

COVER

USER'S GUIDE
RESA
(Remote Engine Start Assembly)

* Before using the product, read the safety cautions and warnings carefully and use this product safely.

* Images shown within this user's guide may appear slightly different as they do in real life.

* The design and specification of this product may change without prior notification for product improvement.

Safety Warnings and Cautions

* RESA may not operate in the following conditions. Driver caution is required.

- When driving near or between high-rise buildings
- When in underground parking structures, tunnels and other enclosed environments
- In bad weather conditions, such as fog, heavy rain, or heavy snow
- When there are strong radio waves in the vicinity
- When the battery life is low
- When the distance with the vehicle is too far
- When the vehicle is at a busy intersection
- When the vehicle has thick window tints or heated windows

[Warnings]

- The LOCK function on RESA is used to prevent states of improper operation. The driver is fully responsible to perform operations to safely drive the vehicle.
- Take caution so that liquids are not introduced into RESA.
- RESA may not properly operate if the distance with the vehicle is too far.
- RESA may not properly operate if the battery life is insufficient.
- Do not disassemble the RESA and its components or subject it to severe shock.
- Excessively operating RESA may cause battery life to be consumed quickly.
- When not properly operating, check the Lock/Unlock button on RESA.
- Make sure to fully understand the functions of this product so that the product and its use does not impede vehicle driving.
- When parking after using this product, the gear position must be shifted to P. For safety, do not use the remote engine start function when parking on roads on a slant or incline.
- If the engine does not start due to product malfunction, use the genuine KEY to start the engine and visit your place of installation or maintenance center to receive repair/inspection.
- When assigning or transferring this product to a third party, make sure to transfer the product with its functions disabled and that the driver fully understands the functions of this product.
- When storing this product for a prolonged period of time, make sure to store it in a moisture-less environment.
- The duration of remote ignition time is up to 10 minutes. The customer must check whether the product is properly operating at all times.

- This product shall only be used as an assistance tool equipped with convenience features. The driver shall be responsible for any and all forms of theft and damage and the manufacturer shall have no consequential civil or criminal responsibility.
- You must carry your genuine key at all times in order to automatically open doors and switch back to normal engine start mode.
- This product is not waterproof.
- Do not use this product in ways not directly expressed within this User's Guide.
- Store this product in places that are out of reach of infants and children.
- When storing this product for a prolonged period of time, make sure to store it in a moisture-less environment.
- The duration of remote ignition time is up to 10 minutes. The customer must check whether the product is properly operating at all times.
- This product is highly sensitive to temperatures and surrounding environments. Severe changes in temperature may result in discharge of the internal battery.
- If the alarm sound does not occur and the product does not properly operate due to product defects or errors, please visit your place of purchase to receive inspections.
- Upon loss of the remote controller, visit your place of purchase.
- Upon replacing your product due to loss of remote controller or device malfunction the vehicle may be reset and contents stores in the memory may be erased.

Verifying Components



<Remote Controller>

Model: RESA-Remote



<Vehicle RF Module>

Model: RESA-Module



<RF Antenna Cable>



<RF Antenna>



< Module Power Cable>

Operating Conditions of RESA System

Vehicle Conditions

- The vehicle must be parked with the gear positioned to P.
- All vehicle doors, including the hood and trunk, must be closed and the doors must be locked.
- The product will not operate if the gear is not positioned to P or when the vehicle is in motion.

Operating Conditions

- The duration of remote ignition time is up to 10 minutes.
- If the doors are opened by force in a state when the door lock is in boundary mode, then remote engine start is automatically disabled.

Normal Engine Start Switch Conditions

- In a state when the IGN1 and IGN2 is connected and the ACC is unconnected, the ACC will operate when the user is at the driver seat and switches to normal engine start.
- After remote engine start and unlocking the car doors with the smart key, switches to normal engine start when the driver-side door is opened and the smart key is inside of the car followed by the driver-side door closing or brake pedal being pressed.
- After remote engine start and unlocking the card doors with the smart key, switches to normal engine start after the smart key is inside of the car for over 30 seconds.

Driver Conditions

- The driver must perform engine start/stop by understanding the vehicle state at close-far distances.
- RESA will not operate if the driver has turned the RESA Lock button On.
- The driver must operate according to each state upon pressing the START, STOP and STATUS buttons on RESA.
- The driver must be at distances that support operation. RESA may not operate in certain operating conditions.
- If the driver presses and holds the START, STOP or STATUS button, it recognizes the first button press and will not repeatedly perform the action.
- If a button is pressed and another button is pressed within 5 seconds, only the initial button press is recognized.
- RESA will not operate if the driver is within the vehicle and in possession of RESA. (When RESA is equipped together with the remote controller)

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1. Remote Controller Function Names & Specification and Characteristics

- Remote Controller Function Names



| NUM | Description |
|-----|---------------|
| ① | Start Button |
| ② | Status Button |
| ③ | Stop Button |
| ④ | Lock Button |
| ⑤ | LED 1 |
| ⑥ | LED 2 |

- Specification and Characteristics

| | | | |
|---------------------|---|-------------------------------------|--|
| Operating Frequency | 433MHz | Operating Temperature | -30℃ ~ 80℃ |
| Transmission Power | < 0 dBm | Battery Life | About 1 year when operating 20 times per day |
| Modulation System | GFSK | Operating Power (Vehicle) | 12v |
| Dimensions | 35*62(Remote Controller) 65*56(Car Module) | Operating Power (Remote Controller) | 3v |

2. Remote Controller Buttons



| Button | Time | Function | LED Operation |
|-----------------|-------------|---------------------------------|-------------------|
| ① Start Button | 0.7 seconds | Attempts engine start | LED 2 blinks once |
| ② Status Button | 0.7 seconds | Attempts to check engine status | LED 2 blinks once |
| ③ Stop Button | 0.7 seconds | Attempts engine stop | LED 2 blinks once |

2.1 Button Functions

2.1.1 Start button

Press and hold the button for over 0.7 seconds to attempt engine start. Here, LED2 will blink once for 1 second.

When the signal indicating the engine has been started is received from the vehicle, LED 1 and 2 will alternately blink twice in 0.2 second periods.

If no signal is received from the vehicle, all buttons will not operate for 4 seconds.

2.1.2 Status Button

When the engine start status is received from the vehicle after approximately 2 seconds, either LED1 or LED2 will blink once depending on the engine start status. When the engine has been started, LED1 will blink 3 times in 0.2 second periods. When the engine has not been started, LED2 will blink twice in 0.3 second periods.

If no signal is received from the vehicle, all buttons will not operate for 4 seconds.

2.1.3 Stop Button

① Press and hold the button for over 0.7 seconds to attempt engine stop. Here, LED1 will blink once for 1 second.

② When the signal indicating the engine **has been stopped** is received from the vehicle, LED 1 and 2 will alternately blink twice in 0.3 second periods.

③ If no signal is received from the vehicle, all buttons will not operate for 4 seconds.

2.1.4 Lock Button

① Pushing the button outwards so that the red area is hidden indicates Locked state while pushing the button inwards so that the red area is visible indicates Unlocked state. No operations can be made during Lock state.

2.1.5 MODULE LED (Vehicle)

When data is received from the remote controller, this LED will blink once for 0.3 seconds.

2.1.6 LED Display Rules

① In Normally Operating State

| BUTTON | | LED Operation |
|---------------|---------|---|
| Start Button | | LED 1,2-> alternately blinks twice |
| Status Button | | LED 1,2-> alternately blinks twice |
| Stop Button | IGN ON | LED 1 -> alternately blinks three times |
| | IGN OFF | LED 2 -> alternately blinks twice |

② In Error Operating State

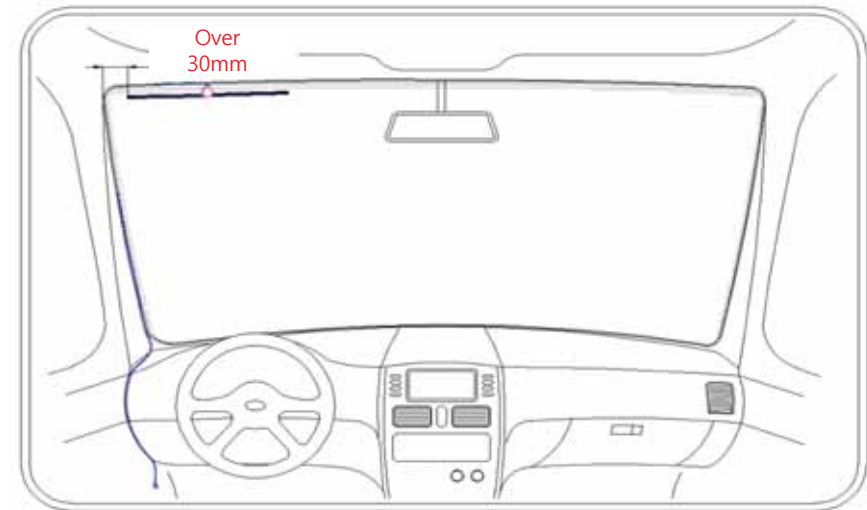
| Error | LED Operation |
|--|----------------------------------|
| LIN Communication Error 1 (NO Response) | LED 1,2 -> Blinks simultaneously |

<Miscellaneous>

Product Installation Procedure

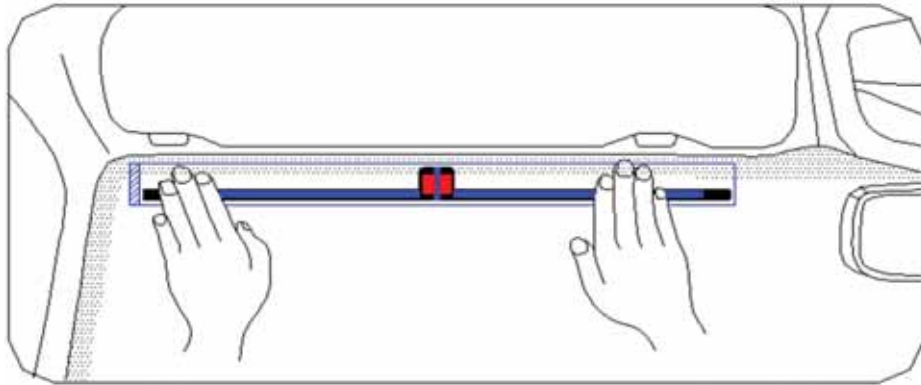
1. RESA MODULE 1.1 ANTENNA

Install at the top side of the front window as shown in the figure below.

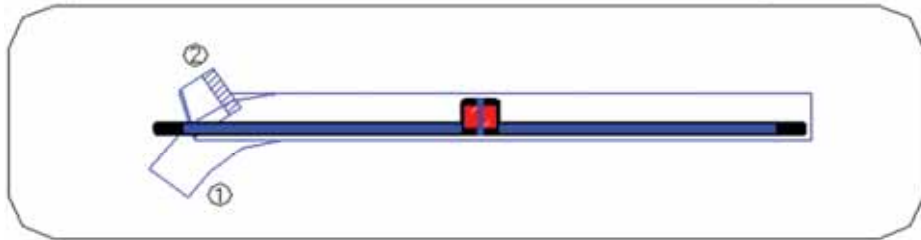


< Cautions>

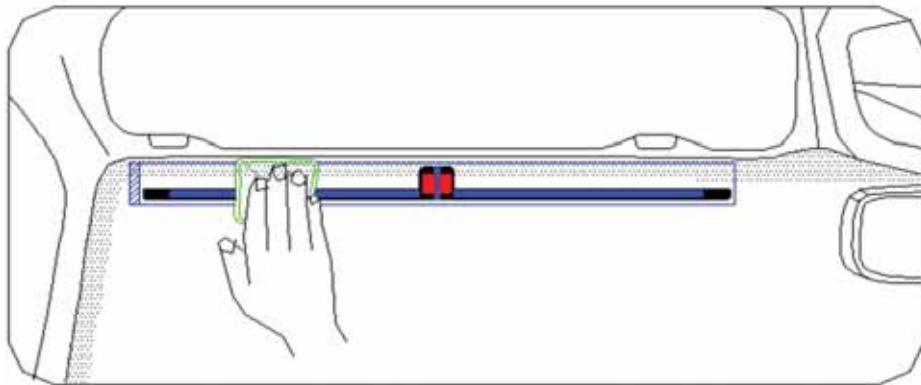
- 1.Refrain from installation during highly humid weather, such as rain or snow, as such will leave high amounts of moisture on the car windows.
- 2.Performance of tape adhesive are assured for their first use. Check the position of installation and attach the tape on the first try.
3. In vehicles installed with electronic room mirror or black box, install as far as possible from such devices.



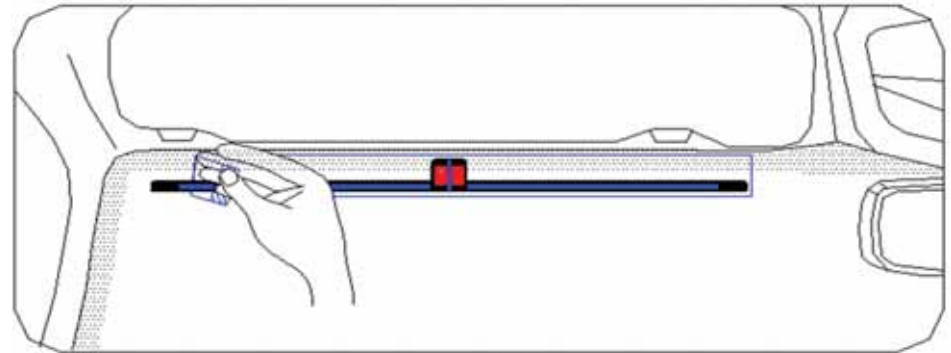
- Check the position for installation by using the antenna element without removing the tape release paper. (Attach the element release paper ends right on the glass sun tint line.)



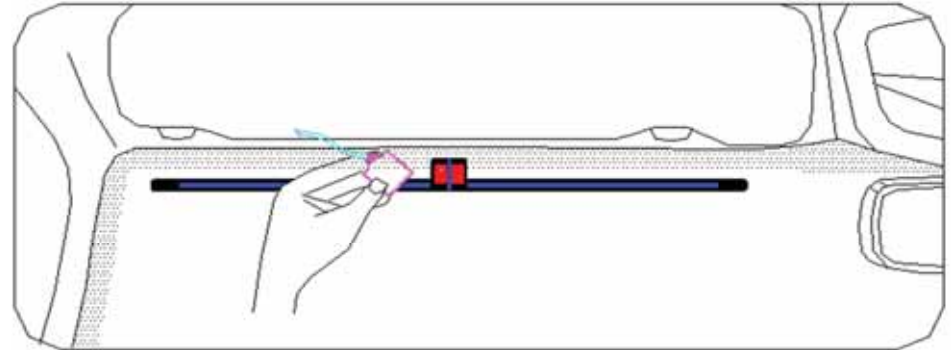
-Remove foreign substances on the glass where the element is to be installed and install the element. (Install the element on the glass while removing tape release paper ① on the bottom side.)



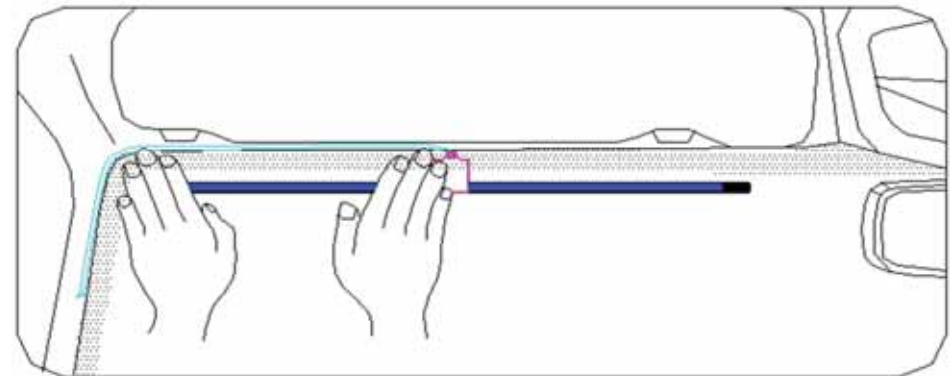
-Adhere the element onto the glass by tightly rubbing across the element with a cloth.



- Slowly remove the protective film (② of Figure 2) on the attached element.



- Attach the antenna to the AMP shape as shown on the element.
- Match the cable with the cable direction as shown on the element.



- Organize the cable using the crack in between the glass and antenna roof, as shown in the figure.
- Connect the vehicle terminal and the antenna.

1.2 ANTENNA CABLE WIRING

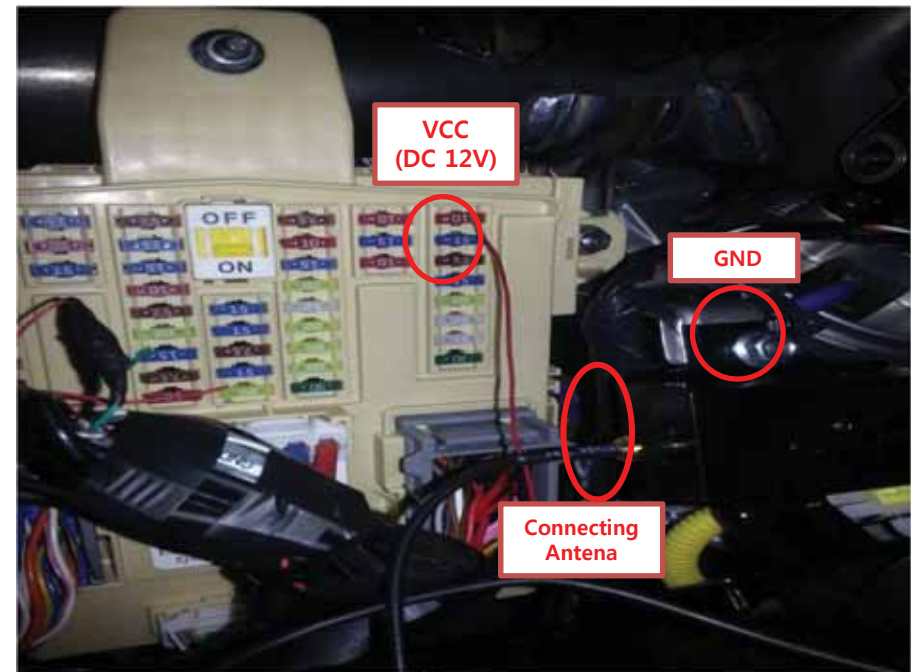
For the protruding antenna cable, wiring can be organized to the interior junction box using the A Pillar.

Remove the A Pillar and use a cable tie to band the wires together.



1.3 MODULE

As shown in the figure, install on the left-side bracket on the interior junction box.

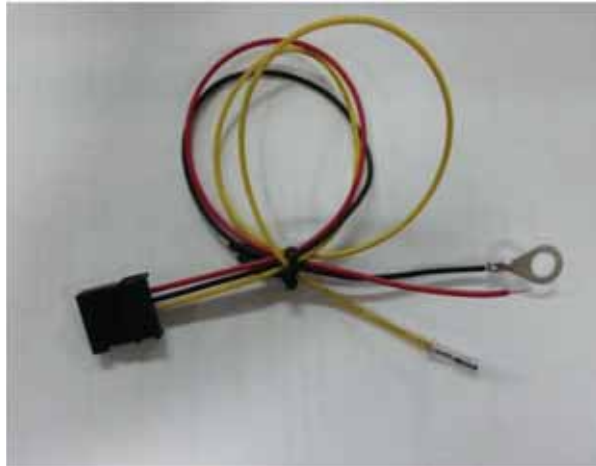


1.4 POWER CABLE

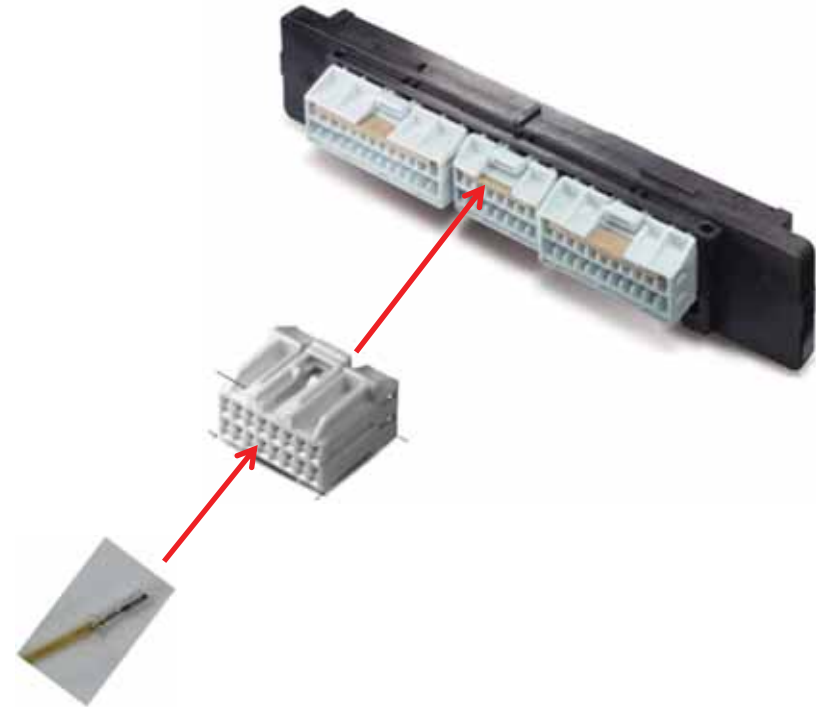
PIN NO 5 = +12V (Install to fog lamp fuse)

PIN NO 4 = GND (Fasten together with bracket nut nearby vehicle module installation region)

PIN NO 3 = LIN (Connect to SMK B Housing PIN NO 3)



1.5 CONNECTING SMK CONNECTOR



Homologation

FCC Compliance Statement

This device complies with part 15 of the FCC Rules.

Operation is subject to the following two conditions :

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

Do Not

Any changes or modifications to the equipment not expressly approved by the party responsible for compliance could void user's authority to operate the equipment.

IC Compliance Statement

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions:

- (1) this device may not cause interference, and
- (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le present appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisee aux deux conditions suivantes :

- (1) l'appareil ne doit pas produire de brouillage, et
- (2) l'utilisateur de l'appareil doit accepter tout brouillage radioelectrique subi, meme si le brouillage est susceptible d'en compromettre le fonctionnement.