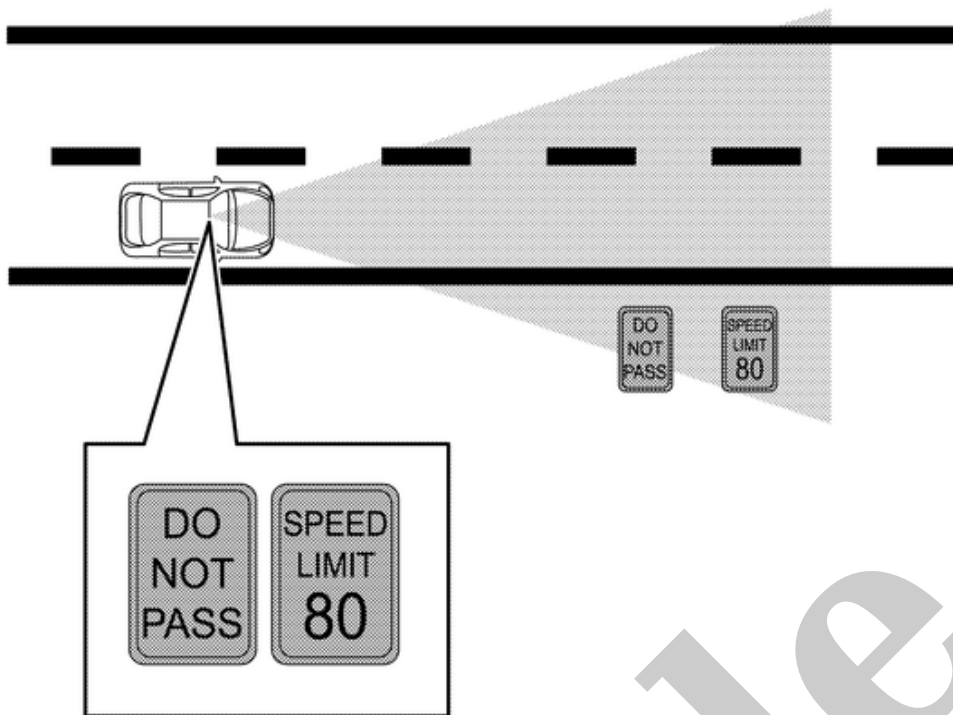


Your Ultimate Source for OEM Repair Manuals

FactoryManuals.net is a great resource for anyone who wants to save money on repairs by doing their own work. The manuals provide detailed instructions and diagrams that make it easy to understand how to fix a vehicle.

2021 NISSAN GT-R Nismo Service and Repair Manual

[Go to manual page](#)



SIEMD-7109802-03-000310463

OPERATION DESCRIPTION

- The TSR system is controlled by the front camera unit.
- The front camera unit turns on the TSR system when the turned ON by combination meter.
- The front camera unit detects the road sign.
- The front camera unit transmits the meter display signal to the combination meter, when detecting the road sign.
- The front camera unit adjusts the detection range of road signs according to a steering angle sensor signal received from the steering angle sensor.

OPERATION CONDITION

Front camera unit performs the control when the following conditions are satisfied.

- TSR system: ON



NOTE:

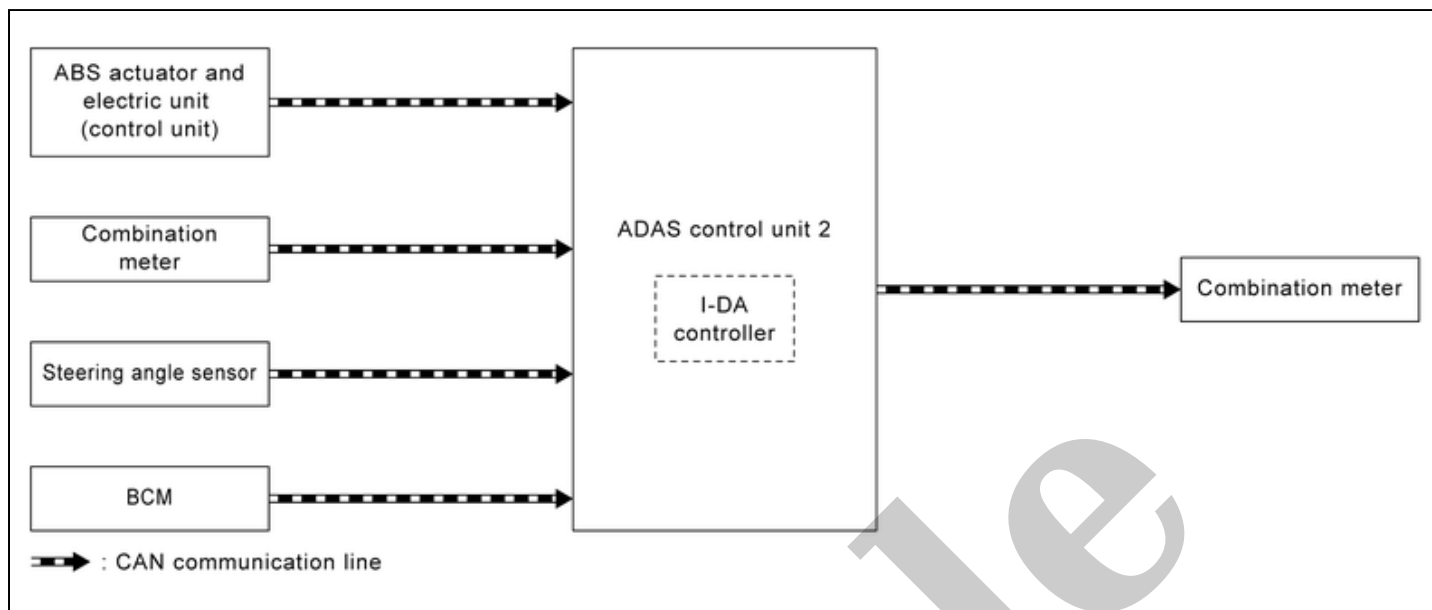
- **TSR system ON/OFF can be set on the combination meter**
- **The TSR system may not function properly, depending on the situation.**

CANCEL CONDITION

The front camera unit cancels the operation when the system is under any conditions of the operation cancellation condition.

- When the system malfunction occurs.
- When the front camera unit becomes high temperature [over approximately 40 °C (104 °F)].

SYSTEM DIAGRAM



SIEMD-7109401-01-000310464

Component	Description
BCM	System Description
Combination meter	Combination Meter
Steering angle sensor	Component Description
ABS actuator and electric unit (control unit)	Component Description
ADAS control unit 2	ADAS Control Unit 2

ADAS CONTROL UNIT 2 INPUT/OUTPUT SIGNAL ITEM

Input Signal Item

Transmit unit	Signal name		Description
ABS actuator and electric unit (control unit)	CAN communication	Vehicle speed signal (ABS)	Receives the wheel speed of the four wheels
Combination meter	CAN communication	System selection signal	Receives a selection state of each item selected with the combination meter
Steering angle sensor	CAN communication	Steering angle sensor signal	Receives the amount of rotation, rotational angle, and rotational direction of the steering wheel
BCM	CAN communication	Turn indicator signal	Receives an operational state of the turn signal lamp and hazard lamp

Output Signal Item

Reception unit	Signal name		Description
Combination meter	CAN communication	Meter display signal	Transmits a signal and displays the status on the vehicle information display

FUNCTION DESCRIPTION

- Operates when the vehicle speed is 55 km/h (34 MPH) or higher.
- Detects the steering status and judges the attentiveness of the driver. The driver's attentiveness is shown on the vehicle information display in eight stages (level indicator).
- When it is judged from the degree of minor swerving in the steering operation that the vehicle is drifting, the driver is prompted to exert caution by the drift warning, which displays on the combination meter.
- When the EV system is stopped, the system is reset.

OPERATION DESCRIPTION

- The I-DA (Intelligent Driver Alertness) is controlled by the ADAS control unit 2.
- ON/OFF of the I-DA is performed by using the combination meter.
- The steering angle sensor detects the degree of swerving in the steering operation.
- When the ADAS control unit 2 judges that the steering operation is drifting it transmits the meter display signal to the combination meter.

OPERATION CONDITION

ADAS control unit 2 performs the control when the following conditions are satisfied.

- I-DA system: ON
- Vehicle speed: Approximately 60 MPH (37 km/h) or lower



NOTE:

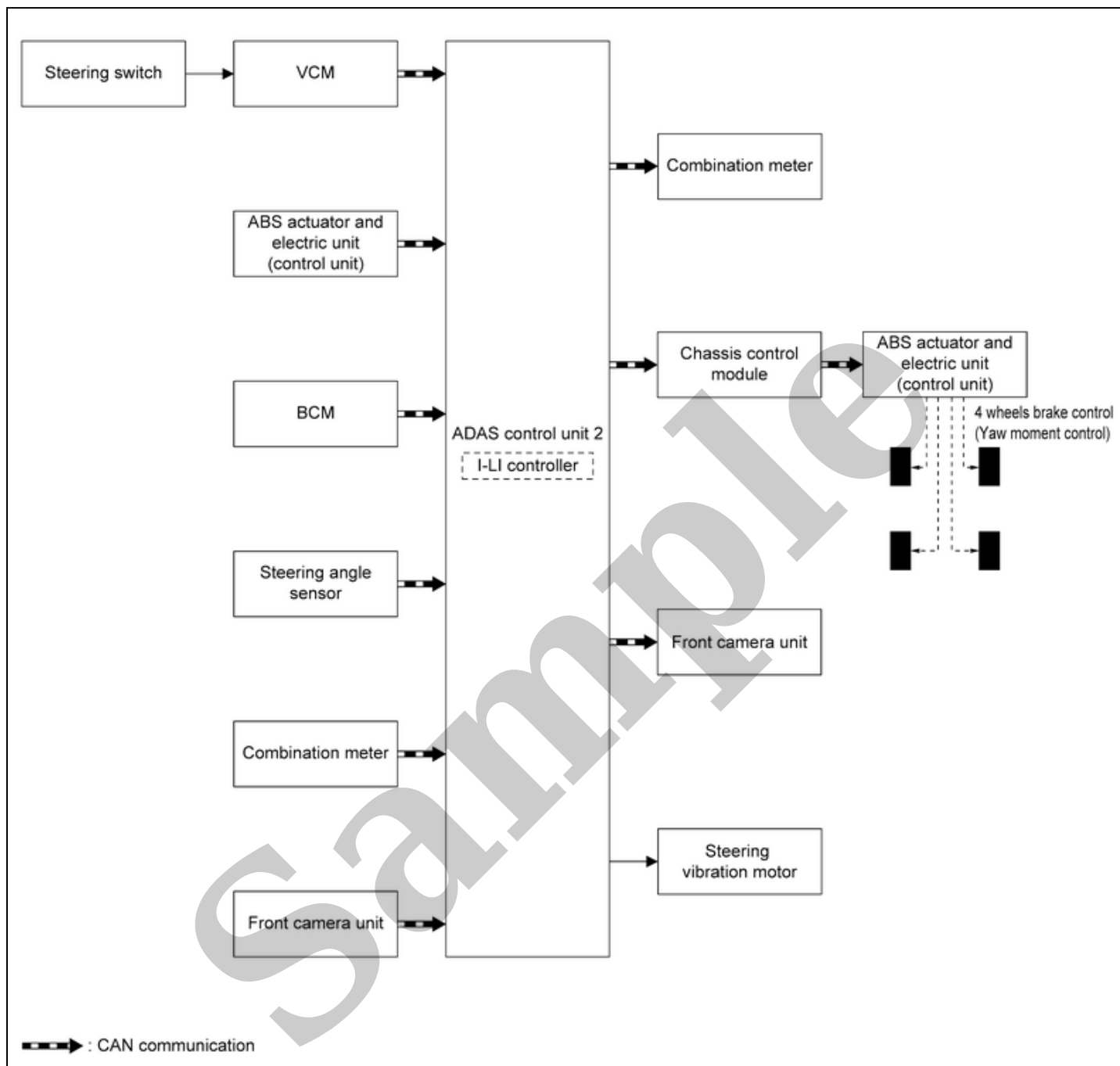
- **I-DA system ON/OFF can be set on the information display.**
- **When the EV system is stopped, the system is reset.**
- **The I-DA system may not function properly, depending on the situation.**

CANCEL CONDITION

The ADAS control unit 2 cancels the operation when the system is under any conditions of the operation cancellation condition.

- When the system malfunction occurs.

SYSTEM DIAGRAM



SIEMD-7109418-01-000430599

Component	Description
ABS actuator and electric unit (control unit)	Component Description
BCM	System Description
Steering angle sensor	Component Description
Front camera unit	Front Camera Unit
ADAS control unit 2	ADAS Control Unit 2
Combination meter	Combination Meter
Steering vibration motor	Steering Vibration Motor
Chassis control module	Component Description
ProPILOT Assist Steering Switch	ProPILOT Assist Steering Switch
ProPILOT Assist 2.0 Steering Switch	ProPILOT Assist 2.0 Steering Switch

Component	Description
VCM	Component Description

ADAS CONTROL UNIT 2 INPUT/OUTPUT SIGNAL ITEM

Input Signal Item

Transmit unit	Signal name		Description
VCM	CAN communication	Accelerator pedal position signal	Receives accelerator pedal position (angle)
		READY status signal	Receives READY status
		Steering switch signal	Receives the operational state of the steering switch
		ProPILOT Assist permission signal	Receives an operable/inoperable state of the ProPILOT Assist system
		Shift position signal	Receives a select lever position
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
		TCS malfunction signal	Receives a malfunction state of TCS
		TCS operation signal	Receives an operational state of TCS
		VDC OFF signal	Receives an ON/OFF state of ESP
		VDC malfunction signal	Receives a malfunction state of ESP
		VDC operation signal	Receives an operational state of ESP
		Vehicle speed signal (ABS)	Receives wheel speeds of four wheels
		Yaw rate signal	Receives yaw rate acting on the vehicle
		Side G sensor signal	Receives lateral G acting on the vehicle
Electric parking brake operation signal	Receives an operational state of the parking brake		
Combination meter	CAN communication	System selection signal	Receives a selection state of each item in "Driving Aids" selected with the information display
BCM	CAN communication	Turn indicator signal	Receives an operational state of the turn signal lamp and the hazard lamp
		Stop lamp switch signal	Receives an operational state of the brake pedal
Steering angle sensor	CAN communication	Steering angle sensor signal	Receives the number of revolutions, turning direction of the steering wheel
Front camera unit	CAN communication	Detected lane condition signal	Receives detection results of lane marker

Output Signal Item

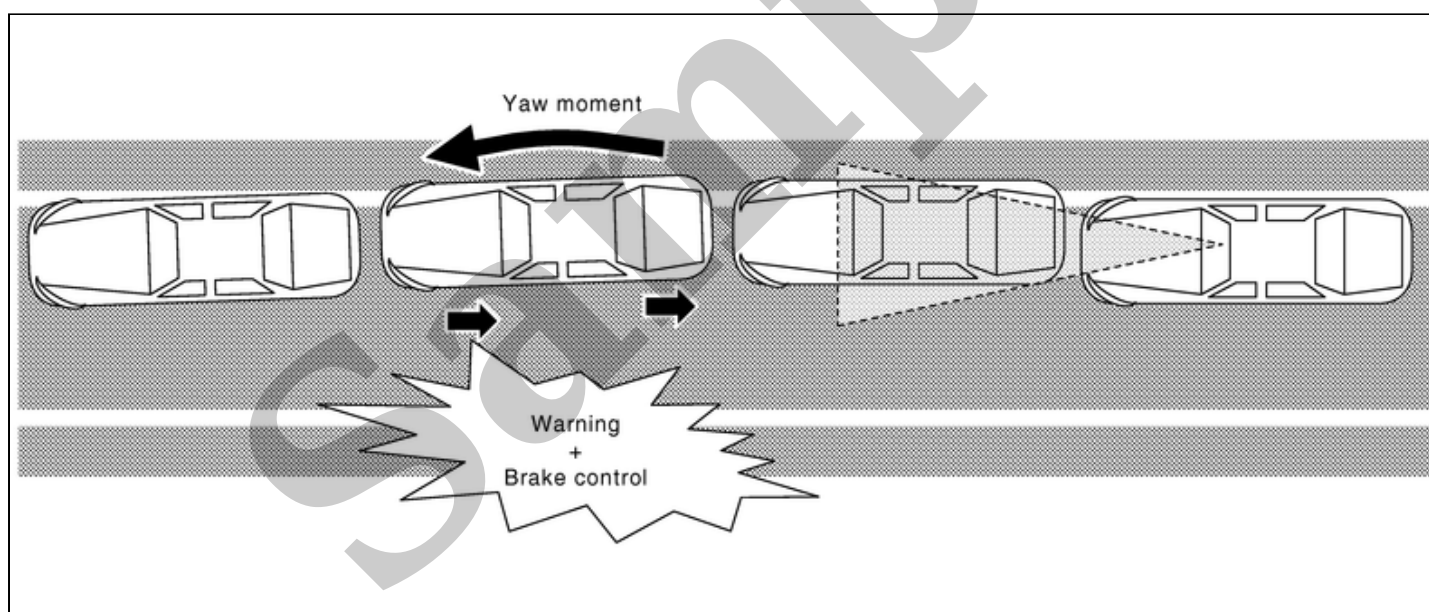
Reception unit	Signal name		Description
ABS actuator and electric unit (via chassis control module)	CAN communication	Target yaw moment signal	Transmits a target yaw moment signal to generate yaw moment to the vehicle
Combination meter	CAN communication	Meter display signal	Transmits an meter display signal to turn ON the I-LI system display
		Buzzer output	Transmits a signal to activate buzzer

Reception unit	Signal name		Description
		signal	
Front camera unit	CAN communication	Vehicle speed signal	Transmits a vehicle speed calculated by ADAS control unit 2
		Turn indicator signal	Transmits a turn indicator signal received from BCM
Steering vibration motor	Motor operation signal		Activates a motor operation signal to active the steering vibration motor

FUNCTION DESCRIPTION

- Intelligent Lane Intervention (I-LI) system provides a lane departure warning and brake control assistance when the vehicle is driven at speeds of approximately 60 km/h (37 MPH) or more.
- When the vehicle approaches either the left or the right side of the traveling lane, a steering vibration activates and the I-LI warning display on the information display blinks to alert the driver. Then, the I-LI system automatically applies the brakes for a short period of time to help assist the driver to return the vehicle to the center of the traveling lane.
- Warning and brake control are not performed during turn signal operation (lane change side).
- The warning and assist functions stop when the vehicle returns to a position inside of the lane marker.

EXAMPLE



SIEMD-7109418-03-POIA0013GB

When the vehicle approaches the right lane marker, the driver is alerted by the steering vibration and the blinking of I-LI indicator. Simultaneously, the left brake is controlled independently to generate force toward the direction to recover the vehicle from the lane departure.

OPERATION DESCRIPTION

- When the system is turned ON by dynamic driver assistance switch, ADAS control unit 2 transmits meter display signal to combination meter via CAN communication.
- Front camera unit monitors lane markers of the traveling lane. It transmits the detected lane condition signal to ADAS control unit 2 via chassis CAN communication.
- When judging from a lane marker detection signal that the vehicle is approaching the lane marker, ADAS control unit 2 controls the following items.
 - Activates the steering vibration motor by ADAS control unit 2.
 - Transmits a meter display signal to combination meter via CAN communication.

- Calculates necessary yaw moment to transmit a target yaw moment signal to ABS actuator and electric unit (control unit) via CAN communication
- When receiving the target yaw moment signal, ABS actuator and electric unit (control unit) controls brake pressure of four wheels, respectively.
- When receiving the signal from ADAS control unit 2, combination meter turns ON/OFF the I-LI system display.

OPERATION CONDITION

ADAS control unit 2 performs the control when the following conditions are satisfied.

- I-LI system: ON
- Vehicle speed: approximately 60 km/h (37 MPH) or more
- Turn indicator signal: After 2 seconds or more from turned OFF



NOTE:

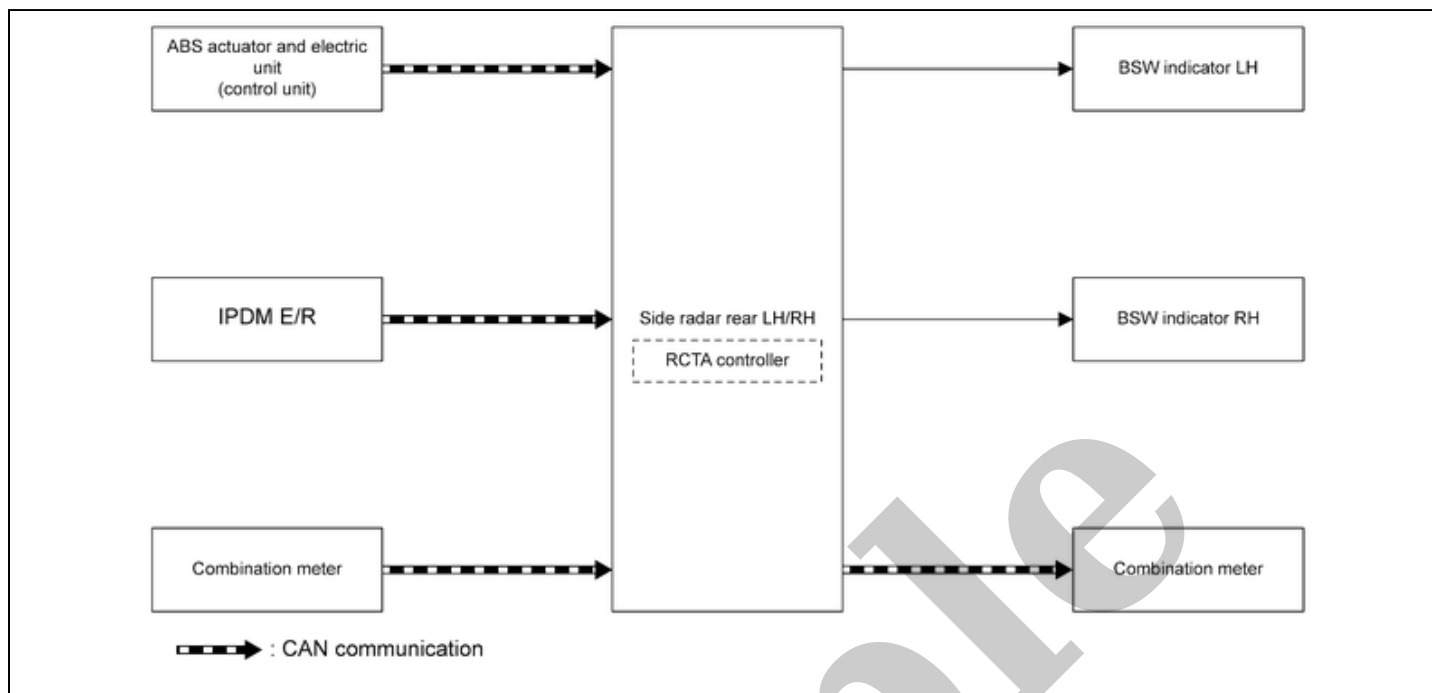
- **I-LI system ON/OFF can be set on the information display.**
- **After the operating conditions are satisfied, the control continues until the vehicle speed reaches approximately 50 km/h (31 MPH).**
- **The I-LI system may not function properly, depending on the situation.**

CANCEL CONDITION

The ADAS control unit 2 cancels the operation when the system is under any conditions of the operation cancellation condition.

- When the system malfunction occurs.
- When the VDC or ABS (Including the TCS) operates.
- When the VDC is turned OFF
- When the SNOW mode and the OFF-ROAD mode is selected (AWD models).
- When the front camera unit becomes high temperature [over approximately 40 °C (104 °F)].

SYSTEM DIAGRAM



SIEMD-7109665-01-000425405

Component	Description
ABS actuator and electric unit (control unit)	Component Description
Combination meter	Combination Meter
Side radar rear LH/RH	Component Description
BSW indicator LH, RH	BSW Indicator LH/RH
IPDM E/R	System Description

SIDE RADAR INPUT/OUTPUT SIGNAL ITEM

Input Signal Item

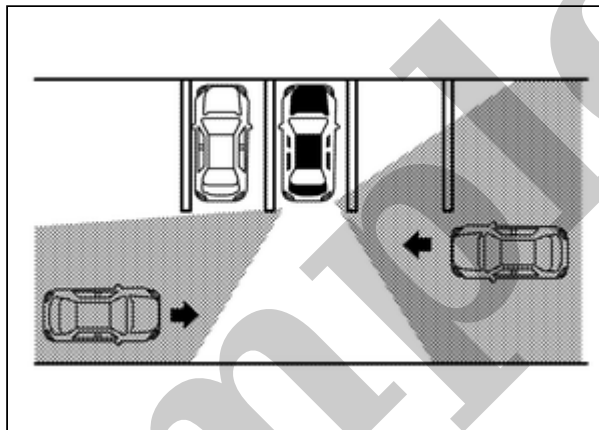
Transmit unit	Signal name		Description
IPDM E/R	CAN communication	Shift position signal	Receives a selector lever position
ABS actuator and electric unit (control unit)	CAN communication	Vehicle speed signal (ABS)	Receives wheel speeds of four wheels
		ABS malfunction signal	Receives a malfunction state of ABS
		VDC malfunction signal	Receives a malfunction state of ESP
Combination meter	CAN communication	System selection signal	Receives a selection state of each item selected through the vehicle information display

Output Signal Item

Reception unit	Signal name		Description
Combination meter	CAN communication	Buzzer output signal	Transmits a signal to activate buzzer
BSW indicator LH, RH	BSW indicator signal		Transmits a BSW indicator signal to turn ON the BSW indicator
	BSW indicator dimmer signal		Transmits a BSW indicator dimmer signal to dimmer BSW indicator

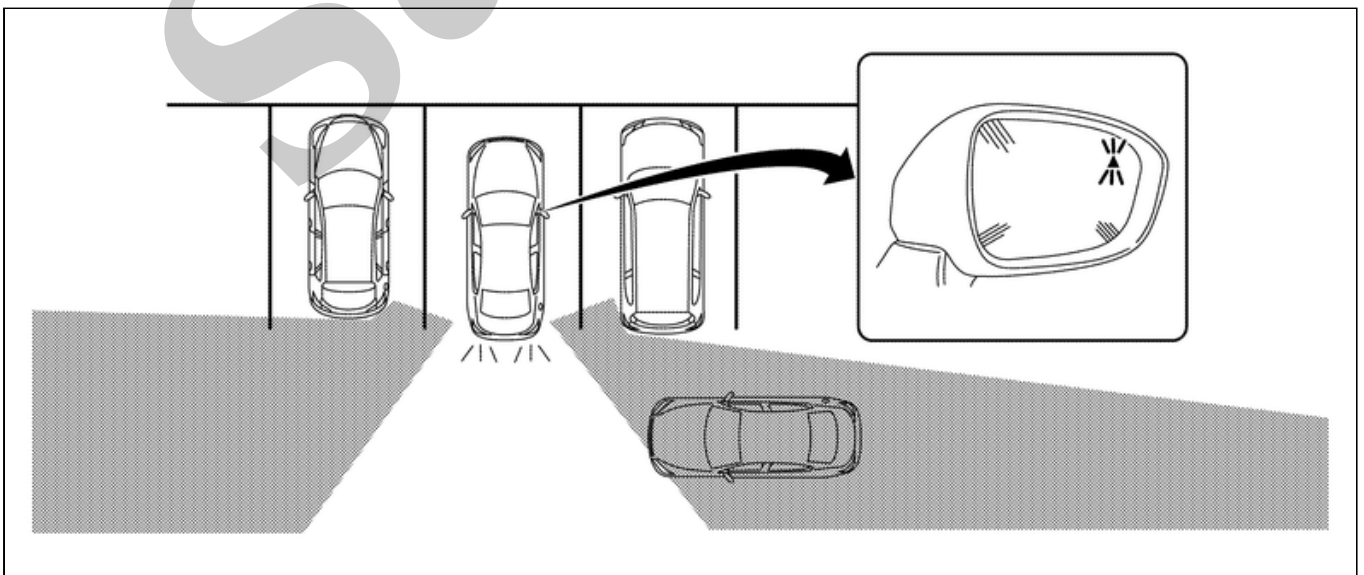
FUNCTION DESCRIPTION

- The Rear Cross Traffic Alert (RCTA) 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.
- The RCTA system operates at speeds below 8 km/h (5 MPH) whenever the vehicle is in reverse.



SIEMD-7109665-02-SOIA0977ZZ

- 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 20 m (66 ft) away.
- If the radar detects a vehicle approaching from the side, the system gives visual and audible warning.



SIEMD-7109665-04-000312500

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

OPERATION DESCRIPTION

- Side radar enables RCTA system.