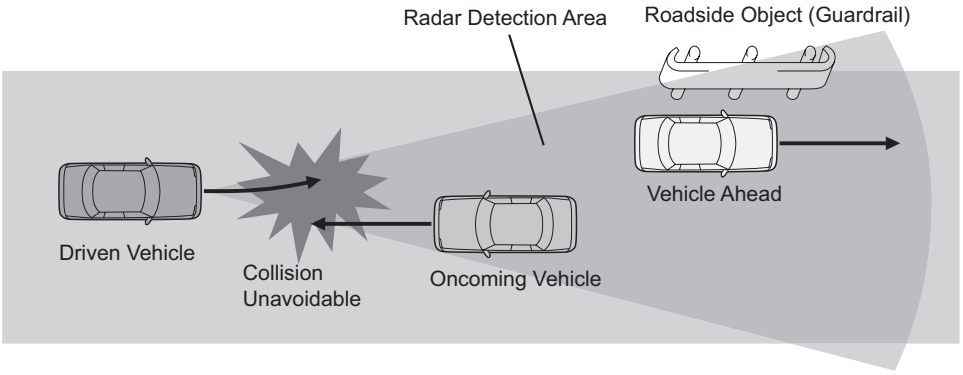
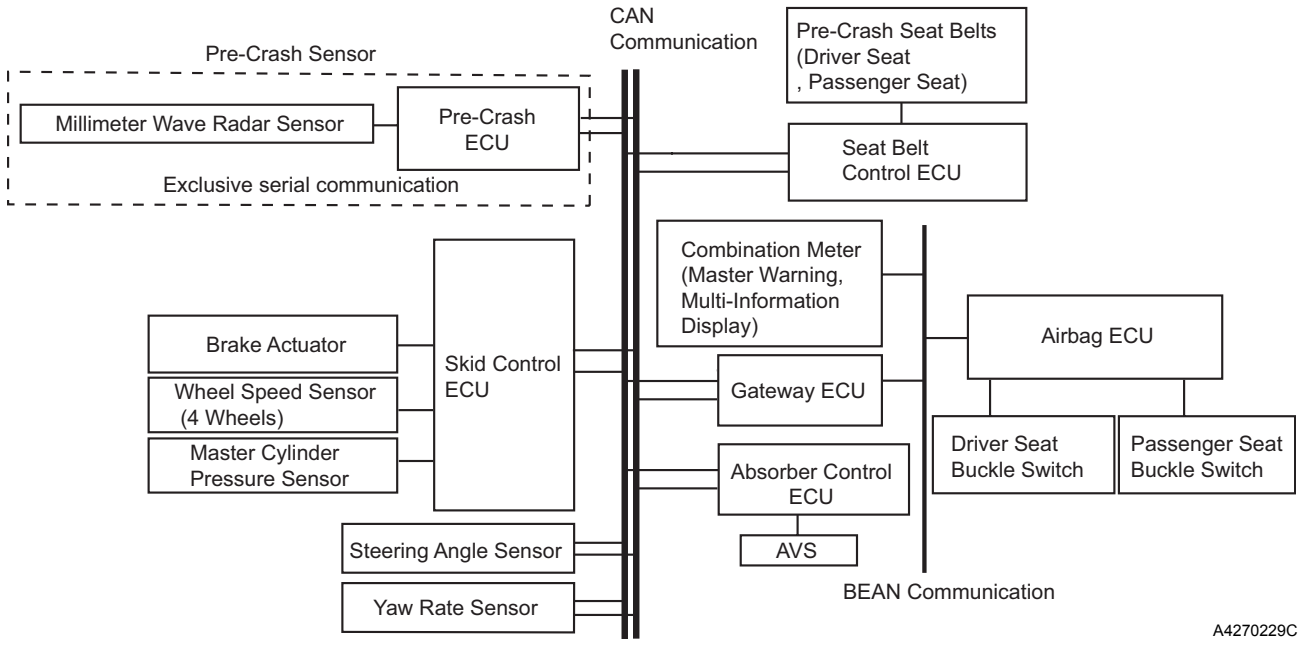
Components	Functions
Seat Belt Control ECU	Effects pre-crash seat belt control based on a signal received from the Pre-Crash ECU.
Pre-Crash Seat Belt	Operates a motor to retract the seat belt before a crash.
Buckle Switch	Detects whether the seat belt is buckled or not.

Pre-Crash Safety System Operation Outline

- The millimeter wave radar sensor recognizes a vehicle or an obstacle along the course of the vehicle. The Pre-Crash ECU determines whether a collision is unavoidable based on the position, speed, and course of the object.
- The Pre-Crash ECU transmits this information to the seat belt control ECU, absorber control ECU, and skid control ECU through the CAN (Controller Area Network), in order to operate the respective controls of the Pre-Crash Safety System.



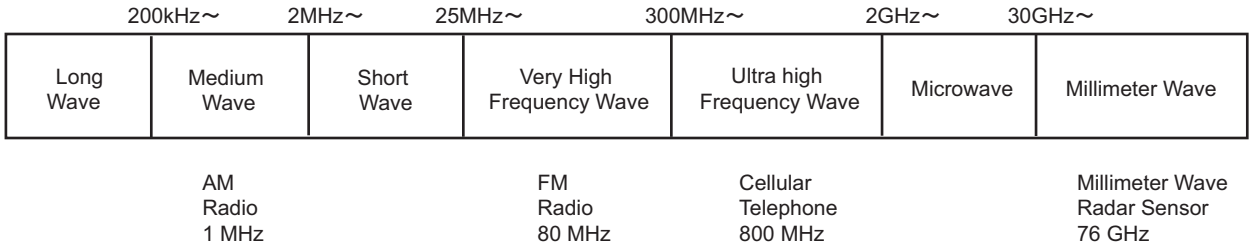


Control list

Control	Contents
Pre-Crash Seat Belt	If the Pre-Crash ECU determines that a collision is unavoidable, the motor retracts the belt to enhance the effectiveness of the pretensioner.
Pre-Crash Brake Assist Control	If the Pre-Crash ECU determines that a collision is unavoidable, this control provides assist by increasing the brake hydraulic pressure, thus enhancing the effectiveness of braking when the driver presses on the brake pedal.
AVS Control	If the Pre-Crash ECU determines that a collision is unavoidable, it sets the suspension shock absorbers to an appropriate amount of damping to suppress the nose dive that occurs during braking.

Millimeter Wave

- The millimeter waves occupy an extremely high frequency band of 30 to 300 GHz. Their wavelengths in a vacuum are extremely short, between 1 to 10mm. The millimeter waves are less likely to be affected by conditions such as rain, fog, or snow, and are able to exhibit superior performance to recognize objects. The pre-crash safety system uses a radar in the 76 GHz band.



Main Wave Types and Frequencies

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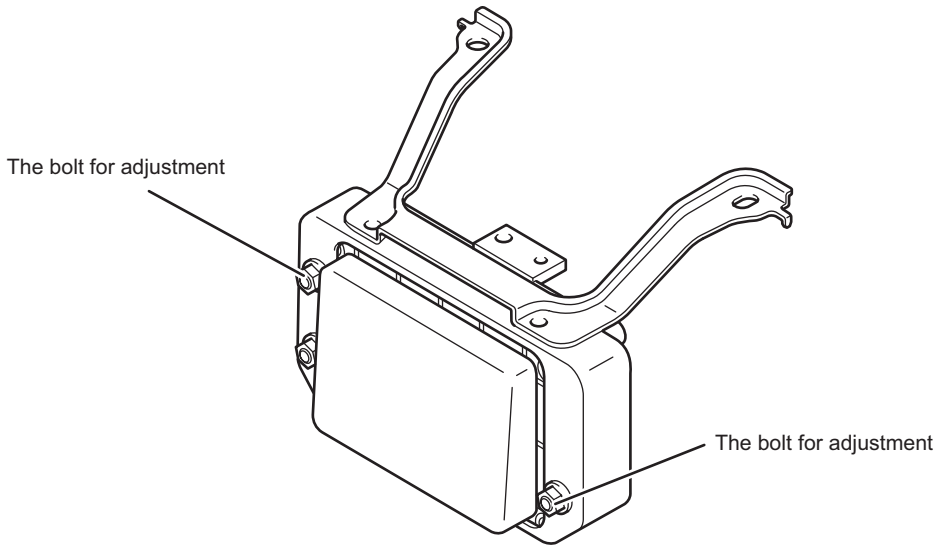
Millimeter Wave Radar Sensor

- The millimeter wave radar sensor is installed behind the front grille.
- To adjust the millimeter wave radar sensor, do so carefully using an Intelligent tester II and a level.



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