

### Diagnosis Procedure

INFOID:0000000012939103

#### 1. CHECK SELF DIAGNOSTIC RESULT

Check if any DTC other than "C1A00" is detected in "Self Diagnostic Result" mode of "ICC/ADAS".

##### Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-21. "DTC Index"](#).
- NO >> Replace the ADAS control unit. Refer to [DAS-72. "Removal and Installation"](#).



# C1A01 POWER SUPPLY CIRCUIT 1, C1A02 POWER SUPPLY CIRCUIT 2

< DTC/CIRCUIT DIAGNOSIS >

[ADAS CONTROL UNIT]

## C1A01 POWER SUPPLY CIRCUIT 1, C1A02 POWER SUPPLY CIRCUIT 2

### DTC Logic

INFOID:000000012939104

### DTC DETECTION LOGIC

| DTC No.      | CONSULT screen terms<br>(Trouble diagnosis content) | DTC detection condition  |
|--------------|---|--|
| C1A01<br>(1) | POWER SUPPLY CIR<br>(Power supply circuit)          | The battery voltage sent to ADAS control unit remains less than 7.9 V for 5 seconds  |
| C1A02<br>(2) | POWER SUPPLY CIR 2<br>(Power supply circuit 2)      | The battery voltage sent to ADAS control unit remains more than 19.3 V for 5 seconds |

### POSSIBLE CAUSE

- Connector, harness or fuse
- ADAS control unit

### FAIL-SAFE

The following systems are canceled:

- Intelligent Cruise Control (ICC)
- Forward Emergency Braking (FEB)
- Predictive Forward Collision Warning (PFCW)
- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)

### DTC CONFIRMATION PROCEDURE

#### 1.PERFORM DTC CONFIRMATION PROCEDURE

##### CONSULT

1. Start the engine.
2. Turn the MAIN switch of ICC system ON.
3. Select "All DTC Reading" mode.
4. Check if "C1A01" or "C1A02" is detected as the current malfunction in "Self Diagnostic Result" mode of "ICC/ADAS".

Is "C1A01" or "C1A02" detected as the current malfunction?

- YES >> Refer to [DAS-41, "Diagnosis Procedure"](#).
- NO-1 >> To check malfunction symptom before repair: Refer to [GI-44, "Intermittent Incident"](#).
- NO-2 >> Confirmation after repair: Inspection End.

### Diagnosis Procedure

INFOID:000000012939105

#### 1.CHECK ADAS CONTROL UNIT POWER SUPPLY AND GROUND CIRCUIT

Check power supply and ground circuit of ADAS control unit. Refer to [DAS-71, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).
- NO >> Repair or replace the malfunctioning parts.

DAS

# C1A03 VEHICLE SPEED SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[ADAS CONTROL UNIT]

## C1A03 VEHICLE SPEED SENSOR

### DTC Logic

INFOID:000000012939106

### DTC DETECTION LOGIC

| DTC No. | CONSULT screen terms<br>(Trouble diagnosis content)  | DTC detection condition  |
|---------|--|--|
| C1A03   | VHCL SPEED SE CIRC<br>(Vehicle speed sensor circuit) | If the vehicle speed is greater than 19 mph (30km/h) 0.3s and vehicle speed drops to less than 1.8 mph (3km/h) within 200ms and vehicle speed is less than 3km/h continues for 3s. |

### POSSIBLE CAUSE

- Wheel speed sensor
- ABS actuator and electric unit (control unit)
- ADAS control unit

### FAIL-SAFE

The following systems are canceled:

- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)

### DTC CONFIRMATION PROCEDURE

#### 1.CHECK DTC PRIORITY

If DTC "C1A03" is displayed with DTC "U1000", first diagnose the DTC "U1000".

#### Is applicable DTC detected?

- YES >> Perform diagnosis of applicable.  
• U1000: Refer to [DAS-62, "DTC Logic"](#).
- NO >> GO TO 2.

#### 2.PERFORM DTC CONFIRMATION PROCEDURE

##### CONSULT

1. Start the engine.
2. Turn the MAIN switch of ICC system ON.
3. Drive the vehicle at 19 mph (30 km/h) or more.  
**CAUTION:**  
**Always drive safely.**
4. Stop the vehicle.
5. Select "All DTC Reading" mode.
6. Check if "C1A03" is detected as the current malfunction in "Self Diagnostic Result" mode of "ICC/ADAS".

#### Is "C1A03" detected as the current malfunction?

- YES >> Refer to [DAS-42, "Diagnosis Procedure"](#).
- NO-1 >> To check malfunction symptom before repair: Refer to [GI-44, "Intermittent Incident"](#).
- NO-2 >> Confirmation after repair: Inspection End.

### Diagnosis Procedure

INFOID:000000012939107

#### 1.CHECK DTC PRIORITY

If DTC "C1A03" is displayed with DTC "U1000", first diagnose the DTC "U1000".

#### Is applicable DTC detected?

- YES >> Perform diagnosis of applicable.  
• U1000: Refer to [DAS-62, "DTC Logic"](#).
- NO >> GO TO 2.

#### 2.CHECK DATA MONITOR

1. Start the engine.
2. Drive the vehicle at 19 mph (30 km/h) or more.

## C1A03 VEHICLE SPEED SENSOR

[ADAS CONTROL UNIT]

< DTC/CIRCUIT DIAGNOSIS >

3. Check that the value of "VHCL SPD SE" in "Data Monitor" mode of "ICC/ADAS" is almost the same as the actual vehicle speed.

**CAUTION:**

**Be careful of the vehicle speed.**

Is the inspection result normal?

YES >> Replace the ADAS control unit. Refer to [DAS-72. "Removal and Installation"](#).

NO >> GO TO 3.

### 3. CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF DIAGNOSTIC RESULT

Check if any DTC is detected in "Self Diagnostic Result" mode of "ABS".

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [BRC-224. "DTC Index"](#).

NO >> Replace the ADAS control unit. Refer to [DAS-72. "Removal and Installation"](#).

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DAS

## C1A13 STOP LAMP RELAY

### DTC Logic

INFOID:0000000012939108

### DTC DETECTION LOGIC

| DTC No. | CONSULT screen terms<br>(Trouble diagnosis content) | DTC detection condition  |
|---------|---|--|
| C1A13   | STOP LAMP RLY FIX<br>(Stop lamp relay fix)          | <ul style="list-style-type: none"> <li>• Stop lamp inactive state continues for 0.3 seconds or more despite the outputting of an ICC sensor ICC brake hold relay drive signal.</li> <li>• The stop lamp remains ON for 60 seconds or more under the following conditions:                             <ul style="list-style-type: none"> <li>- Driving at 25 mph (40 km/h) or more</li> <li>- No stop lamp drive signal output from ADAS control unit</li> <li>- No brake operation</li> </ul> </li> </ul> |

### POSSIBLE CAUSE

- Stop lamp switch circuit
- ICC brake hold relay circuit
- Stop lamp switch
- ICC brake hold relay
- Incorrect stop lamp switch installation
- ECM
- ABS actuator and electric unit (control unit)

### FAIL-SAFE

The following systems are canceled:

- Intelligent Cruise Control (ICC)
- Forward Emergency Braking (FEB)
- Predictive Forward Collision Warning (PFCW)

### DTC CONFIRMATION PROCEDURE

#### 1. CHECK DTC PRIORITY

If DTC "C1A13" is displayed with DTC "U1000", first diagnose the DTC "U1000".

Is applicable DTC detected?

- YES >> Perform diagnosis of applicable. Refer to [DAS-62, "DTC Logic"](#).  
 NO >> GO TO 2.

#### 2. PERFORM DTC CONFIRMATION PROCEDURE (1)

##### ⓐ CONSULT

1. Start the engine.
2. Select "STOP LAMP" "Active Test" mode of "ICC/ADAS".
3. Select "All DTC Reading" mode.
4. Check if "C1A13" is detected as the current malfunction in the "Self Diagnostic Result" mode of "ICC/ADAS".

Is "C1A13" detected as the current malfunction?

- YES >> Refer to [DAS-45, "Diagnosis Procedure"](#).  
 NO >> GO TO 3.

#### 3. PERFORM DTC CONFIRMATION PROCEDURE (2)

##### ⓐ CONSULT

1. Drive the vehicle at 25 mph (40 km/h) or more for approximately 60 seconds or more without the brake pedal depressed.

**CAUTION:**  
**Always drive safely.**

**NOTE:**

- If it is outside the above condition, repeat step 1.
2. Select "All DTC Reading" mode.

# C1A13 STOP LAMP RELAY

[ADAS CONTROL UNIT]

< DTC/CIRCUIT DIAGNOSIS >

3. Check if "C1A13" is detected as the current malfunction in the "Self Diagnostic Result" mode of "ICC/ADAS".

Is "C1A13" detected as the current malfunction?

YES >> Refer to [DAS-45, "Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-44, "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: Inspection End.

## Diagnosis Procedure

INFOID:0000000012939109

Regarding Wiring Diagram information, refer to [DAS-23, "Wiring Diagram"](#).

### 1. CHECK DTC PRIORITY

If DTC "C1A13" is displayed with DTC "U1000", first diagnose the DTC "U1000".

Is applicable DTC detected?

YES >> Perform diagnosis of applicable. Refer to [DAS-62, "DTC Logic"](#).

NO >> GO TO 2.

### 2. CHECK STOP LAMP SWITCH

#### CONSULT

1. Select "Data Monitor" mode of "ICC/ADAS".

2. Select "STOP LAMP SW".

3. Check that the function operates normally according to the following conditions:

| Monitor item | Condition                    | Status |
|--------------|------------------------------|--------|
| STOP LAMP SW | When brake pedal is applied  | ON     |
|              | When brake pedal is released | OFF    |

Is the inspection result normal?

YES >> GO TO 6.

NO >> GO TO 3.

### 3. CHECK STOP LAMP SWITCH INSTALLATION

1. Turn ignition switch OFF.

2. Check stop lamp switch for correct installation. Refer to [BR-7, "Inspection"](#).

Is the inspection result normal?

YES >> GO TO 4.

NO >> Adjust stop lamp switch installation. Refer to [BR-14, "Inspection and Adjustment"](#).

### 4. CHECK STOP LAMP SWITCH

Check stop lamp switch. Refer to [BRC-294, "Component Inspection"](#).

Is the inspection result normal?

YES >> GO TO 5.

NO >> Replace stop lamp switch. Refer to [BR-21, "Exploded View"](#).

### 5. CHECK STOP LAMP FOR ILLUMINATION

1. Remove ICC brake hold relay.

2. Check that the stop lamp is illuminated by depressing the brake pedal to turn the stop lamp ON.

Is the inspection result normal?

YES >> GO TO 6.

NO >> GO TO 7.

### 6. CHECK ICC BRAKE HOLD RELAY

Check ICC brake hold relay. Refer to [DAS-48, "Component Inspection"](#).

Is the inspection result normal?

YES >> GO TO 8.

# C1A13 STOP LAMP RELAY

[ADAS CONTROL UNIT]

< DTC/CIRCUIT DIAGNOSIS >

NO >> Replace ICC brake hold relay.

## 7. CHECK STOP LAMP RELAY

Check stop lamp relay. Refer to [DAS-48, "Component Inspection"](#).

Is the inspection result normal?

YES >> GO TO 7.

NO >> Replace stop lamp relay.

## 8. CHECK ICC BRAKE HOLD RELAY POWER SUPPLY CIRCUIT

1. Turn ignition switch ON.
2. Check voltage between ICC brake hold relay harness connector and ground.

| Terminal             |          | Voltage<br>(Approx.) |
|----------------------|----------|----------------------|
| (+)                  | (-)      |                      |
| ICC brake hold relay |          | Ground               |
| Connector            | Terminal |                      |
| E77                  | 2        |                      |
|                      | 5        | Battery voltage      |

Is the inspection result normal?

YES >> GO TO 9.

NO >> Repair or replace ICC brake hold relay power supply circuit.

## 9. CHECK HARNESS BETWEEN ICC BRAKE HOLD RELAY AND ADAS CONTROL UNIT

1. Disconnect ADAS control unit connector.
2. Check continuity between ICC brake hold relay harness connector and ADAS control unit harness connector.

| ICC brake hold relay |          | ADAS control unit |          | Continuity |
|----------------------|----------|-------------------|----------|------------|
| Connector            | Terminal | Connector         | Terminal |            |
| E77                  | 1        | B69               | 14       | Yes        |

3. Check continuity between ICC brake hold relay harness connector and ground.

| ICC brake hold relay |          | Ground | Continuity |
|----------------------|----------|--------|------------|
| Connector            | Terminal |        |            |
| E77                  | 1        |        | No         |

Is the inspection result normal?

YES >> GO TO 10.

NO >> Repair or replace the harness or connector.

## 10. CHECK HARNESS BETWEEN ICC BRAKE HOLD RELAY AND ECM

1. Disconnect ECM, stop lamp relay, rear combination lamp, and high-mounted stop lamp connectors and remove ICC brake hold relay.
2. Turn ignition switch ON.
3. Check voltage between ICC brake hold relay harness connector and ground.

| ICC brake hold relay |          | Ground | Voltage<br>(Approx.) |
|----------------------|----------|--------|----------------------|
| Connector            | Terminal |        |                      |
| E77                  | 3        |        | No                   |

4. Turn ignition switch OFF.
5. Check continuity between ICC brake hold relay harness connector and ECM harness connector.

# C1A13 STOP LAMP RELAY

< DTC/CIRCUIT DIAGNOSIS >

[ADAS CONTROL UNIT]

With QR25DE (except California)

| ICC brake hold relay |          | ECM       |          | Continuity |
|----------------------|----------|-----------|----------|------------|
| Connector            | Terminal | Connector | Terminal |            |
| E77                  | 3        | E10       | 115      | Yes        |

With QR25DE (for California)

| ICC brake hold relay |          | ECM       |          | Continuity |
|----------------------|----------|-----------|----------|------------|
| Connector            | Terminal | Connector | Terminal |            |
| E77                  | 3        | E31       | 115      | Yes        |

With VQ35DE

| ICC brake hold relay |          | ECM       |          | Continuity |
|----------------------|----------|-----------|----------|------------|
| Connector            | Terminal | Connector | Terminal |            |
| E77                  | 3        | E32       | 139      | Yes        |

6. Check continuity between ICC brake hold relay harness connector and ground.

| ICC brake hold relay |          | Ground | Continuity |
|----------------------|----------|--------|------------|
| Connector            | Terminal |        |            |
| E77                  | 3        |        | No         |

Is the inspection result normal?

YES >> GO TO 11.

NO >> Repair or replace the harness or connector.

## 11. CHECK ICC BRAKE HOLD RELAY CONTROL CIRCUIT

### CONSULT

1. Connect all connectors again if the connectors are disconnected.
2. Select "STOP LAMP" in "Active Test" mode of "ICC/ADAS".
3. Select "Active Test" and check the voltage between ADAS control unit harness connector and ground.

| Terminal          |          | Condition                       | Voltage (Approx.) |
|-------------------|----------|---------------------------------|-------------------|
| (+)               | (-)      |                                 |                   |
| ADAS control unit |          | Active Test item<br>"STOP LAMP" | Battery voltage   |
| Connector         | Terminal |                                 |                   |
| B69               | 14       |                                 |                   |
|                   |          | ON                              | 0 V               |

Is the inspection result normal?

YES >> GO TO 12.

NO >> Replace ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

## 12. CHECK STOP LAMP RELAY POWER SUPPLY CIRCUIT

Check voltage between stop lamp relay harness connector and ground.

| Terminal        |          | Condition | Voltage (Approx.) |
|-----------------|----------|-----------|-------------------|
| (+)             | (-)      |           |                   |
| Stop lamp relay |          | Ground    | Battery voltage   |
| Connector       | Terminal |           |                   |
| E57             | 5        |           |                   |

Is the inspection result normal?

YES >> GO TO 13.

NO >> Repair or replace stop lamp relay power supply circuit.

# C1A13 STOP LAMP RELAY

< DTC/CIRCUIT DIAGNOSIS >

[ADAS CONTROL UNIT]

## 13.CHECK HARNESS BETWEEN STOP LAMP RELAY AND ECM

1. Turn the ignition switch OFF.
2. Disconnect stop lamp relay, ECM, ICC brake hold relay, rear combination lamp, and high-mounted stop lamp connectors.
3. Check continuity between the stop lamp relay harness connector and the ECM harness connector.

With QR25DE (except California)

| Stop lamp relay |          | ECM       |          | Continuity |
|-----------------|----------|-----------|----------|------------|
| Connector       | Terminal | Connector | Terminal |            |
| E57             | 3        | E10       | 115      | Yes        |

With QR25DE (for California)

| Stop lamp relay |          | ECM       |          | Continuity |
|-----------------|----------|-----------|----------|------------|
| Connector       | Terminal | Connector | Terminal |            |
| E57             | 3        | E31       | 115      | Yes        |

With VQ35DE

| Stop lamp relay |          | ECM       |          | Continuity |
|-----------------|----------|-----------|----------|------------|
| Connector       | Terminal | Connector | Terminal |            |
| E57             | 3        | E32       | 139      | Yes        |

4. Check continuity between stop lamp relay harness connector and ground.

| Stop lamp relay |          | Ground | Continuity |
|-----------------|----------|--------|------------|
| Connector       | Terminal |        |            |
| E57             | 3        |        | No         |

Is the inspection result normal?

YES >> GO TO 14.

NO >> Repair the harness or connector.

## 14.PERFORM SELF-DIAGNOSIS OF ECM

ⓅCONSULT

1. Connect all connectors again if the connectors are disconnected.
2. Turn ignition switch ON.
3. Select "All DTC Reading" mode.
4. Check if any DTC is detected in "Self Diagnostic Result" mode of "ENGINE". Refer to [EC-110, "DTC Index"](#) (with QR25DE engine) or [EC-676, "DTC Index"](#) (with VQ35DE engine).

Is any DTC detected?

YES >> Repair or replace the malfunctioning parts identified by the self-diagnosis result.

NO >> GO TO 15.

## 15.PERFORM SELF-DIAGNOSIS OF ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

ⓅCONSULT

1. Connect all connectors again if the connectors are disconnected.
2. Turn ignition switch ON.
3. Select "All DTC Reading" mode.
4. Check if any DTC is detected in "Self Diagnostic Result" mode of "ABS". Refer to [BRC-224, "DTC Index"](#).

Is any DTC detected?

YES >> Repair or replace the malfunctioning parts identified by the self-diagnosis result.

NO >> Replace ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

## Component Inspection

INFOID:000000012939110

## 1.CHECK ICC BRAKE HOLD RELAY



# C1A13 STOP LAMP RELAY

[ADAS CONTROL UNIT]

## < DTC/CIRCUIT DIAGNOSIS >

Apply battery voltage to ICC brake hold relay terminals 1 and 2, and then check for continuity under the following conditions:

| ICC brake hold relay |   | Condition                               | Continuity |
|----------------------|---|---|------------|
| Terminals            |   |   |            |
| 3                    | 5 | When the battery voltage is applied     | Yes        |
|                      |   | When the battery voltage is not applied | No         |

Is the inspection result normal?

- YES >> Inspection End.
- NO >> Replace ICC brake hold relay.

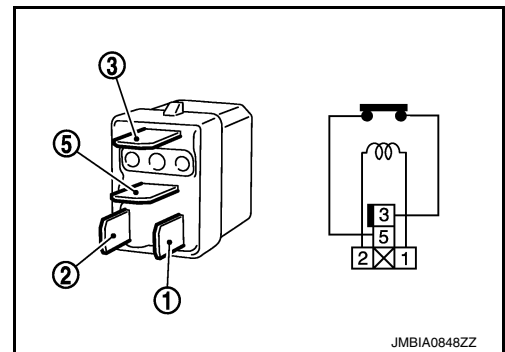
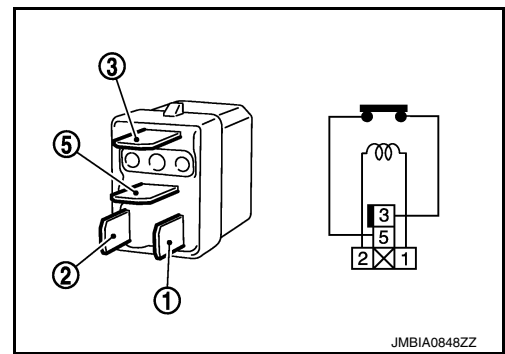
## 2.CHECK STOP LAMP RELAY

Apply battery voltage to stop lamp relay terminals 1 and 2, and then check for continuity under the following conditions:

| Stop lamp relay |   | Condition                               | Continuity |
|-----------------|---|---|------------|
| Terminals       |   |   |            |
| 3               | 5 | When the battery voltage is applied     | Yes        |
|                 |   | When the battery voltage is not applied | No         |

Is the inspection result normal?

- YES >> Inspection End.
- NO >> Replace stop lamp relay.



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DAS

C1A14 ECM

DTC Logic

INFOID:000000012939111

DTC DETECTION LOGIC

| DTC No. | CONSULT screen terms<br>(Trouble diagnosis content) | DTC detection condition |
|---------|---|-------------------------|
| C1A14   | ECM CIRCUIT<br>(ECM circuit)                        | ECU is malfunctioning   |

POSSIBLE CAUSE

- ECM
- ADAS control unit

FAIL-SAFE

The following systems are canceled:

- Intelligent Cruise Control (ICC)
- Forward Emergency Braking (FEB)
- Predictive Forward Collision Warning (PFCW)

DTC CONFIRMATION PROCEDURE

1.CHECK DTC PRIORITY

If DTC “C1A14” is displayed with DTC “U1000”, first diagnose the DTC “U1000”.

Is applicable DTC detected?

- YES >> Perform diagnosis of applicable. Refer to [DAS-62, "DTC Logic"](#).
- NO >> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

ⓑCONSULT

1. Start the engine.
2. Operate the ICC system and drive.  
**CAUTION:**  
**Always drive safely.**
3. Stop the vehicle.
4. Select “All DTC Reading” mode.
5. Check if “C1A14” is detected as the current malfunction in “Self Diagnostic Result” mode of “ICC/ADAS”.

Is “C1A14” detected as the current malfunction?

- YES >> Refer to [DAS-50, "Diagnosis Procedure"](#).
- NO-1 >> To check malfunction symptom before repair: Refer to [GI-44, "Intermittent Incident"](#).
- NO-2 >> Confirmation after repair: Inspection End.

Diagnosis Procedure

INFOID:000000012939112

1.CHECK DTC PRIORITY

If DTC “C1A14” is displayed with DTC “U1000”, first diagnose the DTC “U1000”.

Is applicable DTC detected?

- YES >> Perform diagnosis of applicable. Refer to [DAS-62, "DTC Logic"](#).
- NO >> GO TO 2.

2.CHECK SELF-DIAGNOSIS RESULTS

Check if “U1000” is detected with “C1A14” in “Self Diagnostic Result” of “ICC/ADAS”.

Is “U1000” detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.  
Refer to [DAS-62, "DTC Logic"](#).
- NO >> GO TO 3.

**3.**PERFORM SELF-DIAGNOSIS OF ECM

Check if any DTC is detected in "Self Diagnostic Result" mode of "ENGINE".

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [EC-110, "DTC Index"](#) (with QR25DE engine) or [EC-676, "DTC Index"](#) (with VQ35DE engine).

NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

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DAS

C1A17 ICC SENSOR

DTC Logic

INFOID:000000012939113

DTC DETECTION LOGIC

| DTC No. | CONSULT screen terms<br>(Trouble diagnosis content) | DTC detection condition      |
|---------|---|------------------------------|
| C1A17   | ICC SENSOR MALF<br>(ICC sensor malfunction)         | ICC sensor is malfunctioning |

**NOTE:**

If DTC “C1A17” is detected along with DTC “U1000”, first diagnose the DTC “U1000”. Refer to [DAS-62. "DTC Logic"](#).

POSSIBLE CAUSE

ICC sensor

FAIL-SAFE

The following systems are canceled:

- Intelligent Cruise Control (ICC)
- Forward Emergency Braking (FEB)
- Predictive Forward Collision Warning (PFCW)

Diagnosis Procedure

INFOID:000000012939114

**1.**CHECK ADAS CONTROL UNIT SELF DIAGNOSTIC RESULT

ⓅCONSULT

1. Perform “All DTC Reading” mode.
2. Check if “U1000” is detected with “C1A17” in “Self Diagnostic Result” mode of “ICC/ADAS”.

Is “U1000”detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-62. "DTC Logic"](#).
- NO >> GO TO 2.

**2.**CHECK ICC SENSOR SELF DIAGNOSTIC RESULT

Check if any DTC is detected in “Self Diagnostic Result” mode of “LASER/RADAR”.

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [CCS-43. "DTC Index"](#).
- NO >> Replace ADAS control unit. Refer to [DAS-72. "Removal and Installation"](#).

# C1A34 COMMAND ERROR

< DTC/CIRCUIT DIAGNOSIS >

[ADAS CONTROL UNIT]

## C1A34 COMMAND ERROR

### DTC Logic

INFOID:0000000012939115

### DTC DETECTION LOGIC

| DTC No. | CONSULT screen terms<br>(Trouble diagnosis content) | DTC detection condition  |
|---------|---|--|
| C1A34   | COMMAND ERROR<br>(Command error)                    | If an error occurs in the command signal that ADAS control unit transmits to ECM via CAN communication |

### POSSIBLE CAUSE

ADAS control unit

### FAIL-SAFE

The following systems are canceled:

- Intelligent Cruise Control (ICC)
- Forward Emergency Braking (FEB)
- Predictive Forward Collision Warning (PFCW)

### DTC CONFIRMATION PROCEDURE

#### 1.CHECK DTC PRIORITY

If DTC "C1A34" is displayed with DTC "U1000", first diagnose the DTC "U1000".

#### Is applicable DTC detected?

- YES >> Perform diagnosis of applicable. Refer to [DAS-62, "DTC Logic"](#).  
NO >> GO TO 2.

#### 2.PERFORM DTC CONFIRMATION PROCEDURE

##### CONSULT

1. Start the engine.
2. Operate the ICC system and drive.  
**CAUTION:**  
**Always drive safely.**
3. Stop the vehicle.
4. Select "All DTC Reading" mode.
5. Check if "C1A34" is detected as the current malfunction in "Self Diagnostic Result" mode of "ICC/ADAS".

#### Is "C1A34" detected as the current malfunction?

- YES >> Refer to [DAS-53, "Diagnosis Procedure"](#).  
NO-1 >> To check malfunction symptom before repair: Refer to [GI-44, "Intermittent Incident"](#).  
NO-2 >> Confirmation after repair: Inspection End.

### Diagnosis Procedure

INFOID:0000000012939116

#### 1.CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected with "C1A34" in "Self Diagnostic Result" mode of "ICC/ADAS".

#### Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.  
Refer to [DAS-62, "DTC Logic"](#).  
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

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DAS

# C1B53 SIDE RADAR RIGHT MALFUNCTION

< DTC/CIRCUIT DIAGNOSIS >

[ADAS CONTROL UNIT]

## C1B53 SIDE RADAR RIGHT MALFUNCTION

### DTC Logic

INFOID:000000012939117

### DTC DETECTION LOGIC

| DTC No. | CONSULT screen terms<br>(Trouble diagnosis content) | DTC detection condition  |
|---------|---|--|
| C1B53   | SIDE RDR R MALF<br>(Side radar right malfunction)   | ADAS control unit detects that side radar RH has a malfunction |

### POSSIBLE CAUSE

Side radar RH

### FAIL-SAFE

The following systems are canceled:

- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)

### DTC CONFIRMATION PROCEDURE

#### 1. PERFORM DTC CONFIRMATION PROCEDURE

##### CONSULT

1. Start the engine.
2. Select "All DTC Reading" mode.
3. Check if "C1B53" is detected as the current malfunction in "Self Diagnostic Result" mode of "ICC/ADAS".

Is "C1B53" detected as the current malfunction?

YES >> Refer to [DAS-54, "Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-44, "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: Inspection End.

### Diagnosis Procedure

INFOID:000000012939118

#### 1. CHECK SELF DIAGNOSTIC RESULT

Check if "U1000" is detected with "C1B53" in "Self Diagnostic Result" mode of "ICC/ADAS".

Is "U1000" detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.  
Refer to [DAS-62, "DTC Logic"](#).

NO >> GO TO 2.

#### 2. CHECK SELF DIAGNOSTIC RESULT

Check if any DTC is detected in "Self Diagnostic Result" mode of "SIDE RADAR RIGHT".

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-117, "DTC Index"](#) (Side radar RH).

NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

# C1B54 SIDE RADAR LEFT MALFUNCTION

< DTC/CIRCUIT DIAGNOSIS >

[ADAS CONTROL UNIT]

## C1B54 SIDE RADAR LEFT MALFUNCTION

### DTC Logic

INFOID:0000000012939119

### DTC DETECTION LOGIC

| DTC No. | CONSULT screen terms<br>(Trouble diagnosis content) | DTC detection condition  |
|---------|---|--|
| C1B54   | SIDE RDR L MALF<br>(Side radar left malfunction)    | ADAS control unit detects that side radar LH has a malfunction |

### POSSIBLE CAUSE

Side radar LH

### FAIL-SAFE

The following systems are canceled:

- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)

### DTC CONFIRMATION PROCEDURE

#### 1. PERFORM DTC CONFIRMATION PROCEDURE

##### CONSULT

1. Start the engine.
2. Select "All DTC Reading" mode.
3. Check if "C1B54" is detected as the current malfunction in "Self Diagnostic Result" mode of "ICC/ADAS".

##### Is "C1B54" detected as the current malfunction?

YES >> Refer to [DAS-55, "Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-44, "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: Inspection End.

### Diagnosis Procedure

INFOID:0000000012939120

#### 1. CHECK SELF DIAGNOSTIC RESULT

Check if "U1000" is detected with "C1B54" in "Self Diagnostic Result" mode of "ICC/ADAS".

##### Is "U1000" detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.  
Refer to [DAS-62, "DTC Logic"](#).

NO >> GO TO 2.

#### 2. CHECK SELF DIAGNOSTIC RESULT

Check if any DTC is detected in "Self Diagnostic Result" mode of "SIDE RADAR LEFT".

##### Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-115, "DTC Index"](#) (Side radar LH).

NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

DAS

&lt; DTC/CIRCUIT DIAGNOSIS &gt;

## U0121 VDC CAN 2

## DTC Logic

INFOID:000000012939121

## DTC DETECTION LOGIC

| DTC No. | CONSULT screen terms<br>(Trouble diagnosis content) | DTC detection condition  |
|---------|---|--|
| U0121   | VDC CAN CIR2<br>(VDC CAN circuit 2)                 | If ADAS control unit detects an error signal that is received from ABS actuator and electric unit (control unit) via CAN communication |

## POSSIBLE CAUSE

ABS actuator and electric unit (control unit)

## FAIL-SAFE

The following systems are canceled:

- Intelligent Cruise Control (ICC)
- Forward Emergency Braking (FEB)
- Predictive Forward Collision Warning (PFCW)
- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)

## DTC CONFIRMATION PROCEDURE

## 1.CHECK DTC PRIORITY

If DTC "U0121" is displayed with DTC "U1000", first diagnose the DTC "U1000".

Is applicable DTC detected?YES >> Perform diagnosis of applicable. Refer to [DAS-62. "DTC Logic"](#).

NO &gt;&gt; GO TO 2.

## 2.PERFORM DTC CONFIRMATION PROCEDURE

## ⓑCONSULT

1. Start the engine.
2. Turn the MAIN switch of ICC system ON.
3. Select "All DTC Reading" mode.
4. Check if "U0121" is detected as the current malfunction in "Self Diagnostic Result" mode of "ICC/ADAS".

Is "U0121" detected as the current malfunction?YES >> Refer to [DAS-56. "Diagnosis Procedure"](#).NO-1 >> To check malfunction symptom before repair: Refer to [GI-44. "Intermittent Incident"](#).

NO-2 &gt;&gt; Confirmation after repair: Inspection End.

## Diagnosis Procedure

INFOID:000000012939122

## 1.CHECK DTC PRIORITY

If DTC "U0121" is displayed with DTC "U1000", first diagnose the DTC "U1000".

Is applicable DTC detected?YES >> Perform diagnosis of applicable. Refer to [DAS-62. "DTC Logic"](#).

NO &gt;&gt; GO TO 2.

## 2.CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" mode of "ABS".

Is any DTC detected?YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [BRC-49. "DTC Index"](#).NO >> Replace the ADAS control unit. Refer to [DAS-72. "Removal and Installation"](#).



U0235 ICC SENSOR CAN 1

DTC Logic

INFOID:0000000012939123

DTC DETECTION LOGIC

| DTC No. | CONSULT screen terms<br>(Trouble diagnosis content) | DTC detection condition  |
|---------|---|--|
| U0235   | ICC SENSOR CAN CIR1<br>(ICC sensor CAN circuit 1)   | ADAS control unit detects an error signal that is received from ICC sensor via ITS communication |

POSSIBLE CAUSE

ICC sensor

FAIL-SAFE

The following systems are canceled:

- Intelligent Cruise Control (ICC)
- Forward Emergency Braking (FEB)
- Predictive Forward Collision Warning (PFCW)

DTC CONFIRMATION PROCEDURE

1.CHECK DTC PRIORITY

If DTC “U0235” is displayed with DTC “U1000”, first diagnose the DTC “U1000”.

Is applicable DTC detected?

- YES >> Perform diagnosis of applicable. Refer to [DAS-62, "DTC Logic"](#).
- NO >> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

ⓂCONSULT

1. Start the engine.
2. Turn the MAIN switch of ICC system ON.
3. Select “All DTC Reading” mode.
4. Check if “U0235” is detected as the current malfunction in “Self Diagnostic Result” mode of “ICC/ADAS”.

Is “U0235” detected as the current malfunction?

- YES >> Refer to [DAS-57, "Diagnosis Procedure"](#).
- NO-1 >> To check malfunction symptom before repair: Refer to [GI-44, "Intermittent Incident"](#).
- NO-2 >> Confirmation after repair: Inspection End.

Diagnosis Procedure

INFOID:0000000012939124

1.CHECK DTC PRIORITY

If DTC “U0235” is displayed with DTC “U1000”, first diagnose the DTC “U1000”.

Is applicable DTC detected?

- YES >> Perform diagnosis of applicable. Refer to [DAS-62, "DTC Logic"](#).
- NO >> GO TO 2.

2.CHECK ICC SENSOR SELF DIAGNOSTIC RESULT

Check if any DTC is detected in “Self Diagnostic Result” mode of “LASER/RADAR”.

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [CCS-43, "DTC Index"](#).
- NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

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DAS

U0401 ECM CAN 1

DTC Logic

INFOID:000000012939125

DTC DETECTION LOGIC

| DTC No. | CONSULT screen terms<br>(Trouble diagnosis content) | DTC detection condition  |
|---------|---|--|
| U0401   | ECM CAN CIR1<br>(ECM CAN circuit 1)                 | If ADAS control unit detects an error signal that is received from ECM via CAN communication |

POSSIBLE CAUSE

ECM

FAIL-SAFE

The following systems are canceled:

- Intelligent Cruise Control (ICC)
- Forward Emergency Braking (FEB)
- Predictive Forward Collision Warning (PFCW)
- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)

DTC CONFIRMATION PROCEDURE

1.CHECK DTC PRIORITY

If DTC “U0401” is displayed with DTC “U1000”, first diagnose the DTC “U1000”.

Is applicable DTC detected?

- YES >> Perform diagnosis of applicable. Refer to [DAS-62. "DTC Logic"](#).
- NO >> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

ⓑCONSULT

1. Start the engine.
2. Turn the MAIN switch of ICC system ON.
3. Select “All DTC Reading” mode.
4. Check if “U0401” is detected as the current malfunction in “Self Diagnostic Result” mode of “ICC/ADAS”.

Is “U0401” detected as the current malfunction?

- YES >> Refer to [DAS-58. "Diagnosis Procedure"](#).
- NO-1 >> To check malfunction symptom before repair: Refer to [GI-44. "Intermittent Incident"](#).
- NO-2 >> Confirmation after repair: Inspection End.

Diagnosis Procedure

INFOID:000000012939126

1.CHECK DTC PRIORITY

If DTC “U0401” is displayed with DTC “U1000”, first diagnose the DTC “U1000”.

Is applicable DTC detected?

- YES >> Perform diagnosis of applicable. Refer to [DAS-62. "DTC Logic"](#).
- NO >> GO TO 2.

2.CHECK ECM SELF DIAGNOSTIC RESULT

Check if any DTC is detected in “Self Diagnostic Result” mode of “ENGINE”.

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [EC-110. "DTC Index"](#) (with QR25DE engine) or [EC-676. "DTC Index"](#) (with VQ35DE engine).
- NO >> Replace the ADAS control unit. Refer to [DAS-72. "Removal and Installation"](#).

U0402 TCM CAN 1

DTC Logic

INFOID:000000012939127

DTC DETECTION LOGIC

| DTC No. | CONSULT screen terms<br>(Trouble diagnosis content) | DTC detection condition  |
|---------|---|--|
| U0402   | TCM CAN CIRC1<br>(TCM CAN circuit 1)                | If ADAS control unit detects an error signal that is received from TCM via CAN communication |

POSSIBLE CAUSE

TCM

FAIL-SAFE

The following systems are canceled:

- Intelligent Cruise Control (ICC)
- Forward Emergency Braking (FEB)
- Predictive Forward Collision Warning (PFCW)
- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)

DTC CONFIRMATION PROCEDURE

1.CHECK DTC PRIORITY

If DTC “U0402” is displayed with DTC “U1000”, first diagnose the DTC “U1000”.

Is applicable DTC detected?

- YES >> Perform diagnosis of applicable. Refer to [DAS-62. "DTC Logic"](#).
- NO >> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

CONSULT

1. Start the engine.
2. Turn the MAIN switch of ICC system ON.
3. Select “All DTC Reading” mode.
4. Check if “U0402” is detected as the current malfunction in “Self Diagnostic Result” mode of “ICC/ADAS”.

Is “U0402” detected as the current malfunction?

- YES >> Refer to [DAS-59. "Diagnosis Procedure"](#).
- NO-1 >> To check malfunction symptom before repair: Refer to [GI-44. "Intermittent Incident"](#).
- NO-2 >> Confirmation after repair: Inspection End.

Diagnosis Procedure

INFOID:000000012939128

1.CHECK DTC PRIORITY

If DTC “U0402” is displayed with DTC “U1000”, first diagnose the DTC “U1000”.

Is applicable DTC detected?

- YES >> Perform diagnosis of applicable. Refer to [DAS-62. "DTC Logic"](#).
- NO >> GO TO 2.

2.CHECK TCM SELF DIAGNOSTIC RESULT

Check if any DTC is detected in “Self Diagnostic Result” mode of “TRANSMISSION”.

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [TM-60. "DTC Index"](#) (with RE0F10D) or [TM-60. "DTC Index"](#) (with RE0F10H).
- NO >> Replace the ADAS control unit. Refer to [DAS-72. "Removal and Installation"](#).



U0415 VDC CAN 1

DTC Logic

INFOID:000000012939129

DTC DETECTION LOGIC

| DTC No. | CONSULT screen terms<br>(Trouble diagnosis content) | DTC detection condition  |
|---------|---|--|
| U0415   | VDC CAN CIR1<br>(VDC CAN circuit 1)                 | If ADAS control unit detects an error signal that is received from ABS actuator and electric unit (control unit) via CAN communication |

POSSIBLE CAUSE

ABS actuator and electric unit (control unit)

FAIL-SAFE

The following systems are canceled:

- Intelligent Cruise Control (ICC)
- Forward Emergency Braking (FEB)
- Predictive Forward Collision Warning (PFCW)
- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)

DTC CONFIRMATION PROCEDURE

1.CHECK DTC PRIORITY

If DTC "U0415" is displayed with DTC "U1000", first diagnose the DTC "U1000".

Is applicable DTC detected?

- YES >> Perform diagnosis of applicable. Refer to [DAS-62. "DTC Logic"](#).
- NO >> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

ⓐCONSULT

1. Start the engine.
2. Turn the MAIN switch of ICC system ON.
3. Select "All DTC Reading" mode.
4. Check if "U0415" is detected as the current malfunction in "Self Diagnostic Result" mode of "ICC/ADAS".

Is "U0415" detected as the current malfunction?

- YES >> Refer to [DAS-60. "Diagnosis Procedure"](#).
- NO-1 >> To check malfunction symptom before repair: Refer to [GI-44. "Intermittent Incident"](#).
- NO-2 >> Confirmation after repair: Inspection End.

Diagnosis Procedure

INFOID:000000012939130

1.CHECK DTC PRIORITY

If DTC "U0415" is displayed with DTC "U1000", first diagnose the DTC "U1000".

Is applicable DTC detected?

- YES >> Perform diagnosis of applicable. Refer to [DAS-62. "DTC Logic"](#).
- NO >> GO TO 2.

2.CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF DIAGNOSTIC RESULT

Check if any DTC is detected in "Self Diagnostic Result" mode of "ABS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [BRC-224. "DTC Index"](#).
- NO >> Replace the ADAS control unit. Refer to [DAS-72. "Removal and Installation"](#).

U0433 DIST SEN CAN CIRC 2

DTC Logic

INFOID:000000012939131

DTC DETECTION LOGIC

| DTC No. | CONSULT screen terms<br>(Trouble diagnosis content) | DTC detection condition   |
|---------|---|---|
| U0433   | ICC SENSOR CAN CIRC 2<br>(ICC sensor CAN circuit 2) | ADAS control unit received invalid data from ICC sensor via ITS communication |

POSSIBLE CAUSE

ICC sensor  
ADAS control unit

FAIL-SAFE

The following systems are canceled:  
 • Intelligent Cruise Control (ICC)  
 • Forward Emergency Braking (FEB)  
 • Predictive Forward Collision Warning (PFCW)

DTC CONFIRMATION PROCEDURE

1.CHECK DTC PRIORITY

If DTC “U0433” is displayed with DTC “U1000”, first diagnose the DTC “U1000”.

Is applicable DTC detected?

YES >> Perform diagnosis of applicable. Refer to [DAS-62, "DTC Logic"](#).  
 NO >> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

 CONSULT

1. Start the engine.
2. Turn the MAIN switch of ICC system ON.
3. Select “All DTC Reading” mode.
4. Check if “U0433” is detected as the current malfunction in “Self Diagnostic Result” mode of “ICC/ADAS”.

Is “U0433” detected as the current malfunction?

YES >> Refer to [DAS-61, "Diagnosis Procedure"](#).  
 NO-1 >> To check malfunction symptom before repair: Refer to [GI-44, "Intermittent Incident"](#).  
 NO-2 >> Confirmation after repair: Inspection End.

Diagnosis Procedure

INFOID:000000012939132

1.CHECK DTC PRIORITY

If DTC “U0433” is displayed with DTC “U1000”, first diagnose the DTC “U1000”.

Is applicable DTC detected?

YES >> Perform diagnosis of applicable. Refer to [DAS-62, "DTC Logic"](#).  
 NO >> GO TO 2.

2.CHECK ICC SENSOR SELF DIAGNOSTIC RESULT

Check if any DTC is detected in “Self Diagnostic Result” mode of “LASER/RADAR”.

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [CCS-43, "DTC Index"](#).  
 NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).



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## U1000 CAN COMM CIRCUIT

### Description

INFOID:0000000012939133

#### CAN COMMUNICATION

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 vehicles are equipped with many electronic control units, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN-H, CAN-L) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads the required data only.

CAN communication signal chart. Refer to [LAN-35, "CAN COMMUNICATION SYSTEM : CAN Communication Signal Chart"](#).

#### ITS COMMUNICATION

- ITS communication is a multiplex communication system. This enables the system to transmit and receive large quantities of data at high speed by connecting control units with 2 communication lines.
- ITS communication lines adopt twisted-pair line style (two lines twisted) for noise immunity.

### DTC Logic

INFOID:0000000012939134

#### DTC DETECTION LOGIC

| DTC No. | CONSULT screen terms<br>(Trouble diagnosis content) | DTC detection condition   |
|---------|---|---|
| U1000   | CAN COMM CIRCUIT<br>(CAN communication circuit)     | If ADAS control unit is not transmitting or receiving CAN communication signal or ITS communication |

**NOTE:**

If “U1000” is detected, first diagnose the CAN communication system.

#### POSSIBLE CAUSE

- CAN communication system
- ITS communication system

#### FAIL-SAFE

The following systems are canceled:

- Intelligent Cruise Control (ICC)
- Forward Emergency Braking (FEB)
- Predictive Forward Collision Warning (PFCW)
- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)

**NOTE:**

With the detection of “U1000”, some systems do not perform the fail-safe operation. A system controlling based on a signal received from the control unit performs fail-safe operation when the communication with the ADAS control unit becomes inoperable.

#### DTC CONFIRMATION PROCEDURE

### 1. PERFORM DTC CONFIRMATION PROCEDURE

#### CONSULT

1. Start the engine.
2. Turn the MAIN switch of ICC system ON.
3. Select “All DTC Reading” mode.
4. Check if the “U1000” is detected as the current malfunction in “Self Diagnostic Result” mode of “ICC/ADAS”.

Is “U1000” detected as the current malfunction?

- YES >> Refer to [DAS-63, "Diagnosis Procedure"](#).
- NO-1 >> To check malfunction symptom before repair: Refer to [GI-44, "Intermittent Incident"](#).
- NO-2 >> Confirmation after repair: Inspection End.

# U1000 CAN COMM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[ADAS CONTROL UNIT]

## Diagnosis Procedure

INFOID:000000012939135

### 1. PERFORM THE SELF DIAGNOSTIC RESULT

#### CONSULT

1. Turn the ignition switch ON.
2. Turn the MAIN switch of ICC system ON, and then wait for 30 seconds or more.
3. Select "All DTC Reading" mode.
4. Check if "U1000" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected as the current malfunction?

- YES >> Refer to [LAN-19. "Trouble Diagnosis Flow Chart"](#).  
NO >> Inspection End.

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DAS

## U1321 CONFIGURATION

### DTC Logic

INFOID:000000012939136

#### DTC DETECTION LOGIC

| DTC No. | CONSULT screen terms<br>(Trouble diagnosis content) | DTC detection condition   |
|---------|---|---------------------------|
| U1321   | NOT CONFIGURED                                      | If ADAS is not configured |

#### POSSIBLE CAUSE

ADAS control unit is not configured.

#### FAIL-SAFE

The following systems are canceled:

- Intelligent Cruise Control (ICC)
- Forward Emergency Braking (FEB)
- Predictive Forward Collision Warning (PFCW)
- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)

#### DTC CONFIRMATION PROCEDURE

### 1. PERFORM DTC CONFIRMATION PROCEDURE

#### CONSULT

1. Start the engine.
2. Select "All DTC Reading" mode.
3. Check if "U1321" is detected as the current malfunction in "Self Diagnostic Result" mode of "ICC/ADAS".

#### Is "U1321" detected as the current malfunction?

- YES >> Refer to [DAS-64, "Diagnosis Procedure"](#).
- NO >> Inspection End.

#### Diagnosis Procedure

INFOID:000000012939137

### 1. PERFORM CONFIGURATION OF ADAS CONTROL UNIT

Perform configuration of ADAS control unit when DTC "U1321" is detected.

>> Perform configuration of ADAS control unit. Refer to [DAS-38, "Work Procedure"](#).



U1503 SIDE RDR L CAN 2

DTC Logic

INFOID:000000012939138

DTC DETECTION LOGIC

| DTC No. | CONSULT screen terms<br>(Trouble diagnosis content)     | DTC detection condition   |
|---------|---|---|
| U1503   | SIDE RDR L CAN CIR 2<br>(Side radar left CAN circuit 2) | ADAS control unit detects an error signal that is received from side radar LH via ITS communication |

POSSIBLE CAUSE

Side radar LH

FAIL-SAFE

The following systems are canceled:

- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)

DTC CONFIRMATION PROCEDURE

1. CHECK DTC PRIORITY

If DTC "U1503" is displayed with DTC "U1000" or "U1508", first diagnose the DTC "U1000" or "U1508".

Is applicable DTC detected?

- YES >> Perform diagnosis of applicable.
- U1000: Refer to [DAS-62, "DTC Logic"](#).
  - U1508: Refer to [DAS-70, "DTC Logic"](#).

NO >> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

 CONSULT

1. Start the engine.
2. Turn the Blind Spot Warning system ON.
3. Select "All DTC Reading" mode.
4. Check if "U1503" is detected as the current malfunction in "Self Diagnostic Result" mode of "ICC/ADAS".

Is "U1503" detected as the current malfunction?

- YES >> Refer to [DAS-65, "Diagnosis Procedure"](#).
- NO-1 >> To check malfunction symptom before repair: Refer to [GI-44, "Intermittent Incident"](#).
- NO-2 >> Confirmation after repair: Inspection End.

Diagnosis Procedure

INFOID:000000012939139

1. CHECK DTC PRIORITY

If DTC "U1503" is displayed with DTC "U1000" or "U1508", first diagnose the DTC "U1000" or "U1508".

Is applicable DTC detected?

- YES >> Perform diagnosis of applicable.
- U1000: Refer to [DAS-62, "DTC Logic"](#).
  - U1508: Refer to [DAS-70, "DTC Logic"](#).

NO >> GO TO 2.

2. CHECK SIDE RADAR LH SELF DIAGNOSTIC RESULT

Check if any DTC is detected in "Self Diagnostic Result" mode of "SIDE RADAR LEFT".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-115, "DTC Index"](#).
- NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

## U1504 SIDE RDR L CAN 1

### DTC Logic

INFOID:000000012939140

#### DTC DETECTION LOGIC

| DTC No. | CONSULT screen terms<br>(Trouble diagnosis content)     | DTC detection condition   |
|---------|---|---|
| U1504   | SIDE RDR L CAN CIR 1<br>(Side radar left CAN circuit 1) | ADAS control unit detects an error signal that is received from side radar LH via ITS communication |

#### POSSIBLE CAUSE

Side radar LH

#### FAIL-SAFE

The following systems are canceled:

- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)

#### DTC CONFIRMATION PROCEDURE

##### 1. CHECK DTC PRIORITY

If DTC "U1504" is displayed with DTC "U1000" or "U1508", first diagnose the DTC "U1000" or "U1508".

##### Is applicable DTC detected?

- YES >> Perform diagnosis of applicable.
- U1000: Refer to [DAS-62, "DTC Logic"](#).
  - U1508: Refer to [DAS-70, "DTC Logic"](#).

NO >> GO TO 2.

##### 2. PERFORM DTC CONFIRMATION PROCEDURE

#### ⓑ CONSULT

1. Start the engine.
2. Turn the Blind Spot Warning system ON.
3. Select "All DTC Reading" mode.
4. Check if "U1504" is detected as the current malfunction in "Self Diagnostic Result" mode of "ICC/ADAS".

##### Is "U1504" detected as the current malfunction?

- YES >> Refer to [DAS-66, "Diagnosis Procedure"](#).
- NO-1 >> To check malfunction symptom before repair: Refer to [GI-44, "Intermittent Incident"](#).
- NO-2 >> Confirmation after repair: Inspection End.

#### Diagnosis Procedure

INFOID:000000012939141

##### 1. CHECK DTC PRIORITY

If DTC "U1504" is displayed with DTC "U1000" or "U1508", first diagnose the DTC "U1000" or "U1508".

##### Is applicable DTC detected?

- YES >> Perform diagnosis of applicable.
- U1000: Refer to [DAS-62, "DTC Logic"](#).
  - U1508: Refer to [DAS-70, "DTC Logic"](#).

NO >> GO TO 2.

##### 2. CHECK SIDE RADAR LH SELF DIAGNOSTIC RESULT

Check if any DTC is detected in "Self Diagnostic Result" mode of "SIDE RADAR LEFT".

##### Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-115, "DTC Index"](#).
- NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

U1505 SIDE RDR R CAN 2

DTC Logic

INFOID:000000012939142

DTC DETECTION LOGIC

| DTC No. | CONSULT screen terms<br>(Trouble diagnosis content)      | DTC detection condition   |
|---------|--|---|
| U1505   | SIDE RDR R CAN CIR 2<br>(Side radar right CAN circuit 2) | ADAS control unit detects an error signal that is received from side radar RH via ITS communication |

POSSIBLE CAUSE

Side radar RH

FAIL-SAFE

The following systems are canceled:

- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)

DTC CONFIRMATION PROCEDURE

1.CHECK DTC PRIORITY

If DTC “U1505” is displayed with DTC “U1000” or “U1507”, first diagnose the DTC “U1000” or “U1507”.

Is applicable DTC detected?

- YES >> Perform diagnosis of applicable.
- U1000: Refer to [DAS-62, "DTC Logic"](#).
  - U1507: Refer to [DAS-69, "DTC Logic"](#).

NO >> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

 CONSULT

1. Start the engine.
2. Turn the Blind Spot Warning system ON.
3. Select “All DTC Reading” mode.
4. Check if “U1505” is detected as the current malfunction in “Self Diagnostic Result” mode of “ICC/ADAS”.

Is “U1505” detected as the current malfunction?

- YES >> Refer to [DAS-67, "Diagnosis Procedure"](#).
- NO-1 >> To check malfunction symptom before repair: Refer to [GI-44, "Intermittent Incident"](#).
- NO-2 >> Confirmation after repair: Inspection End.

Diagnosis Procedure

INFOID:000000012939143

1.CHECK DTC PRIORITY

If DTC “U1505” is displayed with DTC “U1000” or “U1507”, first diagnose the DTC “U1000” or “U1507”.

Is applicable DTC detected?

- YES >> Perform diagnosis of applicable.
- U1000: Refer to [DAS-62, "DTC Logic"](#).
  - U1507: Refer to [DAS-69, "DTC Logic"](#).

NO >> GO TO 2.

2.CHECK SIDE RADAR RH SELF DIAGNOSTIC RESULT

Check if any DTC is detected in “Self Diagnostic Result” mode of “SIDE RADAR RIGHT”.

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-117, "DTC Index"](#).
- NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

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## U1506 SIDE RDR R CAN 1

### DTC Logic

INFOID:000000012939144

#### DTC DETECTION LOGIC

| DTC No. | CONSULT screen terms<br>(Trouble diagnosis content)      | DTC detection condition   |
|---------|--|---|
| U1506   | SIDE RDR R CAN CIR 1<br>(Side radar right CAN circuit 1) | ADAS control unit detects an error signal that is received from side radar RH via ITS communication |

#### POSSIBLE CAUSE

Side radar RH

#### FAIL-SAFE

The following systems are canceled:

- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)

#### DTC CONFIRMATION PROCEDURE

##### 1. CHECK DTC PRIORITY

If DTC "U1506" is displayed with DTC "U1000" or "U1507", first diagnose the DTC "U1000" or "U1507".

##### Is applicable DTC detected?

- YES >> Perform diagnosis of applicable.
- U1000: Refer to [DAS-62, "DTC Logic"](#).
  - U1507: Refer to [DAS-69, "DTC Logic"](#).
- NO >> GO TO 2.

##### 2. PERFORM DTC CONFIRMATION PROCEDURE

#### ⓑ CONSULT

1. Start the engine.
2. Turn the Blind Spot Warning system ON.
3. Select "All DTC Reading" mode.
4. Check if "U1506" is detected as the current malfunction in "Self Diagnostic Result" mode of "ICC/ADAS".

##### Is "U1506" detected as the current malfunction?

- YES >> Refer to [DAS-68, "Diagnosis Procedure"](#).
- NO-1 >> To check malfunction symptom before repair: Refer to [GI-44, "Intermittent Incident"](#).
- NO-2 >> Confirmation after repair: Inspection End.

#### Diagnosis Procedure

INFOID:000000012939145

##### 1. CHECK DTC PRIORITY

If DTC "U1506" is displayed with DTC "U1000" or "U1507", first diagnose the DTC "U1000" or "U1507".

##### Is applicable DTC detected?

- YES >> Perform diagnosis of applicable.
- U1000: Refer to [DAS-62, "DTC Logic"](#).
  - U1507: Refer to [DAS-69, "DTC Logic"](#).
- NO >> GO TO 2.

##### 2. CHECK SIDE RADAR RH SELF DIAGNOSTIC RESULT

Check if any DTC is detected in "Self Diagnostic Result" mode of "SIDE RADAR RIGHT".

##### Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-117, "DTC Index"](#).
- NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

# U1507 LOST COMM(SIDE RDR R)

< DTC/CIRCUIT DIAGNOSIS >

[ADAS CONTROL UNIT]

## U1507 LOST COMM(SIDE RDR R)

### DTC Logic

INFOID:000000012939146

### DTC DETECTION LOGIC

| DTC No. | CONSULT screen terms<br>(Trouble diagnosis content)                 | DTC detection condition   |
|---------|---|---|
| U1507   | LOST COMM(SIDE RDR R)<br>[Lost communication (side radar<br>right)] | ADAS control unit cannot receive ITS communication signal from side radar<br>RH |

### POSSIBLE CAUSE

- Side radar RH right/left switching signal circuit
- ITS communication system
- Side radar RH

### FAIL-SAFE

The following systems are canceled:

- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)

### DTC CONFIRMATION PROCEDURE

#### 1.CHECK DTC PRIORITY

If DTC "U1507" is displayed with DTC "U1000", first diagnose the DTC "U1000".

Is applicable DTC detected?

YES >> Perform diagnosis of applicable. Refer to [DAS-62. "DTC Logic"](#).

NO >> GO TO 2.

#### 2.PERFORM DTC CONFIRMATION PROCEDURE

##### CONSULT

1. Start the engine.
2. Turn the Blind Spot Warning system ON.
3. Select "All DTC Reading" mode.
4. Check if "U1507" is detected as the current malfunction in "Self Diagnostic Result" mode of "ICC/ADAS".

Is "U1507" detected as the current malfunction?

YES >> Refer to [DAS-69. "Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-44. "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: Inspection End.

### Diagnosis Procedure

INFOID:000000012939147

#### 1.CHECK RIGHT/LEFT SWITCHING SIGNAL CIRCUIT

Check right/left switching signal circuit. Refer to [DAS-157. "Diagnosis Procedure"](#).

Is the inspection result normal?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.  
Refer to [LAN-19. "Trouble Diagnosis Flow Chart"](#).

NO >> Repair right/left switching signal circuit.

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# U1508 LOST COMM(SIDE RDR L)

< DTC/CIRCUIT DIAGNOSIS >

[ADAS CONTROL UNIT]

## U1508 LOST COMM(SIDE RDR L)

### DTC Logic

INFOID:000000012939148

### DTC DETECTION LOGIC

| DTC No. | CONSULT screen terms<br>(Trouble diagnosis content)             | DTC detection condition  |
|---------|---|--|
| U1508   | LOST COMM(SIDE RDR L)<br>[Lost communication (side radar left)] | ADAS control unit cannot receive ITS communication signal from side radar LH |

### POSSIBLE CAUSE

- Side radar LH harness connector
- ITS communication system
- Side radar LH

### FAIL-SAFE

The following systems are canceled:

- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)

### DTC CONFIRMATION PROCEDURE

#### 1.CHECK DTC PRIORITY

If DTC "U1508" is displayed with DTC "U1000", first diagnose the DTC "U1000".

Is applicable DTC detected?

YES >> Perform diagnosis of applicable. Refer to [DAS-62, "DTC Logic"](#).

NO >> GO TO 2.

#### 2.PERFORM DTC CONFIRMATION PROCEDURE

##### CONSULT

1. Start the engine.
2. Turn the Blind Spot Warning system ON.
3. Select "All DTC Reading" mode.
4. Check if "U1508" is detected as the current malfunction in "Self Diagnostic Result" mode of "ICC/ADAS".

Is "U1508" detected as the current malfunction?

YES >> Refer to [DAS-70, "Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-44, "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: Inspection End.

### Diagnosis Procedure

INFOID:000000012939149

#### 1.CHECK DTC PRIORITY

If DTC "U1508" is displayed with DTC "U1000", first diagnose the DTC "U1000".

Is applicable DTC detected?

YES >> Perform diagnosis of applicable. Refer to [DAS-62, "DTC Logic"](#).

NO >> GO TO 2.

#### 2.CHECK SIDE RADAR HARNESS CONNECTOR

1. Turn the ignition switch OFF.
2. Check the terminals and connectors of the side radar LH for damage, bend and short (unit side and connector side).

Is the inspection result normal?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.  
Refer to [LAN-19, "Trouble Diagnosis Flow Chart"](#).

NO >> Repair the terminal or connector.

# POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[ADAS CONTROL UNIT]

## POWER SUPPLY AND GROUND CIRCUIT

### Diagnosis Procedure

INFOID:000000012939150

Regarding Wiring Diagram information, refer to [DAS-23. "Wiring Diagram"](#).

### 1. CHECK FUSES

Check that the following fuse is not blown:

| Signal name           | Fuse No.  |
|-----------------------|-----------|
| Ignition power supply | 30 (10 A) |

Is the fuse blown?

- YES >> Replace the blown fuse after repairing the affected circuit.  
 NO >> GO TO 2.

### 2. CHECK ADAS CONTROL UNIT POWER SUPPLY CIRCUIT

Check voltage between ADAS control unit harness connector and ground.

| Terminal          |          | Condition       | Voltage (Approx.)      |
|-------------------|----------|-----------------|------------------------|
| (+)               | (-)      |                 |                        |
| ADAS control unit |          | Ignition switch | 0 V<br>Battery voltage |
| Connector         | Terminal |                 |                        |
| B69               | 3        | OFF             |                        |
|                   |          | ON              |                        |
|                   |          | Ground          |                        |

Is the inspection result normal?

- YES >> GO TO 3.  
 NO >> Repair the ADAS control unit power supply circuit.

### 3. CHECK ADAS CONTROL UNIT GROUND CIRCUIT

- Turn the ignition switch OFF.
- Disconnect the ADAS control unit harness connector.
- Check for continuity between ADAS control unit harness connector and ground.

| ADAS control unit |          | Ground | Continuity |
|-------------------|----------|--------|------------|
| Connector         | Terminal |        |            |
| B69               | 1        |        | Yes        |

Is the inspection result normal?

- YES >> Inspection End.  
 NO >> Repair the ADAS control unit ground circuit.

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## REMOVAL AND INSTALLATION

### ADAS CONTROL UNIT

#### Removal and Installation

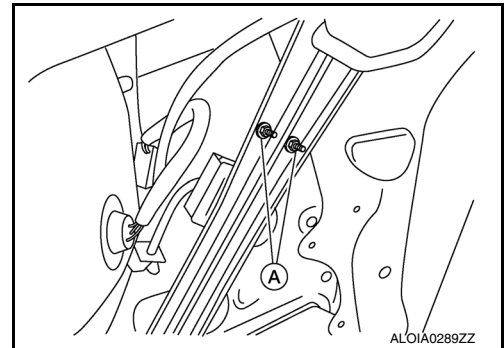
INFOID:0000000012939151

#### REMOVAL

**NOTE:**

Before replacing ADAS control unit, perform “Before Replace ECU” of “Read / Write Configuration” to save or print current vehicle specification. Refer to [DAS-37, "Description"](#).

1. Remove trunk side finisher (LH). Refer to [INT-34, "TRUNK SIDE FINISHER : Removal and Installation"](#).
2. Remove nuts (A) from ADAS control unit bracket.



3. Disconnect harness connector from ADAS control unit and remove ADAS control unit from vehicle.

#### INSTALLATION

Installation is in the reverse order of removal.

**CAUTION:**

Be sure to perform “After Replace ECU” of “Read / Write Configuration” or “Manual Configuration” when replacing ADAS control unit. Refer to [DAS-37, "Description"](#).

**CAUTION:**

Be sure to perform “Configuration (ADAS control unit)” when replacing ADAS control unit. Refer to [DAS-38, "Description"](#).



## PRECAUTION

### PRECAUTIONS

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

INFOID:000000012939152

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

**WARNING:**

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

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

**WARNING:**

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

#### Precaution for Work

INFOID:000000012939153

- When removing or disassembling each component, be careful not to damage or deform it. If a component may be subject to interference, be sure to protect it with a shop cloth.
- When removing (disengaging) components with a screwdriver or similar tool, be sure to wrap the component with a shop cloth or vinyl tape to protect it.
- Protect the removed parts with a shop cloth and prevent them from being dropped.
- Replace a deformed or damaged clip.
- If a part is specified as a non-reusable part, always replace it with a new one.
- Be sure to tighten bolts and nuts securely to the specified torque.
- After installation is complete, be sure to check that each part works properly.
- Follow the steps below to clean components:
  - Water soluble dirt:
    - Dip a soft cloth into lukewarm water, wring the water out of the cloth and wipe the dirty area.
    - Then rub with a soft, dry cloth.
  - Oily dirt:
    - Dip a soft cloth into lukewarm water with mild detergent (concentration: within 2 to 3%) and wipe the dirty area.
    - Then dip a cloth into fresh water, wring the water out of the cloth and wipe the detergent off.
    - Then rub with a soft, dry cloth.
  - Do not use organic solvent such as thinner, benzene, alcohol or gasoline.
  - For genuine leather seats, use a genuine leather seat cleaner.

#### Precautions For Harness Repair

INFOID:000000012939154

ITS communication uses a twisted pair line. Be careful when repairing it.

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# PRECAUTIONS

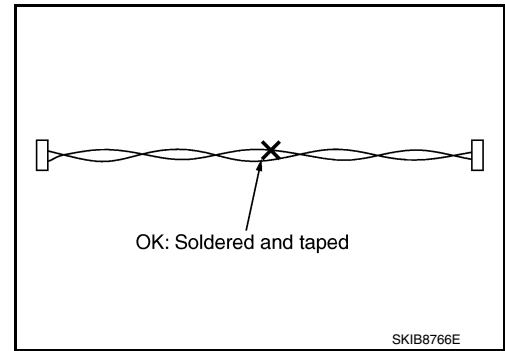
## [DRIVER ASSISTANCE SYSTEM]

### < PRECAUTION >

- Solder the repaired area and wrap tape around the soldered area.

**NOTE:**

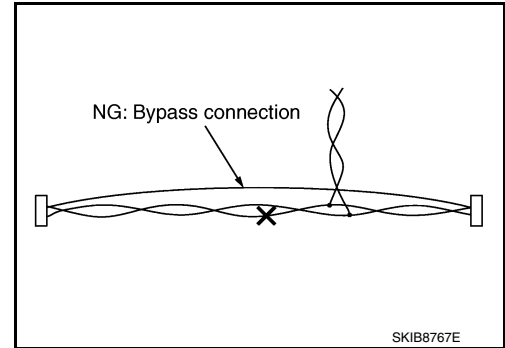
A fray of twisted lines must be within 110 mm (4.33 in).



- Bypass connection is never allowed at the repaired area.

**NOTE:**

Bypass connection may cause ITS communication error. The spliced wire becomes separated and the characteristics of twisted line are lost.



## ICC System Service

INFOID:000000012939155

**CAUTION:**

- Turn **MAIN** switch OFF in conditions similar to driving, such as free rollers or a chassis dynamometer.
- Do not use ICC sensor removed from vehicle. Never disassemble or remodel.
- Erase DTC when replacing parts of ICC system, then check operation of ICC system after adjusting radar alignment if necessary.

## PFCW/FEB System Service

INFOID:000000012939156

**CAUTION:**

- Turn PFCW/FEB system OFF in conditions similar to driving, such as free rollers or a chassis dynamometer.
- Do not use ICC sensor removed from vehicle. Never disassemble or remodel.
- Erase DTC when replacing parts of ICC system, then check operation of ICC system after radar alignment if necessary.
- Do not change PFCW/FEB initial state ON⇒OFF without consent of the customer.

## Blind Spot Warning/Rear Cross Traffic Alert (RCTA) System Service

INFOID:000000012939157

**CAUTION:**

- Do not use Blind Spot Warning/ Rear Cross Traffic Alert (RCTA) system when driving with free rollers or a chassis dynamometer.
- Do not perform active test while driving.

TO KEEP BLIND SPOT WARNING/Rear Cross Traffic Alert (RCTA) SYSTEM OPERATING PROPERLY, BE SURE TO OBSERVE THE FOLLOWING ITEMS:

### System Maintenance

Side radars for Blind Spot Warning and Rear Cross Traffic Alert (RCTA) system are located near rear bumper.

- Be sure to keep the area near the side radars clean.
- Do not attach stickers (including transparent material), install accessories or apply additional paint near side radars.
- Do not strike or damage area around side radars.

< PREPARATION >

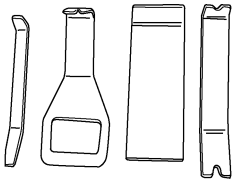
# PREPARATION

## PREPARATION

### Special Service Tools

INFOID:0000000012939158

The actual shape of the tools may differ from those illustrated here.

| Tool number<br>(TechMate No.)<br>Tool name  | Description                     |
|---|---------------------------------|
| <p>—<br/>(J-46534)<br/>Trim Tool Set</p>  <p style="text-align: center;">AWJIA0483ZZ</p> | <p>Removing trim components</p> |

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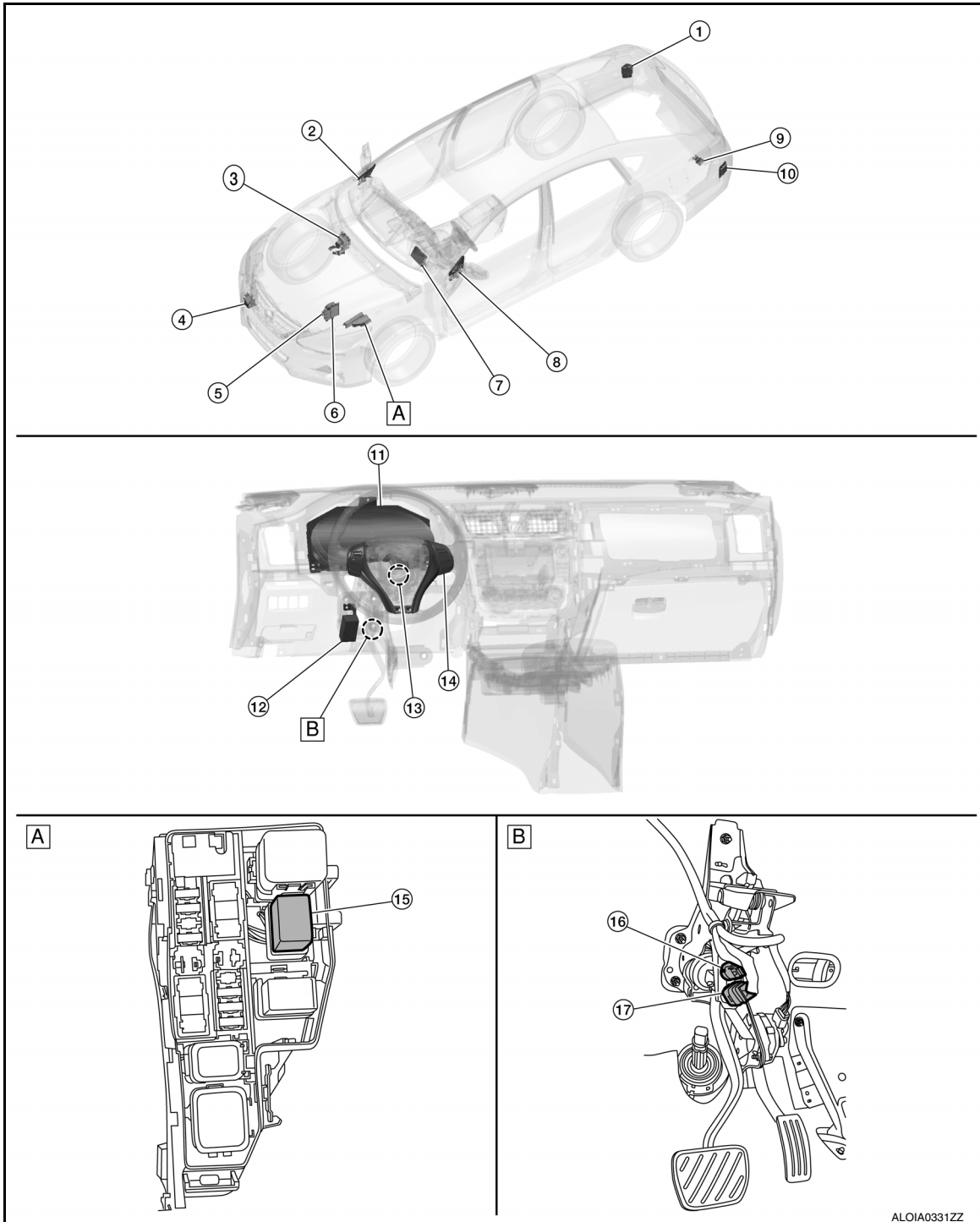
DAS

## SYSTEM DESCRIPTION

### COMPONENT PARTS

#### Component Parts Location

INFOID:000000012939159



A. View with fuse, fusible link and relay B. Upper side of brake pedal assembly box cover removed

# COMPONENT PARTS

< SYSTEM DESCRIPTION >

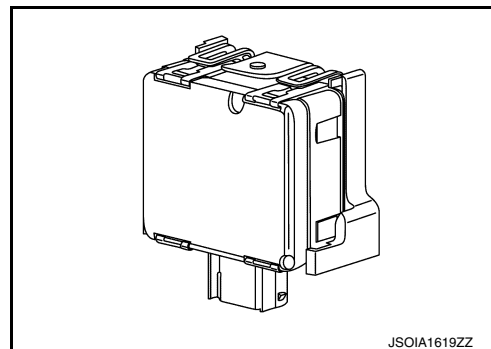
[DRIVER ASSISTANCE SYSTEM]

| No. | Component                                     | Description  |
|-----|---|--|
| 1.  | Side radar RH                                 | Refer to <a href="#">DAS-79, "Side Radar LH/RH"</a> .  |
| 2.  | Blind Spot Warning indicator RH               | Refer to <a href="#">DAS-79, "Blind Spot Warning Indicator LH/RH"</a> .  |
| 3.  | ABS actuator and electric unit (control unit) | <ul style="list-style-type: none"> <li>• ABS actuator and electric unit (control unit) transmits the vehicle speed signal (wheel speed), stop lamp signal and VDC/TCS/ABS system operation condition to ADAS control unit via CAN communication.</li> <li>• ABS actuator and electric unit (control unit) controls the brake, based on a brake fluid pressure control signal received from ADAS control unit via CAN communication.</li> <li>• Refer to <a href="#">BRC-178, "Component Parts Location"</a> for detailed installation location.</li> </ul> |
| 4.  | ICC sensor                                    | Refer to <a href="#">DAS-77, "ICC Sensor"</a> .  |
| 5.  | TCM   | <ul style="list-style-type: none"> <li>• TCM transmits the signal related to CVT control to ADAS control unit.</li> <li>• Refer to <a href="#">TM-14, "CVT CONTROL SYSTEM : Component Parts Location"</a> for detailed installation location.</li> </ul>   |
| 6.  | ECM   | <ul style="list-style-type: none"> <li>• Transmits the ICC brake switch signal, stop lamp switch signal, ICC steering switch signal, etc., to ADAS control unit via CAN communication.</li> <li>• Refer to <a href="#">EC-27, "ECM"</a> for detailed installation location.</li> </ul>   |
| 7.  | BCM   | <ul style="list-style-type: none"> <li>• Transmits the turn indicator signal and position light request signal to ADAS control unit via CAN communication.</li> <li>• Refer to <a href="#">BCS-5, "BODY CONTROL SYSTEM : Component Parts Location"</a> for detailed installation location.</li> </ul>  |
| 8.  | Blind Spot Warning indicator LH               | Refer to <a href="#">DAS-79, "Blind Spot Warning Indicator LH/RH"</a> .  |
| 9.  | ADAS control unit                             | <ul style="list-style-type: none"> <li>• ADAS control unit controls each system (ICC/PFCW/FEB/BSW/RCTA), based on ITS communication signals and CAN communication signals from each control unit.</li> <li>• ADAS control unit transmits engine torque command value, brake fluid pressure control signal, and buzzer output signal to each unit.</li> </ul>   |
| 10. | Side radar LH                                 | Refer to <a href="#">DAS-79, "Side Radar LH/RH"</a> .  |
| 11. | Combination meter                             | <ul style="list-style-type: none"> <li>• Description: <a href="#">DAS-78, "Combination Meter"</a>.</li> <li>• Refer to <a href="#">MWI-6, "METER SYSTEM : Component Parts Location"</a> for detailed installation location.</li> </ul>   |
| 12. | Warning buzzer                                | Refer to <a href="#">DAS-79, "Warning Buzzer"</a> .  |
| 13. | Steering angle sensor                         | <ul style="list-style-type: none"> <li>• Measures the rotation amount, rotation speed, and rotation direction of steering wheel and then transmits them to ADAS control unit via CAN communication.</li> <li>• Refer to <a href="#">BRC-178, "Component Parts Location"</a> for detailed installation location.</li> </ul>   |
| 14. | ICC steering switch                           | Refer to <a href="#">DAS-77, "ICC Steering Switch"</a> .   |
| 15. | ICC brake hold relay                          | Refer to <a href="#">DAS-78, "ICC Brake Hold Relay"</a> .  |
| 16. | Brake pedal position switch                   | Refer to <a href="#">DAS-78, "Brake Pedal Position Switch / Stop Lamp Switch"</a> .  |
| 17. | Stop lamp switch                              |  |

## ICC Sensor

INFOID:0000000012939160

- ICC sensor is installed behind the front bumper and detects a vehicle ahead using millimeter waves.
- ICC sensor detects radar reflected from a vehicle ahead by irradiating radar forward and calculates a distance from the vehicle ahead and relative speed, based on the detected signal.
- ICC sensor transmits the presence/absence of a vehicle ahead and the distance from the vehicle to ADAS control unit via ITS communication.



## ICC Steering Switch

INFOID:0000000012939161

- ICC steering switch is installed to the steering wheel and allows the driver to operate the ICC system using this switch.

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# COMPONENT PARTS

## [DRIVER ASSISTANCE SYSTEM]

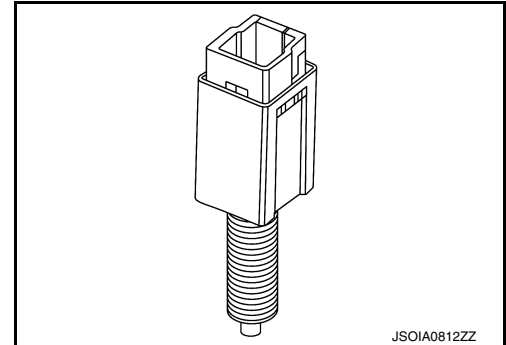
### < SYSTEM DESCRIPTION >

- ICC steering switch allows the ON/OFF of the Intelligent Cruise Control and the settings of a vehicle speed and distance between vehicles.
- ICC steering switch signal is transmitted to ECM. ECM transmits the signal to the ADAS control unit via CAN communication.

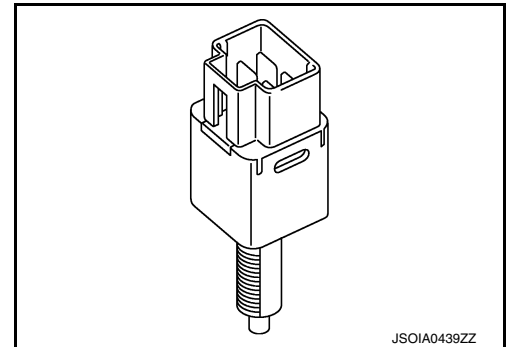
### Brake Pedal Position Switch / Stop Lamp Switch

INFOID:000000012939162

- Brake pedal position switch is installed at the upper part of the brake pedal and detects a brake operation performed by the driver.
- Brake pedal position switch is turned OFF when depressing the brake pedal.
- Brake pedal position switch signal is input to ECM. Brake pedal position switch signal is transmitted from ECM to ADAS control unit via CAN communication.



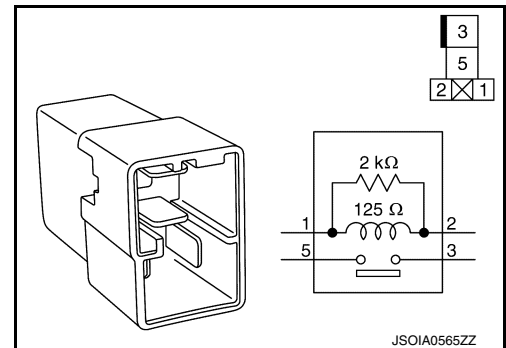
- Stop lamp switch is installed at the upper part of the brake pedal and detects a brake operation performed by the driver.
- Stop lamp switch is turned ON when depressing the brake pedal.
- Stop lamp switch signal is input to ECM and ABS actuator and electric unit (control unit). Stop lamp switch signals are transmitted from ECM and ABS actuator and electric unit (control unit) to ADAS control unit via CAN communication.



### ICC Brake Hold Relay

INFOID:000000012939163

- ICC brake hold relay is installed in the fuse, fusible link and relay box.
- When the brake is activated by the ICC system, the ICC brake hold relay turns ON the stop lamp by bypassing the circuit of the stop lamp according to a signal transmitted from the ADAS control unit.



### Combination Meter

INFOID:000000012939164

- Receives meter display signal from ADAS control unit via CAN communication.
- Displays the system status according to a signal received from the ADAS control unit.
- Receives a buzzer output signal via CAN communication and sounds the buzzer.

# COMPONENT PARTS

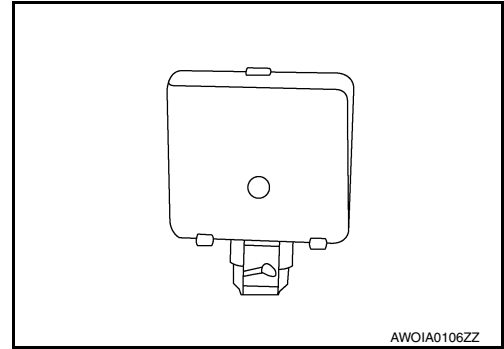
< SYSTEM DESCRIPTION >

[DRIVER ASSISTANCE SYSTEM]

## Side Radar LH/RH

INFOID:000000012939165

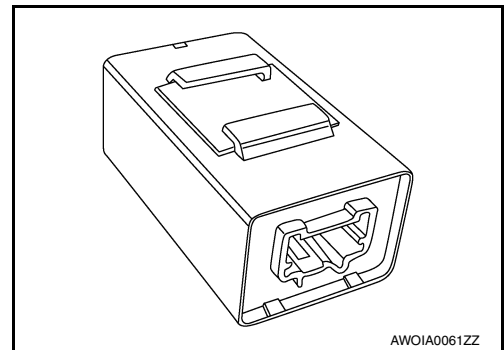
- Installed near the rear bumper, the side radar detects other vehicles beside own vehicle in an adjacent lane.
- Connected with the ADAS control unit via ITS communication, the side radar transmits a vehicle detection signal.
- Receives a Blind Spot Warning indicator signal and a Blind Spot Warning indicator dimmer signal from the ADAS control unit and transmits an indicator operation signal to the Blind Spot Warning indicator LH/RH.
- Since side radar RH and side radar LH have the same specifications, side radar RH has the right/left switching signal circuit for identification.



## Warning Buzzer

INFOID:000000012956518

- The warning buzzer is installed behind the instrument lower panel LH.
- When a warning buzzer signal is received from the ADAS control unit, the buzzer sounds.



## Blind Spot Warning Indicator LH/RH

INFOID:000000012939166

- Installed on the front door corner cover, the Blind Spot Warning indicator warns the driver by lighting/blinking.
- Receives a Blind Spot Warning indicator operation signal from the side radar LH/RH and blinks or turns ON/OFF the Blind Spot Warning indicator.

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# SYSTEM

< SYSTEM DESCRIPTION >

[DRIVER ASSISTANCE SYSTEM]

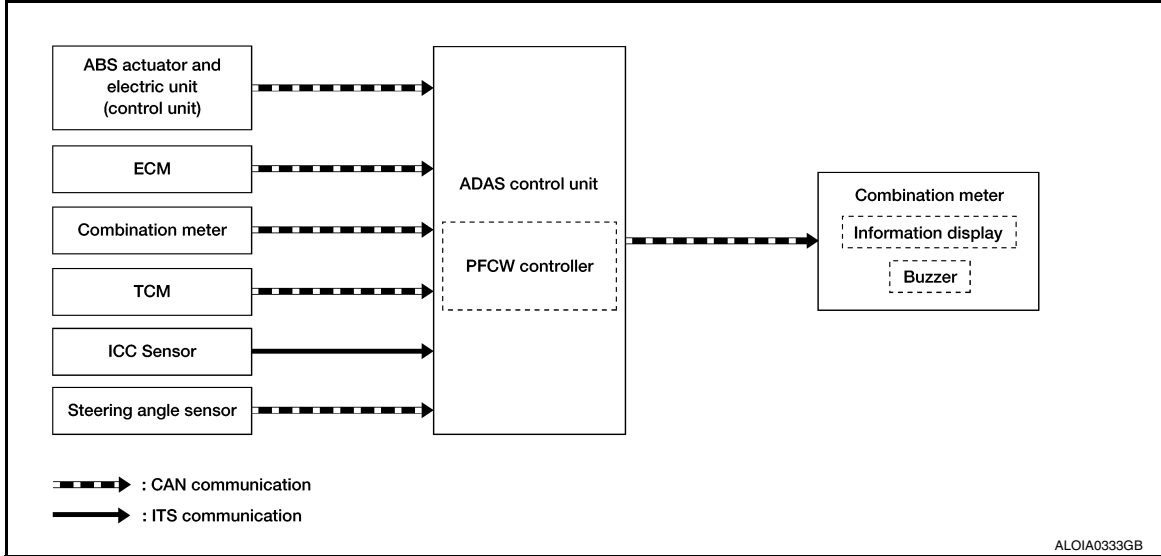
## SYSTEM

### PFCW

#### PFCW : System Description

INFOID:0000000012939167

#### SYSTEM DIAGRAM



#### ADAS CONTROL UNIT INPUT/OUTPUT SIGNAL ITEM

##### Input Signal Item

| Transmit unit                                 |                   | Signal name                        | Description   |
|---|-------------------|------------------------------------|---|
| ABS actuator and electric unit (control unit) | CAN communication | ABS malfunction signal             | Receives a malfunction state of ABS.  |
|   |                   | ABS operation signal               | Receives an operational state of ABS.   |
|   |                   | ABS warning lamp signal            | Receives an operational state of ABS warning lamp.  |
|   |                   | TCS malfunction signal             | Receives a malfunction state of TCS.  |
|   |                   | TCS operation signal               | Receives an operational state of TCS.   |
|   |                   | VDC OFF switch signal              | Receives an ON/OFF state of VDC.  |
|   |                   | VDC malfunction signal             | Receives a malfunction state of VDC.  |
|   |                   | VDC operation signal               | Receives an operational state of VDC.   |
|   |                   | Vehicle speed signal (ABS)         | Receives wheel speeds of front wheels.  |
|   |                   | Yaw rate signal                    | Receives yaw rate acting on the vehicle.  |
|   |                   | Stop lamp switch                   | Receives stop lamp switch state.  |
| ECM   | CAN communication | Engine speed signal                | Receives engine speed.  |
|   |                   | Stop lamp switch signal            | Receives an operational state of the brake pedal.   |
|   |                   | Brake pedal position switch signal | Receives an operational state of the brake pedal.   |
| Combination meter                             | CAN communication | System selection signal            | Receives a selection state of each item in "Driver Aids" selected with the integral switch.                     |
| ICC sensor                                    | ITS communication | ICC sensor signal                  | Receives detection results, such as the presence or absence of a leading vehicle and distance from the vehicle. |
| TCM   | CAN communication | Input speed signal                 | Receives the number of revolutions of input shaft.  |
|   |                   | Shift position signal              | Receives a selector lever position.   |
|   |                   | Current gear position signal       | Receives a current gear position.   |
|   |                   | Output shaft revolution signal     | Receives the number of revolutions of output shaft.   |



# SYSTEM

< SYSTEM DESCRIPTION >

[DRIVER ASSISTANCE SYSTEM]

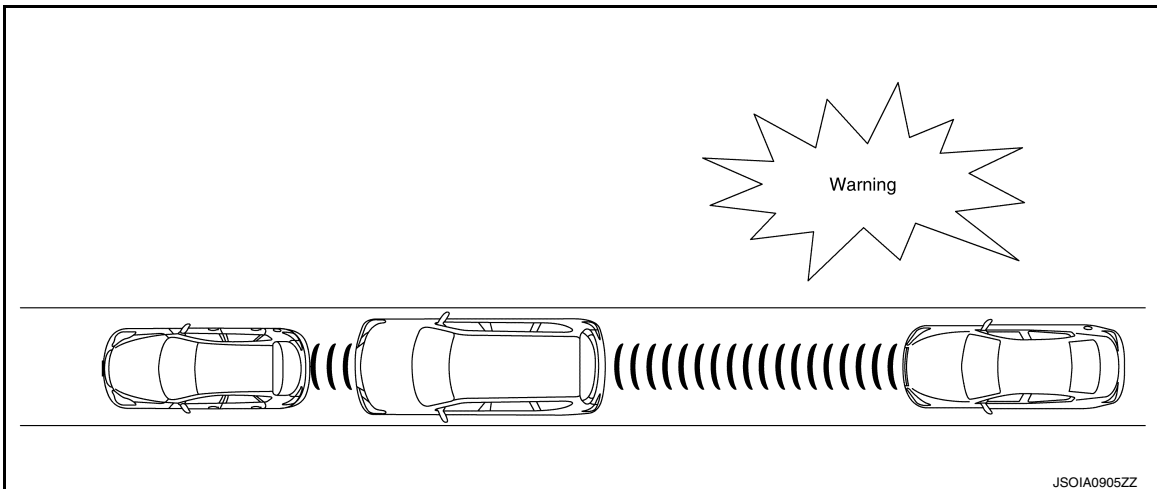
| Transmit unit         | Signal name       |  | Description   |
|-----------------------|-------------------|--|---|
| Steering angle sensor | CAN communication | Steering angle sensor malfunction signal | Receives a malfunction state of steering angle sensor.                          |
|                       |                   | Steering angle sensor signal             | Receives the number of revolutions and turning direction of the steering wheel. |
|                       |                   | Steering angle speed signal              | Receives the turning angle speed of the steering wheel.                         |

## Output Signal Item

| Reception unit    | Signal name       |                      | Description  |
|-------------------|-------------------|----------------------|--|
| Combination meter | CAN communication | Meter display signal | Vehicle ahead detection indicator signal                       |
|                   |                   |                      | PFCW/FEB system indicator signal                               |
|                   |                   | Buzzer output signal |  |
| ICC sensor        | ITS communication | Vehicle speed signal | Transmits a vehicle speed calculated by the ADAS control unit. |

## DESCRIPTION

- The PFCW system will function when own vehicle is driven at speeds of approximately 3 MPH (5 km/h) and above.
- The Predictive Forward Collision Warning (PFCW) system alerts the driver by the vehicle ahead detection indicator and chime when the distance between own vehicle and a vehicle in front of the vehicle ahead becomes closer.



### NOTE:

The PFCW/FEB system shares the diagnosis function with ICC system.

## FUNCTION DESCRIPTION

The distance from the vehicle in front of the vehicle ahead and a relative speed are calculated using the ICC sensor, and an ICC sensor signal is transmitted to the ADAS control unit via ITS communication. When judging the necessity of warning according to the received ICC sensor signal, the ADAS control unit transmits a warning buzzer signal and meter display signal to the combination meter via CAN communication.

### PFCW Operating Condition

- PFCW/FEB system display (white): ON
- Vehicle speed: Approximately 3 MPH (5 km/h) and above
- Vehicle in front of the vehicle ahead: Detected

### NOTE:

ON/OFF of PFCW/FEB system is performed with the integral switch of the combination meter information display.

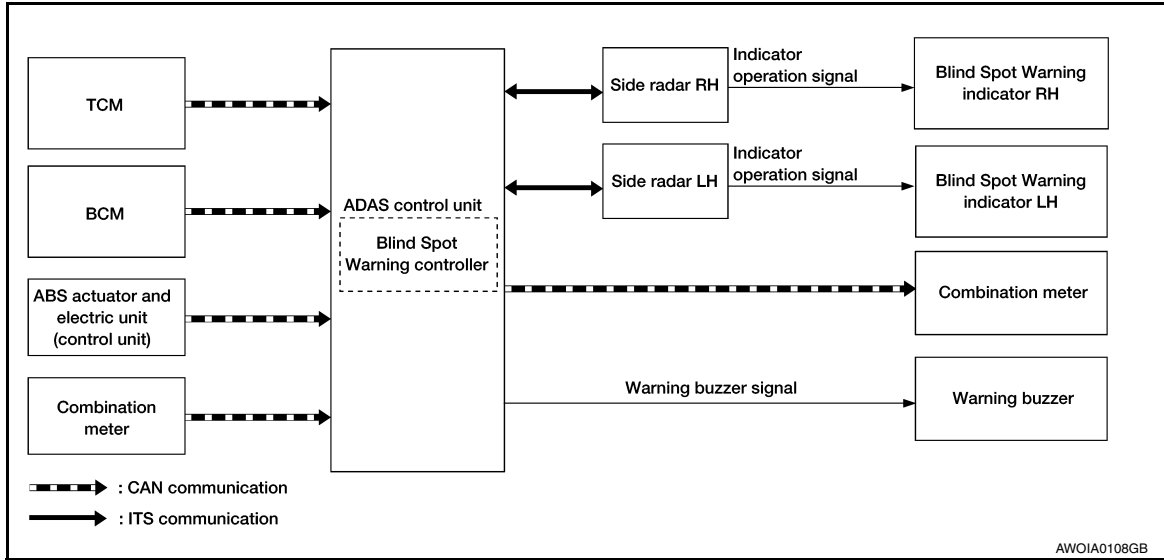
## BSW

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SYSTEM DIAGRAM



ADAS CONTROL UNIT INPUT/OUTPUT SIGNAL ITEM

ADAS control unit receives signals via CAN communication. It also detects vehicle conditions that are necessary for Blind Spot Warning control.

Input Signal Item

| Transmit unit                                 | Signal name       |                            | Description   |
|---|-------------------|----------------------------|---|
| TCM   | CAN communication | Shift position signal      | Receives a selector lever position.   |
| ABS actuator and electric unit (control unit) | CAN communication | Vehicle speed signal (ABS) | Receives wheel speeds of four wheels.   |
| BCM   | CAN communication | Turn indicator signal      | Receives an operational state of the turn signal lamp and the hazard lamp.                  |
|   |                   | Dimmer signal              | Receives ON/OFF state of dimmer signal.   |
| Combination meter                             | CAN communication | System selection signal    | Receives a selection state of each item in "Driver Aids" selected with the integral switch. |
| Side radar LH, RH                             | ITS communication | Vehicle detection signal   | Receives vehicle detection condition of detection zone.                                     |

Output Signal Item

| Reception unit    | Signal name           |  | Description  |
|-------------------|-----------------------|--|--|
| Combination meter | CAN communication     | BSW indicator signal                       | Transmits a BSW indicator signal to turn ON the BSW indicator on the combination meter.      |
| Side radar LH, RH | ITS communication     | Blind Spot Warning indicator signal        | Transmits a Blind Spot Warning indicator signal to turn ON the Blind Spot Warning indicator. |
|                   |                       | Blind Spot Warning indicator dimmer signal | Transmits a Blind Spot Warning indicator dimmer signal to dim Blind Spot Warning indicator.  |
|                   |                       | Vehicle speed signal                       | Transmits a vehicle speed that is calculated by the ADAS control unit.                       |
| Warning buzzer    | Warning buzzer signal |  | Activates warning buzzer.  |

FUNCTION DESCRIPTION

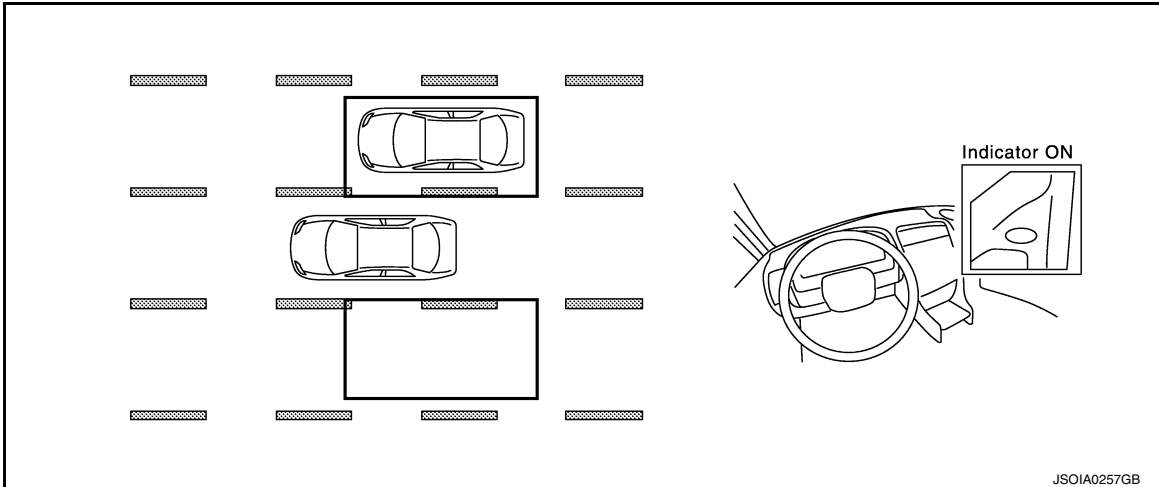
- The BSW system can help alert the driver of other vehicles in adjacent lanes when changing lanes.
- The BSW system uses side radars installed near the rear bumper to detect vehicles in an adjacent lane.
- The side radars can detect vehicles on either side of vehicle within the detection zone shown as illustrated.

# SYSTEM

## [DRIVER ASSISTANCE SYSTEM]

### < SYSTEM DESCRIPTION >

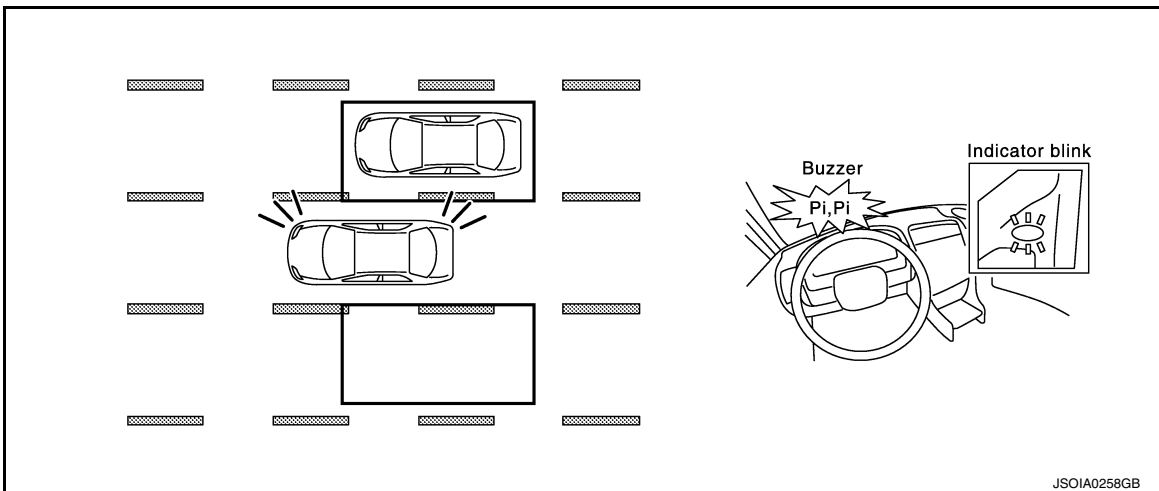
- This detection zone starts from the outside mirror of vehicle and extends approximately 10 ft. (3.0 m) behind the rear bumper, and approximately 10 ft. (3.0 m) sideways.
- The BSW system operates above approximately 20 MPH (32 km/h).
- If the side radar detects vehicles in the detection zone, the Blind Spot Warning indicator illuminates.



- If the driver then activates the turn signal, a buzzer will sound twice and the Blind Spot Warning indicator will blink.

#### NOTE:

A buzzer sounds if the side radar has detected a vehicle when the driver activates the turn signal. If a vehicle comes into the detection zone after the driver activates the turn signal, then only the Blind Spot Warning indicator blinks and no buzzer sounds.



### BLIND SPOT WARNING SYSTEM OPERATION DESCRIPTION

- ADAS control unit enables BSW system.
- The ADAS control unit turns on the BSW system when it is turned ON by the integral switch.
- Side radar detects a vehicle in the adjacent lane and transmits the vehicle detection signal to ADAS control unit via ITS communication.
- ADAS control unit starts the control as follows, based on a vehicle detection signal, turn signal and dimmer signal transmitted from BCM via CAN communication:
  - Blind Spot Warning indicator signal and Blind Spot Warning indicator dimmer signal transmission to side radar.
- Side radar transmits an indicator operation signal to the Blind Spot Warning indicator according to Blind Spot Warning indicator signal and Blind Spot Warning indicator dimmer signal.

### OPERATING CONDITION

- Blind Spot Warning system display (white): ON
- Vehicle speed: Approximately 20 MPH (32 km/h) or more

#### NOTE:

ON/OFF of Blind Spot Warning system is performed with the integral switch.

- After the operating conditions of warning are satisfied, the warning continues until the vehicle speed reaches approximately 18 MPH (29 km/h).

# SYSTEM

## [DRIVER ASSISTANCE SYSTEM]

### < SYSTEM DESCRIPTION >

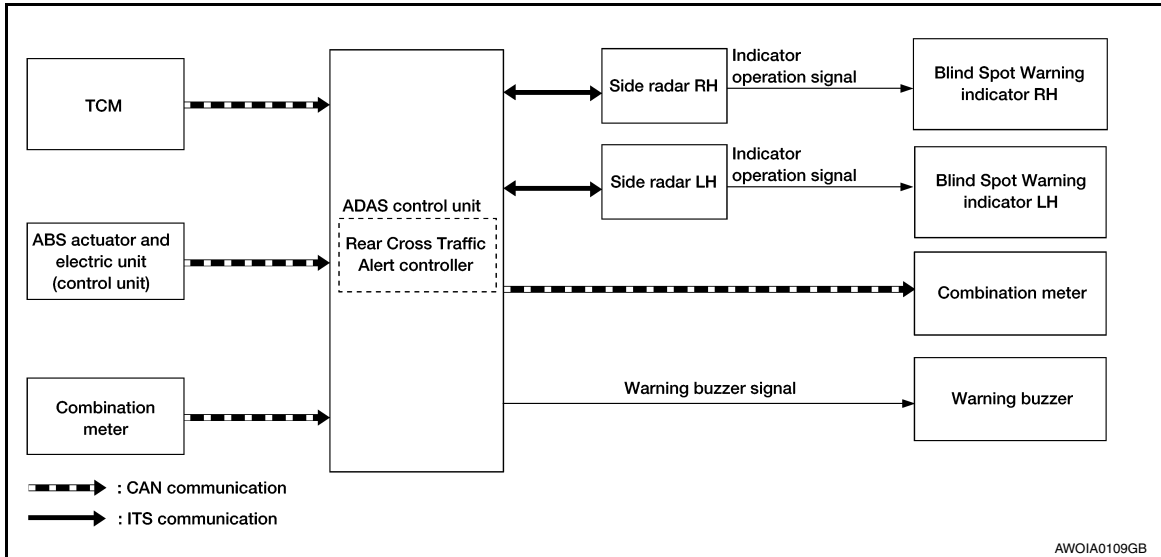
- The Blind Spot Warning system may not function properly, depending on the situation. Refer to [DAS-74](#), "[Blind Spot Warning/Rear Cross Traffic Alert \(RCTA\) System Service](#)".

### RCTA

### RCTA : System Description

INFOID:0000000012939169

### SYSTEM DIAGRAM



### ADAS CONTROL UNIT INPUT/OUTPUT SIGNAL ITEM

#### Input Signal Item

| Transmit unit                                 | Signal name       | Description                    |   |
|---|-------------------|--------------------------------|---|
| TCM   | CAN communication | Current gear position signal   | Receives a current gear position.   |
|   | CAN communication | Shift selector position signal | Receives a shift selector position.   |
| ABS actuator and electric unit (control unit) | CAN communication | ABS malfunction signal         | Receives a malfunction state of ABS.  |
|   | CAN communication | VDC malfunction signal         | Receives a malfunction state of VDC.  |
|   | CAN communication | Vehicle speed signal (ABS)     | Receives wheel speeds of four wheels.   |
| Combination meter                             | CAN communication | System selection signal        | Receives a selection state of each item in "Driver Aids" selected with the integral switch. |
| Side radar LH, RH                             | ITS communication | Vehicle detection signal       | Receives vehicle detection condition of detection zone.                                     |

#### Output Signal Item

| Reception unit    | Signal name           | Description                                |  |
|-------------------|-----------------------|--|--|
| Combination meter | CAN communication     | BSW indicator signal                       | Transmits a BSW indicator signal to turn ON the BSW indicator on the combination meter.      |
| Side radar LH, RH | ITS communication     | Blind Spot Warning indicator signal        | Transmits a Blind Spot Warning indicator signal to turn ON the Blind Spot Warning indicator. |
|                   | ITS communication     | Blind Spot Warning indicator dimmer signal | Transmits a Blind Spot Warning indicator dimmer signal to dim Blind Spot Warning indicator.  |
|                   | ITS communication     | Vehicle speed signal                       | Transmits a vehicle speed calculated by the ADAS control unit.                               |
| Warning buzzer    | Warning buzzer signal | Warning buzzer signal                      | Activates warning buzzer.  |

### FUNCTION DESCRIPTION

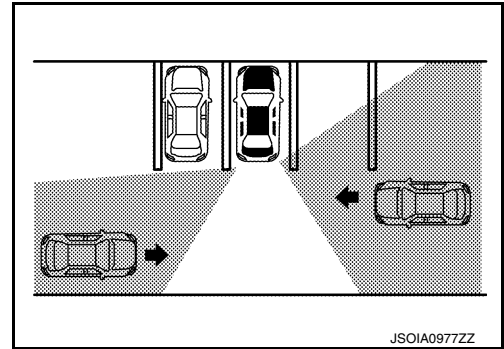
- The Rear Cross Traffic Alert system can help alert the driver of approaching vehicles when the driver is backing out of a parking space.
- The RCTA system uses side radars installed near the rear bumper to detect approaching vehicles.

# SYSTEM

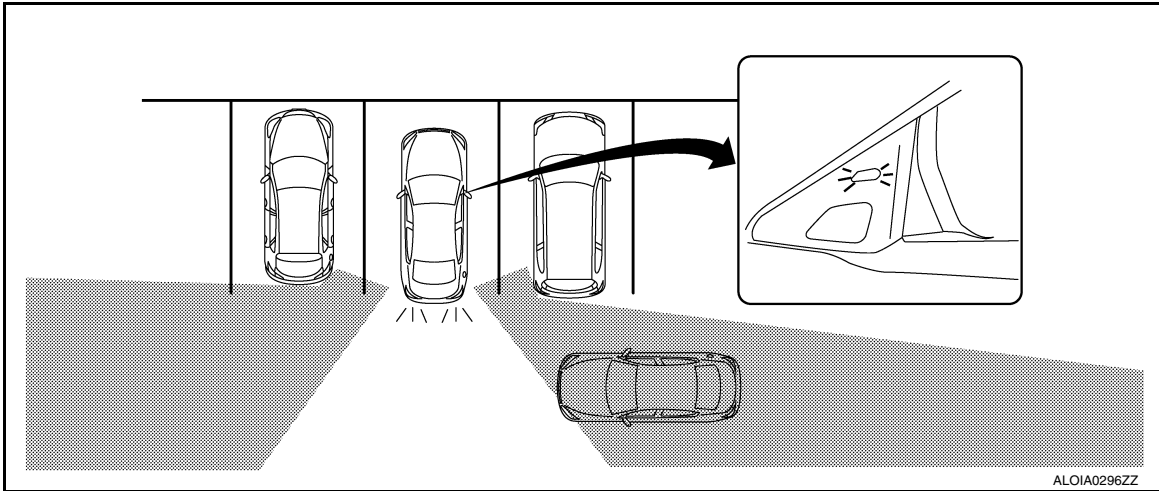
## < SYSTEM DESCRIPTION >

## [DRIVER ASSISTANCE SYSTEM]

- The RCTA system operates at speeds below 5 MPH (8 km/h) whenever the vehicle is in reverse.
- The side radar can detect vehicles on either side of vehicle within the detection zone shown as illustrated.
- The radar sensors detect the approaching vehicle from up to approximately 66 ft (20 m) away.



- If the radar detects a vehicle approaching from the side, the system gives visual and audible warning.



- If the side radar detects an approaching vehicle from the side, the RCTA system sounds a beep (single beep) and the Blind Spot Warning indicator on the side of the approaching vehicle flashes.

### REAR CROSS TRAFFIC ALERT SYSTEM OPERATION DESCRIPTION

- ADAS control unit enables Rear Cross Traffic Alert system
- The ADAS control unit turns ON the RCTA system when the BSW system is turned ON by the integral switch.
- ADAS control unit starts the control as follows, based on a reverse gear signal and vehicle detection signal.
- Side radar detects a vehicle approaching and transmits the vehicle detection signal to ADAS control unit via ITS communication.

#### Operation Condition of Rear Cross Traffic Alert System

ADAS control unit performs the control when the following conditions are satisfied:

- BSW system: ON (Selected by integral switch)
- When the vehicle is moving in reverse at 5 MPH (8 km/h) or less

### Fail-safe (ADAS Control Unit)

INFOID:000000012939170

If a malfunction occurs in each system, ADAS control unit cancels each control, sounds a beep, and turns ON the warning or indicator lamp.

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| System                                      | Buzzer            | Warning lamp/Warning display | Description |
|---|-------------------|------------------------------|-------------|
| Intelligent Cruise Control (ICC)            | High-pitched tone | ICC system warning           | Cancel      |
| Forward Emergency Braking (FEB)             | High-pitched tone | FEB warning lamp (Yellow)    | Cancel      |
| Predictive Forward Collision Warning (PFCW) | High-pitched tone | FEB warning lamp (Yellow)    | Cancel      |

# SYSTEM

< SYSTEM DESCRIPTION >

[DRIVER ASSISTANCE SYSTEM]

| System                          | Buzzer           | Warning lamp/Warning display | Description |
|---------------------------------|------------------|------------------------------|-------------|
| Blind Spot Warning (BSW)        | Low-pitched tone | BSW system warning           | Cancel      |
| Rear Cross Traffic Alert (RCTA) | —                | BSW system warning           | Cancel      |

## Fail-safe

INFOID:000000013007306

If a malfunction occurs in the ICC sensor, ADAS control unit cancels control, sounds a beep, and turns ON the ICC system warning lamp in the combination meter.

## Fail-safe (Side Radar)

INFOID:000000012939172

### FAIL-SAFE CONTROL BY DTC

Blind Spot Warning (BSW)/Rear Cross Traffic Alert (RCTA)

If a malfunction occurs in the side radar, ADAS control unit cancels control and turns ON the Blind Spot Warning indicator (orange) on the combination meter.

### TEMPORARY DISABLED STATUS AT BLOCKAGE

Blind Spot Warning (BSW)

When the side radar is blocked, the operation is temporarily canceled. Then the buzzer sounds and the Blind Spot Warning indicator (orange) is turned ON in the combination meter. Also, under the following conditions, the operation may be temporarily canceled:

- The side radar may be blocked by temporary ambient conditions such as splashing water, mist or fog.
- The blocked condition may also be caused by objects such as ice, frost or dirt obstructing the side radar.

Rear Cross Traffic Alert (RCTA)

When the side radar is blocked, the operation is temporarily canceled. Then the buzzer sounds and the Blind Spot Warning indicator (orange) is turned ON in the combination meter. Also, under the following conditions, the operation may be temporarily canceled.

- The side radar may be blocked by temporary ambient conditions such as splashing water, mist or fog.
- The blocked condition may also be caused by objects such as ice, frost or dirt obstructing the side radar.

# OPERATION

< SYSTEM DESCRIPTION >

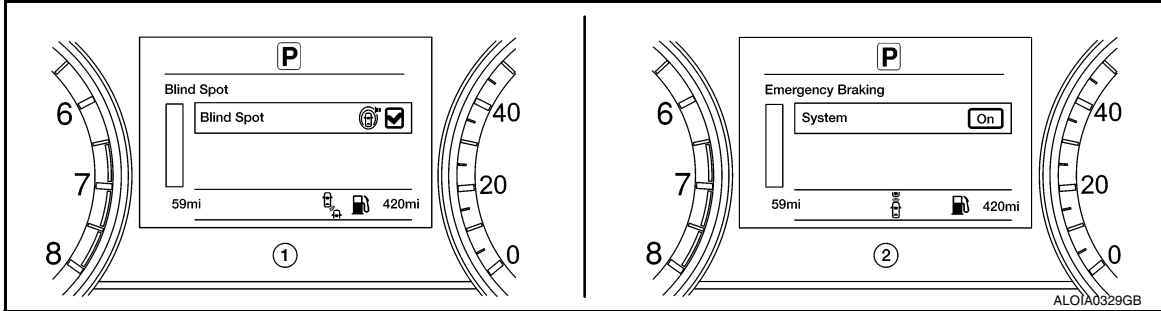
[DRIVER ASSISTANCE SYSTEM]

## OPERATION

PFCW/FEB, BSW/RCTA

PFCW/FEB, BSW/RCTA : Switch Name and Function

INFOID:000000012939173



| No. | Switch name  | Description   |
|-----|--|---|
| 1.  | BSW/RCTA system setting screen (Integral switch settings screen) | The setting of BSW/RCTA system can be switched between ON and OFF on the combination meter information display.<br><b>NOTE:</b><br>When the Blind Spot Warning system is turned ON or OFF, the Rear Cross Traffic Alert system is turned ON or OFF simultaneously.                    |
| 2.  | PFCW/FEB system setting screen (Integral switch settings screen) | The setting of PFCW/FEB system can be switched between ON and OFF on the combination meter information display.<br><b>NOTE:</b><br>When the Forward Emergency Braking system is turned ON or OFF, the Predictive Forward Collision Warning system is turned ON or OFF simultaneously. |

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## HANDLING PRECAUTION

### Precautions for Predictive Forward Collision Warning

INFOID:000000012939174

- The Predictive Forward Collision Warning system is designed to warn the driver before a collision, but will not avoid a collision. It is the driver's responsibility to stay alert, drive safely and be in control of the vehicle at all times.
- The radar sensor does not detect the following objects:
  - Pedestrians, animals, or obstacles in the roadway.
  - Oncoming vehicles.
  - Crossing vehicles.
- The Predictive Forward Collision Warning system does not function when a vehicle ahead is a narrow vehicle, such as a motorcycle.
- The radar sensor may not detect a second vehicle ahead in the following conditions:
  - Snow or heavy rain.
  - Dirt, ice, snow or other material covering the radar sensor.
  - Interference by other radar sources.
  - Snow or road spray from traveling vehicles is splashed.
  - Driving in a tunnel.
- The radar sensor may not detect a second vehicle when the vehicle ahead is being towed.
- When the distance to the vehicle ahead is too close, the beam of the radar sensor is obstructed.
- The radar sensor may not detect a second vehicle when driving on a steep downhill slope or on roads with sharp curves.
- Excessive noise will interfere with the warning tone sound, and it may not be heard.

### Precautions for Blind Spot Warning

INFOID:000000012939175

#### SIDE RADAR HANDLING

- Side radar for Blind Spot Warning system is located inside the rear bumper.
- Always keep the rear bumper near the side radar clean.
- Do not attach a sticker (including transparent material), install an accessory or paint near the side radar.
- Do not strike or damage the areas around the side radar.
- Do not strike, damage, and scratch the side radar, especially the vent seal (gray circular) area, under repair.

#### BLIND SPOT WARNING

- The Blind Spot Warning system is not a replacement for proper driving procedure and is not designed to prevent contact with vehicles or objects. When changing lanes, always use the side and rear mirrors and turn and look in the direction the vehicle will move to ensure it is safe to change lanes. Never rely solely on the Blind Spot Warning system.
- The Blind Spot Warning system may not provide the warning for vehicles that pass through the detection zone quickly.
- Excessive noise (for example, audio system volume or open vehicle window) will interfere with the chime sound, and it may not be heard.
- The side radar may not be able to detect and activate Blind Spot Warning when certain objects are present such as:
  - Pedestrians, bicycles, animals.
  - Several types of vehicles such as motorcycles.
  - Oncoming vehicles.
  - Vehicles remaining in the detection zone when driver accelerates from a stop.
  - A vehicle merging into an adjacent lane at a speed approximately the same as vehicle.
  - A vehicle approaching rapidly from behind.
  - A vehicle which own vehicle overtakes rapidly.
- Severe weather or road spray conditions may reduce the ability of the radar to detect other vehicles.
- The side radar detection zone is designed based on a standard lane width. When driving in a wider lane, the side radar may not detect vehicles in an adjacent lane. When driving in a narrow lane, the side radar may detect vehicles driving two lanes away.
- The side radar is designed to ignore most stationary objects: however, objects such as guardrails, walls, foliage and parked vehicles may occasionally be detected. This is a normal operating condition.



## Precautions for Rear Cross Traffic Alert

INFOID:000000012939176

### SIDE RADAR HANDLING

- Side radar for Rear Cross Traffic Alert system is located inside the rear bumper.
- Always keep the rear bumper near the side radar clean.
- Do not attach a sticker (including transparent material), install an accessory or paint near the side radar.
- Do not strike or damage the areas around the side radar.
- Do not strike, damage, and scratch the side radar, especially the vent seal (gray circular) area, under repair.

### REAR CROSS TRAFFIC ALERT

- Always check surroundings and turn to check what is behind you before backing up. The radar sensors detect approaching (moving) vehicles. The radar sensors cannot detect every object such as:
  - Pedestrians, bicycles, motorcycles, animals or child operated toy vehicles.
  - A vehicle that passing at speeds greater than approximately 19 mph (30 km/h).
  - A vehicle that passing at speeds lower than approximately 5 mph (8 km/h).
- The radar sensors may not detect approaching vehicles in certain situations:
  - When the vehicle that is parked next to you obstructs the beam of the radar sensor.
  - When the vehicle is parked in an angled parking space.
  - When the vehicle is parked on an incline.
  - When an approaching vehicle turns into your vehicle's parking lot isle.
  - When the angle formed by your vehicle is too small.
- The following conditions may reduce the ability of the radar to detect other vehicles:
  - Severe weather
  - Road spray
  - Ice build-up on the vehicle
  - Frost on the vehicle
  - Dirt build-up on the vehicle
- Do not attach stickers (including transparent material), install accessories or apply additional paint near the radar sensors. These conditions may reduce the ability of the radar to detect other vehicles.
- Do not use RCTA system when towing a trailer.
- Excessive noise (e.g., audio system volume or open vehicle window) will interfere with the chime sound, and it may not be heard.

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# DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[DRIVER ASSISTANCE SYSTEM]

## DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

### CONSULT Function (ICC/ADAS)

INFOID:000000012939177

#### APPLICATION ITEMS

CONSULT performs the following functions via CAN communication using ADAS control unit:

| Diagnosis mode           | Description   |
|--------------------------|---|
| Configuration            | <ul style="list-style-type: none"><li>The vehicle specification that is written in ADAS control unit can be displayed or stored.</li><li>The vehicle specification can be written when ADAS control unit is replaced.</li></ul> |
| Work support             | Displays causes of automatic system cancellation that occurred during system control.   |
| Self Diagnostic Result   | Displays the name of a malfunctioning system stored in the ADAS control unit.   |
| Data Monitor             | Displays ADAS control unit input/output data in real time.  |
| Active Test              | Enables an operational check of a load by transmitting a driving signal from the ADAS control unit to the load.   |
| ECU Identification       | Displays ADAS control unit part number.   |
| CAN Diag Support Monitor | Displays a reception/transmission state of CAN communication and ITS communication.   |

#### CONFIGURATION

Configuration includes functions as follows:

| Function                 | Description   |
|--------------------------|---|
| Read/Write Configuration | Before Replace ECU<br>Allows the reading of vehicle specification written in ADAS control unit to store the specification in CONSULT. |
|                          | After Replace ECU<br>Allows the writing of the vehicle information stored in CONSULT into the ADAS control unit.                      |
| Manual Configuration     | Allows the writing of the vehicle specification into the ADAS control unit by hand.   |

#### WORK SUPPORT

| Work support items     | Description  |
|------------------------|--|
| CAUSE OF AUTO-CANCEL 5 | Displays causes of automatic system cancellation that occurred during control of the Intelligent Cruise Control (ICC). |

#### NOTE:

- Causes of the maximum five cancellations (system cancel) are displayed.
- The displayed cancellation causes display the number of the ignition switch ON/OFF up to 254. It is fixed to 254 if it is over 254. It returns to 0 when the same cancellation cause is detected again.

Display Items for the Cause of Automatic Cancellation 1

| Cause of cancellation | Intelligent Cruise Control (ICC) | Description   |
|-----------------------|----------------------------------|---|
| CAN COMM ERROR        | ×                                | ADAS control unit received an abnormal signal with CAN communication. |
| NO RECORD             | ×                                | —   |

#### SELF DIAGNOSTIC RESULT

Refer to [DAS-21, "DTC Index"](#).

# DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

## [DRIVER ASSISTANCE SYSTEM]

### < SYSTEM DESCRIPTION >

#### NOTE:

- The details of time display are as per the following:
- CRNT: A malfunction is detected now.
- PAST: A malfunction was detected in the past.
- ODO/TRIP METER (Mileage) and VOLTAGE (IGN voltage) are displayed on FFD (Freeze Frame Data).

#### DATA MONITOR

| Monitored item<br>[Unit]         | ALL SIG<br>(ICC) | MAIN SIG<br>(ICC) | MAIN SIG<br>(BSW) | Description   |
|----------------------------------|------------------|-------------------|-------------------|---|
| MAIN SW<br>[On/Off]              | ×                | ×                 | ×                 | Indicates [ON/OFF] status as judged from ICC steering switch.   |
| SET/COAST SW<br>[On/Off]         | ×                | ×                 |                   | Indicates [ON/OFF] status as judged from ICC steering switch.   |
| CANCEL SW<br>[On/Off]            | ×                | ×                 |                   | Indicates [ON/OFF] status as judged from ICC steering switch.   |
| RESUME/ACC SW<br>[On/Off]        | ×                | ×                 |                   | Indicates [ON/OFF] status as judged from ICC steering switch.   |
| DISTANCE SW<br>[On/Off]          | ×                |                   |                   | Indicates [ON/OFF] status as judged from ICC steering switch.   |
| CRUISE OPE<br>[On/Off]           | ×                | ×                 |                   | Indicates whether controlling or not (ON means "controlling").  |
| BRAKE SW<br>[On/Off]             | ×                | ×                 | ×                 | Indicates [ON/OFF] status as judged from ICC brake switch signal (ECM transmits ICC brake switch signal through CAN communication).   |
| STOP LAMP SW<br>[On/Off]         | ×                | ×                 | ×                 | Indicates [ON/OFF] status as judged from stop lamp switch signal (ECM transmits stop lamp switch signal through CAN communication).   |
| IDLE SW<br>[On/Off]              | ×                |                   |                   | Indicates [ON/OFF] status of idle switch read from ADAS control unit through CAN communication (ECM transmits ON/OFF status through CAN communication).   |
| SET DISTANCE<br>[Short/Mid/Long] | ×                | ×                 |                   | Indicates set distance memorized in ADAS control unit.  |
| CRUISE LAMP<br>[On/Off]          | ×                | ×                 |                   | Indicates [ON/OFF] status of MAIN switch indicator output.  |
| VHCL AHEAD<br>[On/Off]           | ×                |                   |                   | Indicates [ON/OFF] status of vehicle ahead detection indicator output.  |
| ICC WARNING<br>[On/Off]          | ×                |                   |                   | Indicates [ON/OFF] status of ICC system warning lamp output.  |
| VHCL SPEED SE<br>[km/h] or [mph] | ×                | ×                 | ×                 | Indicates vehicle speed calculated from ADAS control unit through CAN communication [ABS actuator and electric unit (control unit) transmits vehicle speed signal (wheel speed) through CAN communication]. |
| SET VHCL SPD<br>[km/h] or [mph]  | ×                | ×                 |                   | Indicates set vehicle speed memorized in ADAS control unit.   |
| BUZZER O/P<br>[On/Off]           | ×                |                   |                   | Indicates [ON/OFF] status of ICC warning chime output.  |
| ENGINE RPM<br>[rpm]              | ×                |                   |                   | Indicates engine speed read from ADAS control unit through CAN communication (ECM transmits engine speed signal through CAN communication).   |
| WIPER SW<br>[OFF/LOW/HIGH]       | ×                |                   |                   | Indicates wiper [OFF/LOW/HIGH] status (BCM transmits front wiper request signal through CAN communication).   |
| BA WARNING<br>[On/Off]           | ×                |                   |                   | Indicates [ON/OFF] status of FEB indicator lamp output.   |
| STP LMP DRIVE<br>[On/Off]        | ×                | ×                 |                   | Indicates [ON/OFF] status of ICC brake hold relay drive output.   |

# DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[DRIVER ASSISTANCE SYSTEM]

| Monitored item<br>[Unit]       | ALL SIG<br>(ICC) | MAIN SIG<br>(ICC) | MAIN SIG<br>(BSW) | Description  |
|--------------------------------|------------------|-------------------|-------------------|--|
| D POSITION SW<br>[On/Off]      | ×                |                   |                   | Indicates [ON/OFF] status of "D" or "M" positions read from ADAS control unit through CAN communication; ON when position "D" or "M" (TCM transmits shift selector position signal through CAN communication).   |
| NP RANGE SW<br>[On/Off]        | ×                |                   |                   | Indicates shift selector position signal read from ADAS control unit through CAN communication (TCM transmits shift selector position signal through CAN communication).   |
| PKB SW<br>[On/Off]             | ×                |                   |                   | Parking brake switch status [ON/OFF] judged from the parking brake switch signal that ADAS control unit receives via CAN communication is displayed (combination meter transmits the parking brake switch signal via CAN communication).                     |
| PWR SUP MONI<br>[V]            | ×                | ×                 |                   | Indicates ignition voltage input monitored by ADAS control unit.   |
| VHCL SPD AT<br>[km/h] or [mph] | ×                |                   |                   | Indicates vehicle speed calculated from CVT vehicle speed sensor read from ADAS control unit through CAN communication (TCM transmits CVT vehicle speed sensor signal through CAN communication).  |
| THRTL OPENING<br>[%]           | ×                | ×                 |                   | Indicates throttle position read from ADAS control unit through CAN communication (ECM transmits accelerator pedal position signal through CAN communication).   |
| GEAR<br>[1, 2, 3, 4, 5, 6, 7]  | ×                |                   |                   | Indicates CVT gear position read from ADAS control unit through CAN communication (TCM transmits current gear position signal through CAN communication).  |
| NP SW SIG<br>[On/Off]          | ×                |                   |                   | Indicates [ON/OFF] status as judged from park/neutral position switch signal (ECM transmits park/neutral position switch signal through CAN communication).  |
| MODE SIG<br>[OFF, ICC, ASCD]   | ×                |                   |                   | Indicates the active mode from ICC or ASCD [conventional (fixed speed) cruise control mode].   |
| SET DISP IND<br>[On/Off]       | ×                |                   |                   | Indicates [ON/OFF] status of SET switch indicator output.  |
| DISTANCE<br>[m]                | ×                |                   |                   | Indicates the distance from the vehicle ahead.   |
| RELATIVE SPD<br>[m/s]          | ×                |                   |                   | Indicates the relative speed of the vehicle ahead.   |
| SIDE G<br>[G]                  |                  |                   | ×                 | Indicates lateral G acting on the vehicle. This lateral G is judged from a side G sensor signal read by ADAS control unit via CAN communication. (The ABS actuator and electric unit (control unit) transmits a side G sensor signal via CAN communication). |
| FUNC ITEM (FCW)<br>[On/Off]    | ×                | ×                 | ×                 | Indicates system which can be set to ON/OFF by selecting "Driver Assistance" ⇒ "Emergency Brake" of the integral switch: Forward Emergency Braking.  |
| FUNC ITEM (BSW)<br>[On/Off]    | ×                | ×                 | ×                 | Indicates system which can be set to ON/OFF by selecting "Driver Assistance" ⇒ "Blind Spot" of the integral switch: Blind Spot Warning.  |
| FCW SELECT<br>[On/Off]         | ×                | ×                 | ×                 | Indicates an ON/OFF state of the PFCW system. The PFCW system can be set to ON/OFF by selecting "Driver Assistance" ⇒ "Emergency Brake" of the integral switch.  |
| BSW SELECT<br>[On/Off]         | ×                | ×                 | ×                 | Indicates an ON/OFF state of the BSW system. The BSW system can be set to ON/OFF by selecting "Driver Assistance" ⇒ "Blind Spot" of the integral switch.   |
| BSW/BSI WARN LMP<br>[On/Off]   |                  |                   | ×                 | Indicates [ON/OFF] status of Blind Spot warning malfunction.   |
| BSW SYSTEM ON<br>[On/Off]      |                  |                   | ×                 | Indicates [ON/OFF] status of BSW system.   |
| WARN SYS SW<br>[On/Off]        |                  |                   | ×                 | Indicates [ON/OFF] status of warning system switch.  |

# DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[DRIVER ASSISTANCE SYSTEM]

| Monitored item<br>[Unit]                                    | ALL SIG<br>(ICC) | MAIN SIG<br>(ICC) | MAIN SIG<br>(BSW) | Description   |
|---|------------------|-------------------|-------------------|---|
| FCW SYSTEM ON<br>[On/Off]                                   | ×                | ×                 |                   | Indicates [ON/OFF] status of PFCW system.                               |
| SYSTEM CANCEL<br>MESSAGE<br>[NOREQ/SLIP/VDC<br>OFF]         | ×                | ×                 | ×                 | Indicates [ON/OFF] status of system cancel display output.              |
| BSW ON INDICATOR<br>[On/Off]                                |                  |                   | ×                 | Indicates [ON/OFF] status of BSW system ON display output.              |
| SIDE RADAR BLOCK<br>COND<br>[On/Off]                        |                  |                   | ×                 | Indicates [ON/OFF] status of side radar with dirt or foreign materials. |
| BSW IND BRIGHT-<br>NESS<br>[Nothing/Bright/Normal/<br>Dark] |                  |                   | ×                 | Indicates status of brightness of Blind Spot Warning indicator.         |

## ACTIVE TEST

### CAUTION:

- **Never perform “Active Test” while driving the vehicle.**
- **The “Active Test” cannot be performed when the following systems malfunction is displayed.**
- **ICC system**
- **Blind Spot Warning/RCTA**
- **PFCW/FEB**
- **The “Active Test” cannot be performed when the FEB warning lamp is illuminated.**
- **The “Active Test” cannot be performed when the ICC System is ON.**

| Test item        | Description  |
|------------------|--|
| METER LAMP       | The FEB warning lamp can be illuminated by ON/OFF operation as necessary.  |
| STOP LAMP        | The ICC brake hold relay can be operated by ON/OFF operation as necessary, and the stop lamp can be illuminated. |
| ADAS BUZZER      | Sounds a buzzer used for BSW, RCTA by arbitrarily operating ON/OFF.  |
| METER BUZZER     | Sounds a buzzer used for ICC, PFCW, FEB by arbitrarily operating ON/OFF.   |
| BRAKE ACTUATOR 1 | Activates the brake by an arbitrary operation.   |
| BRAKE ACTUATOR 2 |  |
| BRAKE ACTUATOR 3 |  |

## METER LAMP

### NOTE:

The test can be performed only when the engine is running.

| Test item  | Operation | Description   | FEB warning lamp |
|------------|-----------|---|------------------|
| METER LAMP | Off       | Stops sending the FEB warning lamp signal to exit from the test.                      | OFF              |
|            | On        | Transmits the FEB warning lamp signal to the combination meter via CAN communication. | ON               |

## STOP LAMP

| Test item | Operation | Description   | Stop lamp |
|-----------|-----------|---|-----------|
| STOP LAMP | Off       | Stops transmitting the ICC brake hold relay drive signal to end the test. | OFF       |
|           | On        | Transmits the ICC brake hold relay drive signal.                          | ON        |

## METER BUZZER

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# DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[DRIVER ASSISTANCE SYSTEM]

| Test item    | Operation | Description  | Operation sound |
|--------------|-----------|--|-----------------|
| METER BUZZER | Off       | Stops buzzer output to the combination meter via CAN communication.  | OFF             |
|              | On        | Starts buzzer output to the combination meter via CAN communication. | ON              |

## ADAS BUZZER

| Test item   | Operation | Description           | Operation sound |
|-------------|-----------|-----------------------|-----------------|
| ADAS BUZZER | On        | Starts buzzer output. | OFF             |
|             | Off       | Stops buzzer output.  | ON              |

## BRAKE ACTUATOR

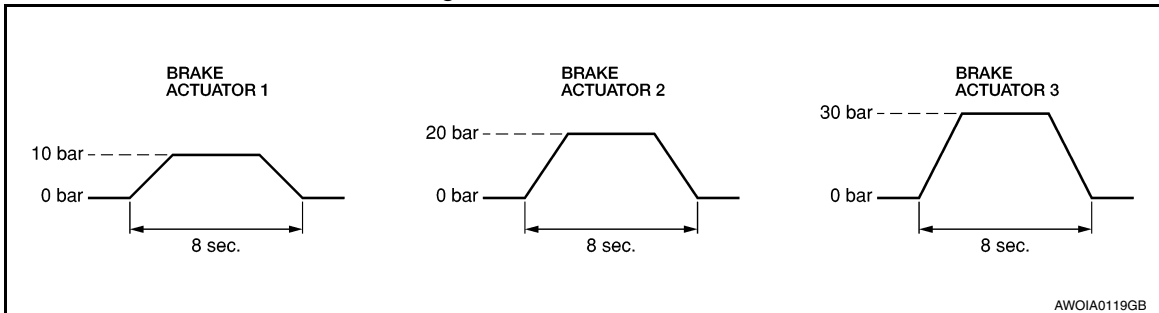
**NOTE:**

The test can be performed only when the engine is running.

| Test item        | Operation | Description  | "PRESS ORDER" value |
|------------------|-----------|--|---------------------|
| BRAKE ACTUATOR 1 | Off       | Stops transmitting the brake fluid pressure control signal to end the test.    | —                   |
|                  | On        | Starts transmitting the brake fluid pressure control signal to start the test. | 10 bar              |
| BRAKE ACTUATOR 2 | Off       | Stops transmitting the brake fluid pressure control signal to end the test.    | —                   |
|                  | On        | Starts transmitting the brake fluid pressure control signal to start the test. | 20 bar              |
| BRAKE ACTUATOR 3 | Off       | Stops transmitting the brake fluid pressure control signal to end the test.    | —                   |
|                  | On        | Starts transmitting the brake fluid pressure control signal to start the test. | 30 bar              |

**NOTE:**

The test is finished 10 seconds after starting.



## ECU IDENTIFICATION

Displays ADAS control unit part number.

# DIAGNOSIS SYSTEM (ICC SENSOR)

< SYSTEM DESCRIPTION >

[DRIVER ASSISTANCE SYSTEM]

## DIAGNOSIS SYSTEM (ICC SENSOR)

### CONSULT Function (LASER/RADAR)

INFOID:000000013007283

#### APPLICATION ITEMS

CONSULT performs the following functions via CAN communication with ADAS control unit and the communication with ICC sensor.

| Diagnosis mode           | Description  |
|--------------------------|--|
| Self Diagnostic Result   | Displays malfunctioning system memorized in ICC sensor   |
| Data Monitor             | Displays real-time input/output data of ICC sensor   |
| Work support             | It can monitor the adjustment direction indication in order to perform the radar adjustment operation smoothly |
| ECU Identification       | Displays ICC sensor part number  |
| CAN Diag Support Monitor | The results of transmit/receive diagnosis of ITS communication can be read.                                    |

#### SELF DIAGNOSTIC RESULT

Refer to [DAS-111, "DTC Index"](#).

#### DATA MONITOR

| Monitored item<br>[Unit]         | Description  |
|----------------------------------|--|
| VHCL SPEED SE<br>[km/h] or [mph] | Vehicle speed judged from a vehicle speed signal read by the ICC sensor via ITS communication is displayed [ADAS control unit receives a vehicle speed signal from ABS actuator and electric unit (control unit) via CAN communication and transmits the calculated vehicle speed to ICC sensor via ITS communication].  |
| YAW RATE<br>[deg/s]              | Indicates yaw rate read from ADAS control unit through ITS communication [ADAS control unit receives yaw rate signal from ABS actuator and electric unit (control unit) via CAN communication and transmits yaw rate calculated by the ADAS control unit]<br>Yaw rate judged from a yaw rate signal read by ICC sensor via ITS communication is displayed [ADAS control unit receives a yaw rate signal from ABS actuator and electric unit (control unit) via CAN communication and transmits the calculated yaw rate to ICC sensor via ITS communication]. |
| PWR SUP MONI<br>[V]              | Indicates IGN voltage input by ICC sensor  |
| DISTANCE<br>[m]                  | Indicates the distance from the vehicle ahead  |
| RELATIVE SPD<br>[m/s]            | Indicates the relative speed of the vehicle ahead  |
| LASER OFFSET<br>[m]              | <b>NOTE:</b><br>The item is indicated but not used.  |
| LASER HEIGHT<br>[m]              | <b>NOTE:</b><br>The item is indicated but not used.  |
| STEERING ANGLE<br>[deg]          | The steering angle is displayed.   |
| STRG ANGLE SPEED<br>[deg/s]      | The steering angle speed is displayed.   |
| L/R ADJUST<br>[deg]              | Indicates a horizontal correction value of the radar   |
| U/D ADJUST<br>[deg]              | Indicates a vertical correction value of the radar   |
| FCW SYSTEM ON                    | <b>NOTE:</b><br>The item is indicated, but not used.   |
| FCW SELECT                       | <b>NOTE:</b><br>The item is indicated, but not used.   |

# DIAGNOSIS SYSTEM (ICC SENSOR)

[DRIVER ASSISTANCE SYSTEM]

## < SYSTEM DESCRIPTION >

| Monitored item<br>[Unit]        | Description  |
|---------------------------------|--|
| PFCW SELECT                     | NOTE:<br>The item is indicated, but not used.  |
| PFCW SYSTEM ON                  | NOTE:<br>The item is indicated, but not used.  |
| FEB SW                          | NOTE:<br>The item is indicated, but not used.  |
| FEB SELECT                      | Indicates [ON/OFF] state of the PFCW system.   |
| MAIN SW                         | Indicates [ON/OFF] status as judged from ICC steering switch.  |
| ICC/ASCD MODE                   | NOTE:<br>The item is indicated, but not used.  |
| SET/COAST SW                    | Indicates [ON/OFF] status as judged from ICC steering switch.  |
| CANCEL SW                       | Indicates [ON/OFF] status as judged from ICC steering switch.  |
| RESUME/ACC SW                   | Indicates [ON/OFF] status as judged from ICC steering switch.  |
| DISTANCE SW                     | Indicates [ON/OFF] status as judged from ICC steering switch.  |
| BRAKE SW                        | Indicates [ON/OFF] status as judged from brake pedal position switch signal [ECM transmits brake pedal position switch signal through CAN communication].  |
| STOP LAMP SW                    | Indicates [ON/OFF] status as judged from stop lamp switch signal [ABS actuator and electric unit (control unit) transmits stop lamp switch signal through CAN communication].  |
| IDLE SW                         | Indicates [ON/OFF] status of idle switch read from ICC sensor through CAN communication (ECM transmits ON/OFF status through CAN communication).   |
| CRUISE LAMP                     | Indicates [ON/OFF] status of MAIN switch indicator output.   |
| OWN VHCL                        | NOTE:<br>The item is indicated, but not used.  |
| VHCL AHEAD                      | Indicates [ON/OFF] status of vehicle ahead detection indicator output.   |
| SET DISTANCE                    | Indicates set distance memorized in ADAS control unit.   |
| SET VHCL SPD<br>[km/h] or [mph] | NOTE:<br>The item is indicated, but not used.  |
| THRTL SENSOR<br>[%]             | Indicates throttle position read from ISS sensor through CAN communication (ECM transmits accelerator pedal position signal through CAN communication).  |
| VEHICLE AHEAD DETECT            | Indicates [ON/OFF] status of vehicle ahead detection indicator output.   |
| STATIC OBSTACLE DETECT          | Indicates [ON/OFF] status of static obstacle detection.  |
| BUZZER O/P                      | [ON/OFF]<br>Indicates [On/Off] status of warning chime output.   |
| FUNC ITEM (FCW)                 | NOTE:<br>The item is indicated, but not used.  |
| FUNC ITEM (PFCW)                | Indicates systems status   |
| FUNC ITEM (FEB)                 | Indicates systems status   |
| FUNC ITEM (ICC)                 | Indicates systems status   |
| PRESS_ORDER<br>[bar]            | Indicates status as judged from brake fluid pressure signal [ABS actuator and electric unit (control unit) transmits brake fluid pressure signal through CAN communication].   |
| D RANGE SW                      | Indicates [ON/OFF] status as judged from D position switch signal (TCM transmits shift position signal through CAN communication).   |
| NP RANGE SW                     | Indicates [ON/OFF] status as judged from N/P position switch signal (TCM transmits shift position signal through CAN communication).   |
| PKB SW                          | Parking brake switch status [ON/OFF] judges from the parking brake switch signal that ADAS control unit readout via CAN communication is displayed (combination meter transmits the parking brake switch signal via CAN communication) |
| VHCL SPD AT                     | NOTE:<br>The item is indicated, but not used.  |



# DIAGNOSIS SYSTEM (ICC SENSOR)

[DRIVER ASSISTANCE SYSTEM]

## < SYSTEM DESCRIPTION >

| Monitored item<br>[Unit]                 | Description  |
|--|--|
| Shift position                           | Indicates shift position read from ADAS control unit though CAN communication (TCM transmits shift position signal through CAN communication).           |
| Turn signal                              | NOTE:<br>The item is indicated, but not used.  |
| SYSTEM CANCEL MESSAGE                    | Indicates [ON/OFF] status of system cancel display output.   |
| DISP VHCL SPD<br>[km/h] or [mph]         | NOTE:<br>The item is indicated, but not used.  |
| VHCL SPD UNIT                            | Indicates vehicle speed unit read from ICC sensor through CAN communication (combination meter transmits vehicle speed unit through CAN communications). |
| ADAS AVAILABLE COND                      | NOTE:<br>The item is indicated, but not used.  |
| ICC SET STATUS                           | NOTE:<br>The item is indicated, but not used.  |
| ICC MALF                                 | NOTE:<br>The item is indicated, but not used.  |
| ADAS MALF                                | Indicates [ON/OFF] status of ADAS malfunction.   |
| STOP LAMP RELAY ON                       | Indicates [ON/OFF] status of stop lamp relay fixed on.   |
| STOP LAMP RELAY OFF                      | Indicates [ON/OFF] status of stop lamp relay fixed off.  |
| ACCEL COM VALUE 1<br>[m/s <sup>2</sup> ] | Indicates accel command calculated from set speed and information of ahead vehicle.  |
| ICC STATUS                               | Indicates ICC status.  |
| ACCEL COM VALUE 2                        | NOTE:<br>The item is indicated, but not used.  |
| MILEAGE                                  | NOTE:<br>The item is indicated, but not used.  |

## WORK SUPPORT

| Work support items     | Description   |
|------------------------|---|
| MILLIWAVE RADAR ADJUST | Outputs millimeter waves, calculates the displacement in radar direction, and indicates an adjustment direction |
| CAUSE OF AUTO-CANCEL   | Displays causes of automatic cancellation occurred during Intelligent Cruise Control system.                    |

ICC sensor Adjust

Refer to [BRC-255](#). "Description".

## ECU IDENTIFICATION

ICC sensor part number is displayed.

## CAUSE OF AUTO CANCEL

| Work support items | Description   |
|--------------------|---|
| OPERATING ABS      | ABS function was operated.  |
| OPERATING TCS      | TCS function was operated.  |
| OPERATING VDC      | VDC function was operated.  |
| ECM CIRCUIT        | ECM did not permit ICC operation.                                   |
| OP SW VOLT CIRC    | The ICC steering switch input voltage is not within standard range. |
| OP SW DOUBLE TOUCH | The ICC steering switches were pressed at the same time.            |
| VHCL SPD DOWN      | Vehicle speed is lower than 24 km/h (15 mph).                       |
| WHL SPD ELEC NOISE | Wheel speed sensor signal caught electromagnetic noise.             |
| VDC/TCS OFF SW     | VDC OFF switch was pressed.   |

## DIAGNOSIS SYSTEM (ICC SENSOR)

[DRIVER ASSISTANCE SYSTEM]

< SYSTEM DESCRIPTION >

| Work support items         | Description   |
|----------------------------|---|
| VHCL SPD UNMATCH           | Wheel speed became different from CVT vehicle speed.  |
| TIRE SLIP                  | Wheel slipped.  |
| IGN LOW VOLT               | Decrease in ICC sensor ignition voltage.  |
| PARKING BRAKE ON           | The parking brake is operating.   |
| WHEEL SPD UNMATCH          | The wheel speed of all four wheels are out of the specified values.   |
| INCHING LOST               | a vehicle ahead is not detected during the following driving when the vehicle speed is approximately 24 km/h (15mph) or less. |
| CAN COMM ERROR             | ICC sensor received an abnormal signal with CAN communication.  |
| ABS/TCS/VDC CIRC           | An abnormal condition occurs in VDC/TCS/ABS system.   |
| ECD CIRCUIT                | An abnormal condition occurs in ECD system.   |
| ASCD VHCL SPD DTAC         | Vehicle speed is detached from the set vehicle speed.   |
| ASCD DOUBLE COMD           | Cancel switch and operation switch are detected simultaneously.   |
| FEB OPERATED               | FEB activated.  |
| VHL AHAD LOST (CLSE RANGE) | A vehicle ahead lost close range.   |
| NO RECORD                  | —   |

# DIAGNOSIS SYSTEM (SIDE RADAR LH)

< SYSTEM DESCRIPTION >

[DRIVER ASSISTANCE SYSTEM]

## DIAGNOSIS SYSTEM (SIDE RADAR LH)

### CONSULT Function (SIDE RADAR LEFT)

INFOID:000000012939179

#### DESCRIPTION

CONSULT performs the following functions by communicating with the side radar LH.

| Diagnosis mode         | Function   |
|------------------------|--|
| Self Diagnostic Result | Displays memorized DTC in the side radar.                                      |
| Data Monitor           | Displays real-time data of side radar.   |
| Active Test            | Enables operation check of electrical loads by sending driving signal to them. |
| ECU Identification     | Displays part number of side radar.  |

#### SELF DIAGNOSTIC RESULT

##### Self Diagnostic Result

Displays memorized DTC in side radar LH. Refer to [DAS-115. "DTC Index"](#).

##### FFD (Freeze Frame Data)

The side radar records the following data when the malfunction is detected.

| Freeze Frame Data item | Description  |
|------------------------|--|
| VHCL SP from ADAS      | The vehicle speed (from ADAS control unit) at the moment a malfunction is detected is displayed. |
| TURN SIG STATUS        | Turn signal status at the moment a malfunction is detected is displayed.                         |

#### DATA MONITOR

| Monitored item<br>[Unit]        | Description  |
|---------------------------------|--|
| BSW/CTA WARN STATUS<br>[On/Off] | Indicates [ON/OFF] status of vehicle detection               |
| CTA SYSTEM ON<br>[On/Off]       | Indicates [ON/OFF] status of Rear Cross Traffic Alert system |
| BSW STATUS<br>[On/Off]          | Indicates [ON/OFF] status of Blind Spot Warning system       |
| VHCL SPD SE<br>[km/h]           | Indicates vehicle speed [km/h]                               |
| TURN SIGNAL<br>[LH/RH/Off]      | Indicates the [LH/RH/OFF] operation of the signal            |
| SHIFT POSITION<br>[P/R/N/D]     | Indicates position of transmission range switch              |
| LUMINANCE (LEFT)<br>[Hi/Lo]     | Indicates the left side luminance level of the radar         |
| LUMINANCE (RIGHT)<br>[Hi/Lo]    | Indicates the right side luminance level of the radar        |

#### ACTIVE TEST

##### CAUTION:

- Never perform the active test while driving.
- Active test cannot be started while the BSW indicator is illuminated.

| Active test item           | Operation | Description  |
|----------------------------|-----------|--|
| BSW/BSI INDICATOR<br>DRIVE | On        | Outputs the voltage to illuminate the BSW/RCTA indicator |
|                            | Off       | Stops the voltage to illuminate the BSW/RCTA indicator   |

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# DIAGNOSIS SYSTEM (SIDE RADAR RH)

< SYSTEM DESCRIPTION >

[DRIVER ASSISTANCE SYSTEM]

## DIAGNOSIS SYSTEM (SIDE RADAR RH)

### CONSULT Function (SIDE RADAR RIGHT)

INFOID:000000012939180

#### DESCRIPTION

CONSULT performs the following functions by communicating with the side radar RH.

| Diagnosis mode         | Function   |
|------------------------|--|
| Self Diagnostic Result | Displays memorized DTC in the side radar.                                      |
| Data Monitor           | Displays real-time data of side radar.   |
| Active Test            | Enables operation check of electrical loads by sending driving signal to them. |
| ECU Identification     | Displays part number of side radar.  |

#### SELF DIAGNOSTIC RESULT

##### Self Diagnostic Result

Displays memorized DTC in side radar RH. Refer to [DAS-117. "DTC Index"](#).

##### FFD (Freeze Frame Data)

The side radar records the following data when the malfunction is detected.

| Freeze Frame Data item | Description  |
|------------------------|--|
| VHCL SP from ADAS      | The vehicle speed (from ADAS control unit) at the moment a malfunction is detected is displayed. |
| TURN SIG STATUS        | Turn signal status at the moment a malfunction is detected is displayed.                         |

#### DATA MONITOR

| Monitored item<br>[Unit]        | Description  |
|---------------------------------|--|
| BSW/CTA WARN STATUS<br>[On/Off] | Indicates [On/Off] status of vehicle detection               |
| CTA SYSTEM ON<br>[On/Off]       | Indicates [On/Off] status of Rear Cross Traffic Alert system |
| BSW STATUS<br>[On/Off]          | Indicates [On/Off] status of Blind Spot Warning system       |
| VHCL SPD SE<br>[km/h]           | Indicates vehicle speed [km/h]                               |
| TURN SIGNAL<br>[LH/RH/Off]      | Indicates the [LH/RH/OFF] operation of the turn signal       |
| SHIFT POSITION<br>[P/R/N/D]     | Indicates position of transmission range switch              |
| LUMINANCE (LEFT)<br>[Hi/Lo]     | Indicates the left side luminance level of the radar         |
| LUMINANCE (RIGHT)<br>[Hi/Lo]    | Indicates the right side luminance level of the radar        |

#### ACTIVE TEST

##### CAUTION:

- Never perform the active test while driving.
- Active test cannot be started while the BSW indicator is illuminated.

| Active test item           | Operation | Description   |
|----------------------------|-----------|---|
| BSW/BSI INDICATOR<br>DRIVE | On        | Outputs the voltage to illuminate the BSW indicator |
|                            | Off       | Stops the voltage to illuminate the BSW indicator   |

# ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[DRIVER ASSISTANCE SYSTEM]

## ECU DIAGNOSIS INFORMATION

### ADAS CONTROL UNIT

Reference Value

INFOID:0000000012939181

#### VALUES ON THE DIAGNOSIS TOOL

| Monitor item  | Condition   |   | Value/Status   |
|---------------|---|---|--|
| MAIN SW       | Ignition switch ON  | When MAIN (ON/OFF) switch is pressed.   | On   |
|               |   | When MAIN (ON/OFF) switch is not pressed.                                     | Off  |
| SET/COAST SW  | Ignition switch ON  | When SET/COAST switch is pressed.   | On   |
|               |   | When SET/COAST switch is not pressed.   | Off  |
| CANCEL SW     | Ignition switch ON  | When CANCEL switch is pressed.  | On   |
|               |   | When CANCEL switch is not pressed.  | Off  |
| RESUME/ACC SW | Ignition switch ON  | When RESUME/ACCELERATE switch is pressed.                                     | On   |
|               |   | When RESUME/ACCELERATE switch is not pressed.                                 | Off  |
| DISTANCE SW   | Ignition switch ON  | When DISTANCE switch is pressed.  | On   |
|               |   | When DISTANCE switch is not pressed.  | Off  |
| CRUISE OPE    | Drive the vehicle and activate the ICC system   | When ICC system is controlling.   | On   |
|               |   | When ICC system is not controlling.   | Off  |
| BRAKE SW      | Ignition switch ON  | When brake pedal is depressed.  | Off  |
|               |   | When brake pedal is not depressed.  | On   |
| STOP LAMP SW  | Ignition switch ON  | When brake pedal is depressed.  | On   |
|               |   | When brake pedal is not depressed.  | Off  |
| IDLE SW       | Engine running  | Idling  | On   |
|               |   | Except idling (depress accelerator pedal)                                     | Off  |
| SET DISTANCE  | <ul style="list-style-type: none"> <li>Start the engine and turn the ICC system ON</li> <li>Press the DISTANCE switch to change the ICC system</li> </ul> | When set to "long"  | Long   |
|               |   | When set to "middle"  | Mid  |
|               |   | When set to "short"   | Short  |
| CRUISE LAMP   | Start the engine and press MAIN switch  | ICC system ON (MAIN switch indicator ON).                                     | On   |
|               |   | ICC system OFF (MAIN switch indicator OFF).                                   | Off  |
| VHCL AHEAD    | Drive the vehicle and activate the ICC system   | When a vehicle ahead is detected (vehicle ahead detection indicator ON).      | On   |
|               |   | When a vehicle ahead is not detected (vehicle ahead detection indicator OFF). | Off  |
| ICC WARNING   | Start the engine and press MAIN switch  | When ICC system is malfunctioning (ICC system malfunction ON).                | On   |
|               |   | When ICC system is normal (ICC system malfunction OFF).                       | Off  |
| VHCL SPEED SE | While driving   |   | Displays the vehicle speed calculated by ADAS control unit |
| SET VHCL SPD  | While driving   | When vehicle speed is set.  | Displays the set vehicle speed                             |

# ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[DRIVER ASSISTANCE SYSTEM]

| Monitor item  | Condition                                     |  | Value/Status                                    |
|---------------|---|--|---|
| BUZZER O/P    | Engine running                                | When the buzzer of the following system operates:<br>• ICC system<br>• PFCW system<br>• FEB system         | On  |
|               |   | When the buzzer of the following system does not operate:<br>• ICC system<br>• PFCW system<br>• FEB system | Off   |
| ENGINE RPM    | Engine running                                |  | Equivalent to tachometer reading                |
| WIPER SW      | Ignition switch ON                            | Wiper not operating.   | Off   |
|               |   | Wiper LO operation.  | Low   |
|               |   | Wiper HI operation.  | High  |
| BA WARNING    | Engine running                                | FEB OFF indicator lamp ON.<br>• When FEB system is malfunctioning.<br>• When FEB system is turned to OFF.  | On  |
|               |   | FEB OFF indicator lamp OFF.<br>• When FEB system is normal.<br>• When FEB system is turned to ON.          | Off   |
| STP LMP DRIVE | Drive the vehicle and activate the ICC system | When ICC brake hold relay is activated.  | On  |
|               |   | When ICC brake hold relay is not activated.  | Off   |
| D POSITION SW | Engine running                                | When the shift selector is in "D" position or manual mode.   | On  |
|               |   | When the shift selector is in any position other than "D" or manual mode.                                  | Off   |
| NP RANGE SW   | Engine running                                | When the shift selector is in "N" or "P" position.   | On  |
|               |   | When the shift selector is in any position other than "N" or "P".  | Off   |
| PKB SW        | Ignition switch ON                            | When the parking brake is applied.   | On  |
|               |   | When the parking brake is released.  | Off   |
| PWR SUP MONI  | Engine running                                |  | Power supply voltage value of ADAS control unit |
| VHCL SPD AT   | While driving                                 |  | Value of CVT vehicle speed sensor signal        |
| THRTL OPENING | Engine running                                | Depress accelerator pedal.   | Displays the throttle position                  |
| GEAR          | While driving                                 |  | Displays the gear position                      |
| NP SW SIG     | Ignition switch ON                            | When the shift selector is in neutral position.  | On  |
|               |   | When the shift selector is in any position other than neutral.   | Off   |
| MODE SIG      | Start the engine and press MAIN switch        | When ICC system is deactivated.  | Off   |
|               |   | When ICC system is activated.  | ICC   |
| SET DISP IND  | Press SET/COAST switch                        | SET switch indicator ON.   | On  |
|               |   | SET switch indicator OFF.  | Off   |

# ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[DRIVER ASSISTANCE SYSTEM]

| Monitor item          | Condition                                     |  | Value/Status                                     |
|-----------------------|---|--|--|
| DISTANCE              | Drive the vehicle and activate the ICC system | When a vehicle ahead is detected.                                | Displays the distance from the preceding vehicle |
|                       |   | When a vehicle ahead is not detected.                            | 0.0  |
| RELATIVE SPD          | Drive the vehicle and activate the ICC system | When a vehicle ahead is detected.                                | Displays the relative speed.                     |
|                       |   | When a vehicle ahead is not detected.                            | 0.0  |
| FCW SYSTEM ON         | Ignition switch ON                            | When the PFCW system is ON.                                      | On   |
|                       |   | When the PFCW system is OFF.                                     | Off  |
| SIDE G                | While driving                                 | Vehicle turning right.   | Negative value                                   |
|                       |   | Vehicle turning left.  | Positive value                                   |
| FUNC ITEM (FCW)       | Engine running                                |  | On   |
| FUNC ITEM (BSW)       | Engine running                                |  | On   |
| FCW SELECT            | Ignition switch ON                            | "Forward Emergency Braking" set when the integral switch is ON.  | On   |
|                       |   | "Forward Emergency Braking" set when the integral switch is OFF. | Off  |
| BSW SELECT            | Ignition switch ON                            | "Blind Spot Warning" set when the integral switch is ON.         | On   |
|                       |   | "Blind Spot Warning" set when the integral switch is OFF.        | Off  |
| BSW WARN LMP          | Engine running                                | When the BSW system is malfunctioning.                           | On   |
|                       |   | When the BSW system is normal.                                   | Off  |
| BSW SYSTEM ON         | Ignition switch ON                            | When the BSW system is ON.                                       | On   |
|                       |   | When the BSW system is OFF.                                      | Off  |
| FCW SYSTEM ON         | Engine running                                | When the FEB/PFCW system is ON.                                  | On   |
|                       |   | When the FEB/PFCW system is OFF.                                 | Off  |
| SYSTEM CANCEL MESSAGE | Engine running                                | System cancel display ON.  | On   |
|                       |   | System cancel display OFF.                                       | Off  |
| BSW ON INDICATOR      | Engine running                                | BSW system display ON.   | On   |
|                       |   | BSW system display OFF.  | Off  |
| WARN SYS SW           | Ignition switch ON                            | When warning system switch is pressed.                           | On   |
|                       |   | When warning system switch is not pressed.                       | Off  |
| SIDE RADAR BLOCK COND | Engine running                                | Front bumper or side radar is dirty.                             | On   |
|                       |   | Front bumper and side radar are clean.                           | Off  |
| BSW IND BRIGHTNESS    | Ignition switch ON                            | BSW system OFF.  | Nothing  |
|                       |   | Blind Spot Warning indicator brightness bright.                  | Bright   |
|                       |   | Blind Spot Warning indicator brightness normal.                  | Normal   |
|                       |   | Blind Spot Warning indicator brightness dark.                    | Dark   |

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DAS

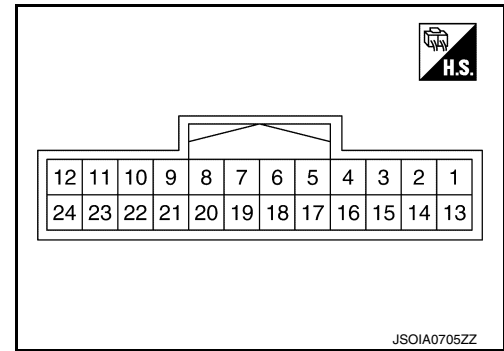
# ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[DRIVER ASSISTANCE SYSTEM]

TERMINAL LAYOUT

PHYSICAL VALUES



| Terminal No.<br>(Wire color) |        | Description                       |                  | Condition                |                              | Value<br>(Approx.) |                 |
|------------------------------|--------|-----------------------------------|------------------|--------------------------|------------------------------|--------------------|-----------------|
| +                            | -      | Signal name                       | Input/<br>Output |                          |                              |                    |                 |
| 1<br>(B)                     | Ground | Ground                            | Input            | —                        |                              | 0 V                |                 |
| 2<br>(L)                     |        | ITS communication high            | —                | —                        |                              | —                  |                 |
| 3<br>(LG)                    |        | Ignition power supply             | Input            | Ignition switch ON       |                              | Battery voltage    |                 |
| 4<br>(V)                     |        | Warning buzzer signal             | Output           | Ignition<br>switch<br>ON | Warning buzzer operation     | Battery voltage    |                 |
|                              |        |                                   |                  |                          | Warning buzzer not operating | 0 V                |                 |
| 5<br>(Y)                     |        | ITS communication low             | —                | —                        |                              | —                  |                 |
| 6<br>(Y)                     |        | CAN Low                           | —                | —                        |                              | —                  |                 |
| 9<br>(L)                     |        | CAN high                          | —                | —                        |                              | —                  |                 |
| 10<br>(P)                    |        | CAN low                           | —                | —                        |                              | —                  |                 |
| 14<br>(L)                    |        | ICC brake hold relay drive signal | Output           | Ignition<br>switch<br>ON | —                            |                    | Battery voltage |
| 18<br>(L)                    |        | CAN High                          | —                | —                        | —                            |                    | 0 V             |

## Fail-safe (ADAS Control Unit)

INFOID:000000012939182

If a malfunction occurs in each system, ADAS control unit cancels each control, sounds a beep, and turns ON the warning or indicator lamp.

| System                                      | Buzzer            | Warning lamp/Warning display | Description |
|---|-------------------|------------------------------|-------------|
| Intelligent Cruise Control (ICC)            | High-pitched tone | ICC system warning           | Cancel      |
| Forward Emergency Braking (FEB)             | High-pitched tone | FEB warning lamp (Yellow)    | Cancel      |
| Predictive Forward Collision Warning (PFCW) | High-pitched tone | FEB warning lamp (Yellow)    | Cancel      |
| Blind Spot Warning (BSW)                    | Low-pitched tone  | BSW system warning           | Cancel      |
| Rear Cross Traffic Alert (RCTA)             | —                 | BSW system warning           | Cancel      |



# ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[DRIVER ASSISTANCE SYSTEM]

## DTC Inspection Priority Chart

INFOID:000000012939183

If multiple DTCs are detected simultaneously, check them one by one depending on the following DTC inspection priority chart.

| Priority | Detected items (DTC)   |
|----------|--|
| 1        | <ul style="list-style-type: none"> <li>• U1507: LOST COMM (SIDE RDR R)</li> <li>• U1508: LOST COMM (SIDE RDR L)</li> </ul>   |
| 2        | <ul style="list-style-type: none"> <li>• U1000: CAN COMM CIRCUIT</li> <li>• U1321: CONFIGURATION</li> </ul>  |
| 3        | <ul style="list-style-type: none"> <li>• C1A17: ICC SENSOR MALF</li> <li>• C1B53: SIDE RDR R MALF</li> <li>• C1B54: SIDE RDR L MALF</li> </ul>   |
| 4        | <ul style="list-style-type: none"> <li>• C1A01: POWER SUPPLY CIR</li> <li>• C1A02: POWER SUPPLY CIR 2</li> <li>• C1A13: STOP LAMP RLY FIX</li> <li>• C1A14: ECM CIRCUIT</li> <li>• C1A34: COMMAND ERROR</li> <li>• U0121: VDC CAN CIR 2</li> <li>• U0235: ICC SENSOR CAN CIRC 1</li> <li>• U0401: ECM CAN CIR 1</li> <li>• U0402: TCM CAN CIR 1</li> <li>• U0415: VDC CAN CIR 1</li> <li>• U0433: ICC SENSOR CAN CIRC 2</li> <li>• U1503: SIDE RDR L CAN CIR 2</li> <li>• U1504: SIDE RDR L CAN CIR 1</li> <li>• U1505: SIDE RDR R CAN CIR 2</li> <li>• U1506: SIDE RDR R CAN CIR 1</li> </ul> |
| 5        | <ul style="list-style-type: none"> <li>• C1A03: VHCL SPEED SE CIRC</li> </ul>  |
| 6        | <ul style="list-style-type: none"> <li>• C1A00: CONTROL UNIT</li> </ul>  |

## DTC Index

INFOID:000000012939184

### Systems for fail-safe

- A: Intelligent Cruise Control (ICC)
- B: Forward Emergency Braking (FEB)
- C: Predictive Forward Collision Warning (PFCW)
- D: Blind Spot Warning (BSW)
- E: Rear Cross Traffic Alert (RCTA)

| DTC   | CONSULT display                                     | Fail-safe     | Reference              |
|---|---|---------------|------------------------|
|   |   | System        |                        |
| NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED | NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED | —             | —                      |
| U1507   | LOST COMM (SIDE RDR R)                              | D, E          | <a href="#">DAS-69</a> |
| U1508   | LOST COMM (SIDE RDR L)                              | D, E          | <a href="#">DAS-70</a> |
| U1000 <sup>NOTE</sup>                               | CAN COMM CIRCUIT                                    | A, B, C, D, E | <a href="#">DAS-62</a> |
| U1321   | CONFIGURATION                                       | A, B, C, D, E | <a href="#">DAS-64</a> |
| C1A17   | ICC SENSOR MALF                                     | A, B, C       | <a href="#">DAS-52</a> |
| C1B53   | SIDE RDR R MALF                                     | D, E          | <a href="#">DAS-54</a> |
| C1B54   | SIDE RDR L MALF                                     | D, E          | <a href="#">DAS-55</a> |
| C1A01   | POWER SUPPLY CIR                                    | A, B, C, D, E | <a href="#">DAS-41</a> |
| C1A02   | POWER SUPPLY CIR 2                                  | A, B, C, D, E | <a href="#">DAS-41</a> |

# ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[DRIVER ASSISTANCE SYSTEM]

Systems for fail-safe

- A: Intelligent Cruise Control (ICC)
- B: Forward Emergency Braking (FEB)
- C: Predictive Forward Collision Warning (PFCW)
- D: Blind Spot Warning (BSW)
- E: Rear Cross Traffic Alert (RCTA)

| DTC     | CONSULT display       | Fail-safe     | Reference              |
|---------|-----------------------|---------------|------------------------|
| CONSULT |                       | System        |                        |
| C1A13   | STOP LAMP RLY FIX     | A, B, C       | <a href="#">DAS-44</a> |
| C1A14   | ECM CIRCUIT           | A, B, C       | <a href="#">DAS-50</a> |
| C1A34   | COMMAND ERROR         | A, B, C       | <a href="#">DAS-53</a> |
| U0121   | VDC CAN CIR 2         | A, B, C, D, E | <a href="#">DAS-56</a> |
| U0235   | ICC SENSOR CAN CIRC 1 | A, C, D, E    | <a href="#">DAS-57</a> |
| U0401   | ECM CAN CIR 1         | A, B, C, D, E | <a href="#">DAS-58</a> |
| U0402   | TCM CAN CIR 1         | A, B, C, D, E | <a href="#">DAS-59</a> |
| U0415   | VDC CAN CIR 1         | A, B, C, D, E | <a href="#">DAS-60</a> |
| U0433   | ICC SENSOR CAN CIRC 2 | A, B, C       | <a href="#">DAS-61</a> |
| U1503   | SIDE RDR L CAN CIR 2  | D, E          | <a href="#">DAS-65</a> |
| U1504   | SIDE RDR L CAN CIR 1  | D, E          | <a href="#">DAS-66</a> |
| U1505   | SIDE RDR R CAN CIR 2  | D, E          | <a href="#">DAS-67</a> |
| U1506   | SIDE RDR R CAN CIR 1  | D, E          | <a href="#">DAS-68</a> |
| C1A03   | VHCL SPEED SE CIRC    | D, E          | <a href="#">DAS-42</a> |
| C1A00   | CONTROL UNIT          | A, B, C, D, E | <a href="#">DAS-40</a> |

**NOTE:**

With the detection of “U1000” some systems do not perform the fail-safe operation.

A system controlling based on a signal received from the control unit performs fail-safe operation when the communication with the ADAS control unit becomes inoperable.

# ICC SENSOR

< ECU DIAGNOSIS INFORMATION >

[DRIVER ASSISTANCE SYSTEM]

## ICC SENSOR

### Reference Value

INFOID:000000013007284

### VALUES ON THE DIAGNOSIS TOOL

| Monitor item     | Condition   |  | Value/Status                                     |
|------------------|---|--|--|
| VHCL SPEED SE    | While driving                                       |  | Value of vehicle speed signal (wheel speed)      |
| YAW RATE         | While driving                                       | Vehicle stopped  | 0.0  |
|                  |   | Vehicle turning right                                      | Positive value                                   |
|                  |   | Vehicle turning left                                       | Negative value                                   |
| PWR SUP MONI     | Ignition switch ON                                  |  | Power supply voltage value of ICC sensor         |
| DISTANCE         | Drive the vehicle and activate the ICC system.      | When a vehicle ahead is detected                           | Displays the distance from the preceding vehicle |
|                  |   | When a vehicle ahead is not detected                       | 0.0  |
| RELATIVE SPD     | Drive the vehicle and activate the ICC system.      | When a vehicle ahead is detected                           | Displays the relative speed                      |
|                  |   | When a vehicle ahead is not detected                       | 0.0  |
| LASER OFFSET     | <b>NOTE:</b><br>The item is indicated but not used. |  | —  |
| LASER HEIGHT     | <b>NOTE:</b><br>The item is indicated but not used. |  | —  |
| STEERING ANGLE   | Ignition switch ON                                  | When setting the steering wheel in straight-ahead position | 0.0  |
|                  |   | When turning the steering wheel 90° rightward              | +90  |
|                  |   | When turning the steering wheel 90° leftward               | -90  |
| STRG ANGLE SPEED | Ignition switch ON                                  | At the time of turning the steering wheel                  | Steering wheel turning speed is displayed        |
| L/R ADJUST       | Ignition switch ON                                  | At the completion of radar alignment adjustment            | Horizontal correction value is displayed         |
| U/D ADJUST       | Ignition switch ON                                  | At the completion of radar alignment adjustment            | Vertical correction value is displayed           |
| FCW SYSTEM ON    | <b>NOTE:</b><br>The item is indicated, but not used |  | OFF  |
| FCW SELECT       | <b>NOTE:</b><br>The item is indicated, but not used |  | —  |
| PFCW SYSTEM ON   | <b>NOTE:</b><br>The item is indicated, but not used |  | OFF  |
| PFCW SELECT      | Engine running                                      | PFCW system set with the information display is ON         | ON   |
|                  |   | PFCW system set with the information display is OFF        | OFF  |
| FEB SW           | <b>NOTE:</b><br>The item is indicated, but not used |  | —  |
| FEB SELECT       | Engine running                                      | PFCW system set with the information display is ON         | ON   |
|                  |   | PFCW system set with the information display is OFF        | OFF  |

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# ICC SENSOR

< ECU DIAGNOSIS INFORMATION >

[DRIVER ASSISTANCE SYSTEM]

| Monitor item           | Condition   |  | Value/Status                   |
|------------------------|---|--|--------------------------------|
| MAIN SW                | Ignition switch ON  | When MAIN switch is pressed  | On                             |
|                        |   | When MAIN switch is not pressed  | Off                            |
| ICC/ASCD MODE          | Engine running  | Intelligent Cruise Control System MAIN switch status   | On                             |
|                        |   |  | Off                            |
| SET/COAST SW           | Ignition switch ON  | When SET/COAST switch is pressed   | On                             |
|                        |   | When SET/COAST switch is not pressed   | Off                            |
| CANCEL SW              | Ignition switch ON  | When CANCEL switch is pressed  | On                             |
|                        |   | When CANCEL switch is not pressed  | Off                            |
| RESUME/ACC SW          | Ignition switch ON  | When RESUME/ACC SW switch is pressed   | On                             |
|                        |   | When RESUME/ACC SW switch is not pressed   | Off                            |
| DISTANCE SW            | Ignition switch ON  | When DISTANCE switch is pressed  | On                             |
|                        |   | When DISTANCE switch is not pressed  | Off                            |
| BRAKE SW               | Ignition switch ON  | When brake pedal is depressed  | On                             |
|                        |   | When brake pedal is not depressed  | Off                            |
| STOP LAMP SW           | Ignition switch ON  | When brake pedal is depressed  | On                             |
|                        |   | When brake pedal is not depressed  | Off                            |
| IDLE SW                | Engine running  | Idling   | On                             |
|                        |   | Except idling (depress accelerator pedal)  | Off                            |
| CRUISE LAMP            | Start the engine and press MAIN switch  | ICC system ON<br>(MAIN switch indicator ON)  | On                             |
|                        |   | ICC system OFF<br>(MAIN switch indicator OFF)  | Off                            |
| OWN VHCL               | NOTE:<br>The item is indicated, but not used.   | —  | Off                            |
| VHCL AHEAD             | Drive the vehicle and activate the Intelligent Cruise Control System  | When a vehicle ahead is detected (vehicle ahead detection indicator ON)  | On                             |
|                        |   | When a vehicle ahead is detected (vehicle ahead detection indicator OFF)   | Off                            |
| SET DISTANCE           | <ul style="list-style-type: none"> <li>• Start the engine and turn the ICC system ON</li> <li>• Press the DISTANCE switch to change the distance setting</li> </ul> | When set to "long"   | LONG                           |
|                        |   | When set to "middle"   | MID                            |
|                        |   | When set to "short"  | SHORT                          |
| SET VHCL SPD           | NOTE:<br>The item is indicated, but not used.   | —  | —                              |
| THRT SENSOR [%]        | Engine running  | Depress accelerator pedal  | Displays the throttle position |
| VEHICLE AHEAD DETECT   | Engine running  | —  | —                              |
| STATIC OBSTACLE DETECT | Indicates [ON/Off] status of static obstacle detection  |  |                                |
| BUZZER O/P             | Engine running  | When the buzzer of the following system operates: <ul style="list-style-type: none"> <li>• Intelligent Cruise Control System</li> <li>• PFCW system</li> <li>• FEB system</li> </ul>         | On                             |
|                        |   | When the buzzer of the following system does not operate: <ul style="list-style-type: none"> <li>• Intelligent Cruise Control System</li> <li>• PFCW system</li> <li>• FEB system</li> </ul> | Off                            |

# ICC SENSOR

< ECU DIAGNOSIS INFORMATION >

[DRIVER ASSISTANCE SYSTEM]

| Monitor item                          | Condition   |   | Value/Status  |
|---------------------------------------|---|---|---|
| FUNC ITEM (FCW)                       | Ignition switch ON  | —   | —   |
| FUNC ITEM (PFCW)                      |   |   | On  |
| FUNC ITEM (FEB)                       |   |   |   |
| FUNC ITEM (ICC)                       |   |   |   |
| PRESS_ORDER                           | Engine running  | —   |   |
| D RANGE SW                            | Engine running  | When the selector lever is in "D" position or manual mode                   | On  |
|                                       |   | When the selector lever is in any other than "D" or manual mode             | Off   |
| NP RANGE SW                           | Engine running  | When the selector lever is in "N" "P"                                       | On  |
|                                       |   | When the selector lever is in any other than "N" "P"                        | Off   |
| PKB SW                                | Ignition switch ON  | When the parking brake is applied   | On  |
|                                       |   | When the parking brake is released  | Off   |
| VHCL SPD AT                           | While driving   | —   | Value of CVT vehicle speed sensor signal            |
| Shift position                        | <ul style="list-style-type: none"> <li>• Engine running</li> <li>• While driving</li> </ul> | —   | Displays the shift position                         |
| Turn signal                           | NOTE:<br>The item is indicated, but not used  | —   | Off   |
| SYSTEM CANCEL MESSAGE                 | Engine running  | System cancel display OFF   | NO REQ  |
|                                       |   | System cancel reason is slippery road                                       | SLIP  |
|                                       |   | System cancel reason is VDC OFF   | VDC OFF   |
| DISP VHCL SPD UNIT                    |   |   |   |
| VHCL SPD UNIT                         | Engine running  | Meter indicates km/h  | km/h  |
|                                       |   | Meter indicates mph   | mph   |
| ADAS AVAILABLE COND                   | NOTE:<br>The item is indicated, but not used  | —   | —   |
| ICC SET STATUS                        |   |   |   |
| ICC MALF                              |   |   |   |
| ADAS MALF                             | Engine running  | ADAS is malfunction   | On  |
|                                       |   | ADAS is not malfunction   | Off   |
| STOP LAMP RELAY ON                    | Engine running  | Stop lamp relay is fixed on   | On  |
|                                       |   | Stop lamp relay is not fixed on   | Off   |
| STOP LAMP RELAY OFF                   | Engine running  | Stop lamp relay is fixed off  | On  |
|                                       |   | Stop lamp relay is not fixed off  | Off   |
| ICC CANCEL                            | NOTE:<br>The item is indicated, but not used  | —   | —   |
| ACCEL COM VALUE 1 [m/s <sup>2</sup> ] | Engine running  | —   | ICC sensor request accel command to ADAS controller |
| ICC STATUS                            | Engine running  | Intelligent Cruise Control System Off                                       | Off   |
|                                       |   | Intelligent Cruise Control System On  | ICC   |
|                                       |   | Intelligent Cruise Control System On and vehicle is stopped                 | STOP1   |
|                                       |   | Intelligent Cruise Control System On and Driver depressed accelerator pedal | ACCEL   |

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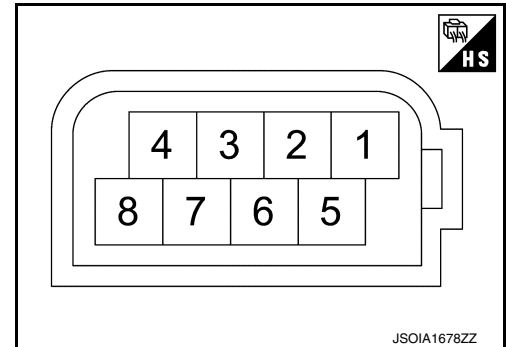
# ICC SENSOR

< ECU DIAGNOSIS INFORMATION >

[DRIVER ASSISTANCE SYSTEM]

| Monitor item          | Condition                                    | Value/Status |
|-----------------------|--|--------------|
| ACCCEL COM VALUE<br>2 | NOTE:<br>The item is indicated, but not used | —            |
| MILEAGE               |  |              |

## TERMINAL LAYOUT



## PHYSICAL VALUES

| Terminal No.<br>(Wire color) |   | Description           |                  | Condition          | Standard value | Reference value<br>(Approx.) |
|------------------------------|---|-----------------------|------------------|--------------------|----------------|------------------------------|
| +                            | - | Signal name           | Input/<br>Output |                    |                |                              |
| 1<br>(GR)                    | — | Ground                | —                | Ignition switch ON | 0 - 0.1 V      | 0 V                          |
| 2<br>(L)                     | — | ITS communication-H   | —                | —                  | —              | —                            |
| 3<br>(Y)                     |   | ITS communication-L   | —                | —                  | —              | —                            |
| 8<br>(BG)                    | — | Ignition power supply | Input            | Ignition switch ON | 9.5 - 16 V     | Battery voltage              |

## Fail-safe

INFOID:000000013007285

If a malfunction occurs in the ICC sensor, ADAS control unit cancels control, sounds a beep, and turns ON the ICC system warning lamp in the combination meter.

## DTC Inspection Priority Chart

INFOID:000000013007286

If multiple DTCs are detected simultaneously, check them one by one depending on the following DTC inspection priority chart.

| Priority | Detected items (DTC)  |
|----------|---|
| 1        | <ul style="list-style-type: none"> <li>• U1000: CAN COMM CIRCUIT</li> <li>• U1010: CONTROL UNIT (CAN)</li> </ul>                                |
| 2        | <ul style="list-style-type: none"> <li>• C1A50: ADAS MALFUNCTION</li> <li>• C1A0C: ADAS MSG COUNTER</li> <li>• C1A0C: ADAS CRC ERROR</li> </ul> |

# ICC SENSOR

< ECU DIAGNOSIS INFORMATION >

[DRIVER ASSISTANCE SYSTEM]

| Priority                   | Detected items (DTC)           |   |
|----------------------------|--------------------------------|---|
| 3                          | • C1A01: POWER SUPPLY CIR      | A |
|                            | • C1A02: POWER SUPPLY CIR 2    |   |
|                            | • C1A04: ABS/TCS/VDC CIRC      | B |
|                            | • C1A05: BRAKE SW/STOP L SW    |   |
|                            | • C1A06: OPERATION SW CIRC     |   |
|                            | • C1A07: CVT CIRCUIT           |   |
|                            | • C1A12: LASER BEAM OFFCNTR    | C |
|                            | • C1A13: STOP_LAMP_RLY_FIX     |   |
|                            | • C1A14: ECM_CIRCUIT           |   |
|                            | • C1A16: RADAR STAIN           |   |
|                            | • C1A18: LASER AIMING INCOMP   | D |
|                            | • C1A21: UNIT HIGH TEMP        |   |
|                            | • C1A24: NP RANGE              |   |
|                            | • C1A26: ECD MODE MALF         |   |
|                            | • C1A27: ECD POWER SUPPLY CIRC | E |
|                            | • C1A39: STRG SEN CIR          |   |
|                            | • C1B5D: FEB OPE COUNT LIMIT   |   |
|                            | • C10B7: YAW RATE SENSOR       | F |
|                            | • U0121: VDC CAN CIR2          |   |
|                            | • U153A: TCM CAN CIR 1         |   |
| • U153B: TCM CAN CIR 2     |                                |   |
| • U153D: ECM CAN CIR 2     |                                |   |
| • U0126: STRG SEN CAN CIR1 | G                              |   |
| • U0401: ECM CAN CIR 1     |                                |   |
| • U0415: VDC CAN CIR1      |                                |   |
| • U0428: STRG SEN CAN CIR2 | H                              |   |
| 4                          | • C1A03: VEHC_SPEED_SE_CIRC    |   |
| 5                          | • C1A15: GEAR POSITION         |   |
| 6                          | • C1A00: CONTROL UNIT          | I |
|                            | • C1A17: ICC SENSOR MALF       |   |
|                            | • C1A0D: RADAR CAN CIR         |   |

## DTC Index

INFOID:000000013007287

### NOTE:

- The details of time display are as per the following.
- 0: The malfunctions that are detected now  
CAN communication system (U1000, U1010)
- 1 - 39: It increases like 0 → 1 → 2 ... 38 → 39 after returning to the normal condition whenever the ignition is switched OFF → ON. It returns to 0 when a malfunction is detected again in the process.
- If it is over 39, it is fixed to 39 until the self-diagnosis results are erased.  
Other than CAN communication system (Other than U1000, U1010)
- 1 - 49: It increases like 0 → 1 → 2 ... 48 → 49 after returning to the normal condition whenever the ignition is switched OFF → ON. It returns to 0 when a malfunction is detected again in the process.
- If it is over 49, it is fixed to 49 until the self-diagnosis results are erased.

DAS

# ICC SENSOR

< ECU DIAGNOSIS INFORMATION >

[DRIVER ASSISTANCE SYSTEM]

×: Applicable

| DTC   | CONSULT display        | ICC system warning lamp | Fail-safe function         |                                      |                               | Reference                                  |
|-------|------------------------|-------------------------|----------------------------|--------------------------------------|-------------------------------|--|
|       |                        |                         | Intelligent Cruise Control | Predictive Forward Collision Control | Forward Emergency Brake (FEB) |  |
| C1A00 | CONTROL UNIT           | ON                      | ×                          | ×                                    | ×                             | <a href="#">CCS-72, "DTC Description"</a>  |
| C1A0C | ADAS CAN CIR 1         | ON                      | ×                          | ×                                    | ×                             | <a href="#">CCS-120, "DTC Description"</a> |
| C1A0D | RADAR CAN CIR          | ON                      | ×                          | ×                                    | ×                             | <a href="#">CCS-121, "DTC Description"</a> |
| C1A01 | POWER SUPPLY CIR       | ON                      | ×                          | ×                                    | ×                             | <a href="#">CCS-73, "DTC Description"</a>  |
| C1A02 | POWER SUPPLY CIR2      | ON                      | ×                          | ×                                    | ×                             | <a href="#">CCS-73, "DTC Description"</a>  |
| C1A03 | VHCL SPEED SE CIRC     | ON                      | ×                          | ×                                    | ×                             | <a href="#">CCS-74, "DTC Description"</a>  |
| C1A04 | ABS/TCS/DC CIRC        | ON                      | ×                          | ×                                    | ×                             | <a href="#">CCS-76, "DTC Description"</a>  |
| C1A05 | BRAKE SW/STOP L SW     | ON                      | ×                          | ×                                    | ×                             | <a href="#">CCS-77, "DTC Description"</a>  |
| C1A06 | OPERATION SW CIRC      | ON                      | ×                          |                                      |                               | <a href="#">CCS-82, "DTC Description"</a>  |
| C1A07 | CVT CIRCUIT            | ON                      | ×                          | ×                                    | ×                             | <a href="#">CCS-117, "DTC Description"</a> |
| C1A12 | LASER BEAM OFFCNTR     | ON                      | ×                          | ×                                    | ×                             | <a href="#">CCS-85, "DTC Description"</a>  |
| C1A13 | STOP LAMP RLY FIX      | ON                      | ×                          | ×                                    | ×                             | <a href="#">CCS-86, "DTC Description"</a>  |
| C1A14 | ECM CIRCUIT            | ON                      | ×                          | ×                                    | ×                             | <a href="#">CCS-88, "DTC Description"</a>  |
| C10B7 | YAW RATE SENSOR        | ON                      | ×                          | ×                                    | ×                             | <a href="#">CCS-106, "DTC Description"</a> |
| C1A15 | GEAR POSITION          | ON                      | ×                          | ×                                    | ×                             | <a href="#">CCS-90, "DTC Logic"</a>        |
| C1A16 | RADAR BLOCKED          | ON                      | ×                          | ×                                    | ×                             | <a href="#">CCS-92, "DTC Description"</a>  |
| C1A17 | ICC SENSOR MALF        | ON                      | ×                          | ×                                    | ×                             | <a href="#">CCS-94, "DTC Description"</a>  |
| C1A18 | LASER ALIGNMENT INCMPT | ON                      | ×                          | ×                                    | ×                             | <a href="#">CCS-95, "DTC Description"</a>  |
| C1A21 | UNIT HIGH TEMP         | ON                      | ×                          | ×                                    | ×                             | <a href="#">CCS-96, "DTC Description"</a>  |
| C1A24 | NP RANGE               | ON                      | ×                          | ×                                    | ×                             | <a href="#">CCS-97, "DTC Description"</a>  |



# ICC SENSOR

< ECU DIAGNOSIS INFORMATION >

[DRIVER ASSISTANCE SYSTEM]

| DTC   | CONSULT display          | ICC system warning lamp | Fail-safe function         |                                      |                               | Reference                                  |
|-------|--------------------------|-------------------------|----------------------------|--------------------------------------|-------------------------------|--|
|       |                          |                         | Intelligent Cruise Control | Predictive Forward Collision Control | Forward Emergency Brake (FEB) |  |
| C1A26 | ECD MODE MALF            | ON                      | ×                          | ×                                    | ×                             | <a href="#">CCS-99, "DTC Description"</a>  |
| C1A27 | ECD POWER SUPPLY CIRCUIT | ON                      | ×                          | ×                                    | ×                             | <a href="#">CCS-101, "DTC Description"</a> |
| C1A39 | STRG SENS CIR            | ON                      | ×                          | ×                                    | ×                             | <a href="#">CCS-103, "DTC Description"</a> |
| C1A50 | ADAS MALFUNCTION         | ON                      | ×                          | ×                                    | ×                             | <a href="#">CCS-105, "DTC Description"</a> |
| C1B5D | FEB OPE COUNT LIMIT      | ON                      | ×                          | ×                                    | ×                             | <a href="#">CCS-104, "DTC Description"</a> |
| C10B7 | YAW RATE SENSOR          | ON                      | ×                          | ×                                    | ×                             | <a href="#">CCS-106, "DTC Description"</a> |
| U153A | TCM CAN CIR 1            | ON                      | ×                          | ×                                    | ×                             | <a href="#">CCS-118, "DTC Description"</a> |
| U153B | TCM CAN CIR 2            | ON                      | ×                          | ×                                    | ×                             | <a href="#">CCS-119, "DTC Description"</a> |
| U153D | ECM CAN CIR 2            | ON                      | ×                          | ×                                    | ×                             | <a href="#">CCS-119, "DTC Description"</a> |
| U0121 | VDC CAN CIR2             | ON                      | ×                          | ×                                    | ×                             | <a href="#">CCS-107, "DTC Description"</a> |
| U0126 | STRG SEN CAN CIR1        | ON                      | ×                          | ×                                    | ×                             | <a href="#">CCS-109, "DTC Description"</a> |
| U0401 | ECM CAN CIR1             | ON                      | ×                          | ×                                    | ×                             | <a href="#">CCS-110, "DTC Description"</a> |
| U0415 | VDC CAN CIR1             | ON                      | ×                          | ×                                    | ×                             | <a href="#">CCS-111, "DTC Description"</a> |
| U0428 | STRG SEN CAN CIR2        | ON                      | ×                          | ×                                    | ×                             | <a href="#">CCS-113, "DTC Description"</a> |
| U1000 | CAN COMM CIRCUIT         | ON                      | ×                          | ×                                    | ×                             | <a href="#">CCS-114, "DTC Logic"</a>       |
| U1010 | CONTROL UNIT (CAN)       | ON                      | ×                          | ×                                    | ×                             | <a href="#">CCS-115, "DTC Logic"</a>       |

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SIDE RADAR LH

Reference Value

INFOID:000000012939189

VALUES ON THE DIAGNOSIS TOOL

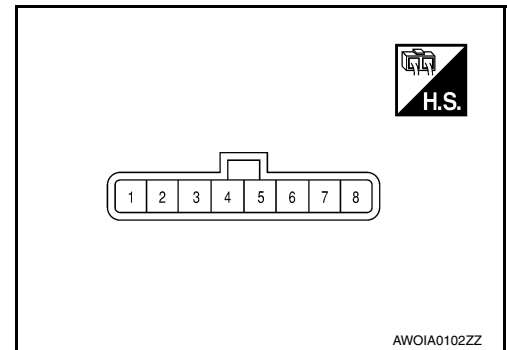
**NOTE:**

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

CONSULT MONITOR ITEM

| Monitor Item        | Condition   | Value/Status |
|---------------------|---|--------------|
| BSW/CTA WARN STATUS | BSW system is normal.                               | On           |
|                     | BSW system is malfunctioning.                       | Off          |
| CTA SYSTEM ON       | CTA system is ON.                                   | On           |
|                     | CTA system is OFF.                                  | Off          |
| BSW STATUS          | BSW system is ON.                                   | Off          |
|                     | BSW system is OFF.                                  | On           |
| VHCL SPD SE         | Indicates current vehicle speed                     | km/h         |
| TURN SIGNAL         | Left/right turn signal is ON.                       | On           |
|                     | Left/right turn signal is OFF.                      | Off          |
| SHIFT POSITION      | Shows the position of the transmission range switch | P/R/N/D/L    |
| LUMINANCE(LEFT)     | Shows radar left luminance level                    | Hi/Lo        |
| LUMINANCE (RIGHT)   | Shows radar right luminance level                   | Hi/Lo        |

TERMINAL LAYOUT



PHYSICAL VALUES

| Terminal No. (Wire color) |        | Description                  |              | Condition  | Value (Approx.) |
|---------------------------|--------|------------------------------|--------------|--|-----------------|
| +                         | -      | Signal name                  | Input/Output |  |                 |
| 4 (G)                     | Ground | Blind Spot Warning indicator | Output       | Approx. 2 sec. after ignition switch OFF ⇒ ON (bulb check) | 6 V             |
| 5 (R)                     | Ground | Ignition power supply        | Input        | Ignition switch ON   | Battery voltage |
| 6 (L)                     | —      | ITS communication high       | —            | —  | —               |
| 7 (Y)                     | —      | ITS communication low        | —            | —  | —               |
| 8 (B)                     | Ground | Ground                       | —            | —  | 0 V             |

Fail-safe (Side Radar)

INFOID:000000012939190

FAIL-SAFE CONTROL BY DTC

Blind Spot Warning (BSW)/Rear Cross Traffic Alert (RCTA)

If a malfunction occurs in the side radar, ADAS control unit cancels control and turns ON the Blind Spot Warning indicator (orange) on the combination meter.

TEMPORARY DISABLED STATUS AT BLOCKAGE

Blind Spot Warning (BSW)

When the side radar is blocked, the operation is temporarily canceled. Then the buzzer sounds and the Blind Spot Warning indicator (orange) is turned ON in the combination meter. Also, under the following conditions, the operation may be temporarily canceled:

- The side radar may be blocked by temporary ambient conditions such as splashing water, mist or fog.
- The blocked condition may also be caused by objects such as ice, frost or dirt obstructing the side radar.

Rear Cross Traffic Alert (RCTA)

When the side radar is blocked, the operation is temporarily canceled. Then the buzzer sounds and the Blind Spot Warning indicator (orange) is turned ON in the combination meter. Also, under the following conditions, the operation may be temporarily canceled.

- The side radar may be blocked by temporary ambient conditions such as splashing water, mist or fog.
- The blocked condition may also be caused by objects such as ice, frost or dirt obstructing the side radar.

DTC Inspection Priority Chart

INFOID:000000012939191

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

| Priority | Detected items (DTC)   |
|----------|--|
| 1        | <ul style="list-style-type: none"> <li>• U1000: CAN COMM CIRCUIT</li> <li>• U1010: CONTROL UNIT (CAN)</li> </ul>   |
| 2        | <ul style="list-style-type: none"> <li>• U0104: ADAS CAN CIR 1</li> <li>• U0405: ADAS CAN CIR 2</li> </ul>   |
| 3        | C1B50: SIDE RDR MALFUNCTION  |
| 4        | <ul style="list-style-type: none"> <li>• C1B51: BSW/BSI IND SHORT CIR</li> <li>• C1B52: BSW/BSI IND OPEN CIR</li> <li>• C1B55: RADAR BLOCKAGE</li> </ul> |

DTC Index

INFOID:000000012939192

×: Applicable

| DTC   |                       | Fail-safe                                   | Reference page          |
|-------|-----------------------|---|-------------------------|
|       |                       | Blind Spot Warning/Rear Cross Traffic Alert |                         |
| C1B50 | SIDE RDR MALFUNCTION  | ×   | <a href="#">DAS-138</a> |
| C1B51 | BSW/BSI IND SHORT CIR | ×   | <a href="#">DAS-139</a> |
| C1B52 | BSW/BSI IND OPEN CIR  | ×   | <a href="#">DAS-141</a> |
| C1B55 | RADAR BLOCKAGE        | ×   | <a href="#">DAS-143</a> |
| U1000 | CAN COMM CIRCUIT      | ×   | <a href="#">DAS-149</a> |
| U1010 | CONTROL UNIT (CAN)    | ×   | <a href="#">DAS-152</a> |
| U0104 | ADAS CAN CIR1         | ×   | <a href="#">DAS-145</a> |
| U0405 | ADAS CAN CIR2         | ×   | <a href="#">DAS-147</a> |

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DAS

SIDE RADAR RH

Reference Value

INFOID:000000012939193

VALUES ON THE DIAGNOSIS TOOL

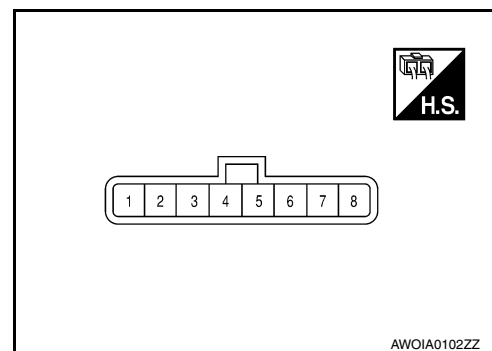
**NOTE:**

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

CONSULT MONITOR ITEM

| Monitor Item        | Condition   | Value/Status |
|---------------------|---|--------------|
| BSW/CTA WARN STATUS | BSW system is normal.                               | On           |
|                     | BSW system is malfunctioning.                       | Off          |
| CTA SYSTEM ON       | CTA system is ON.                                   | On           |
|                     | CTA system is OFF.                                  | Off          |
| BSW STATUS          | BSW system is ON.                                   | Off          |
|                     | BSW system is OFF.                                  | On           |
| VHCL SPD SE         | Indicates current vehicle speed                     | km/h         |
| TURN SIGNAL         | Left/right turn signal is ON.                       | On           |
|                     | Left/right turn signal is OFF.                      | Off          |
| SHIFT POSITION      | Shows the position of the transmission range switch | P/R/N/D      |
| LUMINANCE(LEFT)     | Shows radar left luminance level                    | Hi/Lo        |
| LUMINANCE (RIGHT)   | Shows radar right luminance level                   | Hi/Lo        |

TERMINAL LAYOUT



PHYSICAL VALUES

| Terminal No.<br>(Wire color) |        | Description                  |                  | Condition  | Value<br>(Approx.) |
|------------------------------|--------|------------------------------|------------------|--|--------------------|
| +                            | -      | Signal name                  | Input/<br>Output |  |                    |
| 3<br>(B)                     | Ground | Right/Left switching signal  | Input            | —  | 0 V                |
| 4<br>(G)                     | Ground | Blind Spot Warning indicator | Output           | Approx. 2 sec. after ignition switch OFF ⇒ ON (bulb check) | 6 V                |
| 5<br>(R)                     | Ground | Ignition power supply        | Input            | Ignition switch ON   | Battery voltage    |
| 6<br>(L)                     | —      | ITS communication high       | —                | —  | —                  |
| 7<br>(Y)                     | —      | ITS communication low        | —                | —  | —                  |
| 8<br>(B)                     | Ground | Ground                       | —                | —  | 0 V                |

Fail-safe (Side Radar)

INFOID:000000012939194

FAIL-SAFE CONTROL BY DTC

Blind Spot Warning (BSW)/Rear Cross Traffic Alert (RCTA)

If a malfunction occurs in the side radar, ADAS control unit cancels control and turns ON the Blind Spot Warning indicator (orange) on the combination meter.

TEMPORARY DISABLED STATUS AT BLOCKAGE

Blind Spot Warning (BSW)

When the side radar is blocked, the operation is temporarily canceled. Then the buzzer sounds and the Blind Spot Warning indicator (orange) is turned ON in the combination meter. Also, under the following conditions, the operation may be temporarily canceled:

- The side radar may be blocked by temporary ambient conditions such as splashing water, mist or fog.
- The blocked condition may also be caused by objects such as ice, frost or dirt obstructing the side radar.

Rear Cross Traffic Alert (RCTA)

When the side radar is blocked, the operation is temporarily canceled. Then the buzzer sounds and the Blind Spot Warning indicator (orange) is turned ON in the combination meter. Also, under the following conditions, the operation may be temporarily canceled.

- The side radar may be blocked by temporary ambient conditions such as splashing water, mist or fog.
- The blocked condition may also be caused by objects such as ice, frost or dirt obstructing the side radar.

DTC Inspection Priority Chart

INFOID:000000012939195

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

| Priority | Detected items (DTC)   |
|----------|--|
| 1        | <ul style="list-style-type: none"> <li>• U1000: CAN COMM CIRCUIT</li> <li>• U1010: CONTROL UNIT (CAN)</li> </ul>   |
| 2        | <ul style="list-style-type: none"> <li>• U0104: ADAS CAN CIR 1</li> <li>• U0405: ADAS CAN CIR 2</li> </ul>   |
| 3        | C1B50: SIDE RDR MALFUNCTION  |
| 4        | <ul style="list-style-type: none"> <li>• C1B51: BSW/BSI IND SHORT CIR</li> <li>• C1B52: BSW/BSI IND OPEN CIR</li> <li>• C1B55: RADAR BLOCKAGE</li> </ul> |

DTC Index

INFOID:000000012939196

×: Applicable

| DTC   |                       | Fail-safe                                   | Reference page          |
|-------|-----------------------|---|-------------------------|
|       |                       | Blind Spot Warning/Rear Cross Traffic Alert |                         |
| C1B50 | SIDE RDR MALFUNCTION  | ×   | <a href="#">DAS-138</a> |
| C1B51 | BSW/BSI IND SHORT CIR | ×   | <a href="#">DAS-139</a> |
| C1B52 | BSW/BSI IND OPEN CIR  | ×   | <a href="#">DAS-141</a> |
| C1B55 | RADAR BLOCKAGE        | ×   | <a href="#">DAS-143</a> |
| U1000 | CAN COMM CIRCUIT      | ×   | <a href="#">DAS-150</a> |
| U1010 | CONTROL UNIT (CAN)    | ×   | <a href="#">DAS-152</a> |
| U0104 | ADAS CAN CIR1         | ×   | <a href="#">DAS-145</a> |
| U0405 | ADAS CAN CIR2         | ×   | <a href="#">DAS-147</a> |

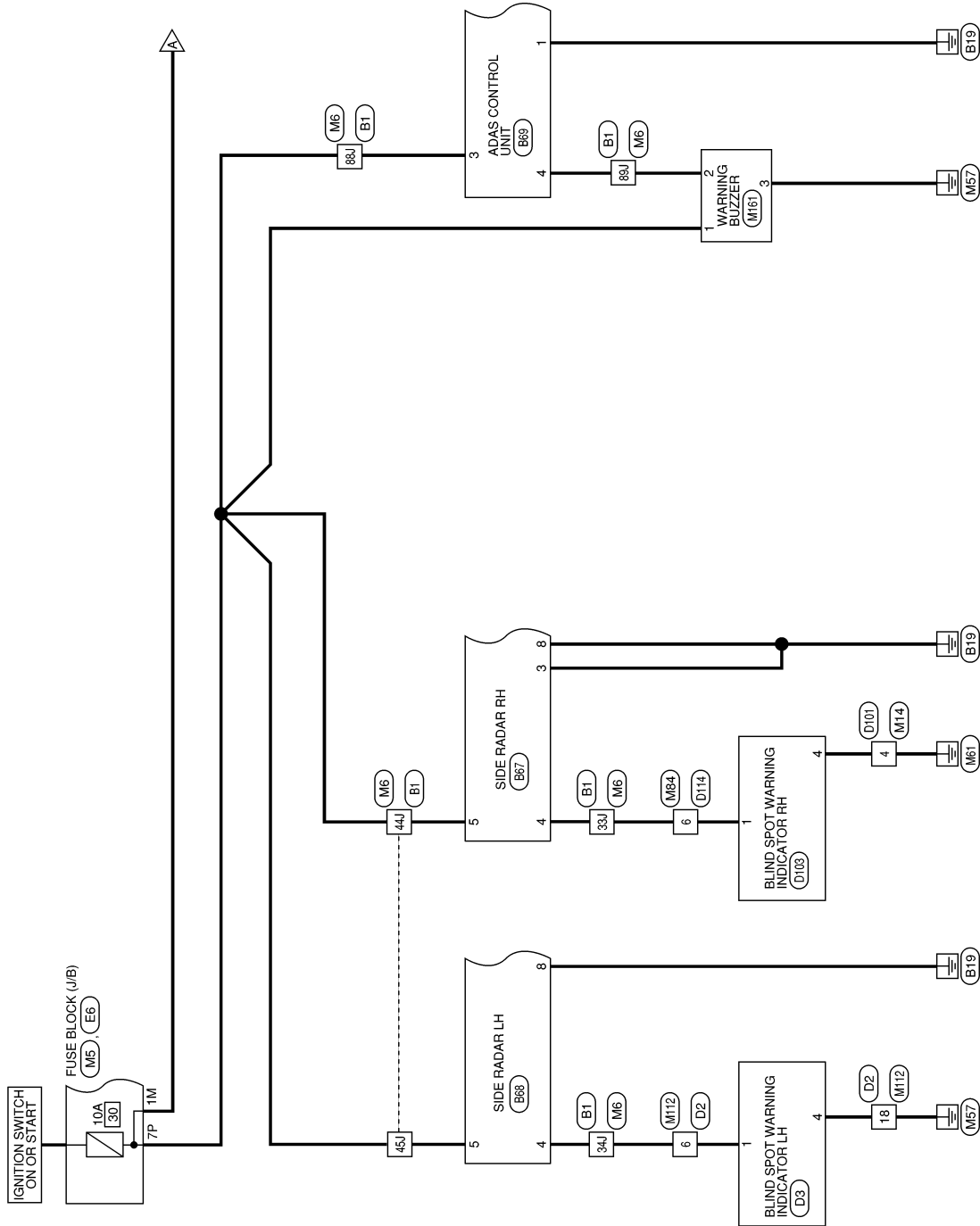
# WIRING DIAGRAM

## DRIVER ASSISTANCE SYSTEMS

### Wiring Diagram

INFOID:000000013019784

#### DRIVER ASSISTANCE SYSTEM

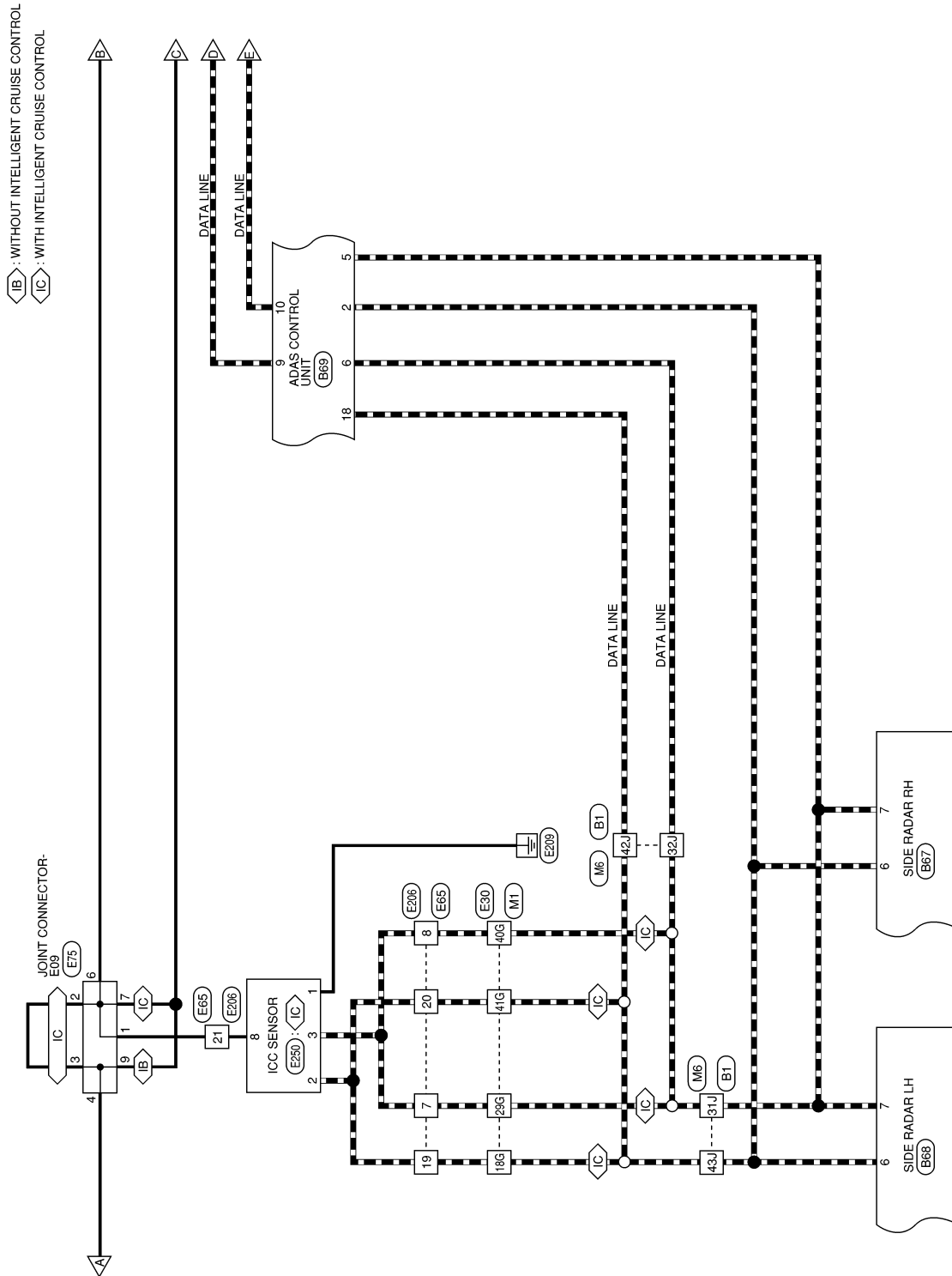


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# DRIVER ASSISTANCE SYSTEMS

## [DRIVER ASSISTANCE SYSTEM]

< WIRING DIAGRAM >



AAOWA0142GB

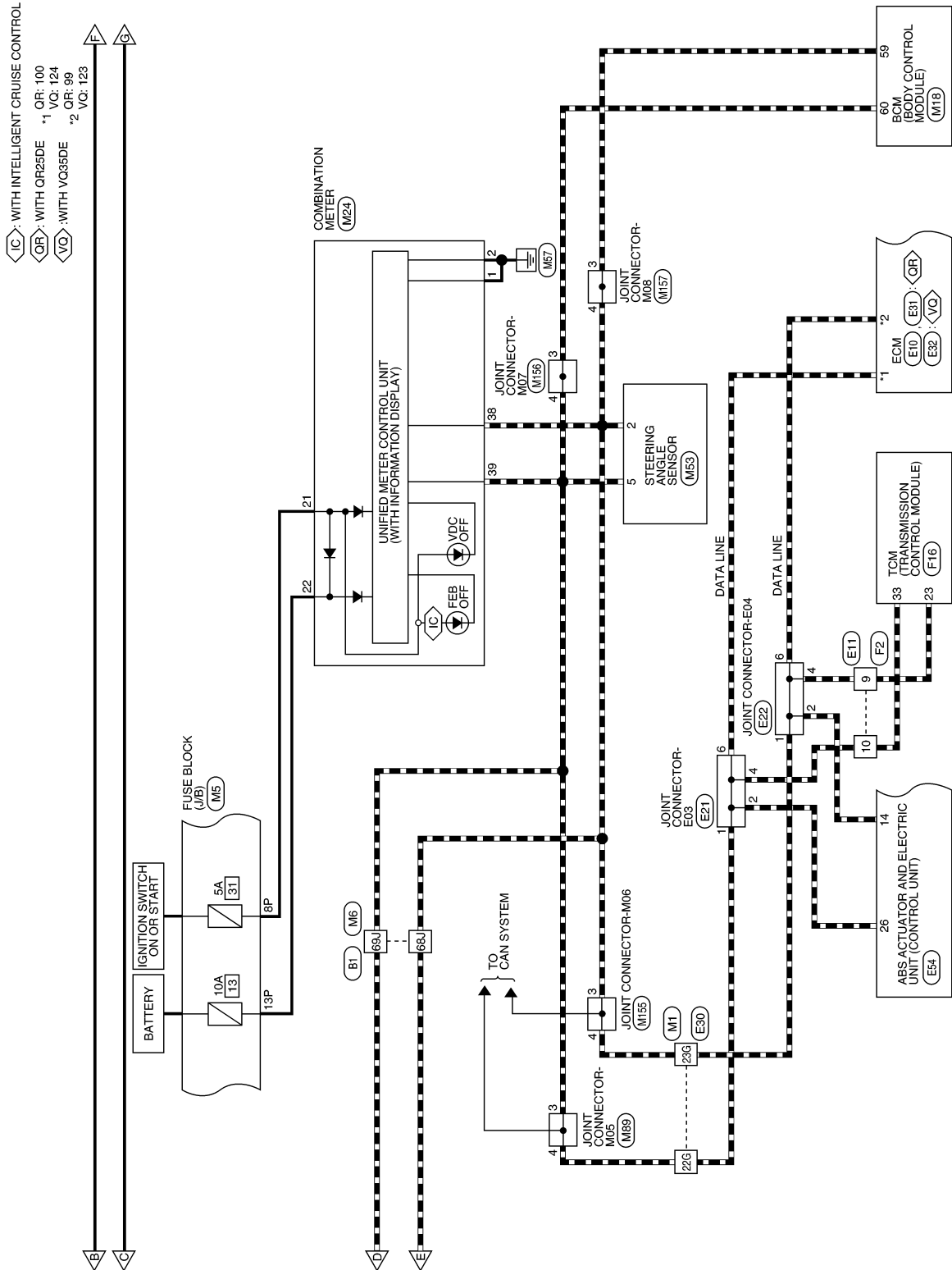
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# DRIVER ASSISTANCE SYSTEMS

## [DRIVER ASSISTANCE SYSTEM]

< WIRING DIAGRAM >



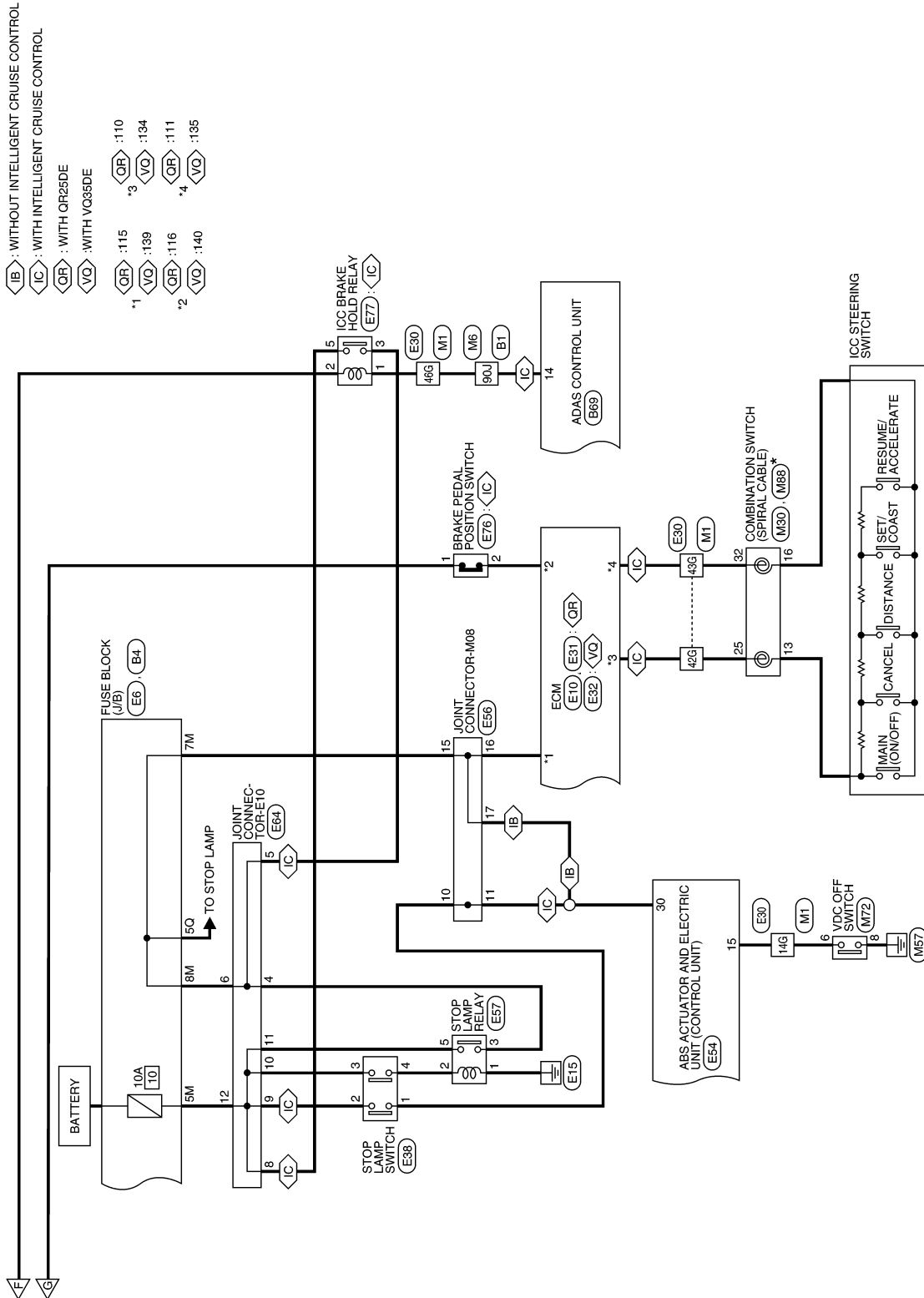
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# DRIVER ASSISTANCE SYSTEMS

## [DRIVER ASSISTANCE SYSTEM]

< WIRING DIAGRAM >



\* : This connector is not shown in "Harness Layout"

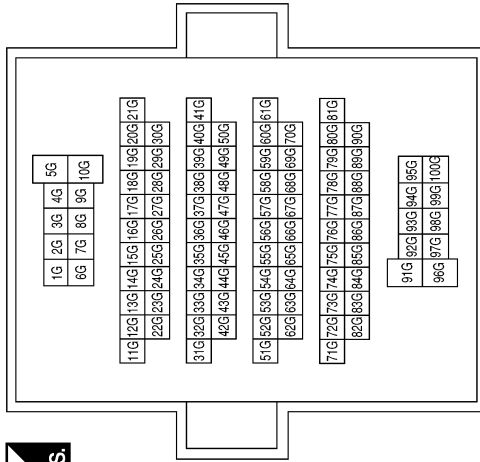
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DRIVER ASSISTANCE SYSTEM CONNECTORS

|                 |              |
|-----------------|--------------|
| Connector No.   | M1           |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



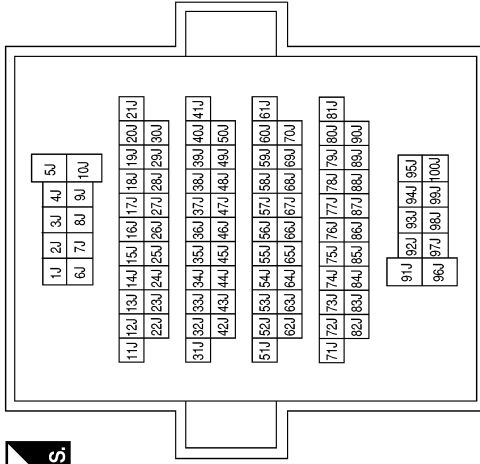
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 14G          | LG            | -           |
| 18G          | L             | -           |
| 22G          | L             | -           |
| 23G          | P             | -           |
| 29G          | Y             | -           |
| 40G          | Y             | -           |
| 41G          | L             | -           |
| 42G          | BG            | -           |
| 43G          | G             | -           |
| 46G          | L             | -           |

|                 |                  |
|-----------------|------------------|
| Connector No.   | M5               |
| Connector Name  | FUSE BLOCK (J/B) |
| Connector Color | WHITE            |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 7P           | G             | -           |
| 8P           | BR            | -           |
| 13P          | G             | -           |

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




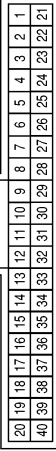
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 31J          | Y             | -           |
| 32J          | Y             | -           |
| 33J          | G             | -           |
| 34J          | W             | -           |
| 42J          | L             | -           |
| 43J          | L             | -           |
| 44J          | R             | -           |
| 45J          | LG            | -           |
| 68J          | P             | -           |
| 69J          | L             | -           |
| 88J          | LG            | -           |
| 89J          | V             | -           |
| 90J          | L             | -           |

# DRIVER ASSISTANCE SYSTEMS

## [DRIVER ASSISTANCE SYSTEM]


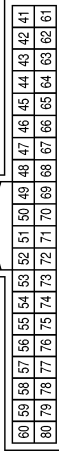
< WIRING DIAGRAM >

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


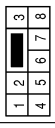
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | B             | GND1        |
| 2            | B             | GND2        |
| 21           | BR            | IGN         |
| 22           | G             | BAT         |
| 38           | P             | CAN-L       |
| 39           | L             | CAN-H       |

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


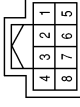
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 59           | P             | CAN-L       |
| 60           | L             | CAN-H       |

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| Connector No.   | M14          |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |


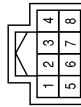
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 4            | GR            | -           |

|                 |                |
|-----------------|----------------|
| Connector No.   | M72            |
| Connector Name  | VDC OFF SWITCH |
| Connector Color | BLACK          |


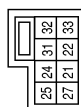
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 6            | LG            | -           |
| 8            | B             | -           |

|                 |                       |
|-----------------|-----------------------|
| Connector No.   | M53                   |
| Connector Name  | STEERING ANGLE SENSOR |
| Connector Color | WHITE                 |

| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 2            | P             | CAN-L       |
| 5            | L             | CAN-H       |

|                 |                                   |
|-----------------|-----------------------------------|
| Connector No.   | M30                               |
| Connector Name  | COMBINATION SWITCH (SPIRAL CABLE) |
| Connector Color | GRAY                              |

| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 25           | BG            | -           |
| 32           | G             | -           |

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# DRIVER ASSISTANCE SYSTEMS

## [DRIVER ASSISTANCE SYSTEM]

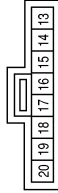
< WIRING DIAGRAM >

|                 |                     |
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| Connector No.   | M89                 |
| Connector Name  | JOINT CONNECTOR-M05 |
| Connector Color | WHITE               |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 3            | L             | -           |
| 4            | L             | -           |

|                 |                                   |
|-----------------|-----------------------------------|
| Connector No.   | M88                               |
| Connector Name  | COMBINATION SWITCH (SPIRAL CABLE) |
| Connector Color | GRAY                              |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 13           | V             | -           |
| 16           | GR            | -           |

|                 |              |
|-----------------|--------------|
| Connector No.   | M84          |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



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

|                 |                     |
|-----------------|---------------------|
| Connector No.   | M156                |
| Connector Name  | JOINT CONNECTOR-M07 |
| Connector Color | WHITE               |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 3            | L             | -           |
| 4            | L             | -           |

|                 |                     |
|-----------------|---------------------|
| Connector No.   | M155                |
| Connector Name  | JOINT CONNECTOR-M06 |
| Connector Color | WHITE               |



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

|                 |              |
|-----------------|--------------|
| Connector No.   | M112         |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 6            | W             | -           |
| 18           | B             | -           |

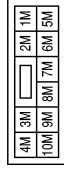
AAOIA0425GB

# DRIVER ASSISTANCE SYSTEMS

## [DRIVER ASSISTANCE SYSTEM]

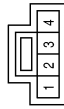
< WIRING DIAGRAM >

|                 |                  |
|-----------------|------------------|
| Connector No.   | E6               |
| Connector Name  | FUSE BLOCK (J/B) |
| Connector Color | WHITE            |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1M           | BG            | -           |
| 5M           | G             | -           |
| 7M           | L             | -           |
| 8M           | W             | -           |

|                 |                |
|-----------------|----------------|
| Connector No.   | M161           |
| Connector Name  | WARNING BUZZER |
| Connector Color | BROWN          |



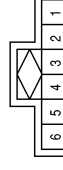
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | LG            | -           |
| 2            | V             | -           |
| 3            | B             | -           |

|                 |                     |
|-----------------|---------------------|
| Connector No.   | M157                |
| Connector Name  | JOINT CONNECTOR-M08 |
| Connector Color | WHITE               |



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

|                 |                     |
|-----------------|---------------------|
| Connector No.   | E21                 |
| Connector Name  | JOINT CONNECTOR-E03 |
| Connector Color | GRAY                |



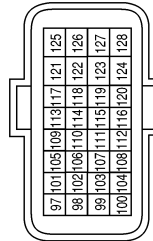
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | L             | -           |
| 2            | L             | -           |
| 4            | L             | -           |
| 6            | L             | -           |

|                 |              |
|-----------------|--------------|
| Connector No.   | E11          |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 9            | P             | -           |
| 10           | L             | -           |

|                 |                                    |
|-----------------|------------------------------------|
| Connector No.   | E10                                |
| Connector Name  | ECM (QR25DE EXCEPT FOR CALIFORNIA) |
| Connector Color | GRAY                               |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 99           | P             | CAN-L       |
| 100          | L             | CAN-H       |
| 110          | O             | ASCD SW     |
| 111          | R             | GND ASCD SW |
| 115          | L             | BRAKE       |
| 116          | BR            | BNC SW      |

AAOIA0426GB

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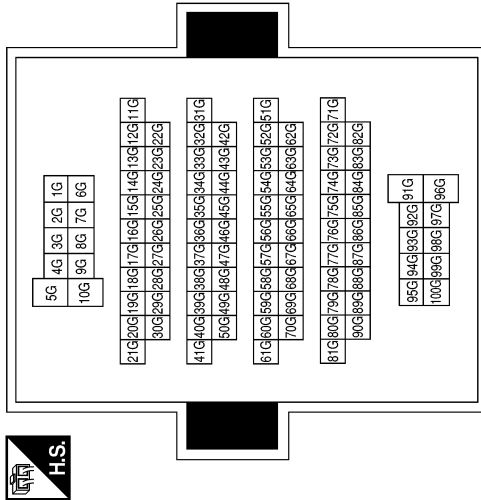
# DRIVER ASSISTANCE SYSTEMS

## [DRIVER ASSISTANCE SYSTEM]

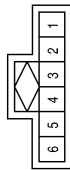
< WIRING DIAGRAM >

| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 14G          | V             | -           |
| 18G          | L             | -           |
| 22G          | L             | -           |
| 23G          | P             | -           |
| 29G          | Y             | -           |
| 40G          | Y             | -           |
| 41G          | L             | -           |
| 42G          | O             | -           |
| 43G          | R             | -           |
| 46G          | L             | -           |

|                 |              |
|-----------------|--------------|
| Connector No.   | E30          |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



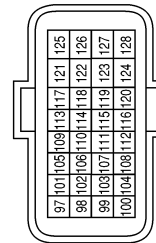
|                 |                     |
|-----------------|---------------------|
| Connector No.   | E22                 |
| Connector Name  | JOINT CONNECTOR-E04 |
| Connector Color | GRAY                |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | P             | -           |
| 2            | P             | -           |
| 4            | P             | -           |
| 6            | P             | -           |

| Terminal No. | Color of Wire | Signal Name                 |
|--------------|---------------|-----------------------------|
| 99           | P             | CAN-L                       |
| 100          | L             | CAN-H                       |
| 110          | O             | ASCD STEERING SWITCH        |
| 111          | R             | SENSOR GROUND               |
| 115          | L             | STOP LAMP SWITCH            |
| 116          | BR            | BRAKE PEDAL POSITION SWITCH |

|                 |                             |
|-----------------|-----------------------------|
| Connector No.   | E31                         |
| Connector Name  | ECM (QR25DE FOR CALIFORNIA) |
| Connector Color | GRAY                        |



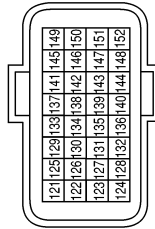
AAOIA0427GB

# DRIVER ASSISTANCE SYSTEMS

## [DRIVER ASSISTANCE SYSTEM]

< WIRING DIAGRAM >

|                 |                   |
|-----------------|-------------------|
| Connector No.   | E32               |
| Connector Name  | ECM (WITH VQ35DE) |
| Connector Color | BLACK             |



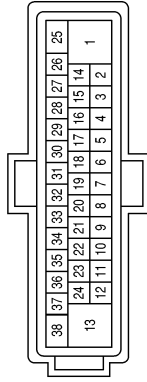
| Terminal No. | Color of Wire | Signal Name                    |
|--------------|---------------|--------------------------------|
| 123          | P             | CAN COMMUNICATION LINE (CAN-L) |
| 124          | L             | CAN COMMUNICATION LINE (CAN-H) |
| 134          | O             | ASCD STEERING SWITCH           |
| 135          | R             | SENSOR GROUND                  |
| 139          | L             | STOP LAMP SWITCH               |
| 140          | BR            | BRAKE PEDAL POSITION SWITCH    |

|                 |                  |
|-----------------|------------------|
| Connector No.   | E38              |
| Connector Name  | STOP LAMP SWITCH |
| Connector Color | WHITE            |



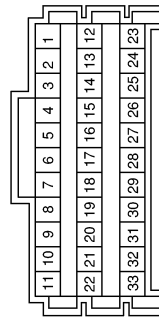
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | BR            | -           |
| 2            | P             | -           |
| 3            | G             | -           |
| 4            | R             | -           |

|                 |   |
|-----------------|---|
| Connector No.   | E54   |
| Connector Name  | ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) |
| Connector Color | BLACK   |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 14           | P             | CAN-L       |
| 15           | V             | VDC OFF     |
| 26           | L             | CAN-H       |
| 30           | L             | BLS         |

|                 |                     |
|-----------------|---------------------|
| Connector No.   | E56                 |
| Connector Name  | JOINT CONNECTOR-E08 |
| Connector Color | WHITE               |



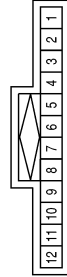
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 10           | BR            | -           |
| 11           | L             | -           |
| 15           | L             | -           |
| 16           | L             | -           |
| 17           | L             | -           |

|                 |                 |
|-----------------|-----------------|
| Connector No.   | E57             |
| Connector Name  | STOP LAMP RELAY |
| Connector Color | BLUE            |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | B             | -           |
| 2            | R             | -           |
| 3            | W             | -           |
| 5            | G             | -           |

|                 |                     |
|-----------------|---------------------|
| Connector No.   | E64                 |
| Connector Name  | JOINT CONNECTOR-E10 |
| Connector Color | BLUE                |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 4            | W             | -           |
| 5            | P             | -           |
| 6            | W             | -           |
| 8            | W             | -           |
| 9            | P             | -           |
| 10           | G             | -           |
| 11           | G             | -           |
| 12           | G             | -           |

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



# DRIVER ASSISTANCE SYSTEMS

## [DRIVER ASSISTANCE SYSTEM]

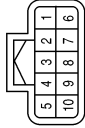
< WIRING DIAGRAM >

|                 |                             |
|-----------------|-----------------------------|
| Connector No.   | E76                         |
| Connector Name  | BRAKE PEDAL POSITION SWITCH |
| Connector Color | BROWN                       |



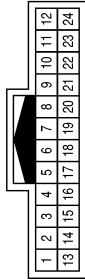
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | R             | -           |
| 2            | BR            | -           |

|                 |                     |
|-----------------|---------------------|
| Connector No.   | E75                 |
| Connector Name  | JOINT CONNECTOR-E09 |
| Connector Color | BLACK               |



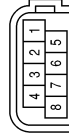
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | R             | -           |
| 2            | L             | -           |
| 3            | L             | -           |
| 4            | BG            | -           |
| 6            | R             | -           |
| 7            | R             | -           |
| 9            | R             | -           |

|                 |              |
|-----------------|--------------|
| Connector No.   | E65          |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 7            | Y             | -           |
| 8            | Y             | -           |
| 19           | L             | -           |
| 20           | L             | -           |
| 21           | R             | -           |

|                 |            |
|-----------------|------------|
| Connector No.   | E250       |
| Connector Name  | ICC SENSOR |
| Connector Color | BLACK      |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | B             | GND         |
| 2            | L             | ITS CAN-H   |
| 3            | R             | ITS CAN-L   |
| 8            | W             | IGN         |

|                 |              |
|-----------------|--------------|
| Connector No.   | E206         |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 7            | Y             | -           |
| 8            | Y             | -           |
| 19           | L             | -           |
| 20           | L             | -           |
| 21           | W             | -           |

|                 |                      |
|-----------------|----------------------|
| Connector No.   | E77                  |
| Connector Name  | ICC BRAKE HOLD RELAY |
| Connector Color | BLUE                 |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | L             | -           |
| 2            | R             | -           |
| 3            | P             | -           |
| 5            | W             | -           |

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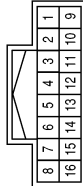


# DRIVER ASSISTANCE SYSTEMS

## [DRIVER ASSISTANCE SYSTEM]

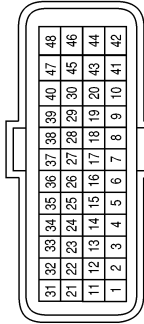
< WIRING DIAGRAM >

|                 |              |
|-----------------|--------------|
| Connector No.   | F2           |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



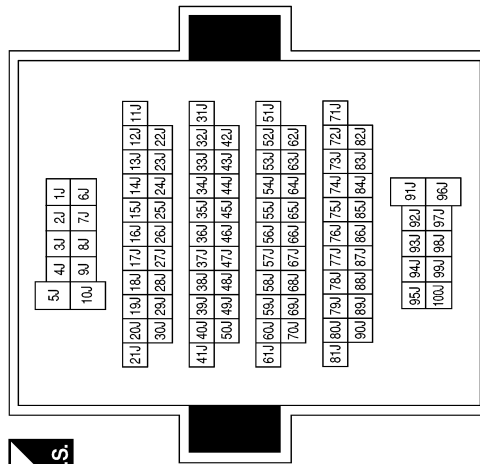
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 9            | P             | -           |
| 10           | L             | -           |

|                 |                                   |
|-----------------|-----------------------------------|
| Connector No.   | F16                               |
| Connector Name  | TCM (TRANSMISSION CONTROL MODULE) |
| Connector Color | BLACK                             |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 23           | P             | CAN-L       |
| 33           | L             | CAN-H       |

|                 |              |
|-----------------|--------------|
| Connector No.   | B1           |
| Connector Name  | WIRE TO WIRE |
| Connector Color | GRAY         |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 31J          | Y             | -           |
| 32J          | Y             | -           |
| 33J          | G             | -           |
| 34J          | G             | -           |
| 42J          | L             | -           |
| 43J          | L             | -           |
| 44J          | R             | -           |
| 45J          | R             | -           |
| 68J          | P             | -           |
| 69J          | L             | -           |
| 88J          | LG            | -           |
| 89J          | V             | -           |
| 90J          | L             | -           |

|                 |                  |
|-----------------|------------------|
| Connector No.   | B4               |
| Connector Name  | FUSE BLOCK (J/B) |
| Connector Color | WHITE            |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 5Q           | L             | -           |

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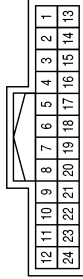


# DRIVER ASSISTANCE SYSTEMS

## [DRIVER ASSISTANCE SYSTEM]

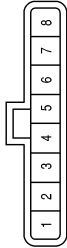
< WIRING DIAGRAM >

|                 |                   |
|-----------------|-------------------|
| Connector No.   | B69               |
| Connector Name  | ADAS CONTROL UNIT |
| Connector Color | WHITE             |



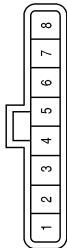
| Terminal No. | Color of Wire | Signal Name           |
|--------------|---------------|-----------------------|
| 1            | B             | GND                   |
| 2            | L             | ITS CAN-H             |
| 3            | LG            | IGN                   |
| 4            | V             | BUZZER OUTPUT         |
| 5            | Y             | ITS CAN-L             |
| 6            | Y             | CAN-L                 |
| 7            | -             | -                     |
| 8            | -             | -                     |
| 9            | L             | CAN-H                 |
| 10           | P             | CAN-L                 |
| 11           | -             | -                     |
| 12           | -             | -                     |
| 13           | -             | -                     |
| 14           | L             | STOP LAMP RELAY DRIVE |
| 15           | -             | -                     |
| 16           | -             | -                     |
| 17           | -             | -                     |
| 18           | L             | CAN-L                 |
| 19           | -             | -                     |
| 20           | -             | -                     |
| 21           | -             | -                     |
| 22           | -             | -                     |
| 23           | -             | -                     |
| 24           | -             | -                     |

|                 |               |
|-----------------|---------------|
| Connector No.   | B68           |
| Connector Name  | SIDE RADAR LH |
| Connector Color | BLACK         |



| Terminal No. | Color of Wire | Signal Name  |
|--------------|---------------|--------------|
| 1            | -             | -            |
| 2            | -             | -            |
| 3            | -             | -            |
| 4            | G             | ALERT SIGNAL |
| 5            | R             | POWER (IGN)  |
| 6            | L             | ITS CAN-H    |
| 7            | Y             | ITS CAN-L    |
| 8            | B             | GND          |

|                 |               |
|-----------------|---------------|
| Connector No.   | B67           |
| Connector Name  | SIDE RADAR RH |
| Connector Color | BLACK         |



| Terminal No. | Color of Wire | Signal Name  |
|--------------|---------------|--------------|
| 1            | -             | -            |
| 2            | -             | -            |
| 3            | B             | ADDRESS      |
| 4            | G             | ALERT SIGNAL |
| 5            | R             | POWER (IGN)  |
| 6            | L             | ITS CAN-H    |
| 7            | Y             | ITS CAN-L    |
| 8            | B             | GND          |

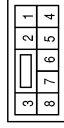
AAOIA0431GB

# DRIVER ASSISTANCE SYSTEMS

## [DRIVER ASSISTANCE SYSTEM]

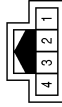
< WIRING DIAGRAM >

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



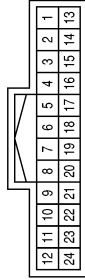
|              |   |               |   |             |   |
|--------------|---|---------------|---|-------------|---|
| Terminal No. | 4 | Color of Wire | B | Signal Name | - |
|--------------|---|---------------|---|-------------|---|

|                 |                                 |
|-----------------|---------------------------------|
| Connector No.   | D3                              |
| Connector Name  | BLIND SPOT WARNING INDICATOR LH |
| Connector Color | WHITE                           |



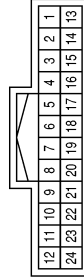
|              |   |               |     |             |   |
|--------------|---|---------------|-----|-------------|---|
| Terminal No. | 1 | Color of Wire | W/L | Signal Name | - |
| 4            | B | -             | -   | -           | - |

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



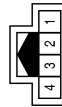
|              |   |               |     |             |   |
|--------------|---|---------------|-----|-------------|---|
| Terminal No. | 6 | Color of Wire | W/L | Signal Name | - |
| 18           | B | -             | -   | -           | - |

|                 |              |
|-----------------|--------------|
| Connector No.   | D114         |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



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

|                 |                                 |
|-----------------|---------------------------------|
| Connector No.   | D103                            |
| Connector Name  | BLIND SPOT WARNING INDICATOR RH |
| Connector Color | WHITE                           |



|              |   |               |   |             |   |
|--------------|---|---------------|---|-------------|---|
| Terminal No. | 1 | Color of Wire | R | Signal Name | - |
| 4            | B | -             | - | -           | - |

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# DIAGNOSIS AND REPAIR WORK FLOW

< BASIC INSPECTION >

[DRIVER ASSISTANCE SYSTEM]

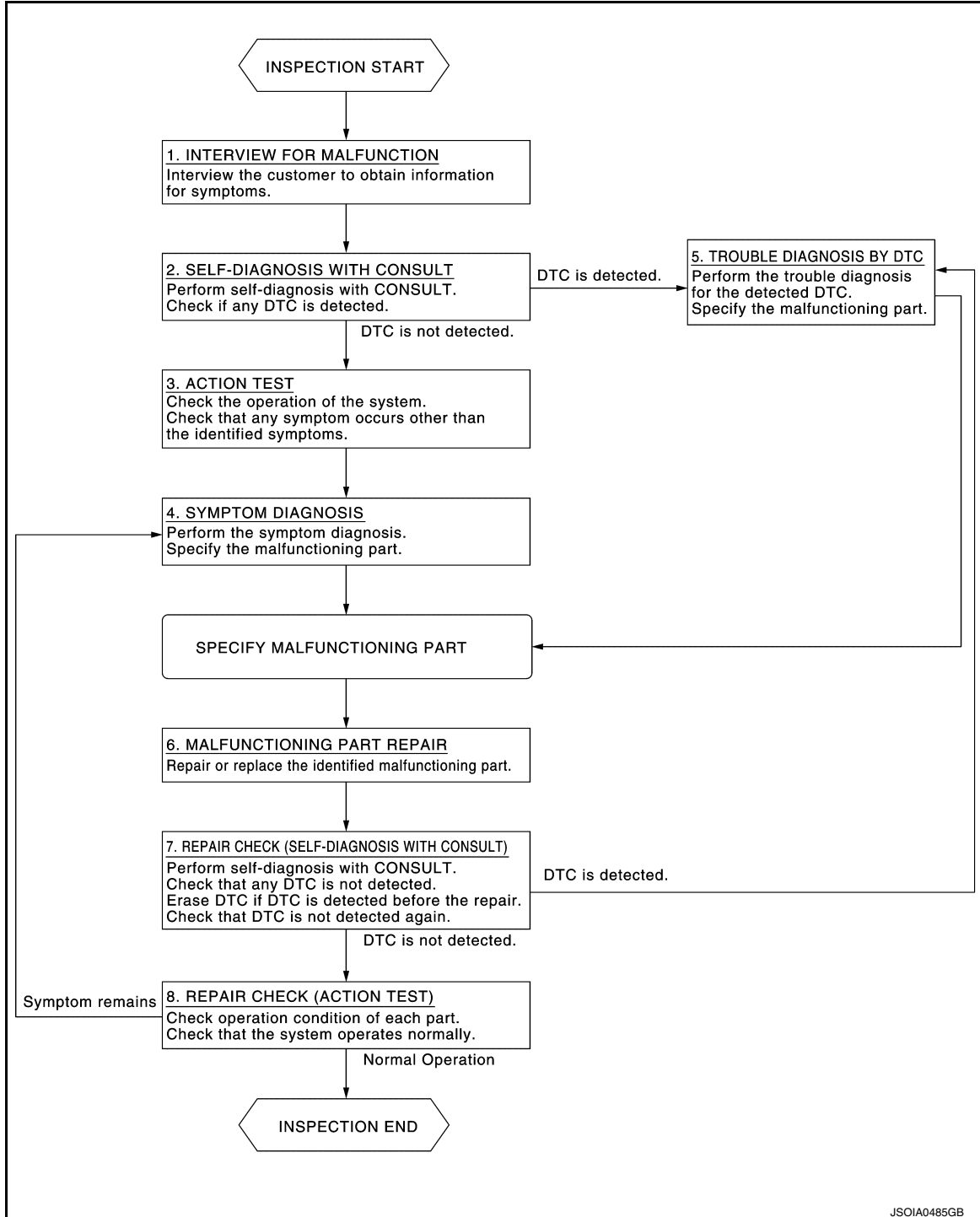
## BASIC INSPECTION

### DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:0000000012939198

#### OVERALL SEQUENCE



JSOIA0485GB

#### DETAILED FLOW

### 1. INTERVIEW FOR MALFUNCTION

It is important to clarify the customer's concerns before starting the inspection. Interview the customer about the concerns carefully and understand the symptoms fully.

# DIAGNOSIS AND REPAIR WORK FLOW

[DRIVER ASSISTANCE SYSTEM]

< BASIC INSPECTION >

## NOTE:

The customers are not professionals. Never assume that “maybe the customer means...” or “maybe the customer mentioned this symptom”.

>> GO TO 2.

## 2. SELF-DIAGNOSIS WITH CONSULT

### CONSULT

1. Perform “All DTC Reading” mode.
2. Check if the DTC is detected in the “Self Diagnostic Result” of the following:
  - “ICC/ADAS”
  - “LASER/RADAR”
  - “SIDE RADAR LEFT”
  - “SIDE RADAR RIGHT”

Is any DTC detected?

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

## 3. ACTION TEST

1. Perform the system action test to check the operation status of the following:
  - BSW: Refer to [DAS-136, "BLIND SPOT WARNING : Description"](#).
  - RCTA: Refer to [DAS-137, "RCTA : Description"](#).
2. Check if any other malfunctions occur.

>> GO TO 4.

## 4. SYMPTOM DIAGNOSIS

Perform the applicable diagnosis according to the diagnosis chart by symptom. Refer to [DAS-160, "Symptom Table"](#).

>> GO TO 6.

## 5. TROUBLE DIAGNOSIS BY DTC

### CONSULT

1. Check the DTC in the “Self Diagnostic Result”.
2. Perform trouble diagnosis for the following detected DTC:
  - “ICC/ADAS”: Refer to [DAS-105, "DTC Index"](#).
  - “LASER/RADAR”: Refer to [CCS-43, "DTC Index"](#).
  - “SIDE RADAR LEFT”: Refer to [DAS-115, "DTC Index"](#).
  - “SIDE RADAR RIGHT”: Refer to [DAS-117, "DTC Index"](#).

## NOTE:

If “DTC U1000” is detected, first diagnose the CAN communication system or ITS communication system.

>> GO TO 6.

## 6. MALFUNCTIONING PART REPAIR

Repair or replace the identified malfunctioning parts.

>> GO TO 7.

## 7. REPAIR CHECK (SELF-DIAGNOSIS WITH CONSULT)

1. Erase “Self Diagnostic Result”.
2. Perform “All DTC Reading” mode after repairing or replacing the specific items.
3. Check if any DTC is detected in self-diagnosis results of the following:
  - “ICC/ADAS”
  - “LASER/RADAR”
  - “SIDE RADAR LEFT”
  - “SIDE RADAR RIGHT”

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## DIAGNOSIS AND REPAIR WORK FLOW

[DRIVER ASSISTANCE SYSTEM]

< BASIC INSPECTION >

Is any DTC detected?

YES >> GO TO 5.

NO >> GO TO 8.

### 8. REPAIR CHECK (ACTION TEST)

Perform the following system action test. Check that the malfunction symptom is solved or no other symptoms occur.

- BSW: Refer to [DAS-136. "BLIND SPOT WARNING : Description"](#).
- RCTA: Refer to [DAS-137. "RCTA : Description"](#).

Is there a malfunction symptom?

YES >> GO TO 4.

NO >> Inspection End.

# ADDITIONAL SERVICE WHEN REPLACING ICC SENSOR

< BASIC INSPECTION >

[DRIVER ASSISTANCE SYSTEM]

## ADDITIONAL SERVICE WHEN REPLACING ICC SENSOR

### Description

INFOID:000000013007288

- Always perform the radar alignment aiming adjustment after removing and installing or replacing the ICC sensor.

**CAUTION:**

**The system does not operate normally unless the ICC sensor is aligned properly.**

- Perform the ICC system action test to check that the ICC system operates normally.

### Work Procedure

INFOID:000000013007289

#### 1. RADAR ALIGNMENT ADJUSTMENT

Adjust the radar alignment. Refer to [CCS-61, "Description"](#).

>> GO TO 2.

#### 2. ICC SYSTEM ACTION TEST

1. Perform the ICC system action test. Refer to [CCS-68, "Description"](#).
2. Check that the ICC system operates normally.

>> Inspection End.

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# ACTION TEST

< BASIC INSPECTION >

[DRIVER ASSISTANCE SYSTEM]

## ACTION TEST

### BLIND SPOT WARNING

#### BLIND SPOT WARNING : Description

INFOID:000000012939201

Always perform the Blind Spot Warning system action test to check that the system operates normally after replacing the side radar LH/RH or repairing any Blind Spot Warning system malfunction.

**WARNING:**

Be careful of traffic conditions and safety around the vehicle when performing road test.

**CAUTION:**

Fully understand the following items well before the road test;

- Precautions: Refer to [DAS-74, "Blind Spot Warning/Rear Cross Traffic Alert \(RCTA\) System Service"](#).
- System description for Blind Spot Warning: Refer to [DAS-82, "BSW : System Description"](#).
- Normal operating condition: Refer to [DAS-166, "Description"](#).

#### BLIND SPOT WARNING : Work Procedure

INFOID:000000012939202

**WARNING:**

Be careful of traffic conditions and safety around the vehicle when performing road test.

**CAUTION:**

Fully understand the following items well before the road test;

- Precautions: Refer to [DAS-74, "Blind Spot Warning/Rear Cross Traffic Alert \(RCTA\) System Service"](#).
- System description for Blind Spot Warning: Refer to [DAS-82, "BSW : System Description"](#).
- Normal operating condition: Refer to [DAS-166, "Description"](#).

#### 1. CHECK BSW SYSTEM SETTING

1. Start the engine.
2. Check that the BSW system setting can be enabled/disabled on the integral switch.
3. Turn ignition switch OFF and wait for 5 seconds or more.
4. Check that the previous setting is saved when the engine starts again.

>> GO TO 2.

#### 2. BSW SYSTEM ACTION TEST

1. Enable the setting of the BSW system on the integral switch.
2. Check BSW operation according to the following table:

| Vehicle condition/ Driver operation |                                 |   | Action   |                                     |                 |                        |
|-------------------------------------|---------------------------------|---|--|-------------------------------------|-----------------|------------------------|
| Vehicle speed (Approx.)             | Turn signal condition           | Status of vehicle detection within detection area   | Indication on the Blind Spot Warning indicator | Indication on the combination meter | Indicator color | Buzzer                 |
| Less than 18 MPH (29 km/h)          | —                               | —   | OFF  | ON                                  | White           | OFF                    |
|                                     | —                               | Vehicle is absent.                                  | OFF  | ON                                  | White           | OFF                    |
| 20 MPH (32 km/h) or more            | OFF                             | Vehicle is detected.                                | ON   | ON                                  | White           | OFF                    |
|                                     | ON (vehicle detected direction) | Before turn signal operates<br>Vehicle is detected. | Blink  | Blink                               | Yellow (Blink)  | Short continuous beeps |
|                                     |                                 | Vehicle is detected after turn signal operates.     | Blink  | Blink                               | Yellow (Blink)  | OFF                    |

>> Inspection End.

### RCTA



# ACTION TEST

< BASIC INSPECTION >

[DRIVER ASSISTANCE SYSTEM]

## RCTA : Description

INFOID:000000012939203

Always perform the RCTA system action test to check that the system operates normally after replacing the side radar LH/RH or repairing any BSW/RCTA system malfunction.

### WARNING:

Be careful of traffic conditions and safety around the vehicle when performing road test.

### CAUTION:

Fully understand the following items well before the road test;

- Precautions: Refer to [DAS-74, "Blind Spot Warning/Rear Cross Traffic Alert \(RCTA\) System Service"](#).
- System description for RCTA: Refer to [DAS-84, "RCTA : System Description"](#).
- Normal operating condition: Refer to [DAS-166, "Description"](#).

## RCTA : Work Procedure

INFOID:000000012939204

### WARNING:

Be careful of traffic conditions and safety around the vehicle when performing road test.

### CAUTION:

Fully understand the following items well before the road test;

- Precautions: Refer to [DAS-74, "Blind Spot Warning/Rear Cross Traffic Alert \(RCTA\) System Service"](#).
- System description for RCTA: Refer to [DAS-84, "RCTA : System Description"](#).
- Normal operating condition: Refer to [DAS-166, "Description"](#).

### 1. CHECK BSW/RCTA SYSTEM SETTING

1. Start the engine.
2. Check that the BSW system setting can be enabled/disabled on the integral switch.
3. Turn ignition switch OFF and wait for 30 seconds or more.
4. Check that the previous setting is saved when the engine starts again.

>> GO TO 2.

### 2. ACTION TEST FOR RCTA

1. Enable the setting of the RCTA system on the integral switch.
2. Check the RCTA operation according to the following table:

| Vehicle condition             | Action   | Buzzer  |             |
|-------------------------------|--|---|-------------|
| • R range<br>• 5 MPH (8 km/h) | If the radar detects an approaching vehicle from the side. | • Chime sounds (single beep)<br>• Flashes Blind Spot Warning indicator on the side that the approaching vehicle is detected<br>• Yellow rectangular frame appears in the display. | Single beep |
|                               | No approaching vehicle                                     | No action   | —           |

>> Inspection End.

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# C1B50 SIDE RADAR MALFUNCTION

< DTC/CIRCUIT DIAGNOSIS >

[DRIVER ASSISTANCE SYSTEM]

## DTC/CIRCUIT DIAGNOSIS

### C1B50 SIDE RADAR MALFUNCTION

#### DTC Logic

INFOID:0000000012939205

#### DTC DETECTION LOGIC

| DTC No. | CONSULT screen terms<br>(Trouble diagnosis content) | DTC detection condition |
|---------|---|-------------------------|
| C1B50   | SIDE RDR MALFUNCTION<br>(Side radar malfunction)    | Side radar malfunction  |

#### POSSIBLE CAUSE

Side radar

#### FAIL-SAFE

The following systems are canceled:

- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)

#### DTC CONFIRMATION PROCEDURE

##### 1.PERFORM DTC CONFIRMATION PROCEDURE

###### CONSULT

1. Start the engine.
2. Select "All DTC Reading" mode.
3. Check if "C1B50" is detected as the current malfunction in "Self Diagnostic Result" mode of "SIDE RADAR RIGHT/LEFT".

###### Is the "C1B50" detected as the current malfunction?

- YES >> Refer to [DAS-138, "Diagnosis Procedure"](#).
- NO-1 >> To check malfunction symptom before repair: Refer to [GI-44, "Intermittent Incident"](#).
- NO-2 >> Confirmation after repair: Inspection End.

#### Diagnosis Procedure

INFOID:0000000012939206

##### 1.PERFORM SELF DIAGNOSTIC RESULT

###### CONSULT

1. Turn ignition switch ON.
2. Select "Self Diagnostic Result" mode of "SIDE RADAR LEFT/RIGHT".
3. Select "ERASE".
4. Turn ignition switch OFF.
5. Turn ignition switch ON.
6. Check if any DTC other than "C1B50" is detected in "Self Diagnostic Result" mode of "SIDE RADAR LEFT/RIGHT".

###### Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning part. Refer to [DAS-117, "DTC Index"](#) (Side Radar Right) or [DAS-115, "DTC Index"](#) (Side Radar Left).
- NO >> Replace the faulty side radar. Refer to [DAS-171, "Removal and Installation"](#).

# C1B51 BLIND SPOT WARNING INDICATOR SHORT CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[DRIVER ASSISTANCE SYSTEM]

## C1B51 BLIND SPOT WARNING INDICATOR SHORT CIRCUIT

### DTC Logic

INFOID:0000000012939207

### DTC DETECTION LOGIC

| DTC No. | CONSULT screen terms<br>(Trouble diagnosis content)                   | DTC detection condition   |
|---------|---|---|
| C1B51   | BSW/BSI IND SHORT CIR<br>(Blind Spot Warning indicator short circuit) | Short circuit in Blind Spot Warning indicator circuit is detected. (Over current is detected) |

### POSSIBLE CAUSE

- Blind Spot Warning indicator circuit
- Blind Spot Warning indicator
- Side radar

### FAIL-SAFE

The following systems are canceled:

- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)

### DTC CONFIRMATION PROCEDURE

#### 1. PERFORM DTC CONFIRMATION PROCEDURE

##### CONSULT

1. Start the engine.
2. Select "All DTC Reading" mode.
3. Check if "C1B51" is detected as the current malfunction in "Self Diagnostic Result" mode of "SIDE RADAR RIGHT/LEFT".

Is the "C1B51" detected as the current malfunction?

- YES >> Refer to [DAS-139, "Diagnosis Procedure"](#).  
NO-1 >> To check malfunction symptom before repair: Refer to [GI-44, "Intermittent Incident"](#).  
NO-2 >> Confirmation after repair: Inspection End.

### Diagnosis Procedure

INFOID:0000000012939208

Regarding Wiring Diagram information, refer to [DAS-118, "Wiring Diagram"](#).

#### 1. CHECK BLIND SPOT WARNING INDICATOR CIRCUIT FOR OPEN (1)

1. Turn ignition switch OFF.
2. Disconnect side radar harness connector and Blind Spot Warning indicator harness connector.
3. Check continuity between side radar harness connector and Blind Spot Warning indicator harness connector.

| Side radar |          | Blind Spot Warning indicator |          | Continuity |
|------------|----------|------------------------------|----------|------------|
| Connector  | Terminal | Connector                    | Terminal |            |
| B68 LH     | 4        | D3 LH                        | 1        | Yes        |
| B67 RH     |          | D103 RH                      |          |            |

Is the inspection result normal?

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

#### 2. CHECK BLIND SPOT WARNING INDICATOR CIRCUIT FOR OPEN (2)

Check continuity between Blind Spot Warning indicator harness connector and ground.

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# C1B51 BLIND SPOT WARNING INDICATOR SHORT CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[DRIVER ASSISTANCE SYSTEM]

| Blind Spot Warning indicator |          | Ground | Continuity |
|------------------------------|----------|--------|------------|
| Connector                    | Terminal |        |            |
| D3 LH                        | 4        |        | Yes        |
| D103 RH                      |          |        |            |

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace harness or connector.

## 3. CHECK SIDE RADAR VOLTAGE OUTPUT

1. Connect side radar harness connector.
2. Check voltage between Blind Spot Warning indicator harness connector and ground.

| Blind Spot Warning indicator |          | Ground | Condition                                       | Voltage (Approx.) |
|------------------------------|----------|--------|---|-------------------|
| Connector                    | Terminal |        |   |                   |
| D3 LH                        | 1        |        | Ignition switch<br>OFF ⇒ ON<br>(Approx. 2 sec.) | 6 V               |
| D103 RH                      |          |        |   |                   |

Is the inspection result normal?

YES >> Replace Blind Spot Warning indicator. Refer to [DAS-172, "Removal and Installation"](#).

NO >> Replace side radar. Refer to [DAS-171, "Removal and Installation"](#).

# C1B52 BLIND SPOT WARNING INDICATOR OPEN CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[DRIVER ASSISTANCE SYSTEM]

## C1B52 BLIND SPOT WARNING INDICATOR OPEN CIRCUIT

### DTC Logic

INFOID:0000000012939209

### DTC DETECTION LOGIC

| DTC No. | CONSULT screen terms<br>(Trouble diagnosis content)                 | DTC detection condition  |
|---------|---|--|
| C1B52   | BSW/BSI IND OPEN CIR<br>(Blind Spot Warning indicator open circuit) | Open circuit in Blind Spot Warning indicator circuit is detected |

### POSSIBLE CAUSE

- Blind Spot Warning indicator circuit
- Blind Spot Warning indicator
- Side radar

### FAIL-SAFE

The following systems are canceled:

- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)

### DTC CONFIRMATION PROCEDURE

#### 1. PERFORM DTC CONFIRMATION PROCEDURE

##### CONSULT

1. Start the engine.
2. Select "All DTC Reading" mode.
3. Check if "C1B52" is detected as the current malfunction in "Self Diagnostic Result" mode of "SIDE RADAR RIGHT/LEFT".

Is the "C1B52" detected as the current malfunction?

- YES >> Refer to [DAS-141, "Diagnosis Procedure"](#).
- NO-1 >> To check malfunction symptom before repair: Refer to [GI-44, "Intermittent Incident"](#).
- NO-2 >> Confirmation after repair: Inspection End.

### Diagnosis Procedure

INFOID:0000000012939210

Regarding Wiring Diagram information, refer to [DAS-118, "Wiring Diagram"](#).

#### 1. CHECK BLIND SPOT WARNING INDICATOR CIRCUIT FOR OPEN (1)

1. Turn ignition switch OFF.
2. Disconnect side radar harness connector and Blind Spot Warning indicator harness connector.
3. Check continuity between side radar harness connector and Blind Spot Warning indicator harness connector.

| Side radar |          | Blind Spot Warning indicator |          | Continuity |
|------------|----------|------------------------------|----------|------------|
| Connector  | Terminal | Connector                    | Terminal |            |
| B68 LH     | 4        | D3 LH                        | 1        | Yes        |
| B67 RH     |          | D103 RH                      |          |            |

Is the inspection result normal?

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

#### 2. CHECK BLIND SPOT WARNING INDICATOR CIRCUIT FOR OPEN (2)

Check continuity between Blind Spot Warning indicator harness connector and ground.

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# C1B52 BLIND SPOT WARNING INDICATOR OPEN CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[DRIVER ASSISTANCE SYSTEM]

| Blind Spot Warning indicator |          | Ground | Continuity |
|------------------------------|----------|--------|------------|
| Connector                    | Terminal |        |            |
| D3 LH                        | 4        |        | Yes        |
| D103 RH                      |          |        |            |

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace harness or connector.

## 3. CHECK SIDE RADAR VOLTAGE OUTPUT

1. Connect side radar harness connector.
2. Check voltage between Blind Spot Warning indicator harness connector and ground.

| Blind Spot Warning indicator |          | Ground | Condition                                       | Voltage (Approx.) |
|------------------------------|----------|--------|---|-------------------|
| Connector                    | Terminal |        |   |                   |
| D3 LH                        | 1        |        | Ignition switch<br>OFF ⇒ ON<br>(Approx. 2 sec.) | 6 V               |
| D103 RH                      |          |        |   |                   |

Is the inspection result normal?

YES >> Replace Blind Spot Warning indicator. Refer to [DAS-172, "Removal and Installation"](#).

NO >> Replace side radar. Refer to [DAS-171, "Removal and Installation"](#).

# C1B55 RADAR BLOCKAGE

< DTC/CIRCUIT DIAGNOSIS >

[DRIVER ASSISTANCE SYSTEM]

## C1B55 RADAR BLOCKAGE

### DTC Logic

INFOID:0000000012939211

### DTC DETECTION LOGIC

| DTC No. | CONSULT screen terms<br>(Trouble diagnosis content) | DTC detection condition |
|---------|---|-------------------------|
| C1B55   | RADAR BLOCKAGE<br>(Radar blockage)                  | Side radar is blocked   |

#### NOTE:

DTC "C1B55" may be detected under the following conditions except for possible cause. (Explain to the customer about the difference between the contamination detection function and the indication when the malfunction is detected and tell them, "This is not malfunction")

- The side radar may be blocked by temporary ambient conditions such as splashing water, mist or fog.
- The blocked condition may also be caused by objects such as ice, frost or dirt obstructing the side radar.
- Due to the nature of radar technology, it is possible to get a blockage warning and not actually be blocked. This is rare and is known as a false blockage warning. A false blocked condition either self-clears or clears after an ignition cycle.

#### POSSIBLE CAUSE

Stain or foreign materials are deposited.

#### FAIL-SAFE

The following systems are canceled:

- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)

#### DTC CONFIRMATION PROCEDURE

##### 1. PERFORM DTC CONFIRMATION PROCEDURE

###### CONSULT

1. Start the engine.
2. Turn the Blind Spot Warning system ON.
3. Select "All DTC Reading" mode.
4. Check if "C1B55" is detected as the current malfunction in "Self Diagnostic Result" mode of "SIDE RADAR RIGHT/LEFT".

Is the DTC "C1B55" detected?

- YES >> Refer to [DAS-143, "Diagnosis Procedure"](#).
- NO-1 >> To check malfunction symptom before repair: Refer to [GI-44, "Intermittent Incident"](#).
- NO-2 >> Confirmation after repair: Inspection End.

#### Diagnosis Procedure

INFOID:0000000012939212

##### 1. CHECK THE REAR BUMPER

Check if rear bumper near the side radar is contaminated with foreign materials.

>> GO TO 2.

##### 2. CHECK THE SIDE RADAR

Check if side radar and the side radar outskirts are contaminated with foreign materials.

>> GO TO 3.

##### 3. CHECK THE SIDE RADAR INSTALLATION CONDITION

Check side radar installation condition (installation position, properly tightened or a bent bracket).

>> GO TO 4.

## C1B55 RADAR BLOCKAGE

< DTC/CIRCUIT DIAGNOSIS >

[DRIVER ASSISTANCE SYSTEM]

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### 4. INTERVIEW

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1. Ask if there is stain or foreign materials.
2. Ask if there is any temporary ambient condition such as splashing water, mist or fog.
3. Ask if there is any object such as ice, frost or dirt obstructing the side radar.

#### Are any of above conditions seen?

- YES >> Explain to the customer about the difference between the blockage detection function and the indication when the malfunction is detected and tell them, "This is not malfunction."
- NO >> Inspection End.



# U0104 ADAS CAN 1

< DTC/CIRCUIT DIAGNOSIS >

[DRIVER ASSISTANCE SYSTEM]

## U0104 ADAS CAN 1

### DTC Logic

INFOID:000000012939213

### DTC DETECTION LOGIC

| DTC No. | CONSULT screen terms<br>(Trouble diagnosis content) | DTC detection condition   |
|---------|---|---|
| U0104   | ADAS CAN CIR1<br>(ADAS control unit CAN circuit 1)  | Side radar detected an error of ITS communication signal that was received from ADAS control unit |

### POSSIBLE CAUSE

ADAS control unit

### FAIL-SAFE

The following systems are canceled:

- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)

### DTC CONFIRMATION PROCEDURE

#### 1.CHECK DTC PRIORITY

If DTC "U0104" is displayed with DTC "U1000", first diagnose the DTC "U1000".

#### Is applicable DTC detected?

YES >> Perform diagnosis of applicable. Refer to [DAS-149, "SIDE RADAR LH : DTC Logic"](#) (Side Radar LH) or [DAS-150, "SIDE RADAR RH : DTC Logic"](#) (Side Radar RH).

NO >> GO TO 2.

#### 2.PERFORM DTC CONFIRMATION PROCEDURE

##### ⓂCONSULT

1. Start the engine.
2. Turn the Blind Spot Warning system ON.
3. Select "All DTC Reading" mode.
4. Check if "U0104" is detected as the current malfunction in "Self Diagnostic Result" mode of "SIDE RADAR RIGHT/LEFT".

#### Is DTC "U0104" detected?

YES >> Refer to [DAS-145, "Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-44, "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: Inspection End.

### Diagnosis Procedure

INFOID:000000012939214

#### 1.CHECK DTC PRIORITY

If DTC "U0104" is displayed with DTC "U1000", first diagnose the DTC "U1000".

#### Is applicable DTC detected?

YES >> Perform diagnosis of applicable. Refer to [DAS-149, "SIDE RADAR LH : DTC Logic"](#) (Side Radar LH) or [DAS-150, "SIDE RADAR RH : DTC Logic"](#) (Side Radar RH).

NO >> GO TO 2.

#### 2.SELF DIAGNOSTIC RESULT OF ADAS CONTROL UNIT

##### ⓂCONSULT

1. Start the engine.
2. Turn the Blind Spot Warning system ON.
3. Select "Self Diagnostic Result" mode of "ICC/ADAS".
4. Check DTC.

#### Is DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-105, "DTC Index"](#).

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## U0104 ADAS CAN 1

< DTC/CIRCUIT DIAGNOSIS >

[DRIVER ASSISTANCE SYSTEM]

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NO >> Replace side radar LH or side radar RH. Refer to [DAS-171. "Removal and Installation"](#).

U0405 ADAS CAN 2

DTC Logic

INFOID:000000012939215

DTC DETECTION LOGIC

| DTC No. | CONSULT screen terms<br>(Trouble diagnosis content) | DTC detection condition   |
|---------|---|---|
| U0405   | ADAS CAN CIR2<br>(ADAS control unit CAN circuit 2)  | Side radar detected an error of ITS communication signal that was received from ADAS control unit |

POSSIBLE CAUSE

ADAS control unit

FAIL-SAFE

The following systems are canceled:

- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)

DTC CONFIRMATION PROCEDURE

1.CHECK DTC PRIORITY

If DTC “U0405” is displayed with DTC “U1000”, first diagnose the DTC “U1000”.

Is applicable DTC detected?

- YES >> Perform diagnosis of applicable. Refer to [DAS-149, "SIDE RADAR LH : DTC Logic"](#) (Side Radar LH) or [DAS-150, "SIDE RADAR RH : DTC Logic"](#) (Side Radar RH).
- NO >> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

ⓂCONSULT

1. Start the engine.
2. Turn the Blind Spot Warning system ON.
3. Select “All DTC Reading” mode.
4. Check if “U0405” is detected as the current malfunction in “Self Diagnostic Result” mode of “SIDE RADAR RIGHT/LEFT”.

Is DTC “U0405” detected?

- YES >> Refer to [DAS-147, "Diagnosis Procedure"](#).
- NO-1 >> To check malfunction symptom before repair: Refer to [GI-44, "Intermittent Incident"](#).
- NO-2 >> Confirmation after repair: Inspection End.

Diagnosis Procedure

INFOID:000000012939216

1.CHECK DTC PRIORITY

If DTC “U0405” is displayed with DTC “U1000”, first diagnose the DTC “U1000”.

Is applicable DTC detected?

- YES >> Perform diagnosis of applicable. Refer to [DAS-149, "SIDE RADAR LH : DTC Logic"](#) (Side Radar LH) or [DAS-150, "SIDE RADAR RH : DTC Logic"](#) (Side Radar RH).
- NO >> GO TO 2.

2.SELF DIAGNOSTIC RESULT OF ADAS CONTROL UNIT

ⓂCONSULT

1. Start the engine.
2. Turn the Blind Spot Warning system ON.
3. Select “Self Diagnostic Result” mode of “ICC/ADAS”.
4. Check DTC.

Is DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-105, "DTC Index"](#).

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## U0405 ADAS CAN 2

< DTC/CIRCUIT DIAGNOSIS >

[DRIVER ASSISTANCE SYSTEM]

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NO >> Replace side radar LH or side radar RH. Refer to [DAS-171, "Removal and Installation"](#).

# U1000 CAN COMM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[DRIVER ASSISTANCE SYSTEM]

## U1000 CAN COMM CIRCUIT

### SIDE RADAR LH

#### SIDE RADAR LH : Description

INFOID:0000000012939217

#### CAN COMMUNICATION

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 vehicles are equipped with many electronic control units, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN-H, CAN-L), allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads the required data only.

For CAN communication signal chart. Refer to [LAN-35. "CAN COMMUNICATION SYSTEM : CAN Communication Signal Chart"](#).

#### ITS COMMUNICATION

- ITS communication is a multiplex communication system. This enables the system to transmit and receive large quantities of data at high speed by connecting plural units with 2 communication lines.
- ITS communication lines adopt twisted-pair line style (two lines twisted) for noise immunity.

#### SIDE RADAR LH : DTC Logic

INFOID:0000000012939218

#### DTC DETECTION LOGIC

| DTC No. | CONSULT screen terms<br>(Trouble diagnosis content) | DTC detection condition  |
|---------|---|--|
| U1000   | CAN COMM CIRCUIT<br>(CAN communication circuit)     | If side radar LH is not transmitting or receiving ITS communication signal |

#### POSSIBLE CAUSE

ITS communication system

#### FAIL-SAFE

The following systems are canceled:

- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)

#### DTC CONFIRMATION PROCEDURE

##### 1. PERFORM DTC CONFIRMATION PROCEDURE

##### CONSULT

1. Start the engine.
2. Turn the Blind Spot Warning system ON.
3. Select "All DTC Reading" mode.
4. Check if "U1000" is detected as the current malfunction in "Self Diagnostic Result" mode of "SIDE RADAR LEFT".

##### Is "U1000" detected?

YES >> Refer to [DAS-149, "SIDE RADAR LH : Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-44, "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: Inspection End.

#### SIDE RADAR LH : Diagnosis Procedure

INFOID:0000000012939219

##### 1. SELF DIAGNOSTIC RESULT

##### CONSULT

1. Start the engine.
2. Turn the Blind Spot Warning system ON, and then wait for 30 seconds or more.
3. Perform "ALL DTC Reading" mode.

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# U1000 CAN COMM CIRCUIT

[DRIVER ASSISTANCE SYSTEM]

< DTC/CIRCUIT DIAGNOSIS >

4. Check if "U1000" is detected as the current malfunction in "Self Diagnostic Result" mode of "SIDE RADAR LEFT".

Is "U1000" detected?

- YES >> Refer to [LAN-19, "Trouble Diagnosis Flow Chart"](#).  
NO-1 >> To check malfunction symptom before repair: Refer to [GI-44, "Intermittent Incident"](#).  
NO-2 >> Confirmation after repair: Inspection End.

## SIDE RADAR RH

### SIDE RADAR RH : Description

INFOID:0000000012939220

#### CAN COMMUNICATION

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 vehicles are equipped with many electronic control units, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN-H, CAN-L), allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads the required data only.

For CAN communication signal chart. Refer to [LAN-35, "CAN COMMUNICATION SYSTEM : CAN Communication Signal Chart"](#).

#### ITS COMMUNICATION

- ITS communication is a multiplex communication system. This enables the system to transmit and receive large quantities of data at high speed by connecting plural units with 2 communication lines.
- ITS communication lines adopt twisted-pair line style (two lines twisted) for noise immunity.

### SIDE RADAR RH : DTC Logic

INFOID:0000000012939221

#### DTC DETECTION LOGIC

| DTC No. | CONSULT screen terms<br>(Trouble diagnosis content) | DTC detection condition  |
|---------|---|--|
| U1000   | CAN COMM CIRCUIT<br>(CAN communication circuit)     | If side radar RH is not transmitting or receiving ITS communication signal |

#### POSSIBLE CAUSE

ITS communication system

#### FAIL-SAFE

The following systems are canceled:

- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)

#### DTC CONFIRMATION PROCEDURE

##### 1. PERFORM DTC CONFIRMATION PROCEDURE

###### ⓅCONSULT

- Start the engine.
- Turn the Blind Spot Warning system ON.
- Select "All DTC Reading" mode.
- Check if "U1000" is detected as the current malfunction in "Self Diagnostic Result" mode of "SIDE RADAR RIGHT".

Is "U1000" detected?

- YES >> Refer to [DAS-150, "SIDE RADAR RH : Diagnosis Procedure"](#).  
NO-1 >> To check malfunction symptom before repair: Refer to [GI-44, "Intermittent Incident"](#).  
NO-2 >> Confirmation after repair: Inspection End.

### SIDE RADAR RH : Diagnosis Procedure

INFOID:0000000012939222

##### 1. SELF DIAGNOSTIC RESULT

###### ⓅCONSULT

# U1000 CAN COMM CIRCUIT

[DRIVER ASSISTANCE SYSTEM]

< DTC/CIRCUIT DIAGNOSIS >

1. Start the engine.
2. Turn the Blind Spot Warning system ON, and then wait for 30 seconds or more.
3. Select "ALL DTC Reading" mode.
4. Check if "U1000" is detected as the current malfunction in "Self Diagnostic Result" mode of "SIDE RADAR RIGHT".

Is "U1000" detected?

YES >> Refer to [LAN-19, "Trouble Diagnosis Flow Chart"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-44, "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: Inspection End.

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# U1010 CONTROL UNIT (CAN)

< DTC/CIRCUIT DIAGNOSIS >

[DRIVER ASSISTANCE SYSTEM]

## U1010 CONTROL UNIT (CAN)

### SIDE RADAR LH

#### SIDE RADAR LH : Description

INFOID:0000000012939223

CAN controller controls the communication of ITS communication signal and the error detection.

#### SIDE RADAR LH : DTC Logic

INFOID:0000000012939224

#### DTC DETECTION LOGIC

| DTC No. | CONSULT screen terms<br>(Trouble diagnosis content) | DTC detection condition  |
|---------|---|--|
| U1010   | CONTROL UNIT (CAN)<br>[Control unit (CAN)]          | If side radar LH detects malfunction by CAN controller initial diagnosis |

#### POSSIBLE CAUSE

Side radar LH

#### FAIL-SAFE

The following systems are canceled:

- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)

#### DTC CONFIRMATION PROCEDURE

##### 1.PERFORM DTC CONFIRMATION PROCEDURE

###### CONSULT

1. Start the engine.
2. Turn the Blind Spot Warning system ON.
3. Select "All DTC Reading" mode.
4. Check if "U1010" is detected as the current malfunction in "Self Diagnostic Result" mode of "SIDE RADAR LEFT".

###### Is "U1010" detected?

- YES >> Refer to [DAS-152, "SIDE RADAR LH : Diagnosis Procedure"](#).  
NO-1 >> To check malfunction symptom before repair: Refer to [GI-44, "Intermittent Incident"](#).  
NO-2 >> Confirmation after repair: Inspection End.

#### SIDE RADAR LH : Diagnosis Procedure

INFOID:0000000012939225

##### 1.SELF DIAGNOSTIC RESULT

###### CONSULT

1. Start the engine.
2. Turn the Blind Spot Warning system ON.
3. Select "ALL DTC Reading" mode.
4. Check if "U1010" is detected as the current malfunction in "Self Diagnostic Result" mode of "SIDE RADAR LEFT".

###### Is "U1010" detected?

- YES >> Replace the side radar LH. Refer to [DAS-171, "Removal and Installation"](#).  
NO >> Inspection End.

### SIDE RADAR RH

#### SIDE RADAR RH : Description

INFOID:0000000012939226

CAN controller controls the communication of ITS communication signal and the error detection.

#### SIDE RADAR RH : DTC Logic

INFOID:0000000012939227

#### DTC DETECTION LOGIC



# U1010 CONTROL UNIT (CAN)

[DRIVER ASSISTANCE SYSTEM]

< DTC/CIRCUIT DIAGNOSIS >

| DTC No. | CONSULT screen terms<br>(Trouble diagnosis content) | DTC detection condition  |
|---------|---|--|
| U1010   | CONTROL UNIT (CAN)<br>[Control unit (CAN)]          | If side radar RH detects malfunction by CAN controller initial diagnosis |

## POSSIBLE CAUSE

Side radar RH

## FAIL-SAFE

The following systems are canceled:

- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)

## DTC CONFIRMATION PROCEDURE

### 1.PERFORM DTC CONFIRMATION PROCEDURE

#### CONSULT

1. Start the engine.
2. Turn the Blind Spot Warning system ON.
3. Select "All DTC Reading" mode.
4. Check if "U1010" is detected as the current malfunction in "Self Diagnostic Result" mode of "SIDE RADAR RIGHT".

#### Is "U1010" detected?

- YES >> Refer to [DAS-153, "SIDE RADAR RH : Diagnosis Procedure"](#).
- NO-1 >> To check malfunction symptom before repair: Refer to [GI-44, "Intermittent Incident"](#).
- NO-2 >> Confirmation after repair: Inspection End.

## SIDE RADAR RH : Diagnosis Procedure

INFOID:000000012939228

### 1.SELF DIAGNOSTIC RESULT

#### CONSULT

1. Start the engine.
2. Turn the Blind Spot Warning system ON.
3. Select "ALL DTC Reading" mode.
4. Check if "U1010" is detected as the current malfunction in "Self Diagnostic Result" mode of "SIDE RADAR RIGHT".

#### Is "U1010" detected?

- YES >> Replace the side radar RH. Refer to [DAS-171, "Removal and Installation"](#).
- NO >> Inspection End.

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# POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[DRIVER ASSISTANCE SYSTEM]

## POWER SUPPLY AND GROUND CIRCUIT

### SIDE RADAR LH

#### SIDE RADAR LH : Diagnosis Procedure

INFOID:000000012939229

Regarding Wiring Diagram information, refer to [DAS-118, "Wiring Diagram"](#).

### 1.CHECK FUSES

Check that the following fuse is not blown:

| Signal name           | Fuse No.  |
|-----------------------|-----------|
| Ignition power supply | 30 (10 A) |

Is the fuse blown?

- YES >> Replace the blown fuse after repairing the affected circuit.  
NO >> GO TO 2.

### 2.CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect the side radar LH connector.
3. Check voltage between side radar LH harness connector and ground.

| Terminal      |          | Condition | Voltage<br>(Approx.) |
|---------------|----------|-----------|----------------------|
| (+)           | (-)      |           |                      |
| Side radar LH |          | Ground    | Ignition switch      |
| Connector     | Terminal |           |                      |
| B68           | 5        |           |                      |
|               |          | OFF       | 0 V                  |
|               |          | ON        | Battery voltage      |

Is the inspection result normal?

- YES >> GO TO 3.  
NO >> Repair the side radar LH power supply circuit.

### 3.CHECK GROUND CIRCUIT

Check continuity between side radar LH harness connector and ground.

| Side radar LH |          | Ground | Continuity |
|---------------|----------|--------|------------|
| Connector     | Terminal |        |            |
| B68           | 8        |        | Yes        |

Is the inspection result normal?

- YES >> Inspection End.  
NO >> Repair the side radar LH ground circuit.

### SIDE RADAR RH

#### SIDE RADAR RH : Diagnosis Procedure

INFOID:000000012939230

Regarding Wiring Diagram information, refer to [DAS-118, "Wiring Diagram"](#).

### 1.CHECK FUSES

Check that the following fuse is not blown:

# POWER SUPPLY AND GROUND CIRCUIT

[DRIVER ASSISTANCE SYSTEM]

< DTC/CIRCUIT DIAGNOSIS >

| Signal name           | Fuse No.  |
|-----------------------|-----------|
| Ignition power supply | 30 (10 A) |

Is the fuse blown?

YES >> Replace the blown fuse after repairing the affected circuit.

NO >> GO TO 2.

## 2.CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect the side radar RH connector.
3. Check voltage between side radar RH harness connector and ground.

| Terminal      |          | Condition       | Voltage (Approx.) |
|---------------|----------|-----------------|-------------------|
| (+)           | (-)      |                 |                   |
| Side radar RH |          | Ignition switch | 0 V               |
| Connector     | Terminal |                 |                   |
| B67           | 5        |                 |                   |
|               |          | OFF             | Battery voltage   |
|               |          | ON              |                   |

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the side radar RH power supply circuit.

## 3.CHECK GROUND CIRCUIT

Check continuity between side radar RH harness connector and ground.

| Side radar RH |          | Ground | Continuity |
|---------------|----------|--------|------------|
| Connector     | Terminal |        |            |
| B67           | 3        |        | Yes        |
|               | 8        |        |            |

Is the inspection result normal?

YES >> Inspection End.

NO >> Repair the side radar RH ground circuit.

## ICC SENSOR

### ICC SENSOR : Diagnosis Procedure

INFOID:0000000013007290

Regarding Wiring Diagram information, refer to [CCS-46, "Wiring Diagram"](#).

## 1.CHECK ICC SENSOR POWER SUPPLY CIRCUIT

Check voltage between ICC sensor harness connector and ground.

| (+) ICC sensor |          | (-) | Condition | Standard voltage | Voltage (Approx.) |
|----------------|----------|-----|-----------|------------------|-------------------|
| Connector      | Terminal |     |           |                  |                   |
| E245           | 8        | 1   | OFF       | 0 - 0.1 V        | 0 V               |
|                |          |     | ON        | 9.5 - 16 V       | Battery voltage   |

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the ICC sensor power supply circuit.

## 2.CHECK ICC SENSOR GROUND CIRCUIT

1. Turn the ignition switch OFF.

## POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[DRIVER ASSISTANCE SYSTEM]

2. Disconnect the ICC sensor connector.
3. Check for continuity between ICC sensor harness connector and ground.

| ICC sensor |          | Ground | Continuity |
|------------|----------|--------|------------|
| Connector  | Terminal |        |            |
| E245       | 1        |        | Yes        |

Is the inspection result normal?

- YES >> Inspection End.  
NO >> Repair the ICC sensor ground circuit.

# RIGHT/LEFT SWITCHING SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[DRIVER ASSISTANCE SYSTEM]

## RIGHT/LEFT SWITCHING SIGNAL CIRCUIT

### Diagnosis Procedure

INFOID:000000012939231

Regarding Wiring Diagram information, refer to [DAS-118. "Wiring Diagram"](#).

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Check the terminals and connectors of the side radar RH for damage, bend and short (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal or connector.

#### 2. CHECK CONTINUITY OF RIGHT/LEFT SWITCHING SIGNAL CIRCUIT

1. Disconnect side radar RH connector.
2. Check continuity between side radar RH harness connector and ground.

| Side radar RH |          | Ground | Continuity |
|---------------|----------|--------|------------|
| Connector     | Terminal |        |            |
| B67           | 3        |        | Yes        |

Is the inspection result normal?

YES >> Inspection End.

NO >> Repair harness or connector.

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# WARNING BUZZER CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[DRIVER ASSISTANCE SYSTEM]

## WARNING BUZZER CIRCUIT

### Component Function Check

INFOID:000000012956519

#### 1.CHECK WARNING BUZZER

##### CONSULT

1. Select "ADAS BUZZER" in "Active Test" mode of "ICC/ADAS".
2. Check that the function operates normally.

Is the inspection result normal?

- YES >> Inspection End.  
NO >> Refer to [DAS-158. "Diagnosis Procedure"](#).

#### Diagnosis Procedure

INFOID:000000012956520

Regarding Wiring Diagram information, refer to [DAS-118. "Wiring Diagram"](#).

#### 1.CHECK WARNING BUZZER POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect the warning buzzer harness connector.
3. Turn ignition switch ON.
4. Check voltage between the warning buzzer harness connector and ground.

| Terminals      |          | Voltage<br>(Approx.) |
|----------------|----------|----------------------|
| (+)            | (-)      |                      |
| Warning buzzer |          | Ground               |
| Connector      | Terminal |                      |
| M161           | 1        |                      |
|                |          | Battery voltage      |

Is the inspection result normal?

- YES >> GO TO 2.  
NO >> Repair the warning buzzer power supply circuit.

#### 2.CHECK WARNING BUZZER GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Check continuity between the warning buzzer harness connector and ground.

| Warning buzzer |          | Ground | Continuity |
|----------------|----------|--------|------------|
| Connector      | Terminal |        |            |
| M161           | 3        |        | Yes        |

Is the inspection result normal?

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

#### 3.CHECK WARNING BUZZER SIGNAL CIRCUIT FOR OPEN

1. Disconnect the ADAS control unit connector.
2. Check continuity between the ADAS control unit harness connector and warning buzzer harness connector.

| ADAS control unit |          | Warning buzzer |          | Continuity |
|-------------------|----------|----------------|----------|------------|
| Connector         | Terminal | Connector      | Terminal |            |
| B69               | 4        | M161           | 2        | Yes        |

Is the inspection result normal?

# WARNING BUZZER CIRCUIT

[DRIVER ASSISTANCE SYSTEM]

< DTC/CIRCUIT DIAGNOSIS >

- YES >> GO TO 4.
- NO >> Repair the harness or connector.

## 4. CHECK WARNING BUZZER SIGNAL CIRCUIT FOR SHORT

Check continuity between the ADAS control unit harness connector and ground.

| ADAS control unit |          | Ground | Continuity |
|-------------------|----------|--------|------------|
| Connector         | Terminal |        |            |
| B69               | 4        |        | No         |

Is the inspection result normal?

- YES >> GO TO 5.
- NO >> Repair the harness or connector.

## 5. CHECK WARNING BUZZER OPERATION

1. Connect the warning buzzer connector.
2. Turn ignition switch ON.
3. Apply ground to warning buzzer terminal 2.
4. Check condition of the warning buzzer.

Does warning buzzer sound?

- YES >> Replace the ADAS control unit. Refer to [DAS-72. "Removal and Installation"](#).
- NO >> Replace the warning buzzer. Refer to [DAS-170. "Removal and Installation"](#).

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# DRIVER ASSISTANCE SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

[DRIVER ASSISTANCE SYSTEM]

## SYMPTOM DIAGNOSIS

### DRIVER ASSISTANCE SYSTEM SYMPTOMS

#### Symptom Table

INFOID:000000012939232

| Symptom  | Confirmation item                                      | Inspection item/Reference page   |  |
|--|--|--|--|
| PFCW/FEB/BSW/RCTA indicators do not illuminate.  | All of driver assistance indicators do not illuminate. | System cannot be turned ON/OFF using the integral switch.<br>Refer to <a href="#">DAS-161, "Description"</a> . |  |
|  | Other information display is not illuminated.          | Combination meter<br>Refer to <a href="#">MWI-18, "Description"</a> .  |  |
| FEB/PFCW/BSW/RCTA warning display does not illuminate (Buzzer is functioning normally) | Information display is functioning normally.           | ADAS control unit<br>Refer to <a href="#">DAS-21, "DTC Index"</a> .  |  |
|  | Information display is not functioning normally.       | Perform on board diagnosis of combination meter.<br>Refer to <a href="#">MWI-18, "Description"</a> .           |  |
| FEB/PFCW warning buzzer is not sounding.<br>(Warning display is functioning normally)  | FEB/PFCW warning buzzer does not sound.                | Chime does not sound.<br>Refer to <a href="#">DAS-162, "Description"</a> .                                     |  |
| BSW/RCTA warning buzzer is not sounding.<br>(Warning display is functioning normally)  | BSW/RCTA warning buzzer does not sound.                | Chime does not sound.<br>Refer to <a href="#">DAS-158, "Component Function Check"</a> .                        |  |
| PFCW/FEB is not activated.   | PFCW and FEB are not activated.                        | Frequently cannot detect the vehicle ahead/Detection zone is short.  | Frequently cannot detect the vehicle ahead/Detection zone is short.<br>Refer to <a href="#">DAS-163, "Description"</a> . |
|  |  | System misidentifies a vehicle even though there is no vehicle ahead.  | Perform radar alignment.<br>Refer to <a href="#">BRC-255, "Description"</a> .  |
|  |  | System misidentifies a vehicle in the next lane.   |  |
|  |  | System does not detect the vehicle ahead at all.   | The system does not detect the vehicle ahead at all.<br>Refer to <a href="#">DAS-165, "Description"</a> .                |



# SYSTEM SETTINGS CANNOT BE TURNED ON/OFF ON THE INTEGRAL SWITCH

< SYMPTOM DIAGNOSIS >

[DRIVER ASSISTANCE SYSTEM]

## SYSTEM SETTINGS CANNOT BE TURNED ON/OFF ON THE INTEGRAL SWITCH

### Description

INFOID:000000012939233

System setting is not selectable in the combination meter information display.

### Diagnosis Procedure

INFOID:000000012939234

#### 1.CHECK DRIVER ASSISTANCE SYSTEM SETTING

1. Turn ignition switch ON.
2. Check that the driver assistance system setting can be turned ON/OFF with the integral switch in the combination meter information display using the steering switches.

##### Is the inspection result normal?

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

#### 2.CHECK STEERING SWITCH CIRCUIT

Check the steering switches. Refer to [MWI-71, "Diagnosis Procedure"](#).

##### Is the inspection result normal?

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

#### 3.CHECK STEERING SWITCH RESISTANCE

Check the resistance of the steering switches . Refer to [MWI-71, "Component Inspection"](#).

##### Is the inspection result normal?

- YES >> Replace combination meter. Refer to [MWI-83, "Removal and Installation"](#).  
NO >> Replace steering switches. Refer to [AV-49, "Removal and Installation"](#).

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# CHIME DOES NOT SOUND

< SYMPTOM DIAGNOSIS >

[DRIVER ASSISTANCE SYSTEM]

## CHIME DOES NOT SOUND

### Description

INFOID:000000012939235

The warning chime may not sound in some cases when there is a short distance between vehicles. Some examples are:

- When the vehicles are traveling at the same speed and the distance between vehicles is not changing.
- When the vehicle ahead is traveling faster and the distance between vehicles is increasing.
- When a vehicle cuts in near own vehicle.
- The warning chime will not sound when own vehicle approaches vehicles that are parked or moving slowly.
- The warning chime does not sound when the system does not detect any vehicle ahead. (Diagnose the conditions under which the system is detecting the vehicle ahead and when the system is malfunctioning. If there is any malfunction in detecting the vehicle ahead, check the system following the [DAS-163, "Description"](#).)

### Diagnosis Procedure

INFOID:000000012939236

#### 1.PERFORM ACTIVE TEST

##### ⓐCONSULT

1. Select "METER BUZZER" in "Active Test" mode of "ICC/ADAS".
2. Check that the function operates normally.

Is the inspection result normal?

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

#### 2.PERFORM THE SELF DIAGNOSTIC RESULT

##### ⓐCONSULT

1. Perform "All DTC Reading" mode.
2. Check if the "U1000" is detected in "Self Diagnostic Result" mode of "ICC/ADAS".

Is "U1000" detected?

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

#### 3.CAN COMMUNICATION INSPECTION

Check the CAN communication and repair or replace malfunctioning parts. Refer to [DAS-62, "Description"](#).

>> Inspection End.

#### 4.CHECK METER BUZZER OPERATION

Check meter buzzer. Refer to [WCS-28, "Component Function Check"](#).

Is the inspection result normal?

- YES >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).  
NO >> Replace the combination meter. Refer to [MWI-83, "Removal and Installation"](#).

# FREQUENTLY CANNOT DETECT THE VEHICLE AHEAD / DETECTION ZONE IS SHORT

< SYMPTOM DIAGNOSIS >

[DRIVER ASSISTANCE SYSTEM]

## FREQUENTLY CANNOT DETECT THE VEHICLE AHEAD / DETECTION ZONE IS SHORT

### Description

INFOID:0000000012939237

Symptom check: Detection function may become unstable under the following conditions:

- When the vehicle is driving on a curve such as an S-curve where the curvature changes.
- When the vehicle is driving on an up-and-down road or passing the peak or foot of a slope or passing the break of the inclination of a hill.

### Diagnosis Procedure

INFOID:0000000012939238

#### 1.VISUAL CHECK (1)

Check ICC sensor for contamination and foreign materials.

Does contamination or foreign materials exist?

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

#### 2.WIPE OUT DIRT AND FOREIGN MATERIAL

Clean the contamination and foreign material from the ICC sensor.

>> GO TO 7.

#### 3.VISUAL CHECK (2)

Check ICC sensor and ICC sensor bracket for damage or looseness.

Does damage or looseness exist?

- YES >> Repair or replace affected components. Refer to [CCS-140, "Removal and Installation"](#).
- NO >> GO TO 4.

#### 4.PERFORM RADAR ALIGNMENT

1. Perform radar alignment. Refer to [CCS-61, "Description"](#).
2. Perform action test. Refer to [CCS-68, "Description"](#).
3. Check that the vehicle ahead detection performance improves.

Does it improve?

- YES >> Inspection End.
- NO >> GO TO 5.

#### 5.REPLACE ICC SENSOR

1. Replace the ICC sensor. Refer to [CCS-140, "Removal and Installation"](#).
2. Perform radar alignment. Refer to [CCS-61, "Description"](#).
3. Perform action test. Refer to [CCS-68, "Description"](#).
4. Check that the vehicle ahead detection performance improves.

Does it improve?

- YES >> Inspection End.
- NO >> GO TO 6.

#### 6.REPLACE ADAS CONTROL UNIT

Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

>> GO TO 7.

#### 7.CHECK ICC SYSTEM

1. Erase "Self Diagnostic Result", and then perform "All DTC Reading" again after performing the action test. (Refer to [CCS-68, "Description"](#) for action test.)
2. Check that the ICC system is normal.

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**FREQUENTLY CANNOT DETECT THE VEHICLE AHEAD / DETECTION ZONE IS SHORT**

< SYMPTOM DIAGNOSIS >

[DRIVER ASSISTANCE SYSTEM]

---

>> Inspection End.

# THE SYSTEM DOES NOT DETECT THE VEHICLE AHEAD AT ALL

< SYMPTOM DIAGNOSIS >

[DRIVER ASSISTANCE SYSTEM]

## THE SYSTEM DOES NOT DETECT THE VEHICLE AHEAD AT ALL

### Description

INFOID:000000012939239

When PFCW/FEB system is active, the PFCW/FEB system does not perform any control even though there is a vehicle ahead.

### Diagnosis Procedure

INFOID:000000012939240

#### 1. CHECK INFORMATION DISPLAY

1. Start the "Self Diagnosis" of combination meter. Refer to [MWI-18, "Description"](#).
2. Check that the segment of information display is displayed normally.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the combination meter. Refer to [MWI-83, "Removal and Installation"](#).

#### 2. VISUAL CHECK (1)

Check ICC sensor for contamination and foreign materials.

Does contamination or foreign materials exist?

YES >> GO TO 3.

NO >> GO TO 4.

#### 3. WIPE OUT DIRT AND FOREIGN MATERIAL

Clean the contamination and foreign material from the ICC sensor.

>> Inspection End.

#### 4. VISUAL CHECK (2)

Check ICC sensor and ICC sensor bracket for damage or looseness.

Does damage or looseness exist?

YES >> Repair or replace affected components. Refer to [CCS-140, "Removal and Installation"](#).

NO >> GO TO 5.

#### 5. PERFORM RADAR ALIGNMENT

1. Perform radar alignment. Refer to [CCS-61, "Description"](#).
2. Perform action test. Refer to [CCS-68, "Description"](#).
3. Check that the vehicle ahead detection performance improves.

Does it improve?

YES >> Inspection End.

NO >> GO TO 6.

#### 6. REPLACE ICC SENSOR

1. Replace the ICC sensor. Refer to [CCS-140, "Removal and Installation"](#).
2. Perform radar alignment. Refer to [CCS-61, "Description"](#).
3. Perform action test. Refer to [CCS-68, "Description"](#).
4. Check that the vehicle ahead detection performance improves.

Does it improve?

YES >> Inspection End.

NO >> GO TO 7.

#### 7. REPLACE ADAS CONTROL UNIT

Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

>> Inspection End.

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**NORMAL OPERATING CONDITION****Description**

INFOID:0000000012939241

**PRECAUTIONS FOR PREDICTIVE FORWARD COLLISION WARNING (PFCW)**

- The Predictive Forward Collision Warning system is designed to warn the driver before a collision, but will not avoid a collision. It is the driver's responsibility to stay alert, drive safely and be in control of the vehicle at all times.
- The radar sensor does not detect the following objects:
  - Pedestrians, animals, or obstacles in the roadway.
  - Oncoming vehicles.
  - Crossing vehicles.
- The Predictive Forward Collision Warning system does not function when a vehicle ahead is a narrow vehicle, such as a motorcycle.
- The radar sensor may not detect a second vehicle ahead in the following conditions:
  - Snow or heavy rain.
  - Dirt, ice, snow or other material covering the radar sensor.
  - Interference by other radar sources.
  - Snow or road spray from traveling vehicles is splashed.
  - Driving in a tunnel.
- The radar sensor may not detect a second vehicle when the vehicle ahead is being towed.
- When the distance to the vehicle ahead is too close, the beam of the radar sensor is obstructed.
- The radar sensor may not detect a second vehicle when driving on a steep downhill slope or on roads with sharp curves.
- Excessive noise will interfere with the warning tone sound, and it may not be heard.

**PRECAUTIONS FOR BLIND SPOT WARNING**

- The Blind Spot Warning system is not a replacement for proper driving procedure and is not designed to prevent contact with vehicles or objects. When changing lanes, always use the side and rear mirrors and turn and look in the direction the vehicle will move to ensure it is safe to change lanes. Never rely solely on the Blind Spot Warning system.
- The Blind Spot Warning system may not provide the warning or the control for vehicles that pass through the detection zone quickly.
- Excessive noise (for example, audio system volume or open vehicle window) will interfere with the chime sound, and it may not be heard.
- The side radar may not be able to detect and activate Blind Spot Warning when certain objects are present such as:
  - Pedestrians, bicycles, animals.
  - Several types of vehicles such as motorcycles.
  - Oncoming vehicles.
  - Vehicles remaining in the detection zone when driver accelerates from a stop.
  - A vehicle merging into an adjacent lane at a speed approximately the same as own vehicle.
  - A vehicle approaching rapidly from behind.
  - A vehicle which own vehicle overtakes rapidly.
- Severe weather or road spray conditions may reduce the ability of the radar to detect other vehicles.
- The side radar detection zone is designed based on a standard lane width. When driving in a wider lane, the side radar may not detect vehicles in an adjacent lane. When driving in a narrow lane, the side radar may detect vehicles driving two lanes away.
- The side radar is designed to ignore most stationary objects; however, objects such as guardrails, walls, foliage and parked vehicles may occasionally be detected. This is a normal operating condition.

**PRECAUTIONS FOR REAR CROSS TRAFFIC ALERT (RCTA)**

- Always check surroundings and turn to check what is behind you before backing up. The radar sensors detect approaching (moving) vehicles. The radar sensors cannot detect every object such as:
  - Pedestrians, bicycles, motorcycles, animals or child operated toy vehicles.
  - A vehicle that is passing at speeds greater than approximately 19 mph (30 km/h).
  - A vehicle that is passing at speeds less than approximately 5 mph (8 km/h).
- The radar sensors may not detect approaching vehicles in certain situations:
  - When the vehicle that is parked next to you obstructs the beam of the radar sensor.
  - When the vehicle is parked in an angled parking space.
  - When the vehicle is parked on an incline.

## NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[DRIVER ASSISTANCE SYSTEM]

- When an approaching vehicle turns into your vehicle's parking lot isle. A
- When the angle formed by your vehicle is too small.
- The following conditions may reduce the ability of the radar to detect other vehicles:
  - Severe weather
  - Road spray B
  - Ice build-up on the vehicle
  - Frost on the vehicle
  - Dirt build-up on the vehicle
- Do not attach stickers (including transparent material), install accessories or apply additional paint near the radar sensors. These conditions may reduce the ability of the radar to detect other vehicles. C
- Do not use RCTA system when towing a trailer.
- Excessive noise (e.g., audio system volume or open vehicle window) will interfere with the chime sound, and it may not be heard. D

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## REMOVAL AND INSTALLATION

### ICC SENSOR

#### Removal and Installation

INFOID:000000013057162

For removal and installation of the ICC sensor, refer to [CCS-140, "Exploded View"](#).



## ICC STEERING SWITCH

### Removal and Installation

INFOID:000000013057163

For removal and installation of the ICC steering switch, refer to [AV-49. "Removal and Installation"](#) (Base audio), [AV-113. "Removal and Installation"](#) (Display audio without BOSE™), [AV-202. "Removal and Installation"](#) (Display audio with BOSE™), [AV-298. "Removal and Installation"](#) (Navigation without BOSE™), or [AV-418. "Removal and Installation"](#) (Navigation with BOSE™).

**CAUTION:**

Always perform ICC system action test to check that the ICC system operates normally after replacing the ICC sensor or repairing any ICC system malfunction. Refer to [CCS-58. "Description"](#).

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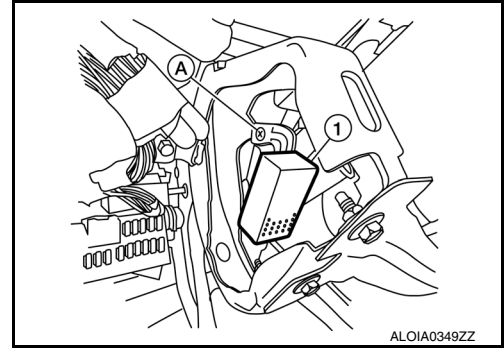
## WARNING BUZZER

### Removal and Installation

INFOID:000000012939246

#### REMOVAL

1. Remove the instrument lower panel (LH). Refer to [IP-21. "Removal and Installation"](#).
2. Remove screw (A) and remove warning buzzer (1).
3. Remove bracket from buzzer (if necessary).



#### INSTALLATION

Installation is in the reverse order of removal.

# SIDE RADAR

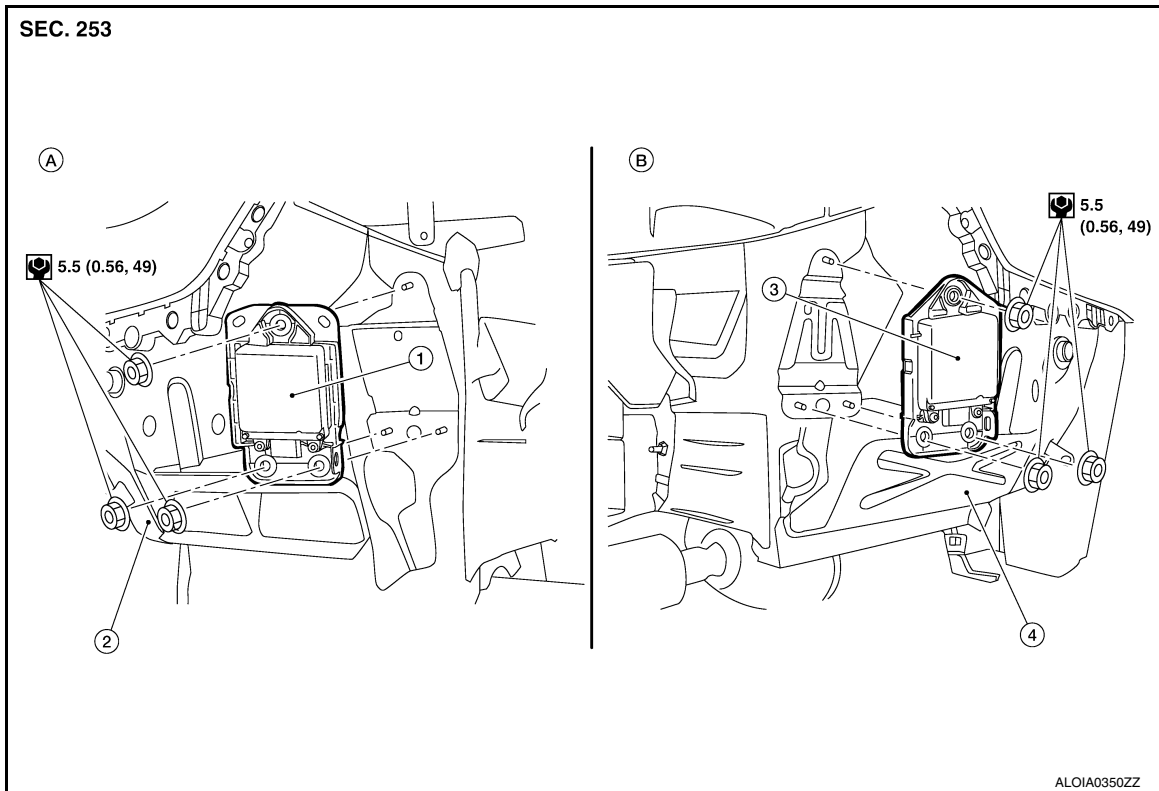
< REMOVAL AND INSTALLATION >

[DRIVER ASSISTANCE SYSTEM]

## SIDE RADAR

### Exploded View

INFOID:000000012939248



- |                     |                     |                    |
|---------------------|---------------------|--------------------|
| 1. Side radar (LH)  | 2. Rear fender (LH) | 3. Side radar (RH) |
| 4. Rear fender (RH) | A. LH side          | B. RH side         |

## Removal and Installation

INFOID:000000012939249

### REMOVAL

1. Remove rear bumper fascia. Refer to [EXT-29, "Removal and Installation"](#).
2. Disconnect harness connector from side radar.
3. Remove nuts and remove side radar.

### INSTALLATION

Installation is in the reverse order of removal.

#### CAUTION:

- Do not use side radar if lens has flaws.
- Perform Blind Spot Warning system action test after side radar installation is complete. Refer to [DAS-136, "BLIND SPOT WARNING : Description"](#).
- Perform the Rear Cross Traffic Alert action test after side radar installation is complete. Refer to [DAS-137, "RCTA : Description"](#).

#### NOTE:

Do not touch side radar lens and keep lens area clean.

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# BLIND SPOT WARNING INDICATOR

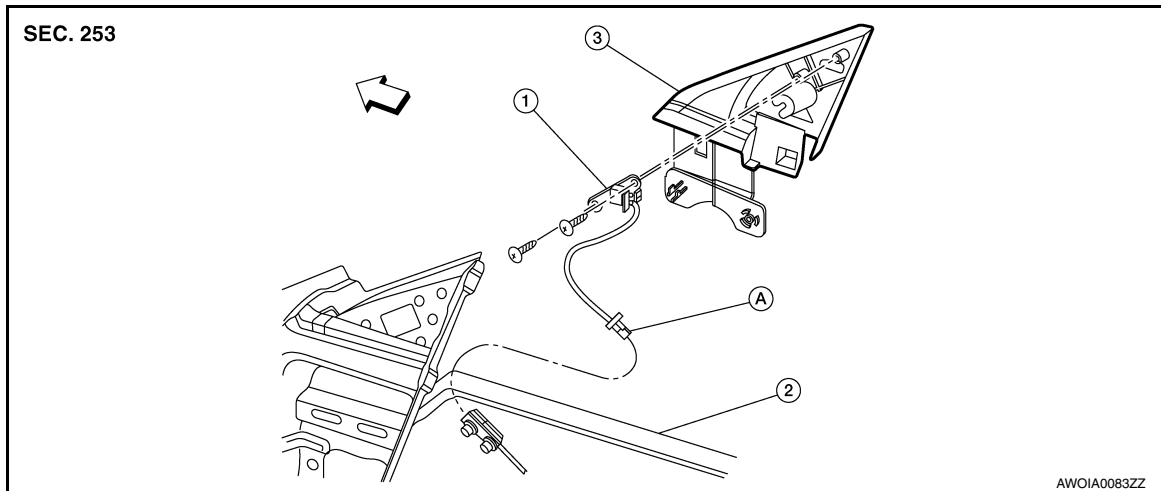
< REMOVAL AND INSTALLATION >

[DRIVER ASSISTANCE SYSTEM]

## BLIND SPOT WARNING INDICATOR

Exploded View

INFOID:000000012939250



1. Blind spot warning indicator                      2. Front door                      3. Door mirror corner finisher  
A. Blind spot warning indicator harness connector   ← Front

## Removal and Installation

INFOID:000000012939251

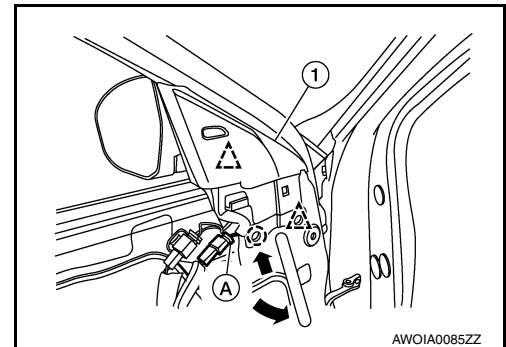
### REMOVAL

#### NOTE:

LH shown; RH similar

1. Remove the front door finisher. Refer to [INT-15. "Removal and Installation"](#).
2. Disconnect the harness connector (A) for the BSW indicator.
3. Release the clips and pawl using suitable tool and remove the door mirror corner finisher (1).
  - Push suitable tool underneath finisher, then pry outward as shown. Move tool further up near upper fastened area, then pry outward again.

- △: Clip  
○: Pawl



4. Remove the blind spot warning indicator screws.
5. Remove the blind spot warning indicator.

### INSTALLATION

Installation in the reverse order of removal.