Digital Wireless
Backup Camera Kit

English	User Manual

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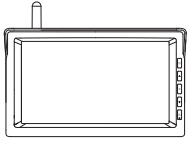
Introduction

Thank you for purchasing this digital wireless backup camera kit.

Please read all of the installation instructions carefully before installing the product. Improper installation will invalid manufacturer's warranty. The installation instructions do not apply to all types of vehicles, and are written as guide to assist in installing the backup camera kit.

Package Contents



7-inch Monitor with Antenna

Mount Holder with Rotary Knob

Camera (1.31ft Cable)

Car Charger (11.48ft Cable)

Self Tapping Screw *2

Hole Saw (0.8inch)

Power Cable (3.28ft Cable)

User Manual

Installation

Pre-Installation Note:

- When installing the unit, please do not impair the vehicle's equipment, control systems. Follow the local applicable laws and safety regulations for vehicles.
- Park your car in an even and safe place before installation.

Before installing the backup camera on your car, please test all the components of the product by using your vehicle power or an external power supply to check if the product can work properly. The following test steps for reference:

1) Connect the power cable to the car battery. (The red wire is connected to the positive pole, and the black wire is connected to the negative pole)
2) Insert the car charger into the cigarette lighter port, turn on the engine and power it on.
3) After the above steps are completed, if the screen displays image normally, it means the product is working normally.

After the test is complete, the installation can be performed.

Installing the monitor

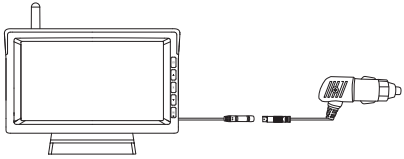
1) Tear off the red sticker from the base of the display and stick it on the dashboard. Press the base against the mounting surface for 15 seconds to ensure it sticks firmly.
   - The location of the monitor cannot block the driver's sight.
   - Please clean and dry the area of the dashboard where you want to mount your monitor.
   - The angle of the display can be adjusted by moving the display from left to right, up to down.
   - Do not remove the base after it is glued, because the adhesive tape will lose its stickiness.

- If you need to remove the display, you can separate the base from the display by unscrewing the rotary knob on the back of the display.

2) Connect the monitor cable with the car charger cable. Plug the car charger into 12V/24V cigarette lighter port in your car.

Note:

- To avoid poor contact, please fully insert the monitor cable into the car charger cable.
- If the cigarette lighter of your car supply constant power (it has power after turning off the engine), in order to prevent the car battery from draining, please unplug the car charger before leaving the car.



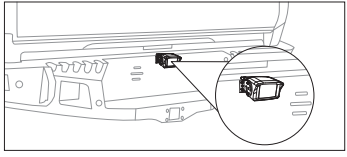
Installing the backup camera

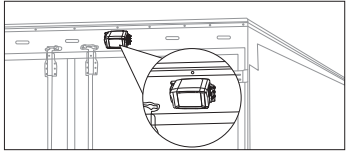
Note: This product supports two cameras, but the package comes with one camera only. if you want a second camera, please purchase the specified camera separately.

1) **Confirm the installation location of the backup camera**

The installation location of the backup camera is flexible, depending on the vehicle models. It can be installed on the rear bumper of the vehicle, or the roof of the vehicle, etc. (As shown on the right)

Note: When confirming the installation location of the camera, please also check the signal reception and camera's angle of view, and evaluate whether the power cable is long enough. If it is not, you can extend the power cable by yourself.

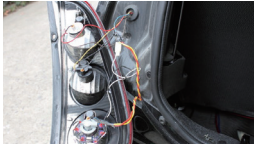


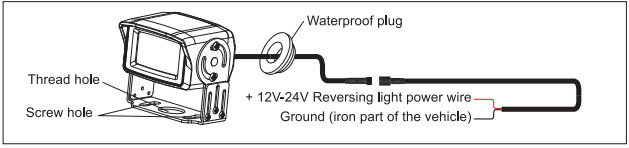


2) **Connect the power cable**

a. Open the inner plastic panel and remove it from the hatch or tailgate. (The panels are usually attached to the tailgate by clips. This may take a bit longer time to avoid clip damages. Once this panel is removed, the work will be done easily)

b. Find the power wire (positive) of the reversing light and connect it to the red wire of the power cable. Then connect the black wire of the power cable to the ground. (Iron part of the vehicle)





3) **Install the backup camera**

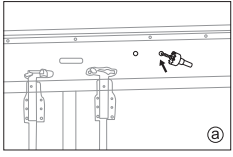
a. Find an opening or drill a hole with the hole saw to thread the camera cable into the interior of the vehicle.

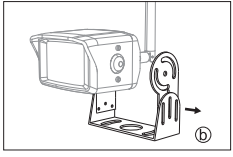
b. Then remove the bracket from the camera. The screws need to be kept in a safe place to avoid losing them.

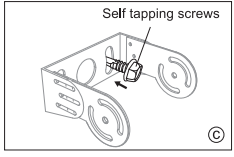
c. Use the electric drill or other professional equipment to install the camera bracket on the vehicle with self tapping screws.

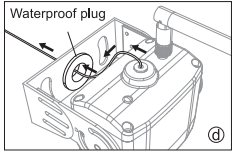
d. Thread the camera cable into the thread hole and plug in the waterproof plug.

e. Fix the camera with the screws.



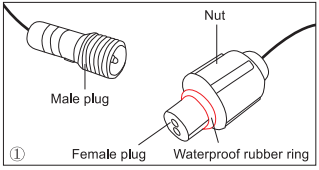






4) **Connect the camera cable**

Connect the 2 pin male plug of the camera cable to the female plug of the power cable. Make sure you don't lose the waterproof rubber ring. Then tighten the nut. Make sure the cables are not pinched or knotted. (As picture ① shown on the right)



How to find the reverse light (Positive)?

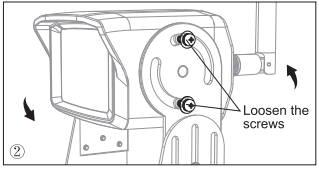
a. Please switch the key to ACC position, then shift your car into R-gear.

b. Prepare a test pencil, connect its clip or clamp to a known ground source, then use the pointed end to pierce the plastic insulation on a wire. If the bulb lights up, it means the wire may be the potential reversing light's positive power source.

c. Please shift your car into another gear, then use a test light to test all the wires which used to light up the bulb again, if there is one wire that doesn't light up the bulb, it's the reversing light's positive power source.

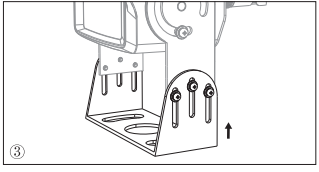
How to adjust the angle of the camera?

Loosen the screws on both sides of the camera as shown below. Then rotate the camera to the desired angle. Finally, tighten the screws. (As picture ② shown on the right)



How to extend the camera bracket?

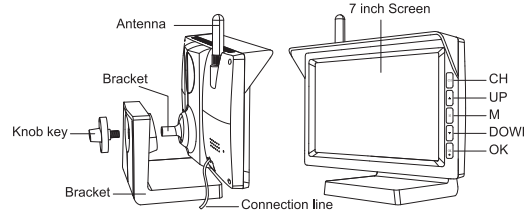
Loosen the screws on both sides of the bracket as shown below. Then stretch the bracket, and finally tighten the screws. (As picture ③ shown on the right)



Note:

- The above wirings also apply to the second camera. The red wire should be connected to a positive pole and the black wire should be connected to a ground wire. You can also connect the camera to other ACC power supplies or external power supplies.
- Due to differences in technical and design-related vehicle models, these instructions for use do not apply to all vehicle models.
- When washing the car, please avoid using a high-pressure water gun to spray the camera at close range to avoid water ingress.

Operating Instructions



Monitor operations

1) **CH**: Switch CAM1/CAM2 Channel.
2) ▲: Forward/Increase.
3) **M**: Menu/Return/Confirm.
4) ▼: Back/Decrease.
5) **OK**: Confirm.

Monitor menu settings

1) Press (**M**) to access menu mode.
2) Press (▲) and (▼) to advance the following menu items:

Pair: pair the monitor with backup camera.
B/C Control: adjust the monitor brightness and contrast.
M/U Control: switch to Mirror/Normal/Up/Down image.
Guide Line: activate or deactivate guidelines.
Reset: return to factory settings.
Press (**M**)/(**OK**) to confirm your settings and exit the menu.

Basic operations

1) Choose the Sizes of Guidelines
   a. Set the guideline ON on menu.
   b. Put the car in reverse and the monitor shows the image (non-menu mode).
   c. Press and hold "**M**" button for about 3 seconds until the guidelines flick.
   d. Press "▲" or "▼" to choose from 6 different sizes. Press "**M**"/"**OK**" to confirm.

Note: The setting screen will close automatically if no operation is performed for about 5 seconds, then the settings will be saved.

2) **Pair the Camera**

If you need to re-paired/change the camera or install the Cam2, please follow the steps:

a. Press "**M**" to enter the Menu setting, select "**Pair**"

b. Select Cam1/Cam2, press the "**M**"/"**OK**" to enter into the selected channel pairing interface (A looping symbol will appears on the screen), and the indicator lights of OK will flash fast.

c. The pairing will start when the camera gets power. (If your camera is powered by reversing light, please shift your vehicle into R-gear). The monitor will display the image of Cam2 when pairing is successful.

Note:

- Do not power the backup camera before completing steps a-b.
- The pairing timeout is the default 30s. If the pairing does not finish in 30s, the pairing screen will close automatically, and then the monitor enters standby mode, please follow the steps to pair the camera again. If the pairing is failed after many attempts, please contact customer support for help. (Customer support email: **service@auto-vox.com**)
- The Cam1 is pre-paired with the monitor, and it is set as rear camera as default.

3) **Switch Cam1/Cam2 Channel or Split Screen**

If the monitor has been paired with Cam1&Cam2, and the monitor is not on any setting interface, press (CH) to switch between Cam1 display, Cam2 display and split screen.

Note:

- The monitor will show the image of CH1 channel as priority when both cameras get power and not in the split screen. The rear camera should chose the CH1 channel.
- The Contrast, M/U Control, Guide line and Rest which can be changed separately by channels. This indicates that when you change Cam1's guidelines on CH1 channel or on split screen, it will only be saved in this channel rather than both channels. But Brightness will be saved on both channel if it is changed.

4) **Daytime and Nighttime Mode**

Daytime Mode

The camera automatically switches to daytime mode in daytime or high light conditions, and the screen displays color images.

Nighttime Mode

The camera automatically switches to nighttime mode in nighttime or low light conditions and the infrared lights turn on to fill light, then the screen displays black and white images.

Note: When the light conditions suddenly change from dark to bright, the black and white image will be switched to the color image after 5 seconds. To avoid the image constantly jumps between black and white image or color image when driving at night and being illuminated by the lights behind the car.

5) **Standby Mode**

When the product works normally, press and hold "**OK**" for 3 seconds, the monitor turns off and enter into standby mode. It exits standby mode after pressing "**OK**" again. Or when the Cam1 is triggered on the standby mode, the monitor turns on and shows the image again.

Technical Specifications

Monitor			
Screen size	7.0 inch	**Screen brightness**	500 cd/m² (Typ.)
Power supply	DC 12-24V	**Transmission frame rate**	25 FPS
Current consumption	Max 300mA (@12V)	**Operating temperature**	-20°C~65°C/-4°F~149°F
Camera			
View angle	Diagonal 135°±5°	**Power supply**	DC 12-24V
Current consumption	Max 650mA (@12V)	**Minimum illumination**	0 Lux (Fully automatic night switch infrared light fill light)
Operating frequency	2.4GHz ISM	**Operating temperature**	-20°C ~65°C /-4°F~149°F

Troubleshooting

Q1: When ignition is on and the R-gear is engaged, but the monitor display is blank.

1) When you charge the monitor, the brand logo is not displayed on the screen.

a. **Possible cause**: The monitor or the car charger is broken.

Solution: Power the monitor, if the red light on OK is always on after 15 seconds which indicates the monitor is broken, please replace the monitor; if the red light doesn't come on, please check if the connection between the monitor cable and car charger cable is poor contact, if the connection is good which indicates the car charger is broken, please contact us to replace the car charger. (Customer service email: **service@auto-vox.com**)

2) When you charge the monitor, the brand logo is displayed on the screen.

a. **Possible cause**: The signal from the transmitter isn't strong enough.

Solution: Please keep the camera away from the metal or sealed place, and put the camera close to the monitor as possible as you can.

b. **Possible cause**: The camera is broken or the cables may be not correctly connected or loose.

Solution: Cover the camera sensor with your finger, if the infrared lights doesn't come on, then use the test pencil to check if the camera cable has power; if yes, which indicates the camera is broken, please replace the camera; if no, please check if the cables are connected to the reverse light correctly and tightly.

c. **Possible cause**: The camera doesn't pair to the monitor well.

Solution: Try re-pair the camera with monitor. Refer to the "Pair the Camera" section on Page 7.

Q2: The monitor image isn't clear enough.

a. **Possible cause**: Bright light is hitting the camera lens.
Solution: Move the backup camera out of the area of the interfering light.

b. **Possible cause**: The protective films on the monitor and backup camera aren't removed.
Solution: Remove films from the monitor and backup camera.

c. **Possible cause**: The camera lens may be dirty.
Solution: Carefully clean the camera lens.

Q3: The image is flashing/the image delay is more than 2 seconds.

a. **Possible cause**: The signal from the transmitter isn't strong enough.
Solution: Please keep the camera away from the metal or sealed place, and put the camera close to the monitor as possible as you can.

b. **Possible cause**: Your vehicle is longer than 10 meters. And when you put the camera closer to the monitor, the image is stable.
Solution: We suggest you to purchase an extension antenna if your vehicle is longer than 10 meters.

c. **Possible reasons**: Passing through complex construct such as bridges, tunnels, factories, and tall buildings; or the speed exceeds 80Km/H.
Solution: Drove away from complex construct.

Q4: The red indicator (Such as CH1/CH2) at the top-left corner of the monitor is flashing.

● **Possible cause**: The monitor is not paired with the camera, or the monitor does not find the camera that has already paired.
Solution: Please refer to the "Pair the Camera" section on page 7.

Care and Maintenance

For maintaining its condition and performance, please follow the guidelines below.

● Keep your system away from excessive moisture, extreme heat or cold.

- Keep liquids away from the display.
- Wipe the unit gently with a soft cloth moistened with water. Do not allow residue or liquids to enter any part of the appliance as this may cause risk of electrocution.
- When washing your car, please do not use a high-pressure water gun to spray the camera at close range, so as to avoid water intrusion.

Note: Always disconnect from the mains before cleaning. Never use solvents such as benzene, thinner or cleaners available commercially to clean the system.

Warranty and Service

You (as the end-user) receive a 12 months guarantee from the date of purchase. In addition, you can contact our service representative via the email address in the warranty card to extend the warranty for 6 months. If we repair or replace a product, the repaired or replaced product shall be warranted for the remaining time of the original warranty period. If you are not satisfied with your purchase for any quality problem, you shall return the item in its original condition within 30 days of receipt and we will gladly provide a refund, replacement, or an exchange. Any items received after 30 days will not be accepted for refund. For any items received after 30 days, we will provide repair service during the warranty period.

Our warranty does NOT cover the following situations:

1. Warranty expired.
2. Damage caused by human factors, accident, misuse of the product.
3. Products purchased from unauthorized channels.
4. Unauthorized alternation to change of parts or components of the product.
5. Fail to provide a receipt or proof of purchase.
6. Malfunctions caused by phenomena such as fire, natural disasters.

For speedy processing of your warranty claim you will need:

- Copy of the receipt showing the purchase date.
- Reason for the claim (description of defect).

For more information or support, see **www.auto-vox.com**

Alternatively, send an e-mail to a service representative at **service@auto-vox.com**

FCC 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.

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 correct the interference by one or more of the following measures:

- Reorient the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into and outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications not expressly approved by the party responsible for compliance could void your authority to operate the equipment.

The distance between user and products should be no less than 20cm

www.auto-vox.com

Email: service@auto-vox.com

Ver-1.0