Truly Wireless
Backup Camera Kit

English	User Manual

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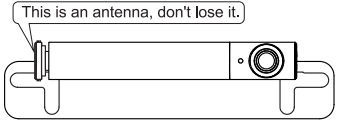
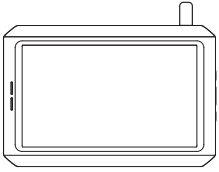
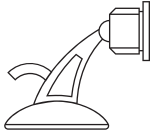
Components



Backup Camera (Built-in Battery)

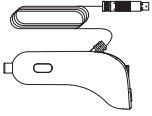


5-inch Monitor

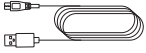


Monitor Suction Mount

Screwdriver



Car Charger with Camera Activation Button (11.5 ft cable)



Battery Charging Cable (4.9 ft cable)

Double Sided Tape

User Manual

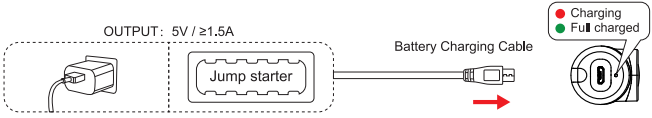
Note: The backup camera can work with optional solar panel. For more information, please refer to ***page 11***.

Get Started

Charge the Camera

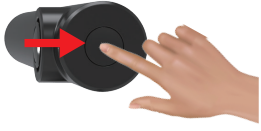
Before installing your backup camera, fully charge the camera's battery using a plug and the battery charging cable.

Let the battery charge for 4-5 hours.



Attention:

1. If you are leaving your vehicle unused for more than half a month, press the power button on the right side to turn off the camera. This prevents the battery from discharging.
2. The backup camera can work continuously for 7.5 hours at 100% charge. If it is being used 3 times a day (the reversing time is 60 seconds), the fully charged camera can last for about 45 to 60 days. When a low battery icon flashes on the display, please charge the camera in time. (The working hours are for your reference only, it also depends on the using environment.)



3. If you use a power bank or a jump starter to charge the device, make sure that its battery capacity is no less than 5000mAh.

4. If the product has been installed, you can charge the camera by battery charging cable using a mobile power supply or jumper starter. Or you can remove the camera as following instructions and then charge it.

① Unscrew the anti-theft screw of the camera with the equipped screwdriver;

② Remove the camera in the direction specified below.

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Test the System

Prior to installing your backup camera, test all components in the system to ensure proper functionality. (Camera and monitor come pre-paired)

1. Supply power to the monitor. If the indicator light is lit, the monitor is on and functioning.

2. Press the power button to turn on the rear camera. The indicator light will flash once. This indicates that the backup camera is on the functioning.

3. Press the camera activation button on car charger or any side button on the monitor once. The indicator lights on the monitor flash twice, then the monitor will display image of the camera. In addition, the camera indicator light will remain solid. If you can not see camera image showing on the monitor, refer to the troubleshooting section of the manual.

Note: By default, the monitor will stop displaying images and enter into standby mode after 60 seconds.

Installation

Install the Rear Camera

1. Unscrew and remove your license plate.
2. Snap the bracket of camera into the license plate.
3. Secure the backup camera and license plate with screws back onto the rear of your vehicle.
4. You can also install the camera on the bottom of the license plate. If you install the camera on the bottom of the license plate, please adjust the image's direction in the setting menu to avoid image inversion.

Note: The installation pictures are for reference only.

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If it is hard to tighten the backup camera and license plate with screws back onto the rear of your vehicle, install the camera as following steps:

1. Unscrew the anti-theft screw, Slide the camera in the specified direction to separate it from the bracket;
2. Install the camera bracket to your license plate and fasten screws;
3. Fix the camera onto the bracket and fasten the anti-theft screw.

If your license plate is not fixed by screws, you can install the camera by the included double-sided tape.

Tear off the double-sided tape and stick it to the front of the camera bracket. Then tear off the other side of the double-sided tape, stick the camera to a proper position on your license plate.

*For installation about the solar panel, please refer to ***page 11***.

Adjust the Camera Angle

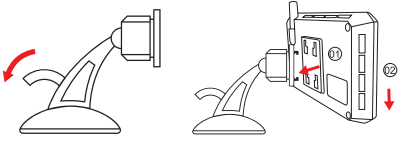
The camera can be rotated up and down by 30°, you can adjust it according to your needs.

Mount the Monitor

Find a mounting surface inside your vehicle where the monitor can be easily seen from the driver's seat and does not obstruct your vision when driving. You can mount the monitor on your dashboard or on your windshield.

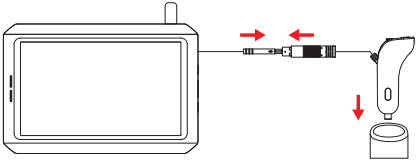
Note: Before permanently mounting the monitor, test the reception of the camera signal in several locations as one may have better reception than the other.

1. Clean and dry the area you will be mounting your monitor to before fixing the suction cup.
2. Press the suction cup against the mounting surface and push the suction cup lock lever down to lock the suction cup in place.
3. Slide the monitor onto the bracket. The angle of the monitor can be adjusted by loosening the rotary knob. Once in desired position, tighten the rotary knob to secure.
4. Insert the monitor car charger into a 12V/24V DC power supply.



Note:

1. For a clean installation, you can hide the charging cable into the decorative seam around the edge of the dashboard, and if necessary, bundle the additioal wires with a cable tie.
2. If the 12V/24V DC power port on your vehicle is a permanent power source and still have electricity go through after the engine is off, be sure to unplug the car charger before leaving the vehicle in case the car battery drains out.



Operation

Display Rear View

1. Turn on the camera (Please make sure the camera is fully charged, see “Charge the Camera”)
2. Start your vehicle, the monitor is getting power, and then the monitor will display the rear image. (If it doesn't display rear image, press the button on the car charger or any buttons on the monitor to activate the camera)

Camera Status Light Quick Reference

Status	Description
⚪⚪⚪⚪⚪⚪	Red light is off when camera is off or in standby mode
🔴⚪⚪⚪⚪⚪	Red light is on for 10 seconds and then turns off. Camera enters standby mode
🔴⚪🔴⚪🔴⚪	Red light flashes until pairing success is complete
🔴🔴🔴🔴🔴🔴	While the monitor is showing the camera image, the red light will remain solid.
🔴⚪🔴⚪⚪⚪	Red light flashes 2 times when the camera is powered off.

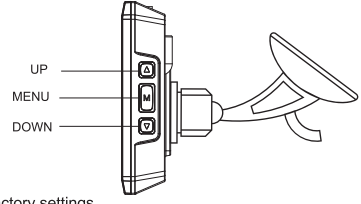
Operate the Monitor

The monitor indicators glow when the monitor is getting power, indicating that the monitor is in standby mode. Pressing any side button on the monitor you will see rear view image.

M: Menu / Return / Confirm

▲**:** Forward / Increase

▼**:** Back / Decrease



● Press **M** to access the menu. The display will show the menu for 3-5 seconds.

● Press ▲ or ▼ to increase/decrease, or switch between the following menu items:

Brightness: adjust brightness

Contrast: adjust contrast

M/U Control: switch to Mirror/Normal/Upside/Down Image

Setting: to pair the monitor with the backup camera/choose different language/retrun to factory settings

Reversing time: set the duration of reversing display time

Guide line: activate or deactivate guide line

Choose the Size of Guidelines

1. Set the guideline ON on menu;
2. Press and hold **M** for about 4 seconds until the guidelines flick;
3. Press ▲ or ▼ to choose from 6 different sizes;
4. Press **M** to confirm.

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

Pair the Cam 2

1. Press **M** to enter the main setting menu;

2. Press ▲ or ▼ switch to Setting>Pair, press **M** to enter the pairing interface;

3. Press ▲ or ▼ switch to CAM 2, press **M** to enter pairing mode. Indicators on the monitor will flash while pairing;

4. Press the power button to turn on the camera, press and hold the power button for 5s to start pairing. The indicator on the camera will flash while pairing;

5. The monitor will display the image of CAM 2 when pairing is successful.

Note:

1. 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. If the pairing is failed, try again.

2. The Cam 1 is pre-paired with the monitor, and it is set as rear camera as default.

Switch Cam 1/Cam 2 Channel

If the monitor has been paired with both CAM 1&CAM 2, and the monitor is not on any setting interface, press and hold ▼ for 3 seconds to switch between Cam 1 and Cam 2 display.

Switching will be invalid in the following situations:

- When the monitor is only paired with one camera.
- When the monitor is paired with 2 cameras, but only one is connected successful.

Note: The settings include Guide line, contrast and M / U control can be changed separately by channels. This indicates that when you change Cam 1's guidelines, it only saves in this channel instead of both channels.

Confirm Version Number

When the monitor displays the rearview without signal indication, press and hold ▲ for 3 seconds in a non-menu state, the firmware version will be displayed in the upper and middle of the screen. The information will be automatically hidden after 3 seconds. The screen version number starts with RX and the cameras' with TX, for example, Cam 1 is TX1: xxx, Cam 2 is TX2: xxx.

Battery Indicator

The battery icon is located in the upper right corner of the display, showing the battery level of the backup camera.

Battery power status	Relative power	Estimated duration	Note
	≈ 100%	≈ 75 days	—
	≈ 70%	≈ 45 days	-—
	≈ 40%	≈ 20 days	—
	≤ 20%	≈ 10 days	Need to charge

Note: The parameters are tested under 25℃, low temperature may decrease the performance of the built-in battery.

For reference, the chart below depicts battery life at different temperatures at 100% charge (being used 3 times a day). However, specific battery performance will vary according to local temperature and actual use.

Temperature(℉/℃)	140℉/60℃	113℉/45℃	77℉/25℃	0℉/0℃	14℉/-10℃	-4℉/-20℃	-22℉/-30℃
Battery Working Days	≈ 75 days	≈ 74 days	≈ 73 days	≈ 57 days	≈ 50 days	≈ 25 days	≈ 0 days
Battery Performance(%)	100%	99%	98%	86%	77%	44%	0%

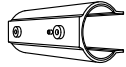
Optional Accessory - Solar Panel

In addition to charging the battery by USB cable, you can also use the optional accessory - solar panel to charge it. Under the condition that the solar panel can be fully exposed to sunlight for 2 hours a day, and you are using it 3 times a day for 60 seconds each time, you should not need to charge the camera for 3 to 9 months. (The charging effect of solar panel and working hours is for your reference only, it also depends on the using environment.)

Package

Solar Panel

Double Sided Tape



Bracket

Screws

Install the Solar Panel

1. Solar Panel and Camera Install Separate

① Stick double-sided tape on the solar panel.

② Unscrew and remove your license plate.

③ Remove the cover(the atenna), and insert the solar panel plug to the camera's micro socket. Ensure that they are connected properly.

④ Hide the solar panel wire behind the license plate. Secure the backup camera and license plate with screws back onto the rear of your vehicle.

⑤ Tear off the double-sided tape on the solar panel and then stick the solar panel on the bottom of the license plate frontside.

Tips:

You can also install the solar panel on the top of your license plate, and install the camera on the bottom. If you install the camera on the bottom of the license plate, please go to the setting menu and set the image's up and down correctly to avoid image inversion.

*If necessary, you can install the solar panel to other places near the license plate.

2. Install Solar Panel onto the Camera

① Secure the bracket and the solar panel with screws. (Use a standard screwdriver to tighten screws.)

② Unscrew the anti-theft screw on the camera with the equipped anti-theft screw screwdriver.

③ Fix the solar panel onto the camera by sliding in the direction shown below.

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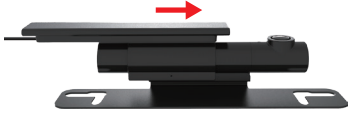

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④ Remove the cover from the camera charging port, and insert the solar panel plug to the camera's micro socket. Ensure that they are connected properly.

⑤ Align the hole of solar panel and camera, then tighten the anti-theft screw.

⑥ Snap the bracket of camera into the license plate. Secure the backup camera and license plate with screws back onto the rear of your vehicle.

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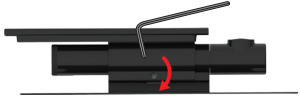

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Tips: If you install the camera on the bottom of the license plate, please go to the setting menu and adjust the image's up and down correctly to avoid image inversion.

Note:

1. The installation pictures are for reference only.
2. Ensure that the solar panel is not covered by any objects. Otherwise, the wireless signal might be affected. (Antenna is in the solar panel.)

Troubleshooting

1. The red light of the indicator keeps flashing when charging

   Possible cause: The power adapter can't supply enough current

   Solution: Use another power adapter that has 5V/1.5A

2. The monitor doesn't work even though camera battery is fully charged(green light stays on)

   Possible cause: The camera isn't turning on or came unpaired

   Solution: ① Press the On/Off switch to turn on camera again

   ② If it doesn't work, try re-pairing and follow the steps below:

   - Power the monitor and press **M** button to enter the menu.
   - Choose Setting>Pair and press **M** button to enter pairing mode, then the monitor indicator light flickers.
   - Press and hold the camera battery switch for 5 seconds, or until the monitor shows rear image.
   - If the pairing is successful, the display will show rear image, and the monitor indicator light is off.
   - If no camera is found, then the monitor will not display anything. In this case, try again. If you keep receiving no images after several attempts, please email our customer support to assist in troubleshooting.

Specifications

Device Designation	Backup Camera Kit	**RF Transmission Distance**	230 ft. (70 m)
Storage Temperature	-4°F to 149°F / -20°C to 65°C	**Operating Temperature**	-4°F to 149°F / -20°C to 65°C
Image Delay	150 ms	**Transmission Frame Rate**	25 FPS
Multilingual	EN/DE/JP		
Camera			
Operational Current	Max 430mA@4.2V	**Working Voltage**	DC 3.0-4.2V
Image Sensor	JX-H65	**Minimal Illumination**	0.1Lux
Battery Type	Lithium Battery	**Battery Capacity**	3350mAh
View Angle	115°±5°		
Monitor			
Operating Voltage	DC 12-24V	**Operational Current**	Max 300mA (@12V)
Screen Size	5-inch		

Warranty

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 given in the warranty card to obtain an extra 6 months warranty for free. 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 for any quality problem not satisfied with your purchase, you shall return any 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 or 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).

Customer support can be found at **www.auto-vox.com**

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

FCC Statement

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.

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.

www.auto-vox.com

Email: service@auto-vox.com

Ver-2.1