

Prohibition of Door Lock Signal Input During Impact-Sensing Unlock Operation

- After the unlock operation is completed, the right side door J/B ECU prohibits the input of all door lock signals. It permits the input of lock signals if the conditions listed below have been met.

Lock Signal Input Permission Conditions

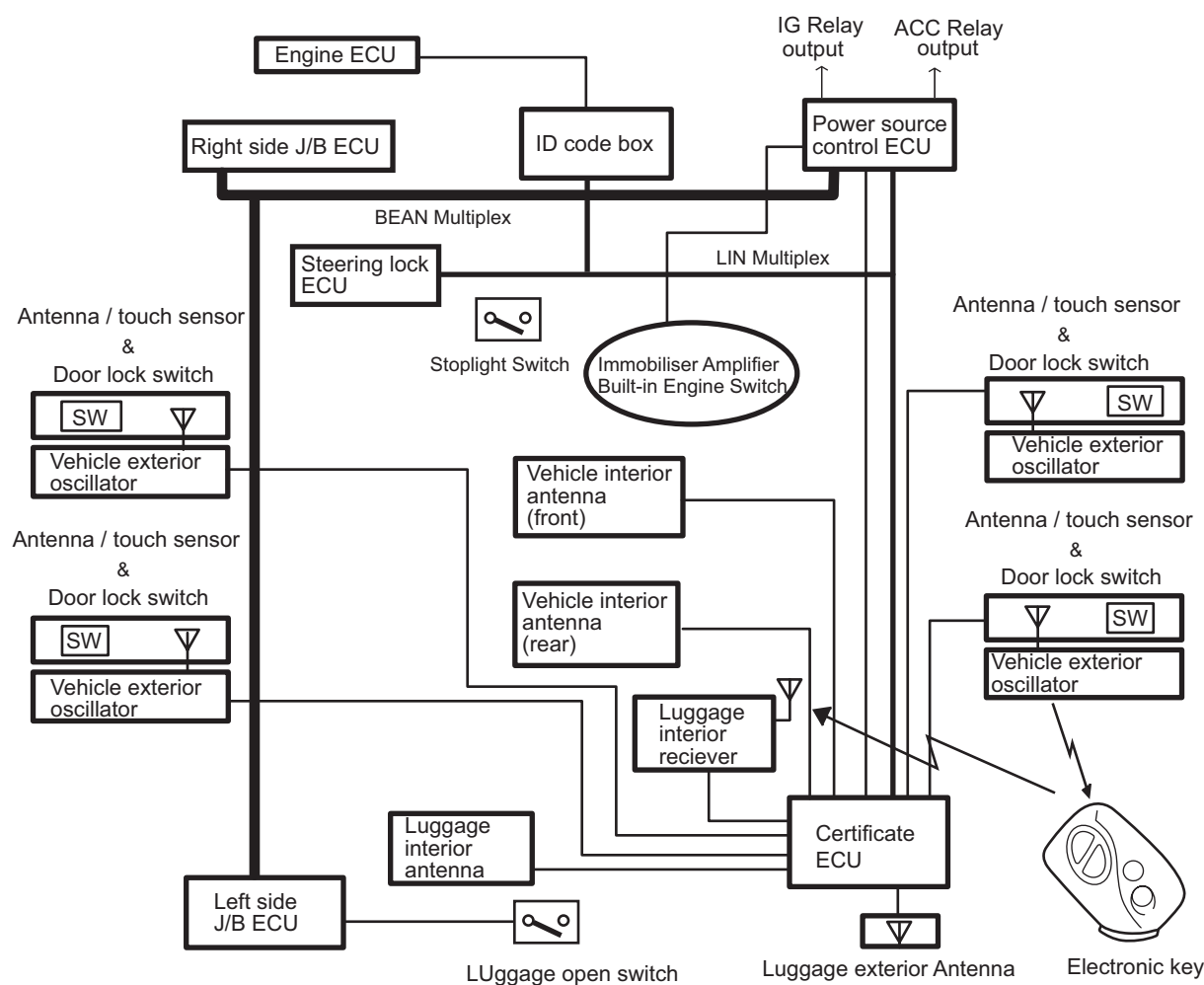
- The ignition is turned from OFF to ON, and the vehicle speed of below 10 mph(16km/h) has changed to approximately 12 mph(20km/h) and continued for 5 seconds or more.
- The doors are locked through the use of the door lock control switch (for manual operation).
- The ignition is turned from ON to OFF, and the driver's door that is open is closed (the driver's door courtesy light switch is turned from ON to OFF).

SMART ENTRY & START SYSTEM

- The SMART ENTRY & START SYSTEM is used on all models. An extremely convenient feature, this system also showcases the innovative aspect of the vehicle.
- The SMART ENTRY & START SYSTEM effects various types of controls based on the check results of the electronic ID codes exchanged wirelessly between the electronic key and the vehicle. The user can perform these controls without the need to handle the key.
- This system provides a convenient warning function that alerts the user of various problems that could arise if the user's awareness of the electronic key in his/her possession recedes.
- A cancel function is provided to enable the user to cancel the system control at will.
- It uses an ID code registration function to support the use of multiple electronic keys.
- Through the use of the hand-held tester diagnostic tool, the functions that support the customizable function can be changed in accordance with the user's preference.

SMART ENTRY & START SYSTEM summary

- Based on the results of the ID code check in and out of the vehicle through bi-directional communication between the electronic key and the vehicle, the certificate ECU communicates with the following computers via BEAN (Body Electronics Area Network) in order to control the system: right side J/B ECU, computers at the individual doors, left side J/B ECU, power source control ECU.
- Depending on the function to be executed, the certificate ECU outputs a request signal to the vehicle interior, vehicle exterior, luggage interior, and luggage exterior transmitters for the purpose of "checking the ID code with the electronic key" or "verifying the position of the electronic key (or the person possessing it)". Then, upon receiving an ID code, including a response code, from the electronic key that received the request signal, the certificate ECU distinguishes and checks the code, and transmits an operation instruction signal to the individual ECUs according to the function.



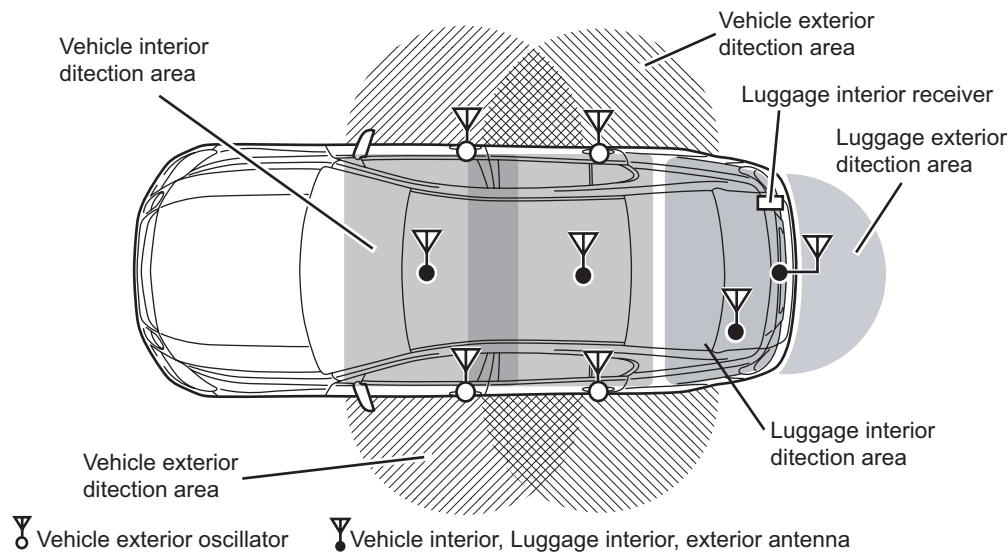
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Detection Area of SMART ENTRY & START SYSTEM

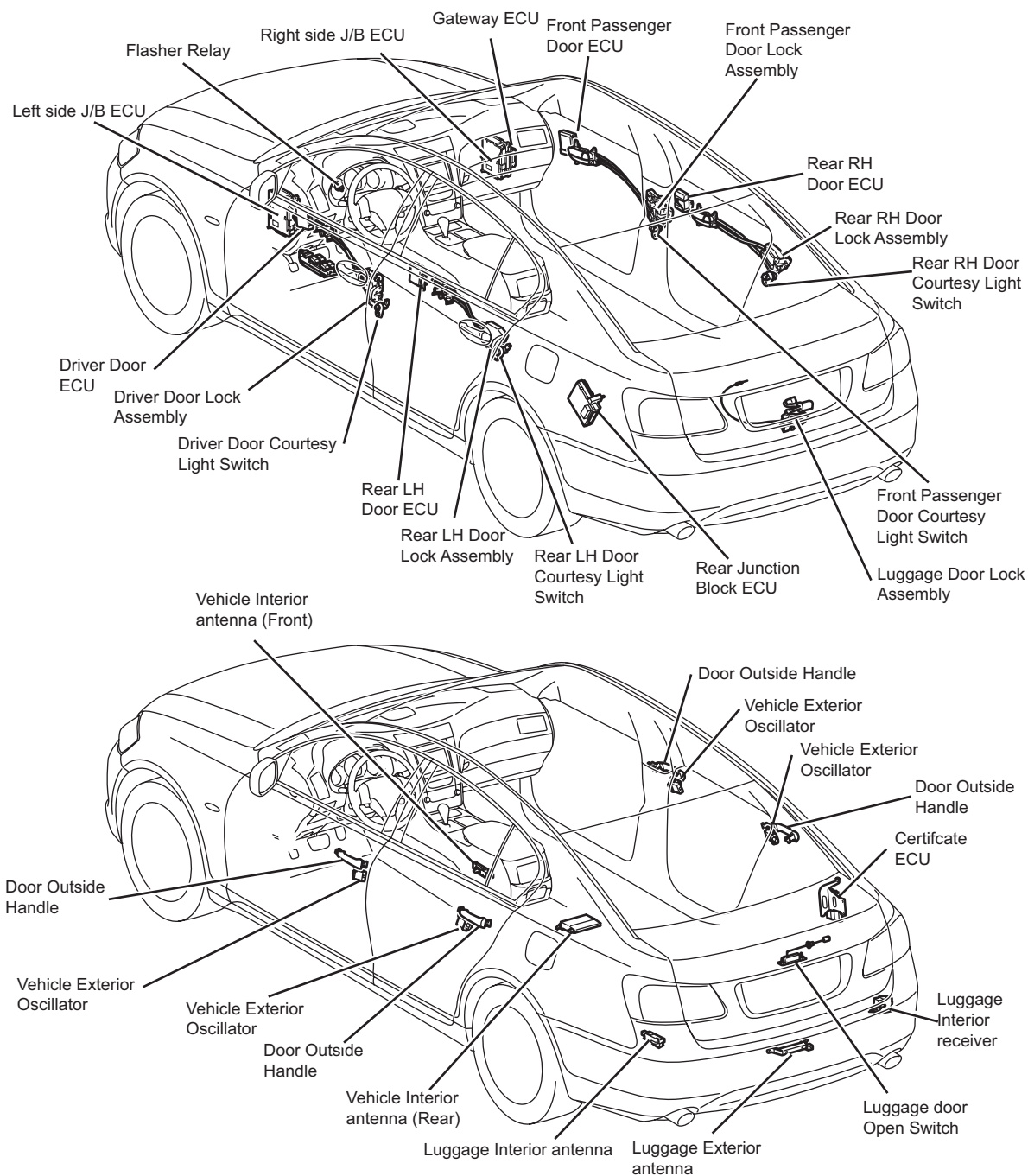
- The request signal that is sent by the certificate ECU is transmitted from an antenna by way of the respective oscillator, thus forming a detection area for the electronic key. The detection area formed by the vehicle exterior and luggage exterior antenna extends approximately 0.7 to 1.0 meter from the individual outside door handles, and from the center of the rear bumper.
- The detection area of the vehicle exterior oscillator is formed by request signals that are transmitted regularly at approximately 0.3-second intervals while the vehicle is parked (engine switch OFF, and doors locked*), in order to constantly monitor the approach of the electronic key (or the person possessing it). The detection area is formed when the lock switch is turned ON through the door lock operation, in order to detect the presence of the electronic key (or the person possessing it) in the vehicle exterior.*
- The detection area of the luggage exterior antenna is formed when the luggage door open switch is turned ON through the luggage open operation.
- The vehicle interior detection area, which is formed when the driver's door is opened or closed, the Power switching or engine starting function is operated, the required conditions for the respective warning have been met, and the lock switch is turned ON, detects the presence of the electronic key (or the person possessing it) in the vehicle interior.
- The detection area of the luggage interior antenna is formed when the luggage compartment door is closed or the luggage door open switch (vehicle exterior) is pressed.

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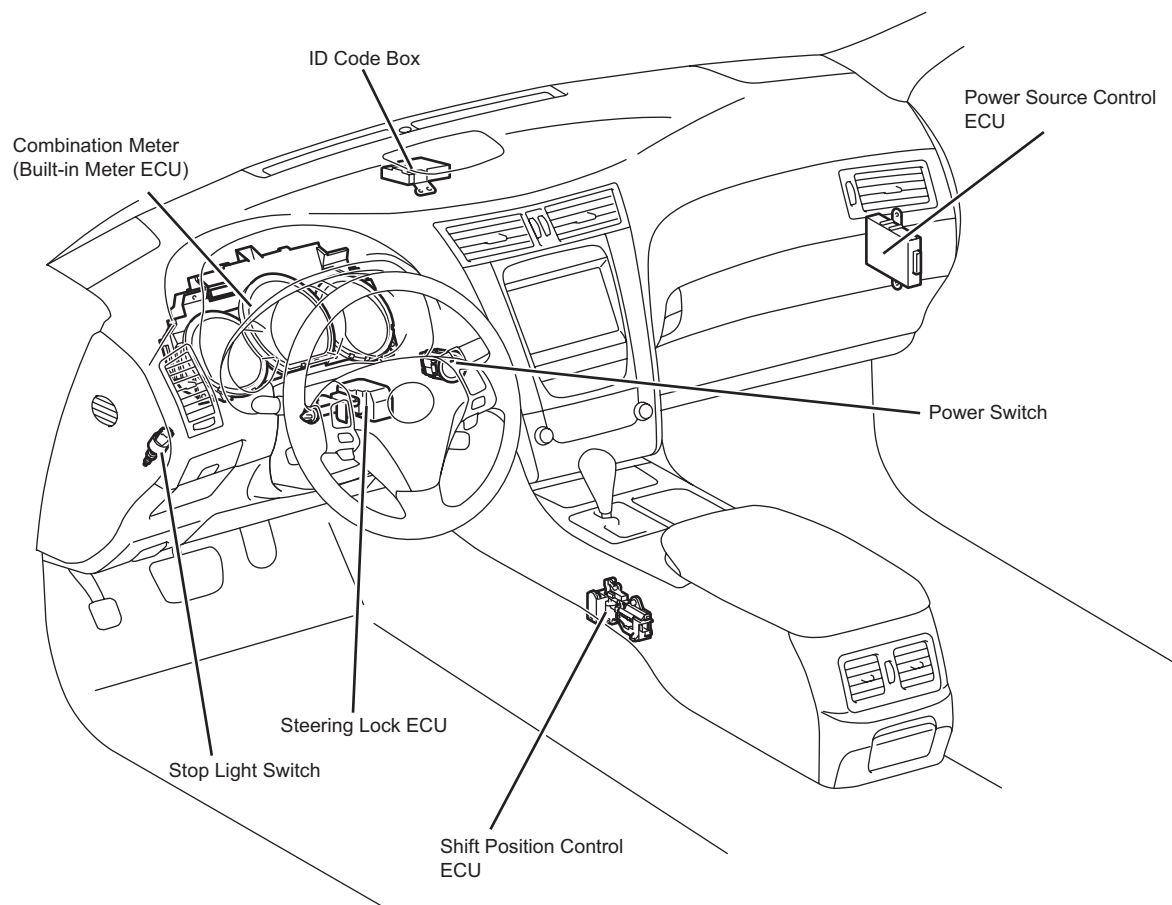
*SMART ACCESS SYSTEM with PUSH-BUTTON START control is effected for every individual door. After the doors are locked through the use of the door lock switch or the wireless remote control function, the detection areas are formed at the locked doors, even if not all the doors are locked.



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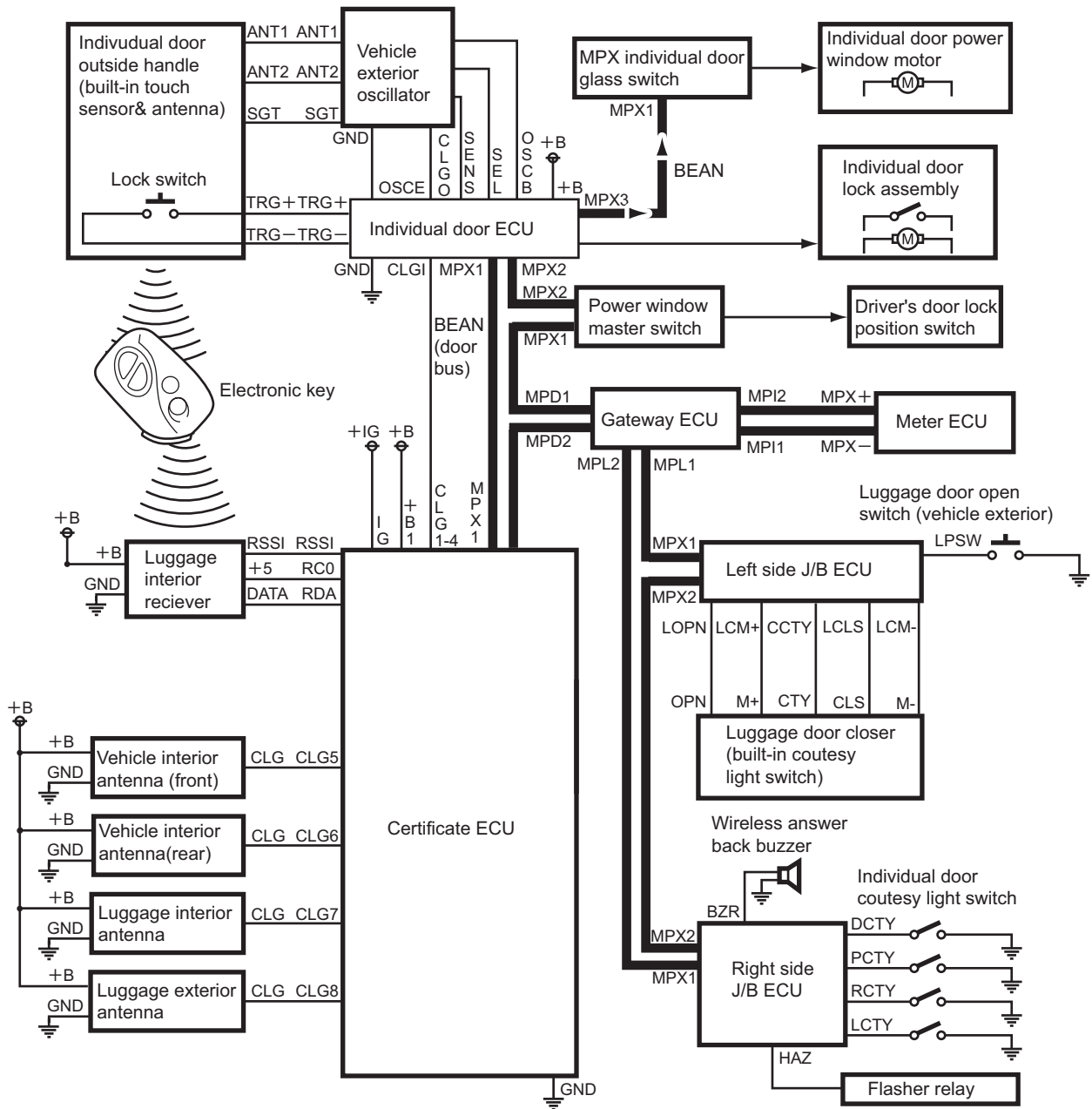
SMART ENTRY & START SYSTEM Composition Parts


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Door lock/Unlock /Luggage Door Open Circuit



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Description of Parts

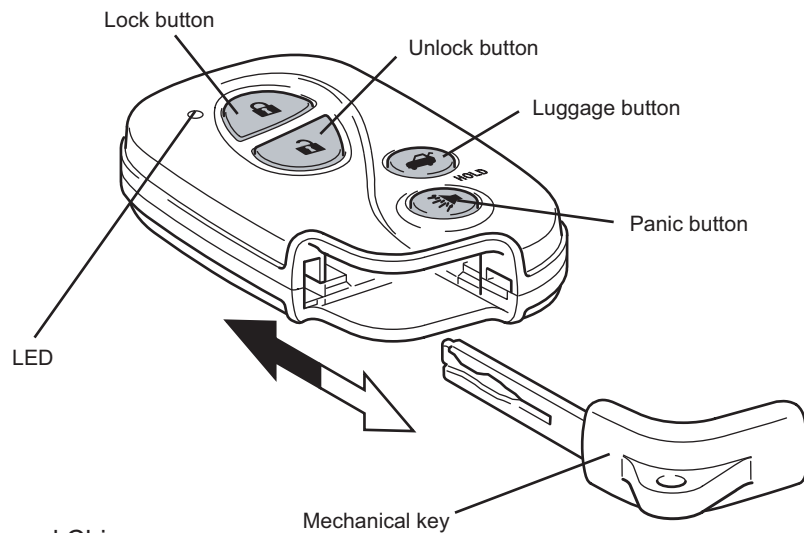
List door lock / unlock and luggage door open main composition parts function

Composition parts (abbreviated name)	Main function
Certificate ECU	• Checks electronic keys (verifies whether the keys are legitimate). • Controls the vehicle interior and exterior oscillators and touch sensors. • Transmits door lock/unlock commands in the SMART ACCESS SYSTEM with PUSH-BUTTON START. • Transmits steering lock unlock/lock commands • Transmits immobiliser set/unset commands • Records codes for checking between multiple units
Power source control ECU	• Controls the ACC and IG power supply ON/OFF. • Transmits engine starting commands to the Engine ECU. • Controls the engine switch indicator and lettering illumination. • Performs auxiliary actuation of the starter relay.
ID code BOX	• Receives commands from the certificate ECU and transmits immobiliser set/unset commands to the Engine ECU. • Records codes for checking between multiple units.
Steering lock ECU	• Receives lock/unlock commands from the certificate ECU and actuates the steering lock actuator. • Records codes for checking between multiple units.
Engine switch	• Switch used for supplying power and starting the engine. • Has a built-in indicator to inform the driver whether the engine is in a startable state. • Has a built-in immobiliser amplifier to start the engine if the electronic key battery is low.
Vehicle interior(Front/Rear)antenna	• Emits LF radiowaves (approximately 134 kHz) inside the vehicle interior to determine whether a electronic key is present in the vehicle interior.
Luggage interior antenna	• Emits LF radiowaves (approximately 134 kHz) inside the luggage room to determine whether a electronic key is present inside the luggage compartment room.
Glass antenna/Luggage interior receiver	• Responds to the LF radiowaves or receives the RF radiowaves that are output from a electronic key through a wireless operation.
Luggage exterior antenna	• Generates and emits the LF radiowaves (approximately 134 kHz) for determining whether a electronic key is present in an area that enables a luggage door open operation.
Luggage open switch	• Switch that is pressed when performing a luggage door open operation.
Vehicle exterior oscillator	• Generates the LF radiowaves (approximately 134 kHz) for determining whether a electronic key is present in an area that enables a SMART ACCESS SYSTEM with PUSH-BUTTON START operation.
Vehicle exterior antenna	• Emits the LF radiowaves generated by the vehicle exterior oscillator.
Touch sensor	• Actuated when the system determines the presence of a electronic key in an area that enables a SMART ACCESS SYSTEM with PUSH-BUTTON START operation, this sensor detects whether a user has touched a door handle.
Lock switch	• Switch that is pressed in order to lock the door during a SMART ACCESS SYSTEM with PUSH-BUTTON START.

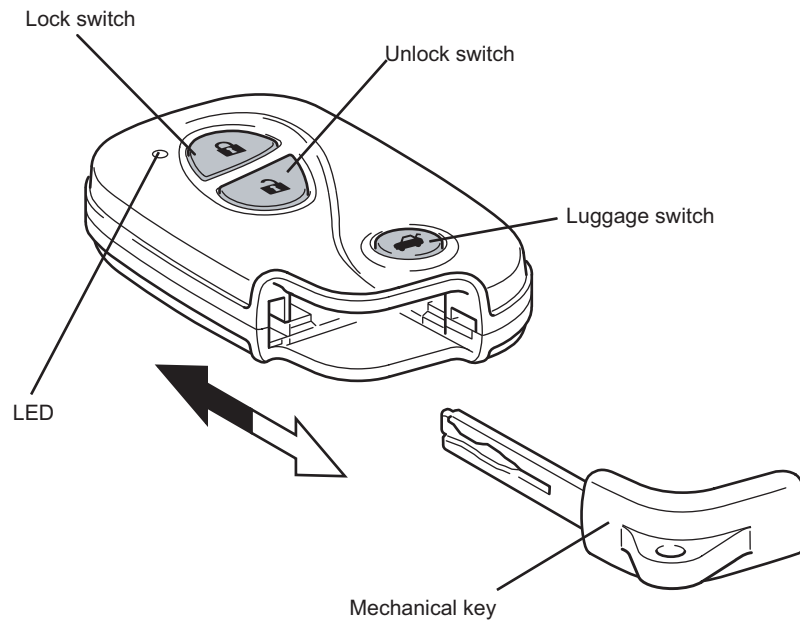
Composition parts (abbreviated name)	Main function
Electronic key	• Upon receiving the LF radiowaves that are output by the vehicle interior and exterior antennas, the electronic key outputs information including the key ID and vehicle ID by modulating them into RF radiowaves • When the driver presses the lock, unlock, panic(excluding Europe and China), or luggage open button on the surface of the key, the electronic key outputs the description of the operation by modulating it into RF radiowaves • Upon receiving the radiowaves that are output by the immobiliser amplifier in the engine switch, the electronic key outputs information including the key ID and vehicle ID through immobiliser communication • Has a built-in mechanical key to unlock the door if the electronic key battery is low

Electronic Key

- The electronic key, which is provided with the lock, unlock, luggage, and panic(excluding the Europe and China) switches, is able to perform the same operations as the wireless remote control system. It uses the CR1632 battery.
- The electronic key can be used to start the engine by holding it near the engine start switch in case the key battery is depleted.



Excluding the Europe and China



Europe and China

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Key Set Specification

- The standard key set consists of the following: 2 electronic keys.

Auto Power OFF

- Even if the user continues to press the buttons on the electronic key, this function stops the transmission of the feeble radiowave signals in approximately 20 seconds.

Transmitter operation Check Indicator Light

- In addition, when the buttons are operated, the operation indicator light (LED) illuminates during the communication (transmission) to check the ID. Thus, this light can be used to check the operating state and whether the battery is depleted.

Door Unlock Operation

- When a electronic key (or the person possessing it) enters the vehicle exterior detection area, the certificate ECU distinguishes and checks (vehicle exterior check) the ID code of the key that the luggage interior receiver has received. If the check results are OK, the certificate ECU will transmit, a door unlock standby control signal to the door exterior oscillator that has been checked OK. Upon receiving this signal, the door exterior oscillator activates the touch sensor via the vehicle exterior oscillator in order to set the door unlock standby mode.*1
- When the door ECU of the door that is in the door unlock standby mode detects, via the touch sensor, that the door outside handle has been touched, the door ECU transmits a touch sensor ON signal to the certificate ECU via BEAN (Body Electronics Area Network). Upon receiving this signal, the certificate ECU transmits a door unlock control signal to the individual door ECUs that assumed the unlock mode.
- The door ECU that has received the door unlock control signal unlocks the door (by turning the door lock position switch ON).*2

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*1From the time of the door unlock standby mode until there is an input from the touch sensor, it implements a vehicle exterior check at 3-second intervals. When the check results are OK, it will await again for an input from the touch sensor. If there is no input for over 10 minutes, it will be in a standby mode with its check function stopped. Then, it will resume the mode that enables a door unlock operation again (thus canceling the standby mode) in accordance with the lock operation, and door key-linked lock/unlock signals, as a result of the door lock switch being turned ON by the wireless remote control function (excluding the luggage door open).

*2When the right side J/B ECU receives a door lock position switch ON signal from the door ECU and verifies that the door is unlocked, it outputs an answer-back signal. If the door does not open (courtesy light switch ON) for approximately 30 seconds, the right side J/B ECU will output a door lock signal to all the doors in order to lock them (and start auto alarm control).

Door Lock Operation

- When the engine switch is OFF and the courtesy light switches of all the doors are OFF (all the doors are closed), if any door lock switch is turned ON, the door ECU of the door whose door lock switch has been turned ON will transmit a door lock switch ON signal to the certificate ECU via BEAN (Body Electronics Area Network).
- Upon receiving the door lock switch ON signal, the certificate ECU will transmit a request signal to the door exterior oscillator. Upon receiving this signal, the vehicle interior antennas (front and rear) will form detection areas in the vehicle interior and exterior. Then, the certificate ECU distinguishes and checks the ID code of the electronic key that has been received by the luggage interior receiver.
- The certificate ECU performs checks to detect*1 that the vehicle exterior check is OK and the vehicle interior check is NG, thus verifying that the key is located in the vehicle exterior. Then, the certificate ECU will transmit a door lock request signal to all the door ECUs via BEAN (Body Electronics Area Network). Upon receiving this signal, the individual door ECUs will lock the doors (door lock position switch OFF).*2

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*1If the electronic key is inadvertently left in the vehicle interior, and the user presses the door lock switch, a warning function (that sounds the wireless answer-back buzzer for 2 seconds) will operate, indicating that the "key was inadvertently left inside". Even if the electronic key is located in the vehicle exterior and placed near the door, the "key was inadvertently left inside" warning function could operate as the user presses the door lock switch. Furthermore, if any one of the courtesy light switches is ON even if the vehicle exterior check is OK and the vehicle interior check is NG, the system will determine that a door is ajar and will operate the warning function.

*2Upon receiving a door lock position switch OFF signal from the door ECU, the right side J/B ECU will output an answer-back signal and also start the auto alarm control. A standby time of approximately 3 seconds is provided after the driver's door is locked, until the system performs a vehicle exterior check for the purpose of door unlock. This feature is provided in the event that after the door is locked, the user pulls on the door handle to check that it is locked.

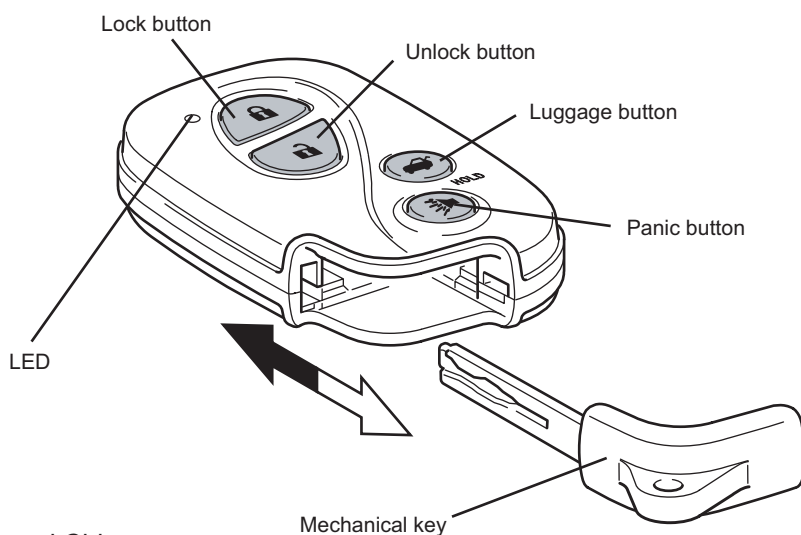
Description of Functions

List SMART ACCESS SYSTEM with PUSH-BUTTON START function

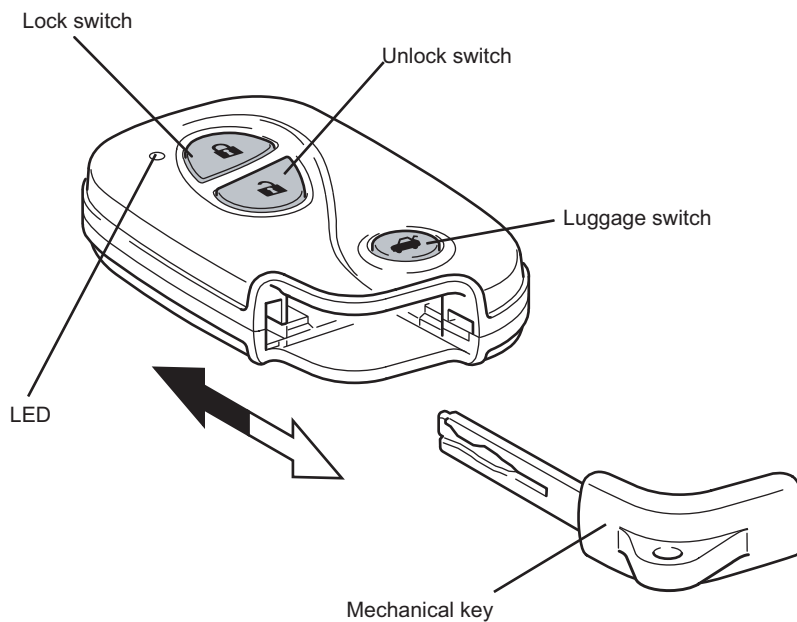
1	Wireless Function
2	Door Unlock Function
3	Door Lock Function
4	ACC/IG Power Supply ON Function (when using electronic key)
5	Engine Starting Function(when using electronic key)
6	ACC/IG Power Supply ON Function (when electronic key battery is low)
7	Engine Starting Function (when electronic key battery is low)
8	Engine Stopping, Steering Locking, and Immobiliser Setting Function
9	Luggage Door Open Function
10	Vehicle Interior Key Lockout Prevention Function
11	Luggage Compartment Key Lockout Prevention Function
12	Answer-Back (sounds the buzzer and flashes the hazard warning light) Function
13	Power Saving Function

Wireless Remote Control Function

- A "multi-function remote control", which consists of a electronic key (wireless door lock key) with additional functions to operate the power windows and the moon roof, is used.
- By pressing the switch on the electronic key, the user can perform a door lock/unlock operation, panic warning sound(excluding Europe and China), or a luggage open operation.



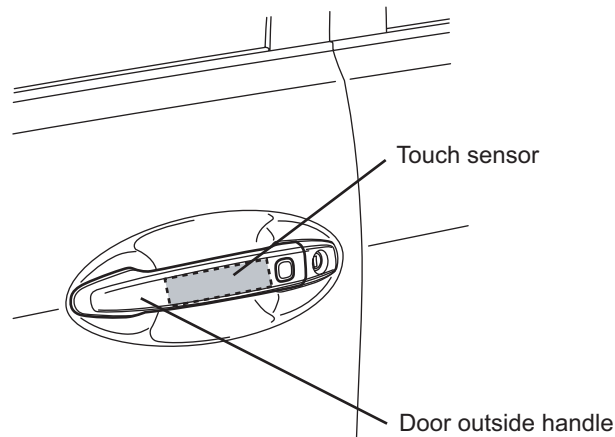
Excluding the Europe and China



Europe and China

Door Unlock Function

- To enable the system to detect the approach of a user with a electronic key in possession, the vehicle exterior oscillator and antenna emit signals on a regular basis when the vehicle's doors are locked. This forms vehicle exterior detection areas (approximately 0.7 to 1.0 meters around each door handle).
- When a user approaches the vehicle with a electronic key in possession and enters a vehicle exterior detection area, the door oscillator in the area and the electronic key in that user's possession will simultaneously perform an ID code check automatically. Upon the completion of the ID code check, that door enters the unlock standby mode.
- When a door is in the unlock standby mode, the touch sensor that is built into the door handle starts sensing, allowing the door to unlock when a user grasps the door handle (or touches its inner surface). (If an ID code check results in a failure, the door will not unlock even if a user touches the door handle.)
- If none of the doors are opened after the doors are unlocked, all doors will lock automatically 30 seconds after they have been unlocked (30-second auto lock function).



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Middle East, Australia, New Zealand door unlock mode

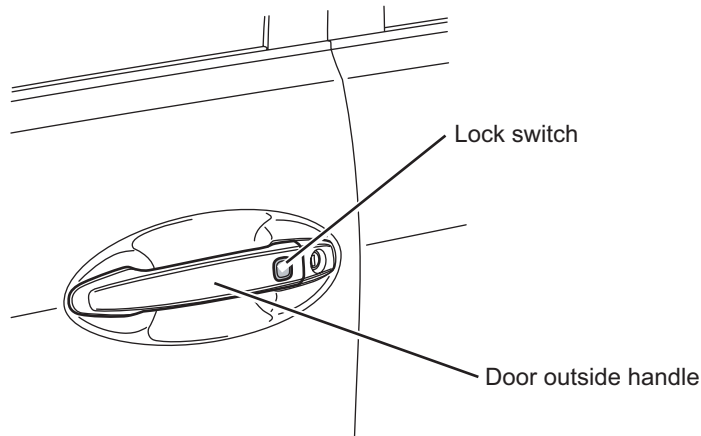
When a user touches the driver's door handle, this mode unlocks only the driver's door. If a user touches a door handle of a door other than the driver's, this mode unlocks all the doors.

Europe, Aftermarket, China: all door unlock mode

When a user touches any door handle, this mode unlocks all the doors.

Door lock Function

- A user exits the vehicle with a electronic key in possession.
- When a user presses the lock switch on a door handle while all the doors are closed, the system checks for a electronic key in the vehicle interior and exterior.
- When the vehicle interior check results in NG, and the vehicle exterior check results in OK, the system locks the doors.
- If a electronic key is present in the vehicle interior, the system sounds a warning buzzer (beeps for 2 seconds) without locking the doors.
- If a user presses the lock switch while a door is ajar (or open), the wireless buzzer sounds for 10 seconds. During a door ajar warning, if a user closes all the doors or presses the unlock switch to unlock the doors, the warning will stop.



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ACC/IG Power Supply ON Function(when using electronic key)

ACC/IG power supply ON function (when using electronic key)

1	The driver enters the vehicle with a electronic key in possession.
2	When the driver presses the engine switch without pressing the brake pedal, the system checks the ID code in the vehicle. When the ID code checks OK, the engine switch illuminates in amber. Then, the power supply changes each time the engine switch is pressed: ACC -> IG -> OFF -> ACC -> and so on.

Engine Starting Function(when using electronic key)

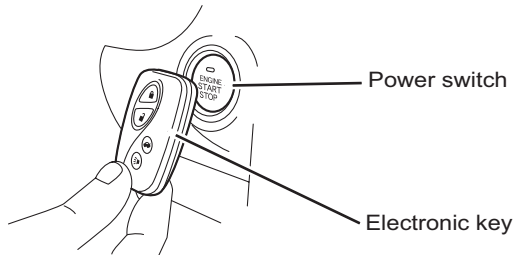
Engine starting function (when using electronic key)

1	The driver enters the vehicle with a electronic key in possession.
2	When the driver presses the brake pedal, the system checks the ID code in the vehicle. The indicator of the engine switch illuminates green and the system cancels the immobiliser and the steering lock. When the driver presses the engine switch while the engine switch indicator is green, the engine starts.

ACC/IG Power Supply ON Function(when electronic key battery is low)

ACC/IG power supply ON function (when electronic key battery is low)

1	The driver enters the vehicle with a electronic key in possession (by using the mechanical key that is built into the electronic key to unlock the door lock).
2	The driver presses the brake pedal and holds the electronic key with its ornament surface facing the engine switch(for the immobilizer and steering lock unset).
3	Within 5 seconds after the buzzer makes a "bong" sound, the driver releases the brake pedal and presses the engine switch.

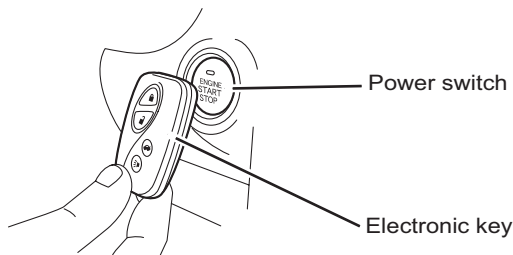


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Engine Starting Function(when electronic key battery is low)

Engine starting function (when electronic key battery is low)

1	The driver enters the vehicle with a electronic key in possession (by using the mechanical key that is built into the electronic key to unlock the door lock).
2	The driver presses the brake pedal and holds the electronic key with its ornament surface facing the engine switch.
3	Within 5 seconds after the buzzer makes a "bong" sound, the driver presses the brake pedal and engine switch.



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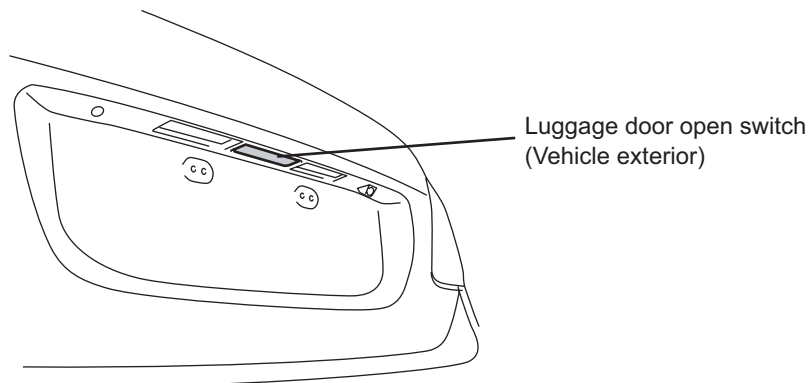
Engine Stopping,Steering Locking,and Immobiliser Setting Function

Engine Stopping Steering Locking and Immobiliser Setting function

1	After stopping the vehicle(vehicle speed absent),After the driver stops the vehicle (vehicle speed absent), moves the shift lever to the "P" position, and presses the engine switch, the engine stops, all power supply turns OFF, and the immobiliser sets.
2	The driver opens the door to operate the steering lock.

Door Luggage Door Open Function

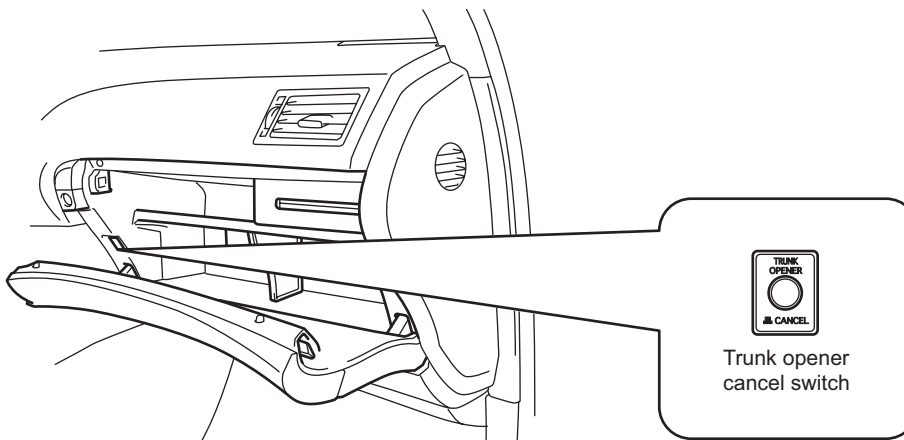
- When the user with a electronic key in possession stands behind the luggage and presses the Luggage door open switch, the certificate ECU starts to check the ID code. When the ID code checks OK, the system opens the luggage door.



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Luggage Door open Cancel Function

- The luggage door open function (including the wireless luggage door open function) can be canceled by turning ON the trunk opener cancel switch.
- When this function is canceled, the luggage compartment door can be opened through the use of a mechanical key.
- A trunk opener key cancel switch is provided inside the glove box. The security of the luggage compartment room can be ensured by locking the glove box with a mechanical key.



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Vehicle Interior Key Lockout Prevention Function

- If the user attempts to perform a door lock (by opening a door, tilting the lock knob in the locking direction, and closing the door) and door lock while a electronic key is left in the vehicle interior, the system determines that a electronic key is left in the vehicle interior, and it unlocks the door.

Luggage Compartment Key Lockout Prevention Function

- If the luggage door is closed while an electronic key is left inside the luggage compartment room, the certificate ECU recognizes the presence of the electronic key in the luggage compartment room and sounds the buzzer. Meanwhile, the user can press the luggage door open switch ON to open the luggage door.

Answer-Back(Sounds the Buzzer and Frashes the Hazard Warning Light) Function

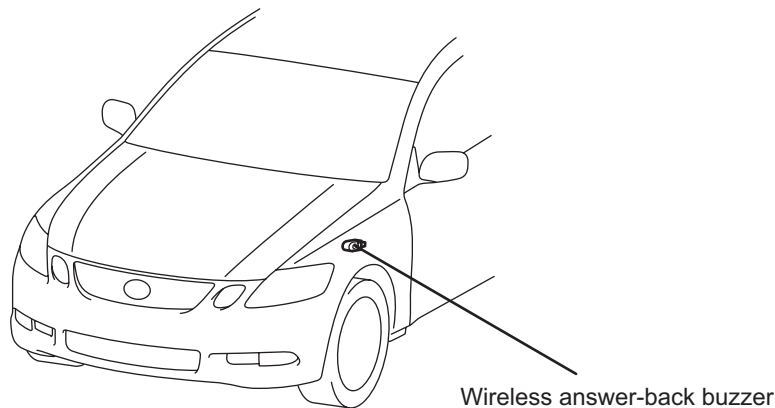
- If the user locks/unlocks the doors through the function or locks/unlocks the doors and operates the luggage door wirelessly, the system will provide an answerback as described below.

Function	Descript
SMART ACCESS SYSTEM with PUSH-BUTTON START/ Wireless Lock	• Wireless buzzer sounds once (beep)*2 • Hazard light flashes once
SMART ACCESS SYSTEM with PUSH-BUTTON START/ Wireless Unlock	• Wireless buzzer sounds twice (beep-beep)*2 • Hazard light flashes twice
Wireless luggage door open*1	• Wireless buzzer sounds once (for 500 ms)*2

❖REFERENCE❖

*1 : The system will not provide an answerback during a SMART ENTRY & START SYSTEM Luggage door open.

*2 : Excluding Europe and China



Power Savings Function

Vehicle Battery Saving Function

- When the doors are locked, the electronic key system transmits vehicle external signals on a regular basis. Therefore, if the vehicle is parked for a long period of time, it might drain the onboard battery. Therefore, the following controls are provided in order to prevent the battery from draining:

Vehicle Battery Saving Function

- If no response is received from an electronic key for 4 days or more, this function extends the check interval from approximately 400 milliseconds to 800 milliseconds.
- If no response is received from a electronic key for 14 days or more, the system will stop the SMART ACCESS SYSTEM with PUSH-BUTTON START.

Resumption Conditions:

1	Any one of the wireless operations is performed: lock, unlock, or luggage door open
2	Doors locked by turning the trigger lock switch ON
3	Doors locked or unlocked by a key-linked switch

Electronic key and Vehicle Battery Saving Function

- If a electronic key is left constantly in the vehicle exterior detection area, the electronic key and the vehicle will maintain a regular communication. If this condition is allowed to continue for a long period of time, it will use the electronic key battery and the vehicle battery. In the worst case, this could cause the electronic key battery and the vehicle battery to become drained. To prevent the batteries from draining, the following controls are provided:
- The SMART ENTRY & START SYSTEM function stops if a electronic key is present in a vehicle exterior detection area for longer than 10 minutes.

Resumption Conditions:

1	Any one of the wireless operations is performed: lock, unlock, or luggage door open
2	Doors locked by turning the trigger lock switch ON
3	Doors locked or unlocked by a key-linked switch

Unlock Mode Switching Function

- While the power supply is OFF, pressing and holding the lock button and the luggage button on a electronic key for 5 seconds to switch the modes of the door unlock. Make sure to do so within 1 meter of the vehicle. When the default value is "driver's door unlock": The door unlock modes switch in the following order each time a button is pressed and held for 5 seconds: driver's door unlock -> adjacent door unlock -> individual door unlock -> all doors unlock.

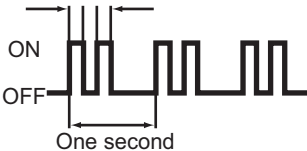
Individual Door Unlock Mode

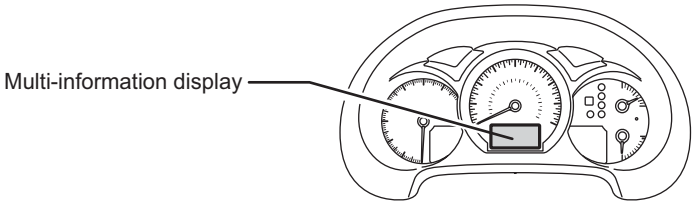
This mode unlocks only the door whose handle has been touched. (Example: if a user touches the driver's door handle, it unlocks only the driver's door.)

Adjacent Door Unlock Mode

When a user touches the driver's door handle, this mode unlocks only the driver's door and the door behind. When a user touches the front passenger's door handle, this mode unlocks only the front passenger's door and the door behind. (Thus, only the doors of the same side as the door handle that has been touched are unlocked.)

- When the modes are switched, the system informs the user through the following means: Wireless buzzer, Information on the meter, Buzzer in the meter

Information Mod	Wireless answer back buzzer	Combination meter		
		Multi-information display		Multi- buzzer
Driver'S door	Each interval approximately 0.13 second 		(5 seconds indication)	One "bong" sound
Adjacent door			(5 seconds indication)	One "bong" sound
Individual door			(5 seconds indication)	One "bong" sound
All door			(5 seconds indication)	One "bong" sound



Information provided to the driver during the switching of the unlock modes

Power Switching or Engine Starting Function

- When the driver has a electronic key in possession within the vehicle interior detection area and presses the engine switch while pressing on the brake pedal, the driver will be able to change the power supplies. The same function can be accomplished by holding a electronic key near the engine switch.
- When the driver presses the engine switch without pressing on the brake pedal, the power supply position will transfer as follows: OFF -> ACC -> IG ON -> OFF (and repeats the cycle).
- When the driver presses the engine switch while pressing on the brake pedal, the engine will start.
- When the driver presses the engine switch while the vehicle is stopped and the engine is running, the power supply position will transfer to OFF.

Automatic transmission function operation list

Power supply position	Shift position						
	"P"range			"N"range		Other	
	Pressing switch	Pressing switch while pressing down brake	Leave for one hour	Pressing switch	Pressing switch while pressing down brake	Pressing switch	Pressing switch while pressing down brake
OFF							
ACC							
IG ON							
Engine starting							

Power supply transition
 Power supply transition (vehicle stopped only)

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Warning Function

- Because the electronic key system is so convenient, the driver could become unaware of the presence of this key, which could lead to human errors.

Examples:

1	The driver is unaware that the key has been taken out of the vehicle (by an occupant).
2	The driver exits the vehicle with its engine running.
3	The driver exits the vehicle with its shift lever in a position other than "P".

- If the situations described above occur, they could lead to a serious problem, such as an inability to restart the engine once it has been turned OFF, the possible theft of the vehicle, or vehicle rollaway. For this reason, some kind of countermeasure must be taken.

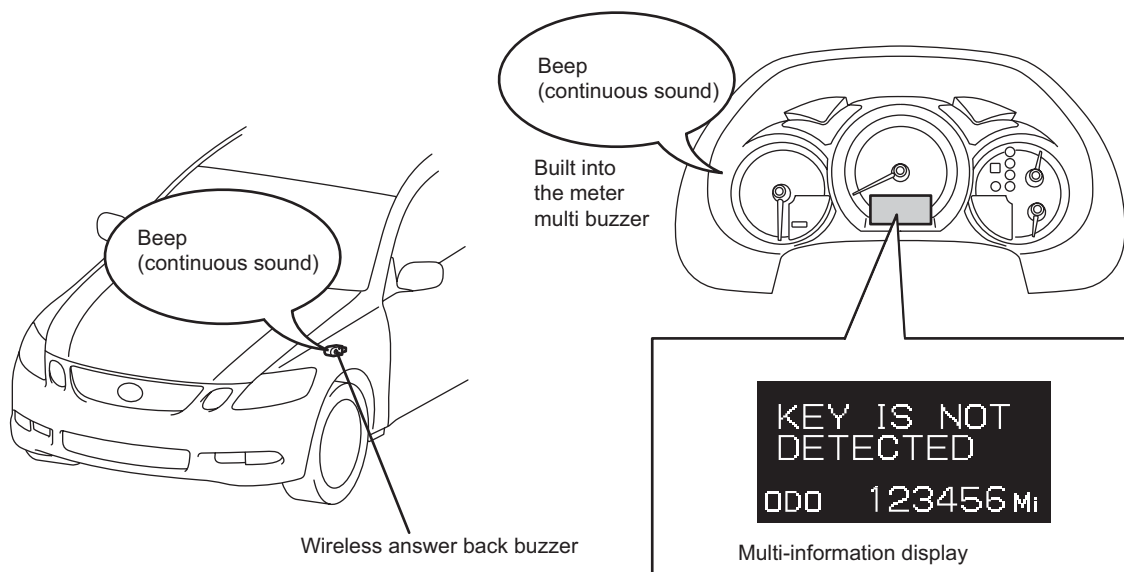
Countermeasure:

The addition of a key search function and a key absence warning to alert the driver of a key being taken out of the vehicle, being left inadvertently in the vehicle interior, or the engine left running, in order to prevent serious problems.

- The human errors (as well as some non-human errors) that can be foreseen with the present control specifications, as well as their warning items are listed below.

Warning Function List

	Warning function list	Meaning of Warning
1	Exiting the vehicle with the shift lever in a position other than "P" (power supply ON) warning	To prevent an A/T vehicle from starting off suddenly, vehicle theft, and vehicle rollaway.
2	Exiting with shift lever in the "P" position, power supply ON warning	To prevent vehicle theft and the inability to restart the engine
3	Electronic key taken out by occupant warning	To prevent the inability to restart the engine
4	Electronic key out of area warning	To prevent user confusion
5	Electronic key confinement warning	To prevent vehicle theft
6	Electronic key battery low warning	Useful function
7	Steering lock unlocked warning	Useful function
8	Steering lock failure warning	Malfunction detection



- 1.Exiting the vehicle with the shift lever in a position other than "P" (power supply ON) warning

Situation: The driver opens the door with the shift lever in a position other than "P" and is about to exit the vehicle.

Conditions	• 1.Shift lever in a position other than "P" • 2.Power supply ON (ACC/IG ON) • 3. Driver's door open, and Vehicle speed absent	
Description of warning	Buzzer in meter	• Description of control: Continuous "beep" sound • Stopping conditions: Power supply OFF (ACC/IG OFF), shift lever in "P" position, or vehicle speed present

Situation: Furthermore, the driver exits the vehicle with a electronic key in possession, closes the door, and is about to leave the vehicle.

Conditions	• 1.Shift lever in a position other than "P" and Power supply ON (ACC/IG ON) and Driver's door open -> closed and Vehicle speed absent • 2.No electronic key in vehicle interior (electronic vehicle interior check NG)	
Description of warning	Buzzer in meter	• Description of control: Continuous "beep" sound • Stopping conditions: Stops with power supply OFF (ACC/IG OFF), shift lever in "P" position, or vehicle interior check OK
	Meter information	• Description of control: The following information appears alternately on the meter: • 1. "Shift to P range" • 2. "Key is not detected" • Stopping conditions: • 1. Stops with shift lever in the "P" position, power supply OFF, or vehicle speed present • 2. Stops with power supply OFF, or vehicle interior check OK
	Wireless buzzer	• Description of control: Continuous "beep" sound • Stopping conditions: Stops with power supply OFF, shift lever in the "P" position, vehicle interior check OK, or vehicle speed present

- 2.Exiting with shift lever in the "P" position, power supply ON warning

Situation: With the shift lever in the "P" position, and the power supply ON, the driver opens the door and is about to exit the vehicle.

Conditions	• 1.Shift lever in the "P" position and (ACC ON or steering lock unlocked), and Driver's door open	
Description of warning	Buzzer in meter	• Description of control: Intermittent "bong - bong - bong ..." sound • Stopping conditions: Shift lever in a position other than "P", (ACC OFF and steering lock locked), IG ON, or driver's door closed

Situation: Furthermore, the driver exits the vehicle with a electronic key in possession, closes the door, and is about to leave the vehicle.

Conditions	• 1.Shift lever in the "P" position and Power supply ON (ACC/IG ON) and Driver's door open -> closed and No electronic key in vehicle interior (vehicle interior check NG)	
Description of warning	Buzzer in Meter	• Description of control: Sounds "bong" once(When the vehicle interior check continues to be NG, the buzzer sounds once again when the vehicle is driven for the first time.)
	Meter information	• Description of control: The following information appears on the meter: "Key is not detected" • Stopping conditions: Stops with power supply OFF or vehicle interior check OK
	Wireless buzzer	• Description of control: Sounds "beep - beep - beep" three times. • Stopping conditions: Stops with power supply OFF or vehicle speed present.

Situation: Furthermore, the driver has pressed the lock switch on the door handle in an attempt to perform a door lock.

Conditions	• 1. Shift lever in the "P" position and Power supply ON (ACC/IG ON) and All doors closed and Door handle lock switch ON and No electronic key in vehicle interior (vehicle interior check NG), electronic key present in vehicle exterior (vehicle exterior check OK)	
Description of warning	Wireless Buzzer	• Description of control: sounds "beep" for 2 seconds.

- 3. Electronic key taken out by occupant warning

Situation: With the power supply ON, an occupant exited the vehicle with a electronic key in possession, which was left inside a briefcase or the like.

Conditions	• 1. Power supply ON (ACC/IG ON) and Door other than driver's open -> closed and Vehicle speed absent and No electronic key in vehicle interior (vehicle interior check NG)	
Description of warning	Buzzer in Meter	• Description of control: The following information appears on the meter: "Key is not detected". • Stopping conditions: Stops with power supply OFF or vehicle speed present.
	Meter information	• Sounds three times upon detection • Stops when the engine switch is OFF or a vehicle speed is present
	Wireless buzzer	• Description: Sounds "beep - beep - beep" three times • Stopping conditions: Stops with power supply OFF or vehicle speed present.

- 4. Electronic key out of area warning

Situation: The driver is about to start the system (power supply ON) with no electronic key in the vehicle interior.

Conditions	• 1. Engine switch ON and No electronic key in vehicle interior (vehicle interior check NG)	
Description of warning	Buzzer in Meter	• Description of control: Sounds "bong" once.
	Meter information	• Description of control: The following information appears on the meter for 8 seconds (and disappears automatically after 8 seconds have elapsed): "Key is not detected"

- ACC is ON and the "driver's door closed -> open" conditions have been met:

When the engine switch is turned ON and the vehicle interior check is NG, the system issues a electronic key out-of-area warning

- 5. Electronic key confinement warning

Situation: The driver exits the vehicle while a electronic key is in the vehicle interior, and presses the door handle switch in an attempt to perform a door lock.

Conditions	• 1. Power supply OFF (ACC/IG OFF) and All doors closed and Door handle lock switch ON and electronic key present in vehicle interior (vehicle interior check OK)	
Description of warning	Wireless Buzzer	• Description of control: sounds "beep" for 2 seconds.

- 6. Electronic key battery low warning

Situation: The driver uses a electronic key with a low battery to drive the vehicle.

Conditions	• After the IG is ON continuously for 20 minutes or more, the IG is turned from ON to OFF and The electronic key battery is low.	
Description of warning	Buzzer in Meter	• Description of control: Sounds "bong" once.
	Meter information	• Description of control: The following information appears on the meter: "Low key battery".

- 7. Steering lock unlocked warning

Situation: The steering lock wedges into the steering wheel, preventing it from being unlocked.

Conditions	• The driver has attempted to unlock the steering lock but failed.	
Description of warning	Meter information	• Description of control: The following information appears on the meter for 15 seconds (and disappears automatically after 15 seconds have elapsed): "S/T is not unlocked" "Steering locked"

- 8. Steering lock failure warning

Situation: The system detects a failure that could lead to an improper operation of the steering lock ECU.

Conditions	• A driver malfunction in the steering lock ECU, power supply ECU, or a malfunction in the lock/unlock position switch.	
Description of warning	Meter information	• Description of control: The following information appears on the meter: "Check steering lock"

SMART ENTRY & START SYSTEM User Customize Function

SMART ACCESS SYSTEM with PUSH-BUTTON START customized function Setup Value Data Check

Function	Default setting
Power switching or engine starting function (front doors/front and rear doors)	Front and rear
Standby time in parking standby mode(1.0s/2.0s/3.0s/5.5s)	3.0
luggage door open (spec yes/no)	Yes

SMART ACCESS SYSTEM with PUSH-BUTTON START Warning customized function Setup Value Data Check

Function	Default setting
Electronic key taken out by occupant warning (spec yes/no)	Yes
Key battery low warning (spec yes/no)	Yes
Electronic key out-of-area warning (spec yes/no)	Yes

Cancel Function

- The SMART ACCESS SYSTEM with PUSH-BUTTON START controls listed below can be canceled by operating the cancel function.

Cancel Operation Stopping Function

• SMART ACCESS SYSTEM with PUSH-BUTTON START Control	• Electronic key Confinement Prevention
• Memory Call Control	• luggage door Open Control
• Door Unlock Customizable Function Mode	• Warning Function

- Under the prerequisites indicated below, the cancel can be set and unset in the manner described below.
Prerequisites: all power supply OFF (ACC and IG OFF), driver's door closed, and driver's door unlocked

Cancel Operation Method

NO.	Operation
1	Perform wireless unlock operation once
2	Open the driver's door within 5 seconds
3	Perform wireless unlock operation twice within 5 seconds*
4	Repeat open -> close driver's door twice within 30 seconds, then open it again (driver's door open -> close -> open -> close -> open)
5	Perform wireless door unlock operation twice within 30 seconds*
6	Repeat open -> close driver's door once within 30 seconds, then open it again (driver's door open -> close -> open)
7	Close driver's door within 5 seconds

❖REFERENCE❖

* : The cancel operation stops if the driver's door is operated open -> close in steps 3 and 5.

- To return the cancel mode to its original mode, perform the "cancel operation method" again as described above.
- When it is canceled, the doors can be locked and unlocked through the use of the wireless remote control function or a mechanical key.
Also, the driver can start the engine by holding a electronic key near the engine switch.