User Manual

RVW-Solar 1

Solar Wireless Digital Reversing System

Welcome

Thanks for your purchase! This solar wireless digital reversing system is designed to make it easier and safer to get in and out of the parking space. Please read the instructions carefully before installing and using.
We reserve the rights to modify printing errors or update specifications without a prior notice. Hope for your understanding.

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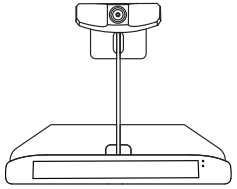
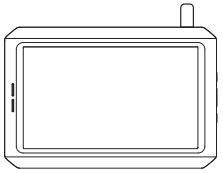
1/Components

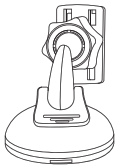


Backup Camera Assembly
(Backup camera, solar battery unit)

Remote Control



Monitor



Monitor Suction Mount

Car Charger Line (3.5 meters)

Battery Charging Cable (1.5 meters)

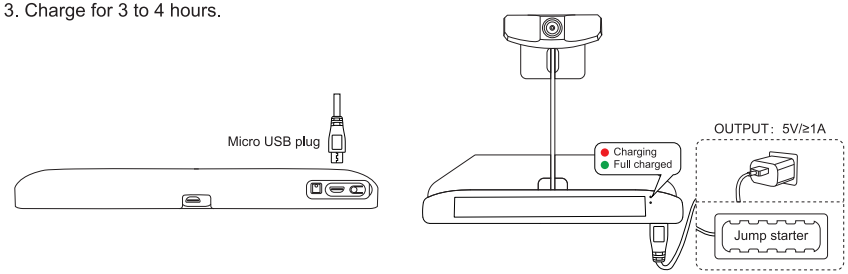
User Manual

2 Getting Started

2.1 Charge the Battery

Use your existing USB charging port to initially charge your device before you install it on your vehicle and charge it when needed.

1. Connect the included USB cable to the Micro USB port of the solar battery unit.
2. Plug the USB cable into any standard USB charger with an output rating of 1000mA or higher.
3. Charge for 3 to 4 hours.



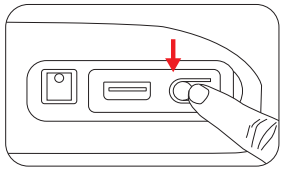
In normal use, the camera pack will remain charged while exposed to sunlight. When the backup camera is working, a battery status indicator will appear on the monitor. If the vehicle is parked in the garage for more than a month, or the camera is not regularly exposed to the sun, you may need to charge it through the micro USB charging port before using.

Attention:

1. If the vehicle is parked for more than 2 months, turn off the solar battery unit switch to disable the camera and prevent the battery from discharging.
2. If you use a power bank or a jump starter to charge the device, make sure that its battery capacity is no less than 4000mA.

2.2 Test the System

To ensure that all components are working properly, please test the system before connecting the components to the vehicle.



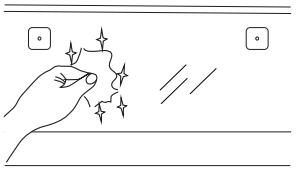
1. When the monitor is powered, the indicator light will light to indicate that the monitor is on and ready to work.
2. Turn on the solar battery unit switch of the rear camera.The working indicator light flashes once and then lights up for about 5 seconds and goes out, which indicates that the backup camera is turned on and ready to work.
3. Press the remote control once, the indicator light of the monitor flashes twice and then the monitor displays image. If not, please refer to the troubleshooting.

Note:

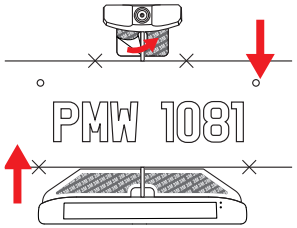
By default, the monitor will stop displaying images and enter into standby mode after 60 seconds.

3/ Installation

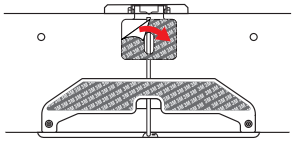
1. Remove the license plate from the vehicle. Clean the mounting surface of the licence plate on the car.



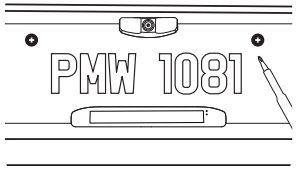
2.1. Mark the mounting location of the solar battery unit and backup camera on the license plate.
2.2. Remove the 3M glue on the front of solar battery bracket and the backup camera bracket.
2.3. Attach the solar battery bracket and the backup camera bracket to the marking location.



3. Remove the 3M glue behind the solar battery bracket and the backup camera bracket.



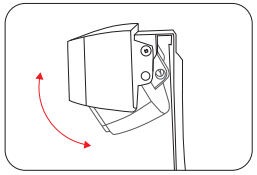
4. Put your license plate back on your vehicle and fix it.

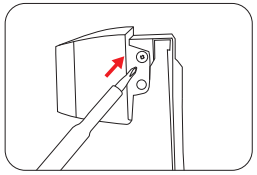


3.1 Adjust Camera Angle

Adjust the angle of the camera as needed:

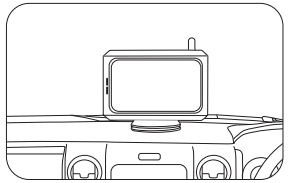
- Tilt the camera to the correct angle.
- The camera should be adjusted to a horizontal position relative to the ground in order to provide the best view of the objects behind the vehicle.
- Carefully tighten the 2 screws to prevent the camera angle from deviating due to vibration during driving.

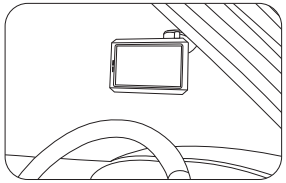




3.2 Mount the Monitor

Find a mounting surface where the monitor can be easily seen inside the car, and does not obstruct your vision when driving.

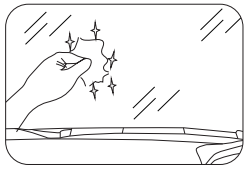




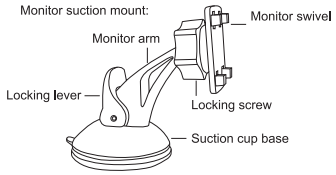
Note:

Before permanently mounting the monitor, test the reception of the camera signal in several selected locations within easy reach as one may have better reception than another. Finally, choose the best location with the best signal reception.

1. Clean and dry the mounting surface before fixing the suction cup bracket.
2. Press the suction cup bracket against the mounting surface and push the suction cup lock lever down to lock the suction cup.

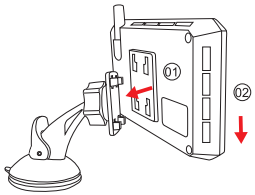


(1)



(2)

3. Slide the monitor into the bracket. The angle of the monitor can be adjusted by loosening or tightening the rotary knob.
4. Insert the monitor car charger into the 12V DC power supply.



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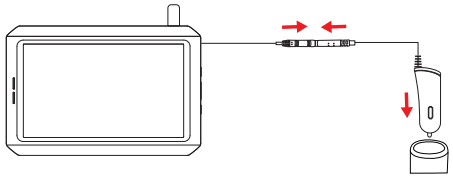


(4)

Note:

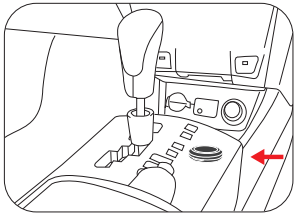
1. For a decent and neat installation, you can hide the charging cable into the decorative seam around the edge of the dashboard, and if necessary, bundle the additional wires with a cable tie.
2. If the 12V DC power port on your vehicle is always running, be sure to unplug the car charger before leaving the vehicle in case the car battery drains out.

3.3 Install Remote Control

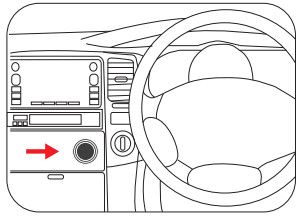
This solar wireless digital reversing camera system comes with a wireless remote control, which is used to activate the rear view camera.

Remove the 3M adhesive film on the back of the remote and fix it in the chosen place:

For example,



1. Console mount

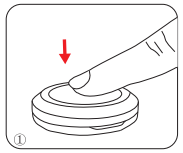


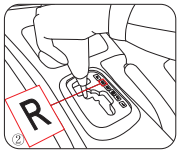
2. Dashboard mount

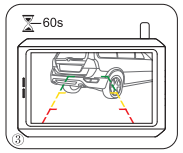
4 Operation

4.1 Activate the Camera

Please make sure the solar battery unit is fully charged before your first use. Information about charging, please refer to the part of “Getting Started” and “Charge the Battery”.



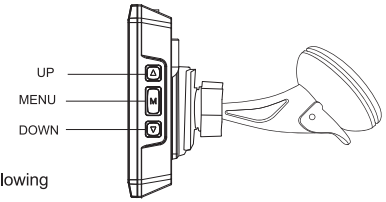




Tips: Pressing any button on the side of the monitor also activates the camera.

4.2 Operate the Monitor

The indicator light is always red after the monitor is powered, which indicates the monitor is on and standby. Pressing any button on the side of the monitor you will see rear view image.



M: Menu/Return/Confirm

▲: Forward/Increase button

▼: Back/Decrease button

- Press the **M** button to access menu mode. The display will show the menu settings for approx 3-5 seconds.
- Use the buttons "▲"and "▼" to increase, decrease or advance the following menu items:

Pair: pair the monitor with a new backup camera

B/C Control: adjust the monitor brightness and contrast

Mirror/Normal: switch between the mirror image and the normal image

Reversing Time: set the duration of reversing display time
Guide Line: activate or deactivate the guide lines
Reset: return to factory settings
Tips:
Normally, the pair between the camera and monitor has been done before they leave the factory. The “Pair” button will only be effective when you need to replace the camera. For more information, please refer to the part of “**Troubleshooting**”.

4.3 Choose the Size of Guideline

1. Press **M** button for about 4 seconds until the guideline flicks.
2. Press“▲”button or “▼” button to choose from 6 different sizes of guidelines.
3. The setting will be saved in 3 seconds when the guideline stops flicking.

5 Indication of Battery Power

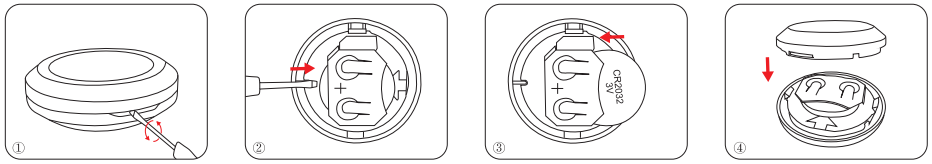
The battery icon is located in the upper right corner of the display, representing the relative power of the built-in lithium battery.
The battery icon in the chart shows the current battery power, and the estimated usage duration of the battery without receiving sunlight.
Your rechargeable solar power unit can continue to power the device for up to several months after full charging with NO SUNLIGHT (the average usage is defined as 4-6 times per day).

Battery power status	Relative power	Estimated duration	Note
	≈ 100%	≈ 60days	---
	≈ 70%	≈ 45days	---
	≈ 40%	≈ 24days	---
	≤ 20%	≈ 12days	Need to charge

Note: Low temperature may drastically decrease the performance of the built-in lithium battery. This product can work at ambient temperatures as low as -20 °C.

6 Battery Replacement of the Remote Control

In normal use, the battery life of the remote control is about 1 year.
The remote control uses a CR2032 button cell.



1. Open the remote control shell. Use a small flat screwdriver and insert the blade into the slot.
2. Turn the screwdriver blade to separate the shell completely.
3. Slide the battery out of the holder for replacement.
4. Insert a new button cell and make the positive pole (+) up. (The positive pole has a “+” mark and it tells the battery type)
5. Reassemble the remote control.

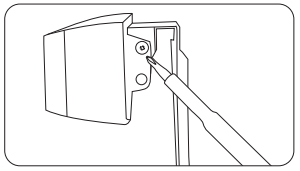
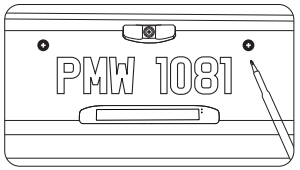
7 / Troubleshooting

Error / malfunction	Possible causes	Solutions / repair
The monitor does not display images within a few seconds after pressing the button on the remote control.	The monitor is not in standby status.	Please make sure that the monitor is powered. The indicator light on monitor is always red when powered, which indicates the monitor is in standby status.

Error / malfunction	Possible causes	Solutions / repair
The monitor does not display images within a few seconds after pressing the button on the remote control.	The signal connection between remote control and monitor is interrupted.	If the indicator light on the monitor does not flicker after pressing the remote control(normally it will flicker twice), but the monitor can be activated and displays images when you press any button on the monitor. In this case the signal connection between the remote control and the monitor may be interrupted. Please try the following steps to rebuild the connection. **A. Replace the remote battery** If the problem is caused by a low level battery, replacing a new battery can fix the problem. **B. Reconnect the remote control to the monitor** If a replaced battery doesn't help, please try the following steps to reconnect the remote control to the monitor: 1. Press and hold the "▼" for about 3s to enter the matching menu after the monitor is powered.

Error / malfunction	Possible causes	Solutions / repair
The monitor does not display images within a few seconds after pressing the button on the remote control.	The signal connection between remote control and monitor is interrupted.	2. Press the "▲" or "▼" button to choose a matching channel(C1 or C2). Press **M** button to confirm and the icon flickers. 3. Press the remote control, when you see the "NO" turns to "YES" on the screen, it means that the pairing of remote control is successfully done. 4. Waiting for 3s and the device exits the matching menu automatically. The pair is done.
	The signal connection between the monitor to the camera is interrupted.	If the indicator light does flicker twice within a few seconds after pressing the remote control but there are still no images displayed even when you press any button on the monitor. In this case the connection between the monitor and camera may be interrupted. Please try the following steps: **A. Turn on the switch for solar battery unit** If the solar battery unit is switched off, please press the switch once and when the indicator light flickers once it means the battery unit is on. **B. Charge your solar battery unit** The camera battery may be drained out and please have a try after charging.

Error / malfunction	Possible causes	Solutions / repair
The monitor does not display images within a few seconds after pressing the button on the remote control.	The signal connection between the monitor to the camera is interrupted.	**C. Reconnect the monitor to the camera** Please try to pair the monitor with the camera as following steps : 1. Power the monitor and press **M** button to enter the menu. 2. Choose “Pair” and press **M** button to confirm. The monitor is pairing and the monitor indicator light flickers. 3. Press the camera battery switch for 5s. The camera is pairing and the camera indicator light flickers. 4. The monitor indicator lights off and the monitor displays reversing image. The pair is done.
	Other reason	Where you mount the monitor may weaken the signal. In this case, please try to mount the monitor to another place.

Error / malfunction	Possible causes	Solutions / repair
The image shakes when the vehicle is moving.	The screws that fixes the camera angle are loose.	Check the screws which fix the camera angle, tighten these screws if necessary. 
	The screws connecting the camera and the vehicle are loose.	Check the screws that attach the camera to vehicle, tighten these screws if necessary. 

8 Care and Maintenance

Please do not use solvents or chemicals to clean or wipe the camera. If necessary, use a soft cloth dipped in neutral detergent to clean the dirt or stains.

Disposal

The system is designed to provide years of service and should be recycled or safely disposed of at a local recycling center.

9 Specifications

Camera			
Operational Current (when transmitting)		<420mA	
Pixels	480 x 272	**View Angle**	110°
Image Sensor	1/3” CMOS VGA	**Minimal Illumination**	0.1Lux
Image Quality	Max 25 fps	**Water-proof Standard**	IP68
RF Transmission Distance		230 ft. (70 m)	
Operation Temperature		-4°to 149°F(-20°to 65°C)	
Storage Temperature		-4°to 149°F(-20°to 65°C)	

Monitor			
Operational Current	<250mA	**Operating Voltage**	DC12V
Standby Current	90mA	**Effective Pixels**	480 x 272
Operation Temperature		-4°to 149°F(-20°to 65°C)	
Storage Temperature		-4°to 149°F(-20°to 65°C)	

10 Warranty

You (as the end user) receive a 12-month guarantee from the date of purchase.
Please contact the point of sale or qualified specialists for damage, repairs or other issues with the product during the guarantee period.
The general warranty terms apply to defects in production and materials. Please return defective products to the point of sale.
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

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

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 complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body

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Ver-2.0