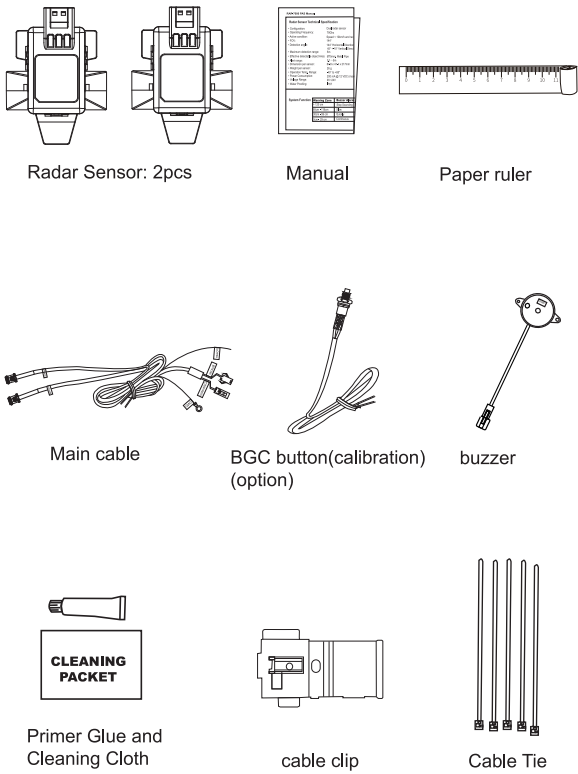


RAR-7000 PAS Manual

Radar Sensor Technical Specification

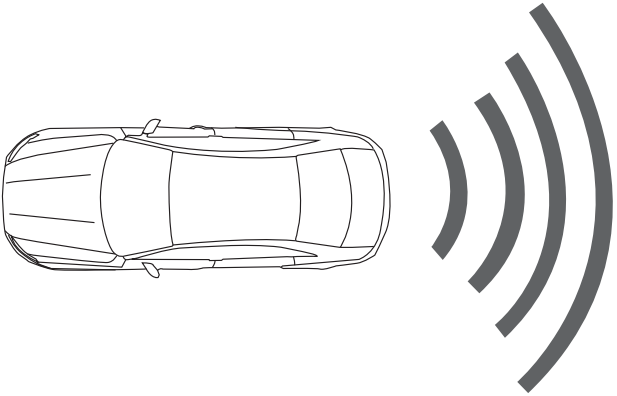
- Configuration: Dual radar sensors
- Operating Frequency: 77~81 Ghz
- Active condition: Speed < 10km/h and reverse gear
- Antenna: 1T1R
- FOV: (HFOV)144°
- Maximum detection range: 5m
- Alert range: ≤ 1m
- Effective detectable object Area: nearest object
75mm plastic pipe or 25mm metal pipe
- Dimension per sensor: 64.8 x 47.4 x 21.7(mm)
- Weight per sensor: 16 g
- Operation Temp. range: -40° to +85°C
- Power Consumption: 200 mA @ 12 VDC (maximum)
- Voltage Range: 8V~18V
- Water Proofing rating: IPX7
- HMI (Human-Machine Interface) Buzzer Alert:
(To be adjusted): >100cm no sound
Level 1: 60~100 cm buzz slowly
Level 2: 35~60 cm buzz fast
Level 3: < 35 cm buzz continuously

Packing List



Alert Range

Through installation 2pcs of 79G radar sensors into car rear bumper, the buzzer is beeping for reminding driver if any object gets close to the bumper zone when the car is in reverse.



Application related:

1. The ECU-less PAS operation will be interfered or obstructed if the vehicle is towing another vehicle.
2. Do not exceed the reversing speed limit of 15km/h.
3. Bumper properties, installation positions of the sensors, and surroundings including from various types of ground surfaces may affect the ability of the sensors to correctly detect obstacles. For example:
(a). If the vehicle was under an extreme heavy load, a ditch cover or large reflection on the ground might cause false alarm at a larger distance from the vehicle.

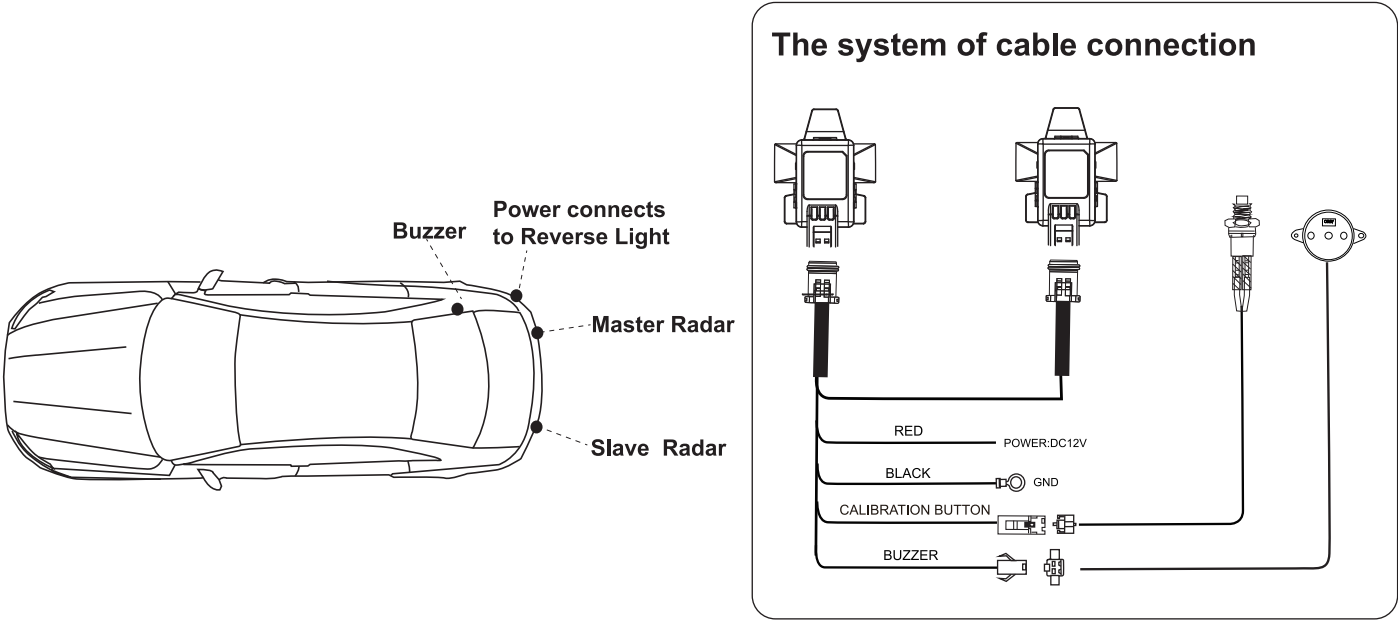
CAUTION:

The Parking sensor system is strictly a driver assistant device. It should not be considered as a safety device for any purpose. Manufacturers and distributors of the product do not guarantee or assume liability for collisions or damages that take place during vehicle reversal.

Attentions

The following use environments can cause radar detection instability:

- The things of small diameter, like pipe, wire...etc.
- The material can absorb the radar wave, like cotton, sweater...etc.
- Non-reflectional surface.
- Drives on grass road or rough road.
- Something sticks on sensor's surface.



Problem solving

	Problem	Root Cause	Solve
1	Buzzer no sound	Power is not turned on	Open the power
		Radar sensor damaged	Contact the original installation store
		Buzzer damaged	Contact the original installation store
		Buzzer wire end is damaged	Contact the original installation store
		Loosening of the Radar sensor end	Contact the original installation store
2	Detection Error	The bumper is covered with dirt	Cleaning bumper If it is still abnormal,please contact the original installation store

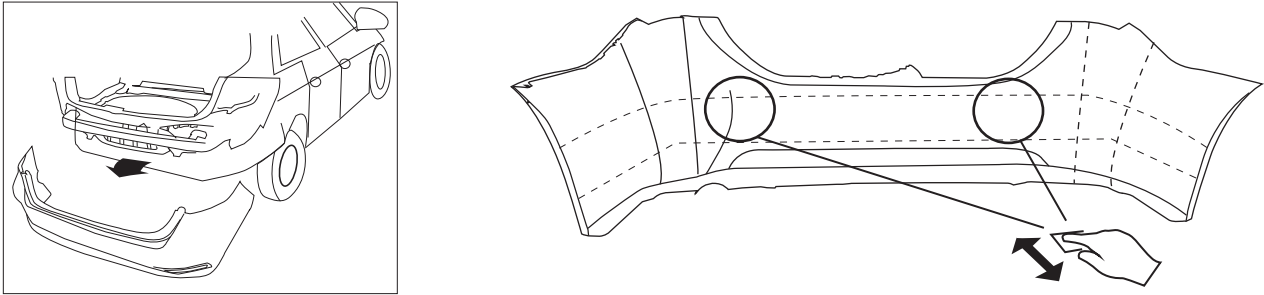


This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
—Reorient or relocate the receiving antenna.
—Increase the separation between the equipment and receiver.
—Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
—Consult the dealer or an experienced radio/TV technician for help
—Professional Installation is required
This device complies with radio frequency (RF) exposure limits adopted by the Federal Communications Commission for an uncontrolled environment. This device should be installed and operated with minimum distance 20cm between the radiator & your body.

Installation

Installation of Radar Sensor

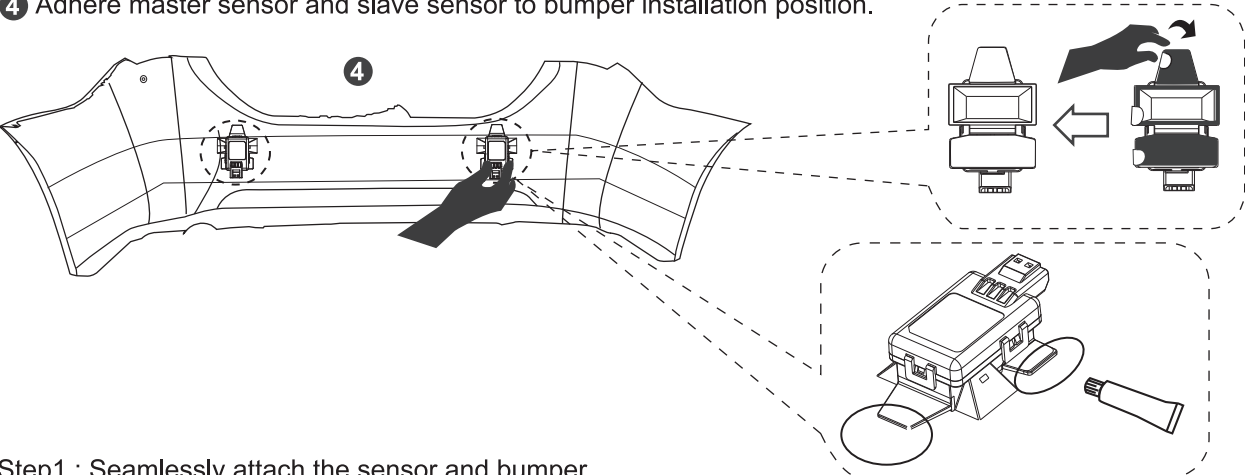
1 Before attaching the sensors onto the rear bumper, make sure the inner bumper surface is **clean and smooth**. Dented or scratched surface could degrade the radar performance.



- Keep the bumper clean at all the time, especially the areas in front of the radar sensors. For example: avoid dirt, clay, snow, stickers (including transparent stickers), or other items covering the radars, which could prevent the radars from operating normally.
- If the bumper was impacted, sensor positions, bumper shape and stability should be checked. If there was any visible offset from original installation, the installation calibration should be performed.
- If the bumper was re-painted, the installation calibration should be performed.
- The radar sensors should be installed at the same height level as the targets to be detected.

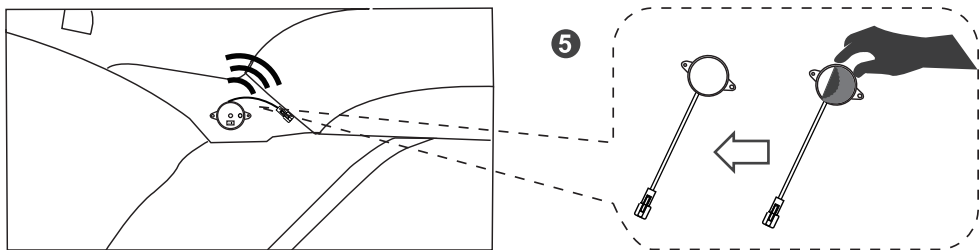
- 2 Mounting horizontal position should be 30, 40, 50cm from bumper center (default is 40cm)
- 3 Mounting Vertical position must be between 40~60cm height from ground (depend on car)

4 Adhere master sensor and slave sensor to bumper installation position.



Step1 : Seamlessly attach the sensor and bumper.
Step2 : Glue the "K-520 Primer Adhesion promoter" as figure shown to improve the attachment.

5 Install buzzer on car c-pillar.

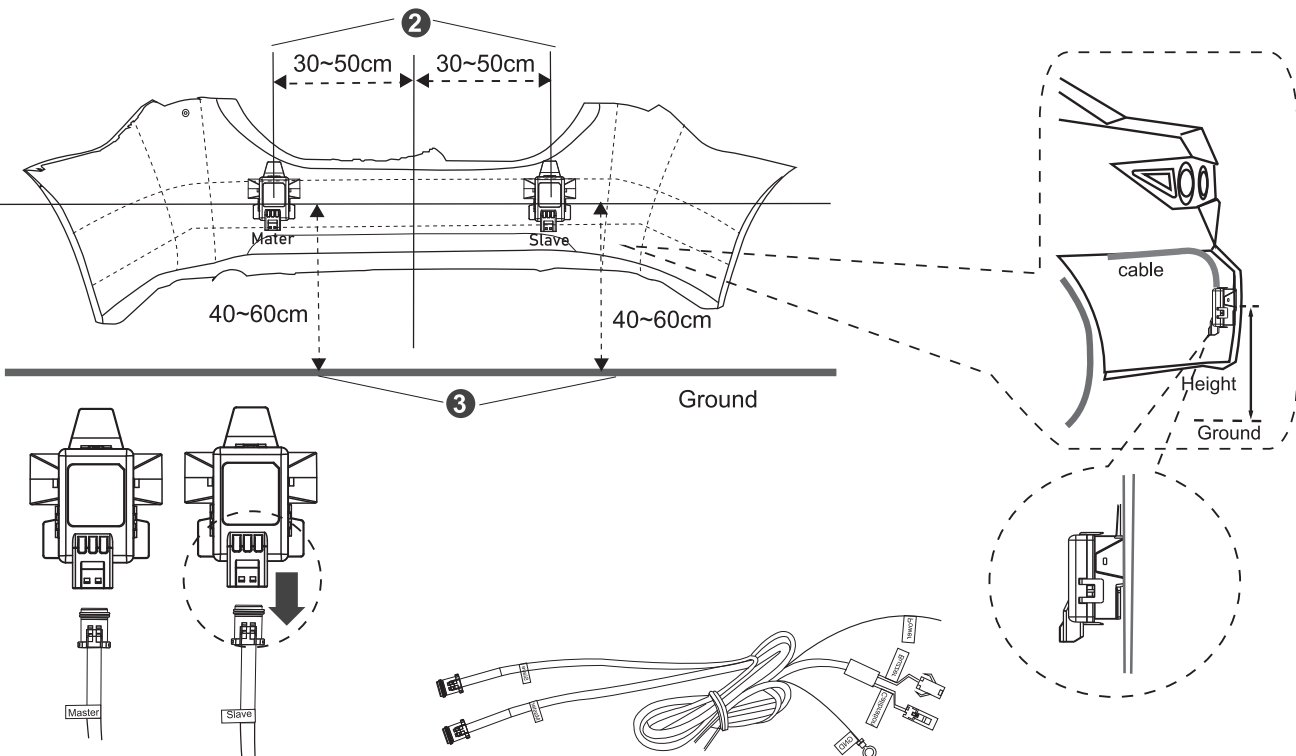


- 6 Connect 12V/GND power to car reversing system.
- 7 Do sensors BGC calibration. (please refer BGC Calibration step)

The installation spec and tolerance

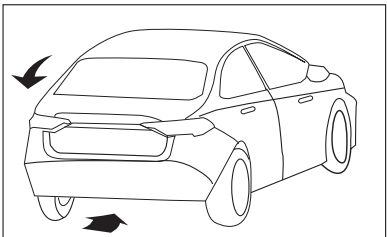
Item	Spec
Sensor to sensor distance	60cm~100cm
Installation tolerance	+/- 10cm

Note: The ground clutter caused by various car bumper and difference field is possible, so the realistic installation height and angle tuning depend on the real case.



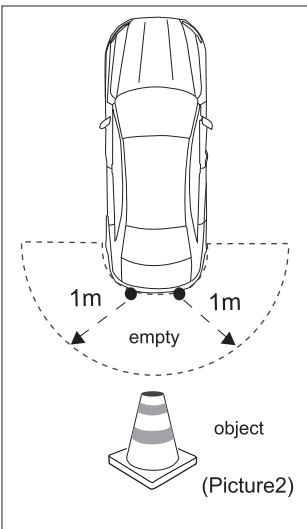
BGC Calibration step (after installation)

Step1: Complete the installation and make sure the trunk is closed. (Refer to Picture1)



(Picture1)

Step2: Check power on and moving objects are >1m away from sensors. (Refer to Picture2)



(Picture2)

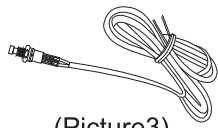
Step3: Press BGC button more than 3s to trigger the BGC → Continuous beeps!!! (Refer to Picture3)

Step4: Release BGC button

Before BGC: hear 3s rapid beeps!!

After BGC: 2s continuous beeps!!

Note: the 3s and 2s are variable parameters



(Picture3)

Step5: Check function.

Step6: After calibration process done, please remove the BGC button cable.