

# User's Manual



## 2.4GHz Digital Wireless Rearview System

Please read all instructions carefully before using, and keep the manual for future reference.

# Welcome

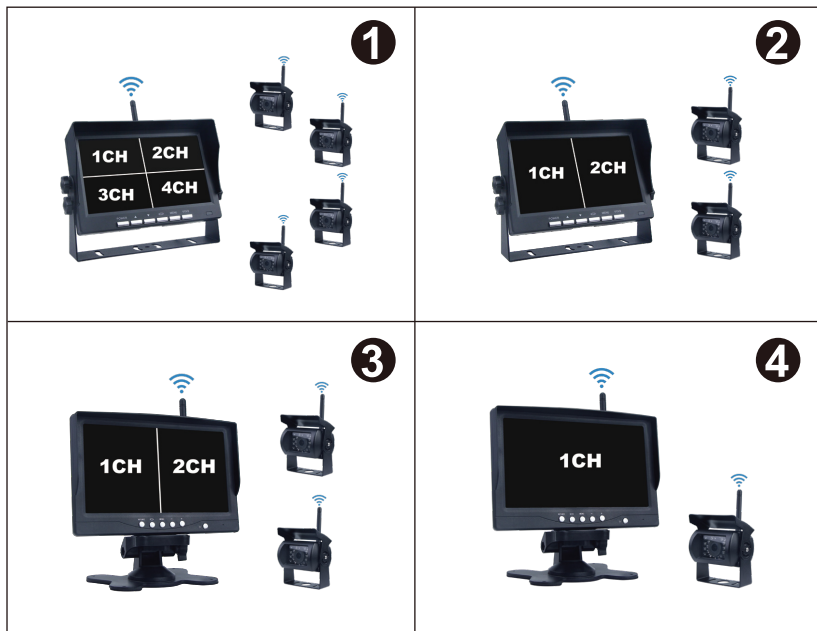
Thanks for purchasing your new 7" Digital wireless backup camera system. This product uses the latest technology to ensure performance, reliability and durability.

The heavy-duty design and quick connectors make the system simple to install and ideal for DIY installation.

Please read all of the installation instructions carefully before installing this system. Improper installation will void manufacturer's warranty. These installation instructions do not apply to all types of vehicles and only guidelines to assist in installing the system.

The manual is applicable to the following systems.

Functions and accessories supplied in kit may be different for each application. Record and Sound functions are selectable for Monitor A.



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# 1 Precautions

## ● Storage

- 1 . Do not expose the monitor to extreme heat, cold, or sudden temperature changes. The storage temperature of this device is -20 to + 85°C The operating temperature is -10 to + 65°C with the humidity under RH90%.
- 2 . Do not use this device in environments with excessive moisture, dust or smoke.
- 3 . Avoid dropping or striking this device.
- 4 . Never puncture, scratch or use abrasive cleaning materials on this device
- 5 . Leave at least a 2" space between the monitor and walls, cabinets or other objects to allow adequate air circulation around the device.
- 6 . The monitor is not designed to be waterproof.

## ● Operating Precautions

- 1 . The device can be powered by a 10-32 volt automotive battery or vehicle electrical system.
- 2 . Improper cable connections may damage the monitor. Remove the power cable connections when you do not intend to use the device.

### Warning

1. High voltage is present within the monitor. The opening of the case should be by professionals.
2. Do not watch the video while driving unless you are monitoring the rear view camera display.

### Special Notice

Occasionally, a few highlights or dark spots may occur on the LCD screen. This is a very common phenomenon in active matrix display technology, and doesn't necessarily indicate any defects or faults. Never try to repair this device by yourself. In case of any problems, please turn off the display at once and notify our company or authorized dealer. The monitor is a complex device. Any disassembly or modification may lead to damage and void the warranty.

## 2 Accessories



**Monitor A X 1**

**OR**



**Monitor B X 1**



**Cigarette Lighter X1**



**Camera X 1**



**Power cord X 1**



**Scotchlock X 1**



**Screw X 2**



**User Manual X 1**

### **Special Notice**

Accessories supplied in kit may be different for each application.

### 3 Features

1. NORMAL, MIRROR, FLIP and MIR-FLIP viewing available.
2. Quad / Dual mode and single-display mode available.
3. Support simultaneous video recording for max 4 channels of cameras in MP4 format.
4. Support up to 4 wireless cameras.
5. HD resolution : 720P/1080P.
6. Wide voltage input : 10 - 32V.

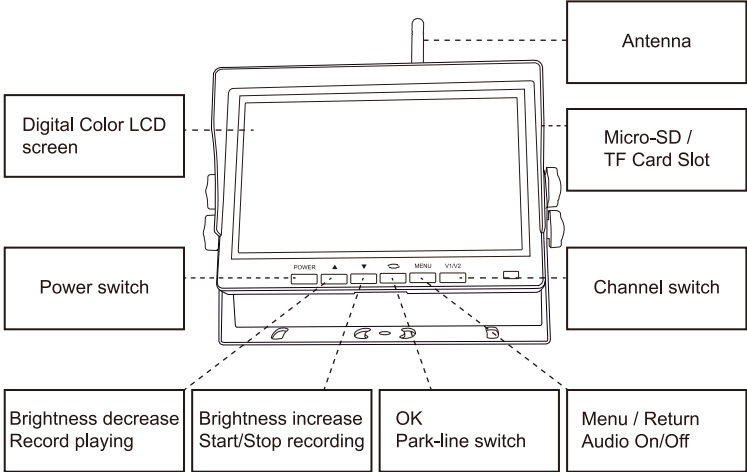
### 4 Specifications

Camera Specification		
Optical format	1/3"	
Active Pixels	1292H x 968V	
Pixels size	3.75 x 3.75 $\mu$ m	
Color filter array	RGB Bayer pattern	
Chief Ray Angle	9 degrees linear	
Shutter type	Electronic rolling shutter	
Maximum Frame Rate	Full: 1280 x 960 @60fps HDR: 1280 x 960 @30fps, 2 frame staggered output	
Supply voltage	Digital	1.35 - 1.65V(1.5V nominal, With embedded 1.5V regulator)
	Analog	2.6 - 3.0V (2.8V nominal)
	I/O	1.7 - 3.45V (1.8V nominal)
Power consumption	Active	55 mA
	Standby	30 $\mu$ A
Output Formats	10-bit RGB Raw Data	
Sensitivity	6488 mV / lux-sec	
Max SNR	37.2 db	
Dynamic range	70.4 db	
Dark Current	< 7 mV / sec @ 45 C	
Operating junction temperature	-30 C to 85 C	
Stable image junction temperature	60 C	

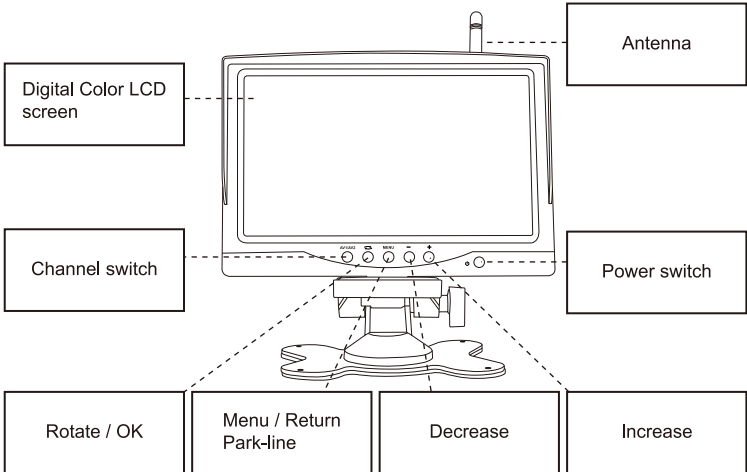
Monitor Specification		
Video frame rate	fps	30(max)
Video transmission resolution	Pixels	1280*720
Screen resolution	Pixels	1024*600
Screen brightness	CD/M2	400
Screen type		7 inch / 7inch IPS
Video formats		Auto
Audio decoding		ADPCM
Video decoding		H.264
Operating frequency	MHz	2400 – 2483.5
Data bandwidth	bps	4M(max)
Modulation/demodulation mode		GFSK
Receiving sensitivity	dBm	-85(max)
Number of camera access	Set	1~4
The code way		Manual
Data encryption	Bit	AES128
Antenna impedance matching	$\Omega$	50
Unobstructed transmission distance	m	>300
Operating voltage	V	DC 10~32
Operating current	A	0.5@DC12V
Operation Temperature	°C	-10 ~ +65
Storage Temperature	°C	-20 ~ +85
Operation Humidity	RH	15%~85%
Storage Humidity	RH	15%~85%

# 5 Functions of each part

## Monitor A:

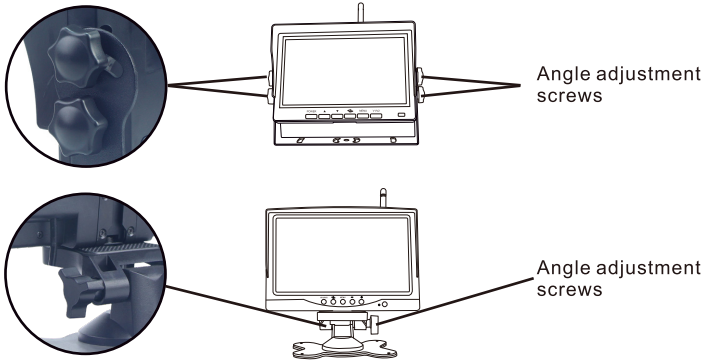


## Monitor B:



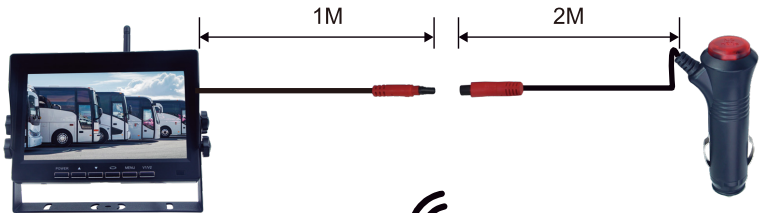
## 6 Basic Operation

### Installation of Bracket

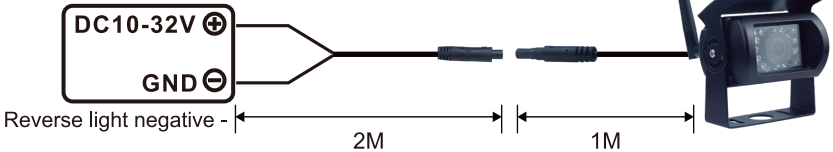


### Monitor Wiring

This is the most commonly used method for users who have the single camera system ( one monitor and one camera ) . Connect the monitor cable with DC connector of car charger. Power on the monitor with cigarette lighter from a 12V vehicle.



Reverse light positive +



### Camera Wiring

Power on the camera by connecting the Red positive wire to 10 - 32 VDC power source, Black to Negative / Ground source, and connecting camera plug.

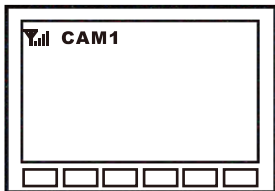


## 7 Installation

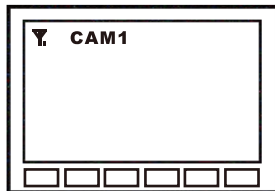
### Please find best signal reception position before installation

The metal body of the vehicle can attenuate wireless signal strength sharply. It is necessary to test the signal strength before installation.

- ① Please connect monitor and camera as wiring installation above.
- ② Pairing the camera to the monitor, please refer to page 9 PAIRING. 4 cameras can be paired separately to CAM1/CAM2/CAM3/CAM4.
- ③ Put the monitor and the camera at the intended position to test signal strength.



**Good signal**



**Poor signal**

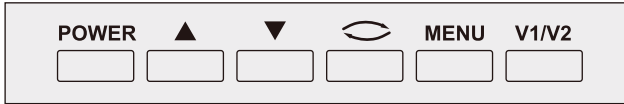
If you get poor signal reception, or signal cannot reach with 3 bars, please adjust the angle of antenna to find the best best signal reception position.



## 8 Menu

### 8.01 Button Function

Monitor A:



Button	Function (Monitor A)
POWER	Turn on / off monitor and standby
▲	Function1: Decrease brightness / Contrast Function2: Records playing
▼	Function1: Increase brightness / Contrast Function2: Start / Stop recording
👁️	Function1: OK Function2: Park-line
MENU	Function1: Enter menu or return to previous menu Function2: Press MENU button for 3 seconds for audio on / off
V1/V2	Switch among cameras

Monitor B:



Button	Function (Monitor B)
V1/V2	Channel switch
👁️	Function1: OK Function2: Rotate
MENU	Function1: Enter menu or return to previous menu Function2: Park-line
-	Decrease
+	Increase
🔌	Power switch

## 8.02 Pairing

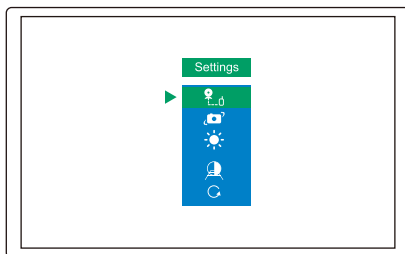
**Camera and monitor are well paired before factory delivery.**

When you need to add or change a camera, please follow the steps below for pairing.

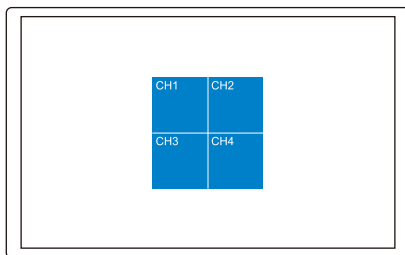
Please finish pairing before installation

- 1) Power-on the camera and monitor.
- 2) Press Menu button to enter menu interface.

Press ▼ / + and OK button to select and enter PAIRING.



- 3) Press ▲ / - or ▼ / + button to select a Channel (CH1, CH2, CH3, CH4) to pair the camera.



- 4) Press OK to start and you will have 10 seconds for pairing



- 5) Video will be displayed after pairing complete.

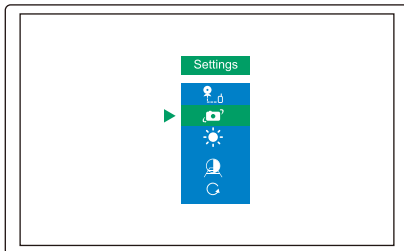
### **Special Notice**

If no picture displayed after pairing, please retry pairing steps and power-on again the camera. The pairing must be completed within 10 seconds, otherwise you need to re-power the camera for pairing.

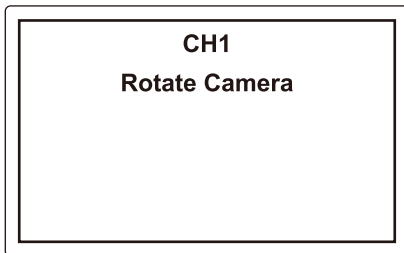
## 8.03 Mirror

### Monitor A

- 1) Press MENU button to enter menu interface. Press ▲ or ▼ to select . Press OK button to enter MIRROR setting.



- 2) Press ▲ or ▼ to select NORMAL/MIRROR/MIR-FLIP/FLIP.

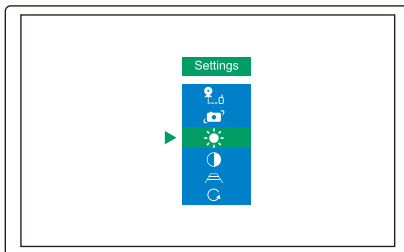


### Monitor B

- Press  to select NORMAL/MIRROR/MIR-FLIP/FLIP.


## 8.04 Picture

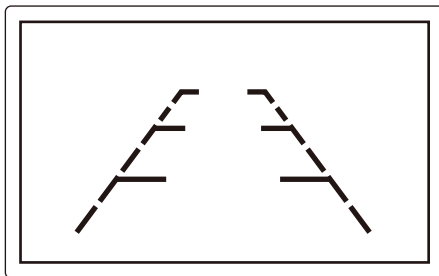
- 1) Press MENU button to enter menu interface.
- 2) Press ▲ / - or ▼ / + to select Brightness or Contrast , Press OK to enter.
- 3) Press ▲ / - or ▼ / + to adjust BRIGHTNESS/CONTRAST settings Press OK to confirm.



## 8.05 Park-line

### Monitor A

- 1) Press  button to switch on/off the PARK-LINE.
- 2) Park line is settable for all cameras.

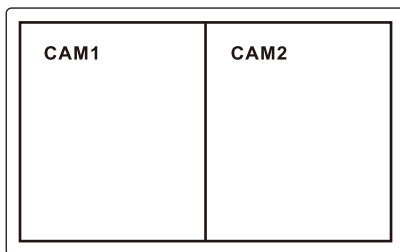
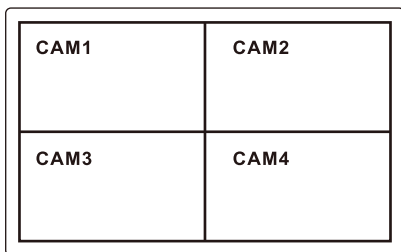


### Monitor B

Press MENU button for 3 seconds to switch on/off the PARK-LINE.

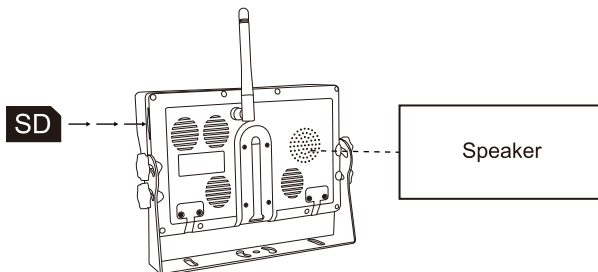
## 8.06 Quad mode / Dual mode

Press V1/V2 button to change display mode. The display will switch from CAM1 to QUAD / DUAL.



## 8.07 Record

- 1) Insert SD Card
- 2) Please insert SD card in SD card slot, max 128G.



- 3) Monitor corner will show  REC and start recording automatically.
- 4) Press  button to stop/start recording.




Start recording






Pause recording

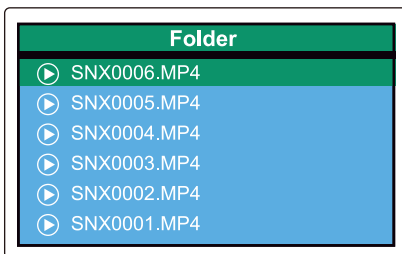
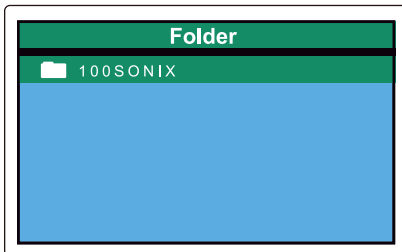
## 8.08 Sound

Sound is only allowed for operation under single image mode, not quad mode.  
Press  button for 3 seconds to switch on/off the voice.

## 8.09 Play Recorded File

Recorded videos can be played by monitor.

- 1) Press  and OK button to enter PLAY.
- 2) Press  or  and OK button to select and play a file.



- 3) Press OK button to PLAY or PAUSE the file.

## 9 Trouble shooting

The symptoms described below do not necessarily mean a failure in the display. Please check the following items before you initiate request for repair.

Symptoms	Possible Causes/Solutions
No picture	Improper connection of automobile adapter Use of unauthorized power supply Power switch is OFF Please re-pairing the system
No signal	Check whether the camera is powered on Please check whether antennas are plugged on both monitor and camera Please check the angle of the antenna Please check whether metal obstacles near the antenna Please re-pairing the system
No sound	Please check whether the monitor with sound function Check whether the sound is turned off or quad mode display
Dark picture	Check whether brightness and contrast are adjusted correctly
No color	Re-power the system
Unable to record	Please check whether the monitor with record function Please check whether SD card inserted Please check whether SD card formatted before recording Please check whether SD card storage full

The monitor is equipped with Anti-Glare screen. Please remove the screen protector to get best picture quality after installation.

## 10 Maintenance

### Camera

If dirt, rain or snow attaches to the camera, the monitor may not clearly display objects. If water droplets, snow or mud adhere to the camera lens, rinse with water and wipe with a dry cloth.

Do not use alcohol, benzene or thinner to clean the camera. This will cause discoloration. To clean the camera, wipe with a clean cloth dampened with mild cleaner diluted with water and then wipe with a dry cloth.

### Monitor

Turn off the monitor. If the screen is dark, it will be easier to see the areas that are dirty or oily.

Use a dry, soft cloth and very gently wipe the screen.

If the dry cloth did not completely remove the dirt or oil, do not press harder in an attempt to scrub it off. Pushing directly on the LCD screen can often cause pixels to burn out.

If necessary, dampen the cloth with distilled water or with an equal ratio of distilled water to white vinegar. The plastic edge that surrounds the screen can be cleaned with any multipurpose cleaner but take care to avoid contact with the screen itself.

Avoid using paper towels, toilet paper, tissue paper, or something like your shirt to wipe the LCD screen. These non-ultrasoft materials can easily scratch the screen.

Avoid cleaning products that contain ammonia, ethyl alcohol, acetone, toluene, ethyl acid, or methyl chloride. These chemicals can react with the materials that the LCD screen is made of which could yellow the screen or cause other kinds of damage.

Never spray liquid directly on the LCD screen or it could run inside the monitor and cause damage.