Operating Instructions

External Antenna

Internal Antenna

2.4GHz HD 7" Digital Wireless Color LCD Monitor

Please read this manual thoroughly before operating the device,

and keep it for future reference.

V1.8

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1. Precautions

1.1 Storage and Keeping

1) Do not expose the monitor to excessive heat or coldness. Storage temperature is -30~+80℃; Operating temperature is -20~+70℃; Humidity is Rh90%.
2) Never use this device near a bathtub, wash basin, kitchen, damp basement, swimming pool or similar places.
3) Never use this device in the environment with excessive moisture, dust or smoke.
4) Avoid dropping or striking.
5) Never use this device in enclosed spaces, areas with excessive vibration or subject to severe impacts.
6) Never puncture, scratch or use abrasive cleaning materials on this device.
7) Do not place cables where they may be pinched or stepped on.
8) Leave at least a 2" space between the monitor and walls, cabinets or other objects to allow adequate air circulation around the device.
9) The monitor is not designed to be waterproof.

1.2 Operating Precautions

1) The device may be powered by a 12 or 24 volt automotive battery or vehicle electrical system.
2) Make sure all cables are connected properly. Observe polarity. 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. Opening monitor case should be done by professionals.
2. Do not watch any video while driving unless you are monitoring rear view camera display.

Special Notice

1. Occasionally, a few highlights or dark spots may occur on the LCD screen. That is a very common phenomenon in active matrix display technology, and it doesn't necessarily indicate any defects or faults.
2. Never try to repair this device by yourself. If any problem, 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 invalidate warranty.

1.3 Maintenance

1) Remove all the cable connections from the monitor before cleaning the device.
2) Use a mild household detergent and clean the unit with a slightly damp, soft cloth.
3) Never use strong solvents such as thinner or benzene, as they might damage the finish of the device.

	Caution	
	Risk of electric shock Do not open	
Caution: to reduce the risk of electric shock, Do not remove cover (or back). No user-serviceable parts inside. Refer servicing to qualified service personnel.		

This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute risk of electric shock to persons.

This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

This symbol is intended to alert the user not to dispose of electrical and electronic equipment.

CAUTION

You are cautioned that any changes or modifications not expressly approved in this manual could void your warrantee and neccessitate expensive repairs.

1.4 FCC Warning

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

NOTE 1: 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 equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

NOTE 2: Any changes or modifications not expressly approved by the party responsible for compliance could void the user’s authority to operate the equipment.

2. Features

1) TFT LCD monitor with wide angle view and high resolution display.
2) Image can be set to horizontally flipped, vertically flipped and normal.
3) Support multiple image display modes like single, dual, quad.
4) Support 5 x triggers, trigger priority & trigger delay are selectable.
5) Support auto scan, scan channel and scan time are selectable.
6) Support backlight adjustment manually and automatically.
7) Supports parking line, parking line size and position can be adjusted.
8) With 1.5W speaker.
9) Monitor operated by remote control or keypad.
10) Working voltage: 10~32V.
11) Compliance with CE/FCC standards.
12) 4 wireless camera input.
13) Capacitive touch-screen (optional).

3. Technical Specifications

LCD Size	7″
Resolution	1024(RGB) x 600
Contrast	700:1
Brightness	650cd/㎡
View Angle	U: 85 / D: 85, R / L: 85
Aspect Ratio	16:9
Camera Channel	4 channels
Operating Frequency	2408 ~2478MHz
Receiving Sensitivity	-78dBm
Decompression Form	H.264
Modulation	FHSS
Time Delay	MIN. 130ms
Transmitting Distance	Max. 300 m
Micro SD Card	Max. 128 GB
Power Supply	DC 10~32V
Power Consumption	Max. 10W
Loudspeaker	1.5W / 8Ω
Operating Temperature	-20~+70ºC,RH90%
Storage Temperature	-30~+80ºC,RH90%

Note: Total video duration

Capacity / Display	16GB	32GB	64GB	128GB
Single	≈15h	≈30h	≈60h	≈120h
Dual	≈17h	≈34h	≈68h	≈136h
Quad	≈18h	≈36h	≈72h	≈144h

Special Notice

All specification are subject to change without notice.

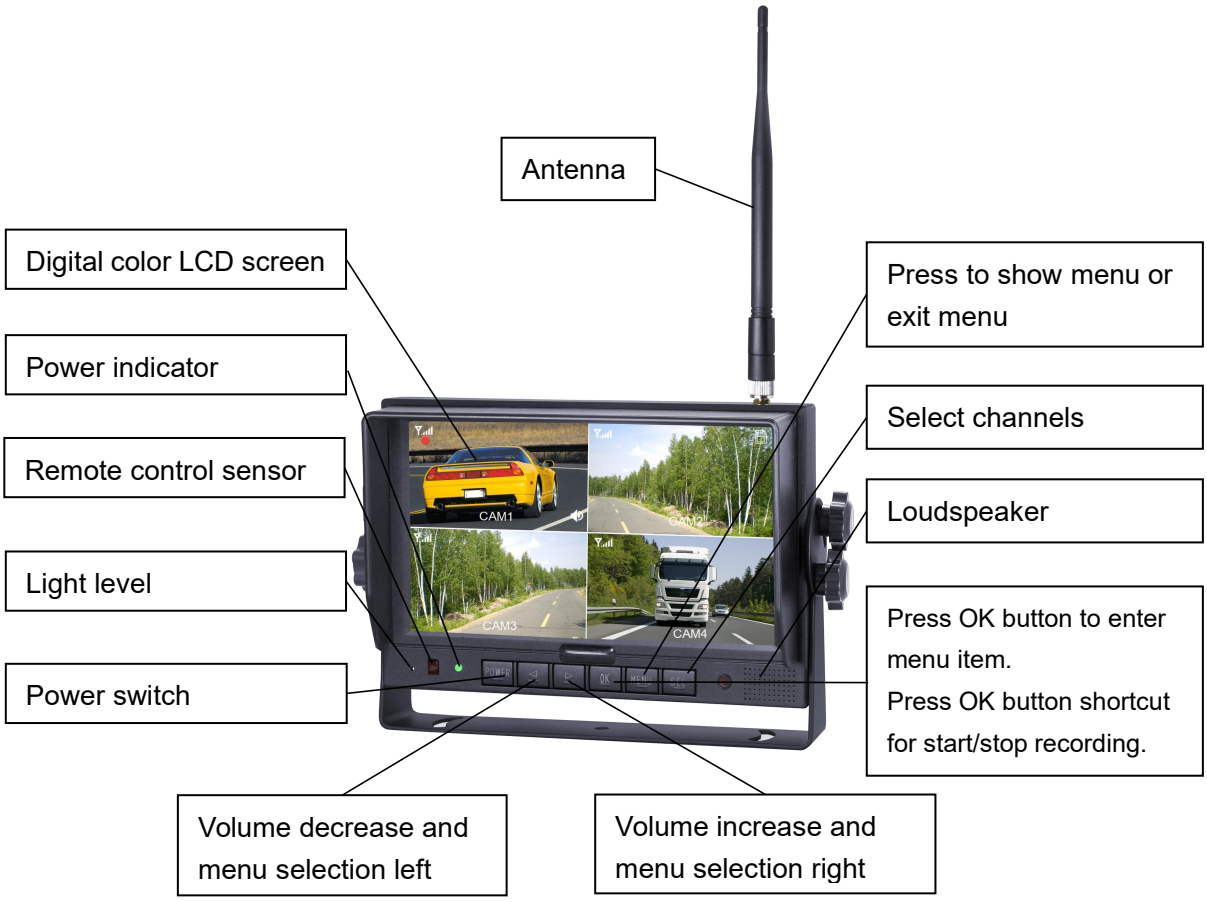
4. Accessories

 U-Support Bracket	 Center Mount Bracket
 Sun Shield	 Power Cable
 Angle Adjustment Screws	 IR Remote Control
 Foot Pedal Switch (Optional)	 Power Supple Cable for Foot Pedal Switch

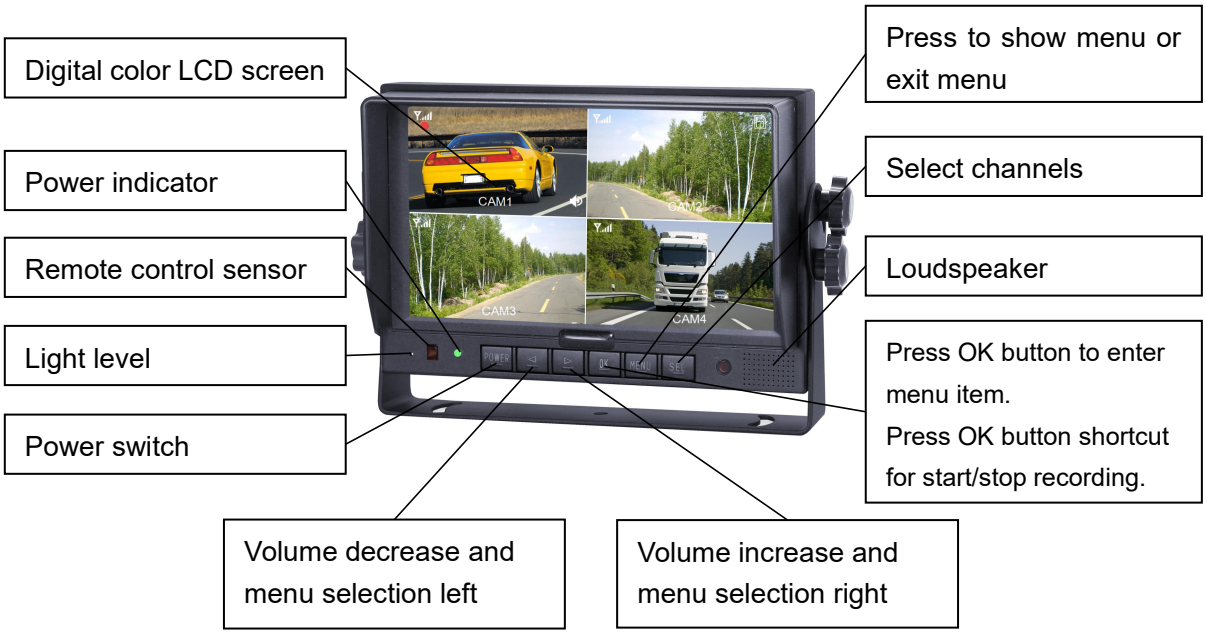
⚠ Special Notice

Accessory supply may be different for different application.

5. Parts Identification

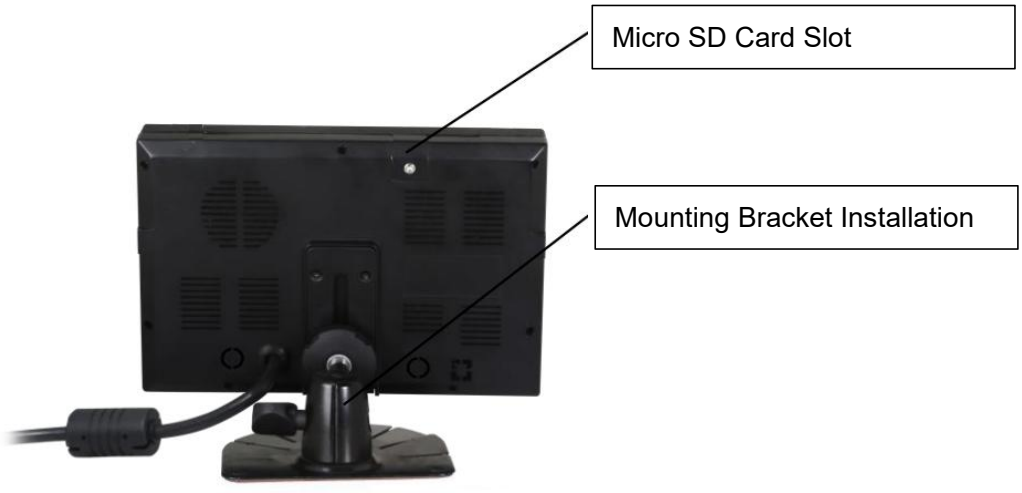


External Antenna



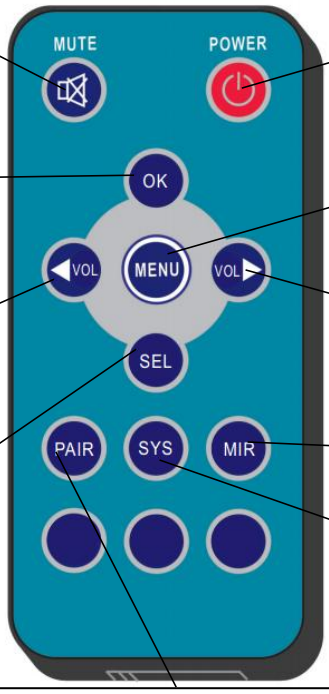
Internal Antenna

External Antenna



Internal Antenna

6. Remote Control Operation



Press to select MUTE or enable sound

Press OK button to enter menu item. Press OK button - shortcut
for start/stop recording.

Volume decrease and menu selection left

Key selector. Switch to next view following CAM1-CAM2-CAM3-CAM4-DUAL-QUAD loop. If the monitor is connected to the zoom cam, long press this button to jump to the zoom camera interface.

Press to turn on/off the monitor

Press to show menu or exit menu

Volume increase and menu selection right

MIR-Flip selection

Reserve now

Fast pairing when camera is activated

● **MUTE (Mute)**

Press to select MUTE or enable sound.

● **POWER (Power switch)**

Press to turn on / off the monitor.

● **OK**

Press OK button to enter menu item or save user settings. Press OK button - shortcut for start / stop recording.

● **MENU**

Press to show menu or exit menu.

● **VOL**

Volume decrease and menu selection left.

● **VOL**

Volume increase and menu selection right.

● **SEL**

Key selector. Switch to next view following CAM1-CAM2-CAM3-CAM4-DUAL-QUAD loop. If the monitor is connected to the zoom cam, long press this button to jump to the zoom camera interface.

● **PAIR**

Fast pairing when camera is activated.

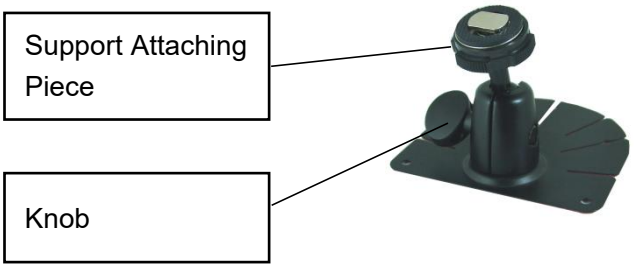
● **MIR**

MIR-Flip selection.

7. Basic Operation

7.1 Installation of Center Mounting Bracket

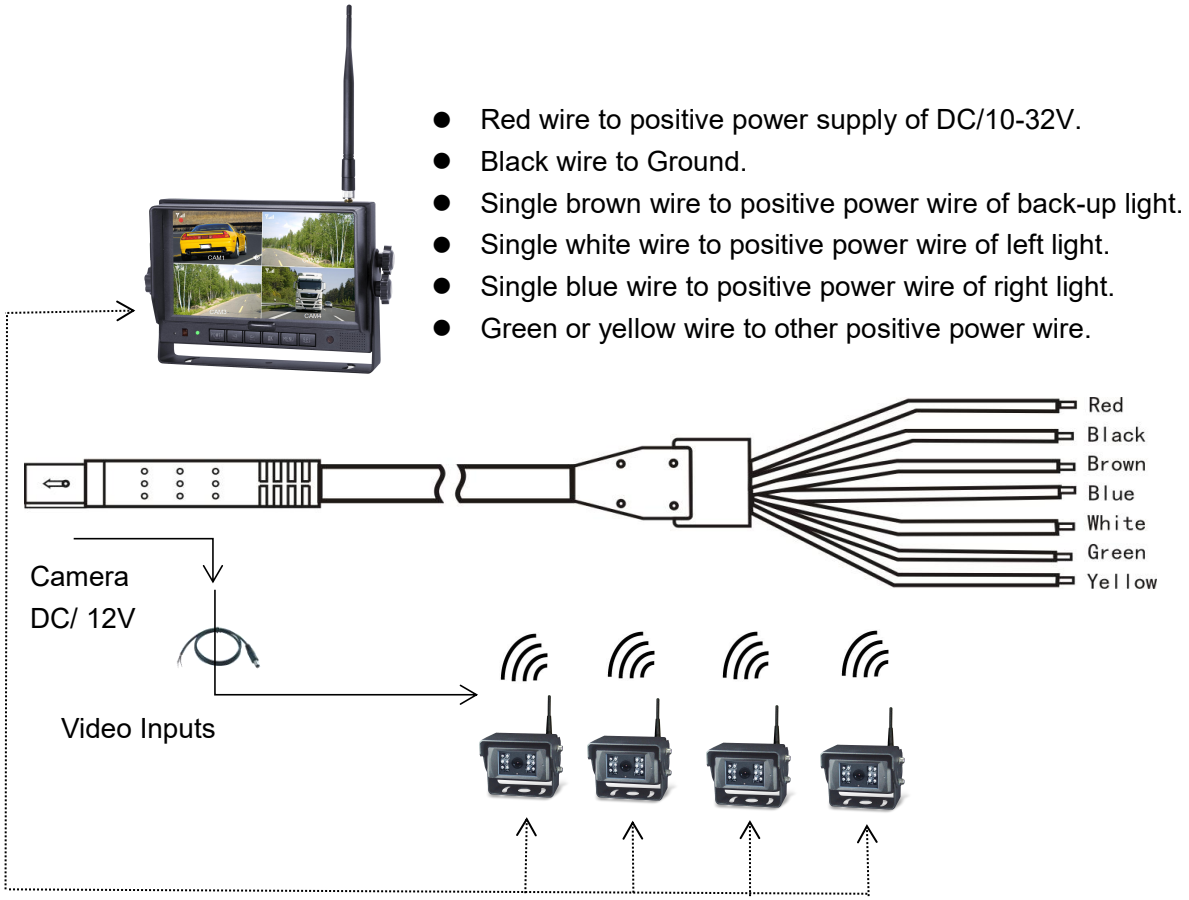
- Adjust monitor level by sliding the support to the desired height.
- Adjust the angle of the monitor and tighten the knob on the center mounting bracket.



7.2 Installation of U-support Bracket

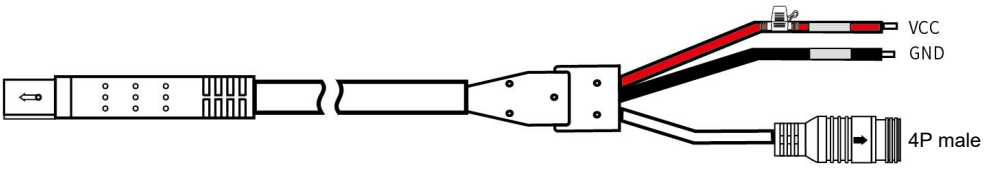
- Align the U-support bracket with the screw holes on both sides of the housing, then screw the star-shaped screws into the screw holes.
- Adjust the angle of the monitor, and tighten the star-shaped screws.

7.3 Wiring Definition



- Red wire to positive power supply of DC/10-32V.
- Black wire to Ground.
- Single brown wire to positive power wire of back-up light.
- Single white wire to positive power wire of left light.
- Single blue wire to positive power wire of right light.
- Green or yellow wire to other positive power wire.

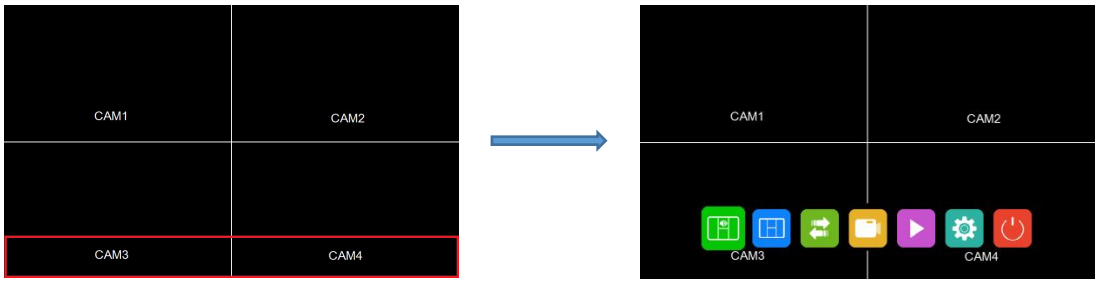
When using foot switch, the following power supply need to be selected:



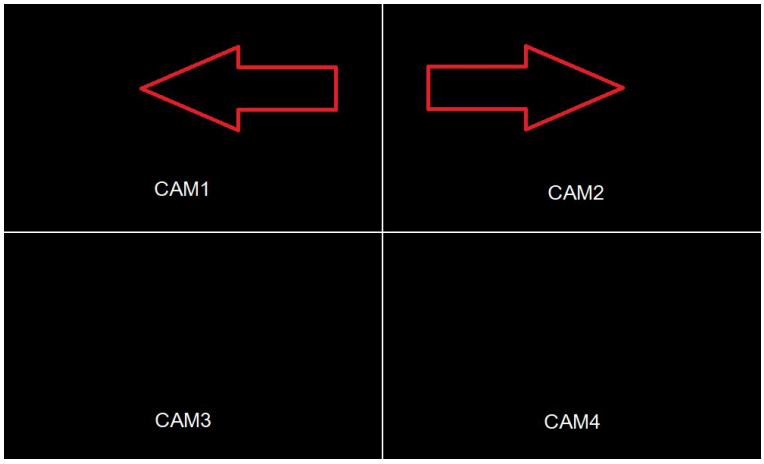
- VCC (Red wire) to positive power supply of DC/10-32V.
- GND (Black) wire to Ground.
- 4P male to foot switch.

8. Menu Instruction

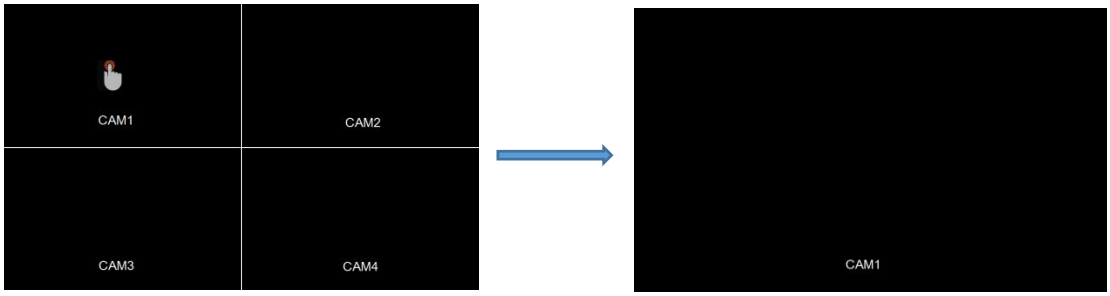
8.1 Preview Interface



- The main menu can be brought up by touching any position inside the red box area or press the MENU button of the remote control.

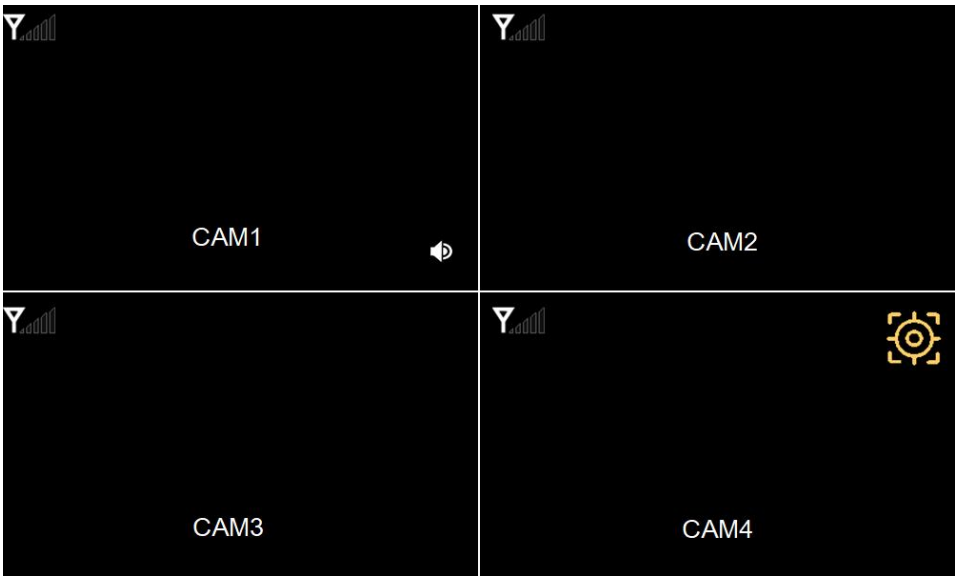


- Swipe left or right on the screen can switch between different views, in the order: CAM1->CAM2->CAM3->CAM4->DUAL->QUAD.
- Slide up/down the screen to exit/enter standby mode quickly.

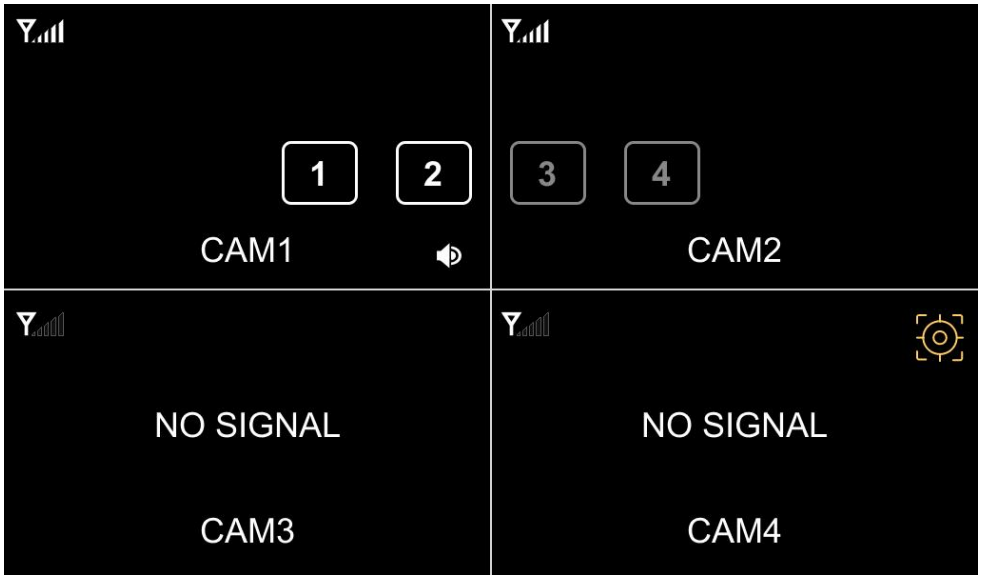


- In split mode, touch the camera channel to scale to full screen, and touch it again to return to the multi-split mode.

- Zoom (It will display following image once paired to zoom camera)



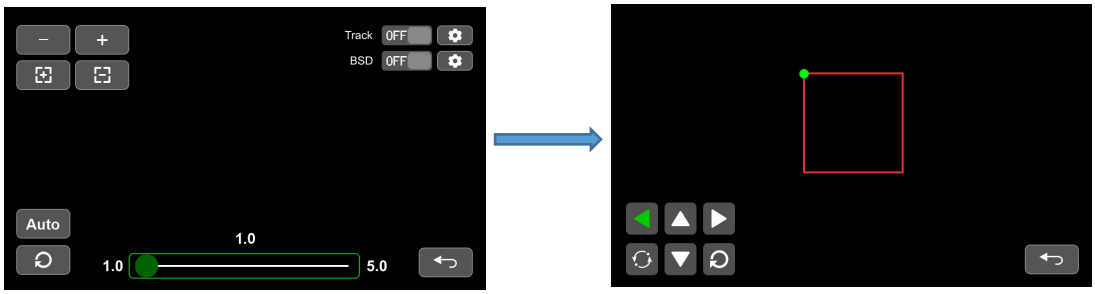
- After paired successfully, this icon will display as shown in the picture.



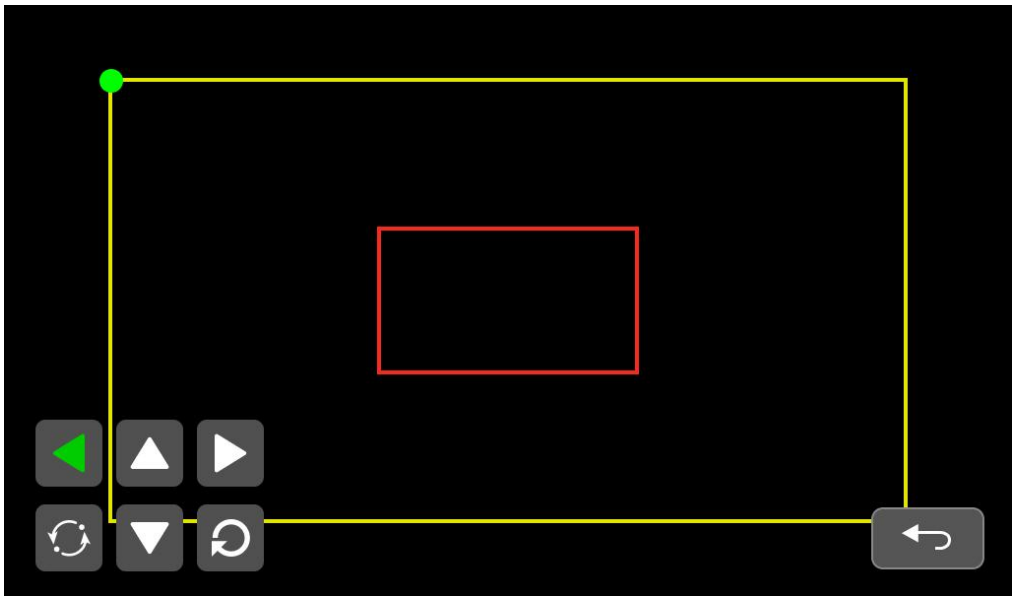
- If paired with multiple zoom cameras,click this icon , or long press SEL/▽ button,the zoom camera channel selection screen will appear. Click the number corresponding to a zoom camera channel to navigate to its control panel.

- If only a single zoom camera is connected, click this icon , or long press SEL/▽ button to switch to the channel of the zoom camera and display the operation interface shown above. The function of the interface buttons is as follows:
  - "-": Zoom out, press it to shorten the focus.
  - "+": Zoom in, press it to increase the focus.
  - "[-]": Near, press it to adjust the focus closer.
  - "[+]": Far, press it to adjust the focus farther.
  - You could also drag the scroll bar to control digital zoom, ranging from 1.0 to 5.0.
  - "": To restart the Zoom camera.
  - "Auto": Automatic focus.
  - BSD: When turning it ON, BSD is available; when turning it OFF, BSD is unavailable.
  - Trace: When set to ON, target trace function is available; When set to OFF, the target trace function is unavailable.

Button operation: when the cursor in the slider area is in green, you can select different icons. To adjust the value, press OK to turn the cursor in red, and then press the left/right button; press OK again and the cursor turns green again.

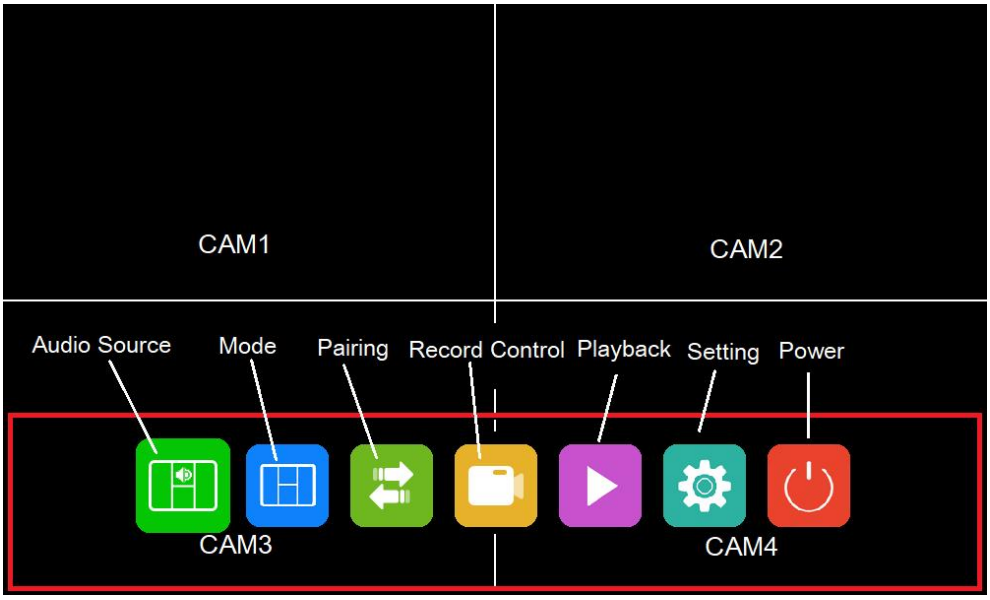


- Click the button next to Track to enter the target selection interface (as shown above). Within this interface, adjust the target frame by touch, click the return button to confirm target frame adjustments.
- Click the button to Cycle through: top-left corner, top-right corner, bottom-left corner, bottom-right corner, and full-frame.
- Whichever ,Click the buttons,selected guidelines can move up, down, left, and right.
- Click the button to reset target frame to default size.



- Click the button next to BSD to enter the alarm zone adjustment interface (as shown above). Within this interface, adjust the target frame by touch, click the return button to confirm target frame adjustments.
- Click the button to Cycle through: top-left corner, top-right corner, bottom-left corner, bottom-right corner, and full-frame.
- Whichever of green and yellow horizontal lines, Click the buttons, selected guidelines of green and yellow horizontal lines can move up, down, left, and right.
- Click the button to reset all operations for the current alarm zone adjustment screen.

8.2 Main Menu

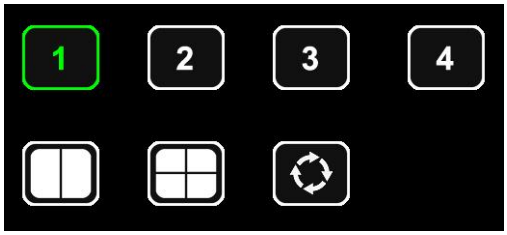


- Touch the icon to enter the menu or touch outside the red box to exit, long press the power button for 3s will open/close the menu lock, and touch is invalid when the menu is closed.

8.2.1 Audio source

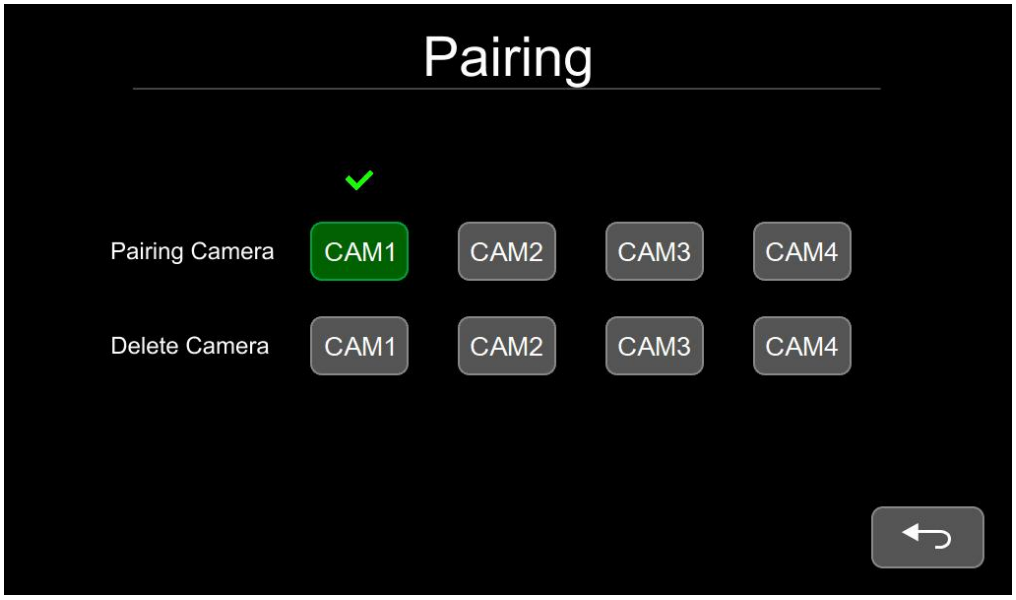
- The audio channel can be switched in the multi-split view mode.
- Click the area outside the menu to exit.

8.2.2 Mode



- Select different icons to switch to the corresponding view, click the last icon will enable automatic scanning.
- Click the area outside the menu to exit.

8.2.3 Pairing



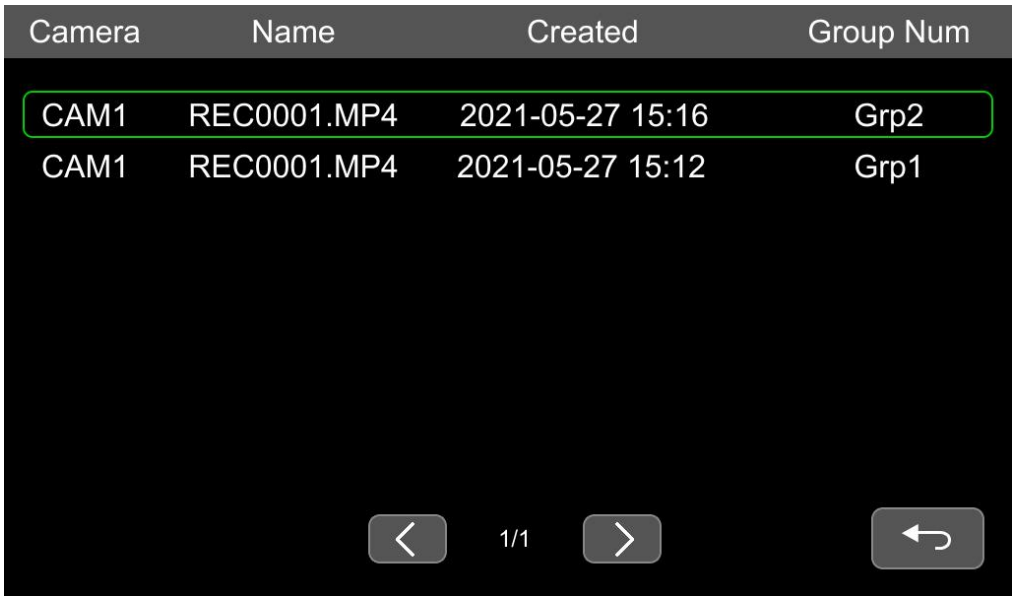
- **Pairing Camera:** Connect to tx of the specified channel.
- **Delete Camera:** Delete the tx of the corresponding channel.
- For details on the pairing process, refer to section 9.2.

8.2.4 Record Control

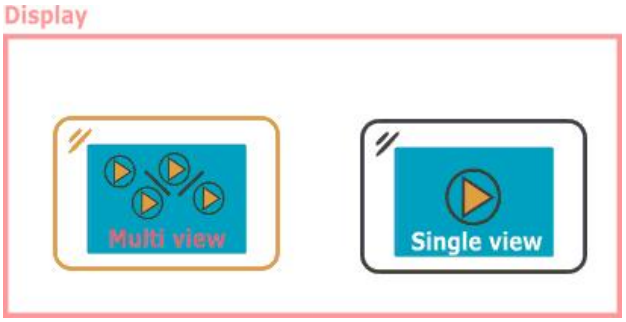
- Click the icon to start or stop recording.

8.2.5 Playback

- **Video:** The folder will increase with video files, and a new folder will be created once the files exceed a maximum of 997 in a folder. The larger the folder number, the newer folder. If the SD card is full, files will be deleted from the oldest folder.



- **Camera:** The tx that the recording file belongs to.
- **Name:** Filename.
- **Created:** Creation date.
- **Group Num:** The corresponding value will increase by 1 with each recording. The Group Num of the video recorded at the same time is the same, that is, the Group Num of the video recorded under multi-split mode is the same.



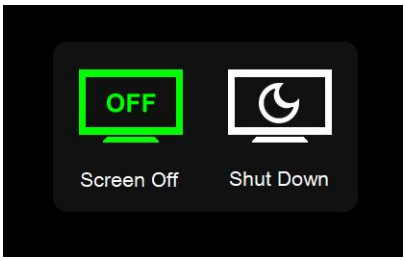
- A window will pop up before playing a file recorded in the multiple split mode to select playing multiple views at the same time or a single view;

Note: A TF card in exFat format with a capacity of 32GB-128GB memory is required.

8.2.6 Setting

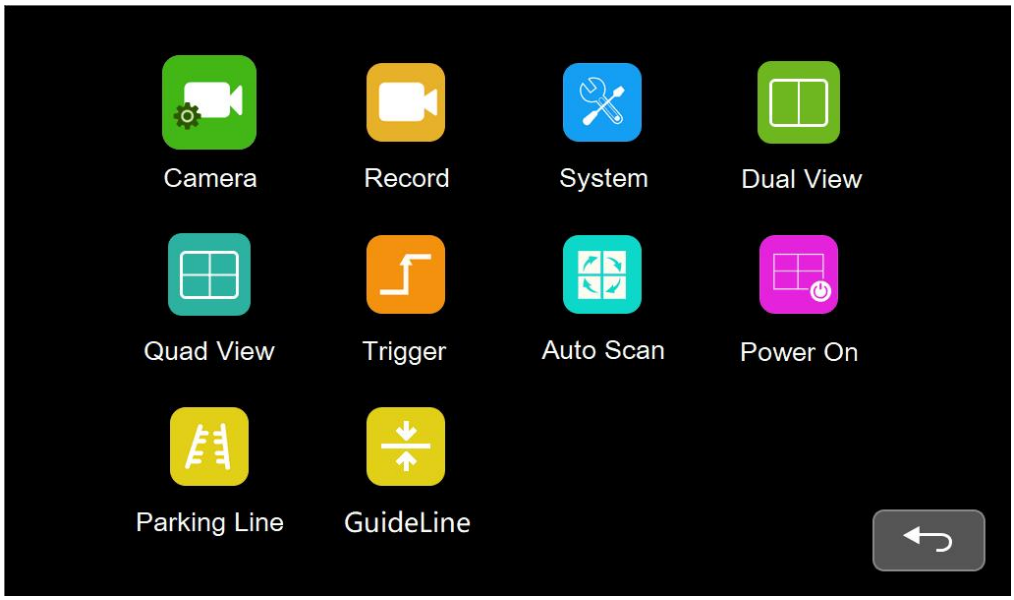
- The "Setting" menu primarily includes the following submenus: Camera, Record, System, Dual View, Quad View, Trigger, Auto Scan, Power on, Parking Line, Guide Line. For details, refer to section 8.3.

8.2.7 Standby



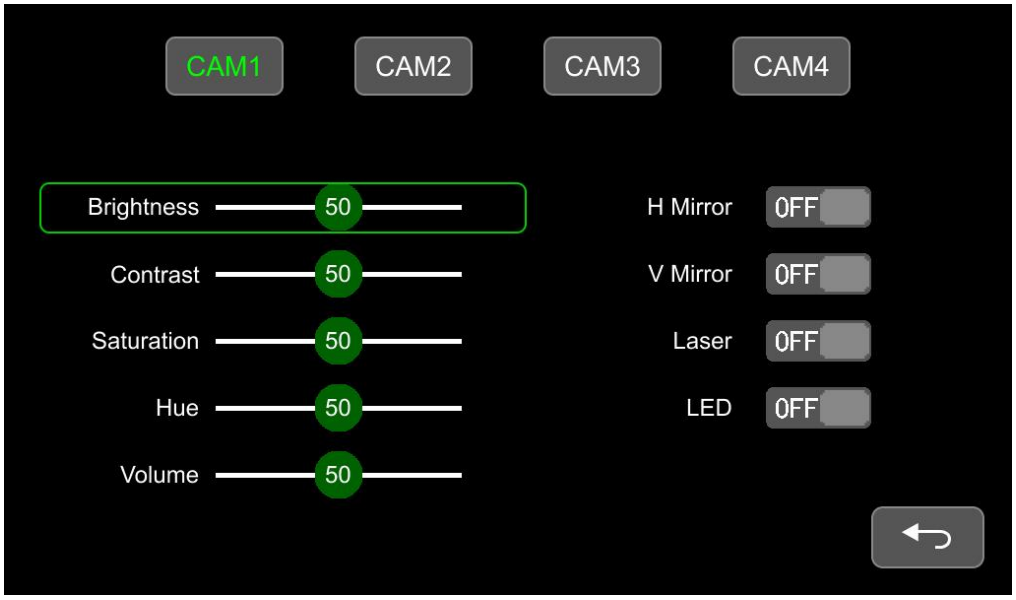
- **Screen Off**: Normal standby mode, the trigger function still works, with only the monitor and camera powered off.
- **Shut Down**: Similar to Screen Off mode, but does not respond to trigger signals.

8.3 Setting



- No operation of the menu within 30 seconds, the monitor will exit from the menu automatically.

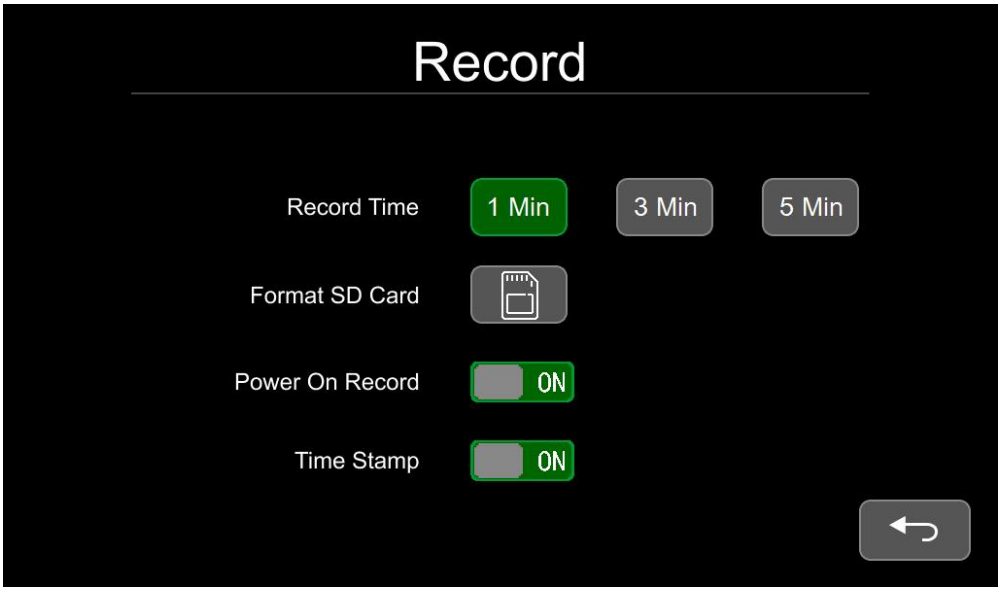
8.3.1 Camera Display Settings



- **CAM**: Touch or press the left/right button plus the OK button to select and switch to the corresponding channel; when the cursor is not on the channel icon, you need to press the menu button of the remote control to return to the channel selection.
- **Brightness**: Drag the corresponding slider bar to adjust the brightness.
- **Contrast**: Drag the corresponding slider bar to adjust the contrast.
- **Saturation**: Drag the corresponding slider bar to adjust the saturation.
- **Hue**: Drag the corresponding slider bar to adjust the hue.
- **Volume**: Drag the corresponding slider bar to adjust the volume.
- **H Mirror**: If it is set to ON, the corresponding recording channel is flipped horizontally. If OFF, the corresponding channel is displayed normally without flipping.
- **V Mirror**: If it is set to ON, the corresponding recording channel is flipped vertically, If OFF, the corresponding channel is displayed normally without flipping.
- **Laser**: The current camera operation is only applicable to cameras equipped with a laser. If set to ON, the laser function of the camera will be activated; if set to OFF, the laser will be deactivated.
- **LED**: The current camera operation is only applicable to cameras equipped with LED. If set to ON, the LED function of the camera will be activated; if set to OFF, the LED will be deactivated.

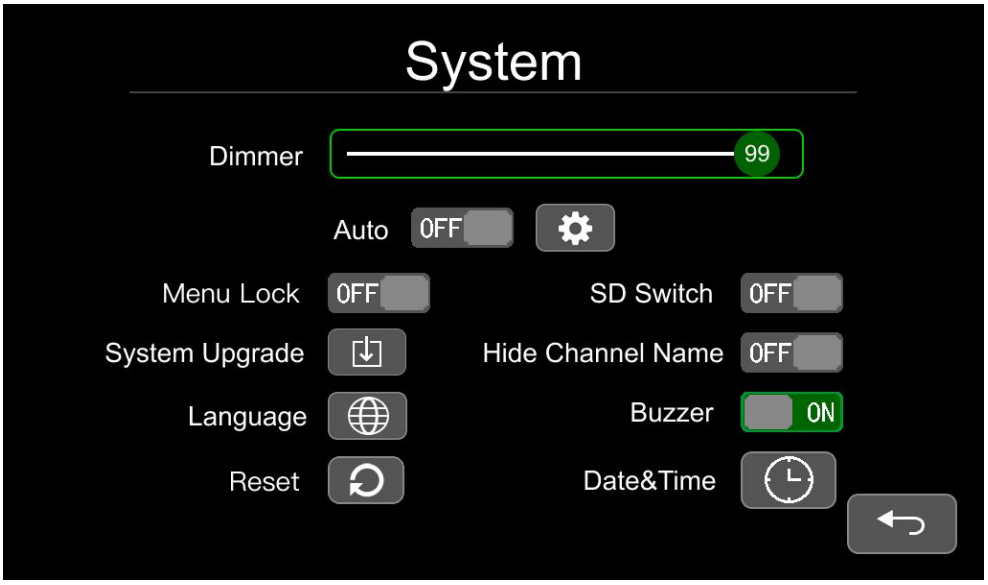
Button operation: When the cursor in the slider area is in green, you can select different icons. To adjust the value, press OK to turn the cursor in red, and then press the left/right button; press OK again and the cursor turns green again.

8.3.2 Record

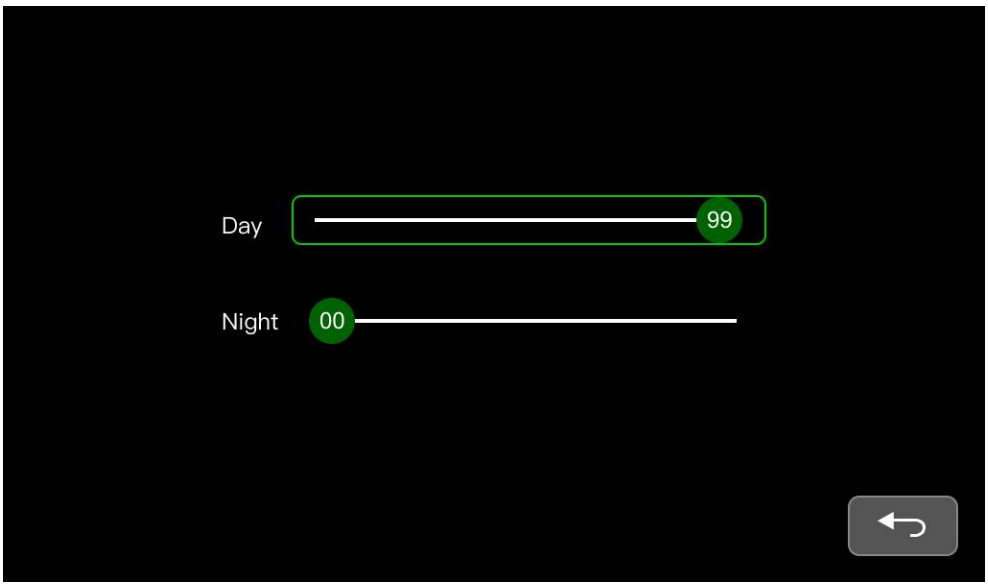


- **Record Time**: Choose the duration of the video.
- **Format SD Card**: “SD Card Format?” will pop up, press Yes to format the SD card. Note: Supports SD cards ranging from 32GB to 128GB, with a requirement of Class 10. Any brand is acceptable. However, please note that cards over 64GB will be formatted to exFAT on the device, while cards between 32GB and 64GB will be formatted to FAT32.
- **Power On Record**: If it is set to on, the monitor will start recording video upon startup. This function is set on by default.
- **Time Stamp**: If set to ON, then camera’s time stamp (if camera has) will also show in the left bottom of the monitor. This function is set on by default.

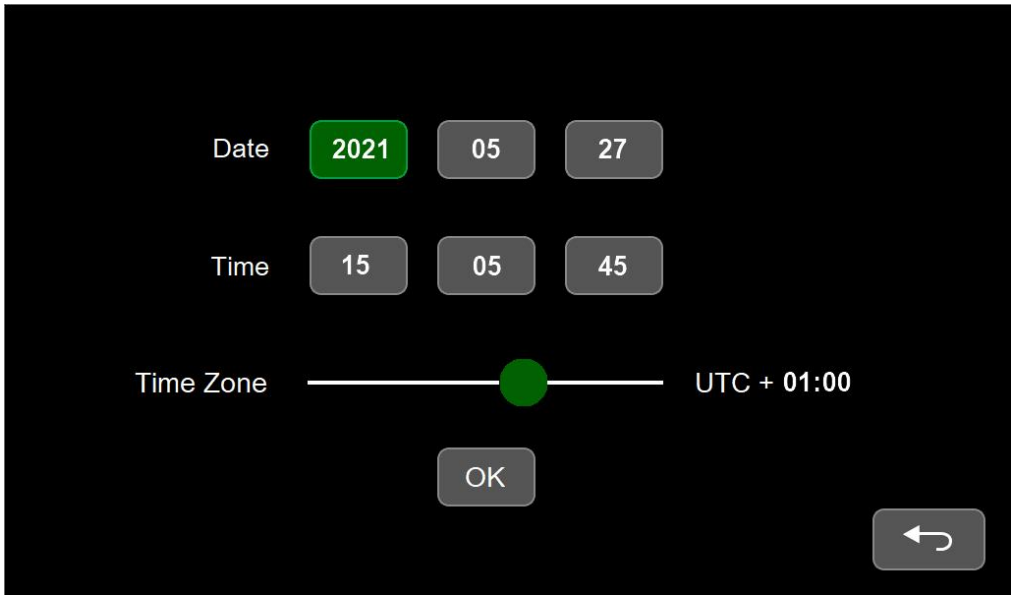
8.3.3 System



- When Auto Backlight (Auto) is off, adjust the slider to adjust the screen brightness; When it is on, adjusting the slider is invalid. The day/night mode backlight can be adjusted by touching the icon.

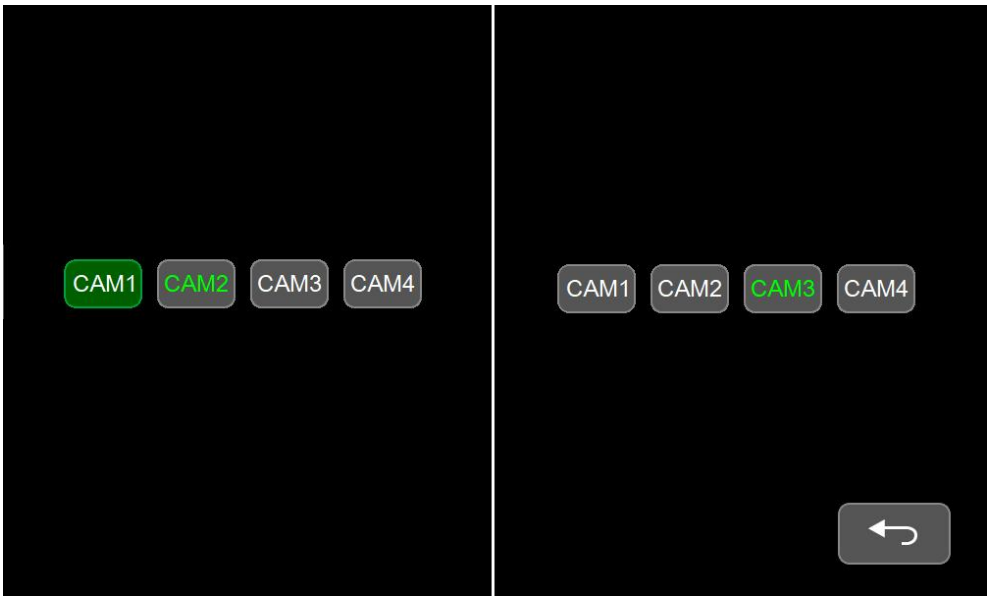


- **Day**: The screen brightness under high ambient brightness.
- **Night**: The screen brightness under low ambient brightness.
- **Menu Lock**: When it is set to On, touch is invalid; when set to OFF, you can operate by touching.
- **SD Switch**: When it is set to On, you can show standard definition image in the single mode.
- **System Upgrade**: If there is a firmware named "SNCC7XFW.bin" in the inserted SD card, click this icon and confirm the upgrade, the device will be upgraded to this firmware.
- **Buzzer**: when it is set to On, Touch, remote control and key pad operation will make a "beep".
- **Language**: Click this icon to enter the language selection interface, currently supporting English, German, French, Chinese.
- **Reset**: Reset operation does not change the tx and rx connection status of the system, but only system parameters.
- **Hide Channel Name**: When it is set to On, the channel name is no longer displayed under any display mode.



- **Date&Time**: Touch or press left/right plus OK key of the remote control to enter the value setting interface, and set the date and time through the small keyboard.
- **Date**: Select the corresponding year, month and day.
- **Time**: Select the corresponding hour, minute, and second.
- **Time Zone**: Once the time zone is set and the OK icon is selected, the system will automatically reboot to apply the new time zone settings. The date and time configurations are saved immediately upon pressing the enter key in the corresponding submenu. It is important to note that the time zone settings will only be applied after rebooting by selecting the OK icon; failure to do so will result in the settings not being applied. Note: This functionality requires the SD card to be formatted using the exFAT file system.

8.3.4 Dual View Display Settings

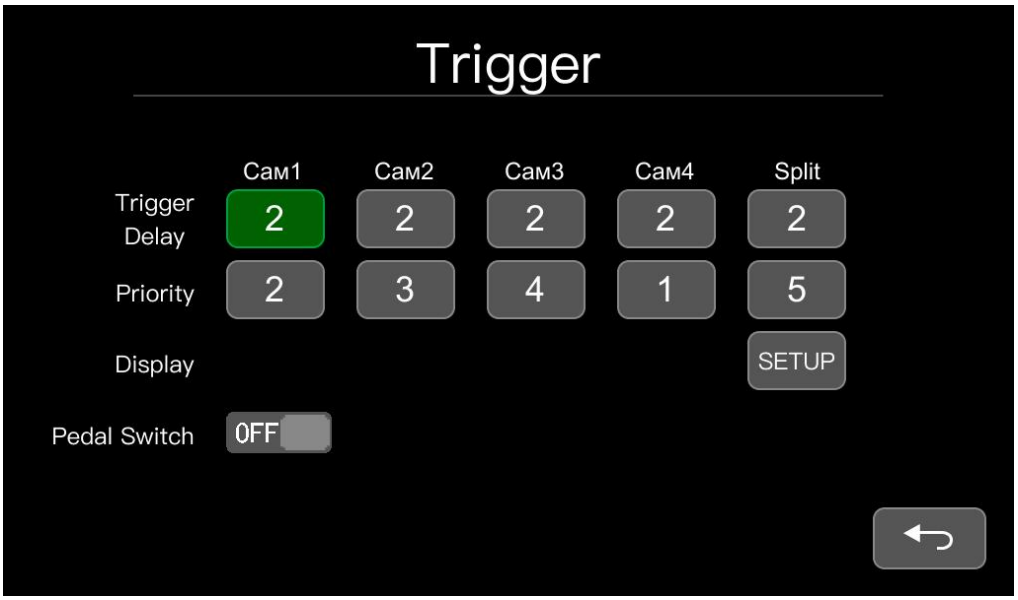


- The text highlighted in green indicates which tx is displayed at that position.
- Touch or press left/right button plus OK button to select any tx in the corresponding position.

8.3.5 Quad View Display Settings

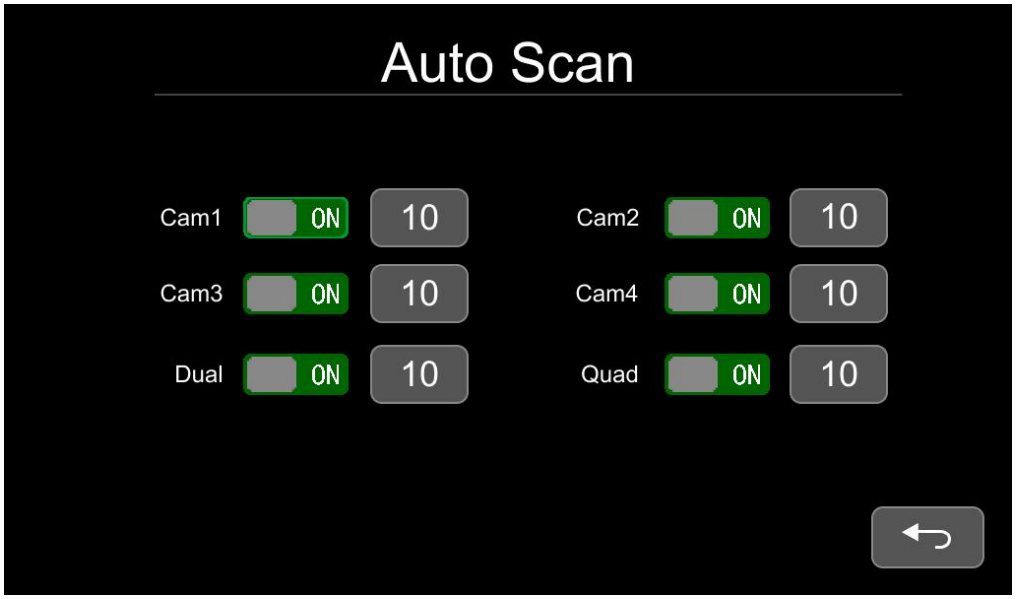
- The text highlighted in green indicates which tx is displayed at that position.
- Touch or press left/right button plus OK button to select any tx in the corresponding position.

8.3.6 Trigger



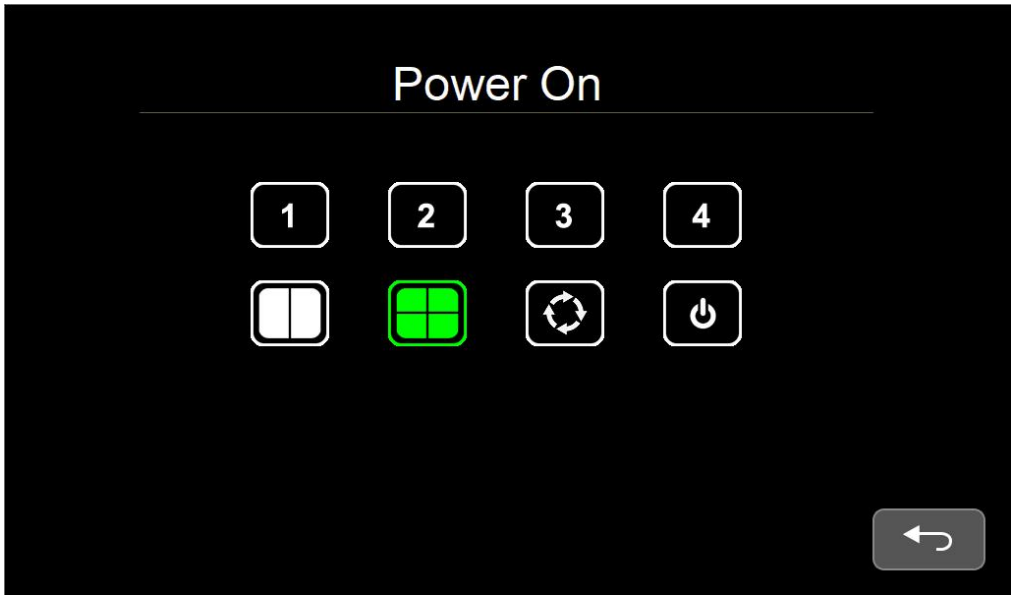
- **Trigger Delay**: Value can be set from 1 to 60s.
- **Priority**: Value can be set from 1 to 5; 1 refers to the highest priority and 5 refers to the lowest priority.
- **Display**: You can select the corresponding channel after triggering, only applicable to the yellow trigger line.
  - Trigger function takes precedence over automatic scan function.
  - When the trigger signal is detected, the signal source will automatically switch to the corresponding view and returns to the previous view when the delay time runs out; support standby trigger.
- **Pedal Switch**: When you choose the power supply cable for pedal switch, please turn it on. If turning off, the pedal switch cannot be used.

8.3.7 Auto Scan



- A window will pop up by touching the number box. Press On/Off to turn on/off the automatic scanning function. Each view can be set whether to be automatically scanned. The duration of automatic scanning ranges from 5s to 60s, 10s by default.

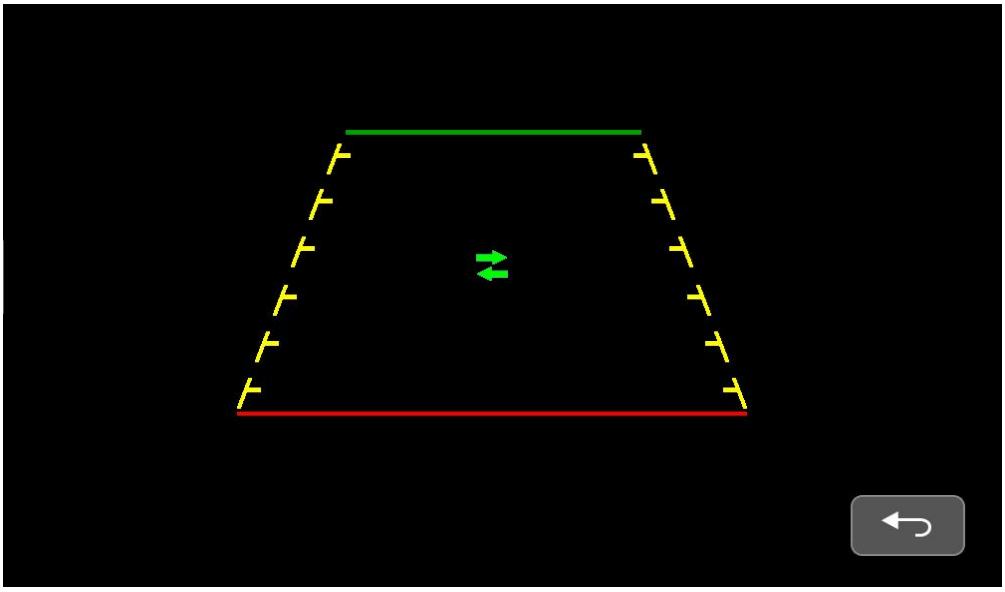
8.3.8 Power On



- Touch or press the left/right button to select the corresponding icon, and the corresponding view will be displayed upon startup or automatic scanning or standby.
- Touch the highlighted icon or press OK button, the green cursor will disappear, and enter the Last mode, specifically, automatically enter the state before shutdown upon power-on.

8.3.9 Parking Line

- When it is set to AUTO, only the channels triggered by CAM1, CAM2, CAM3, and CAM4 will display a reversing icon.
- When it is set to ON, the corresponding CAM1, CAM2, CAM3, and CAM4 will display a reversing icon.

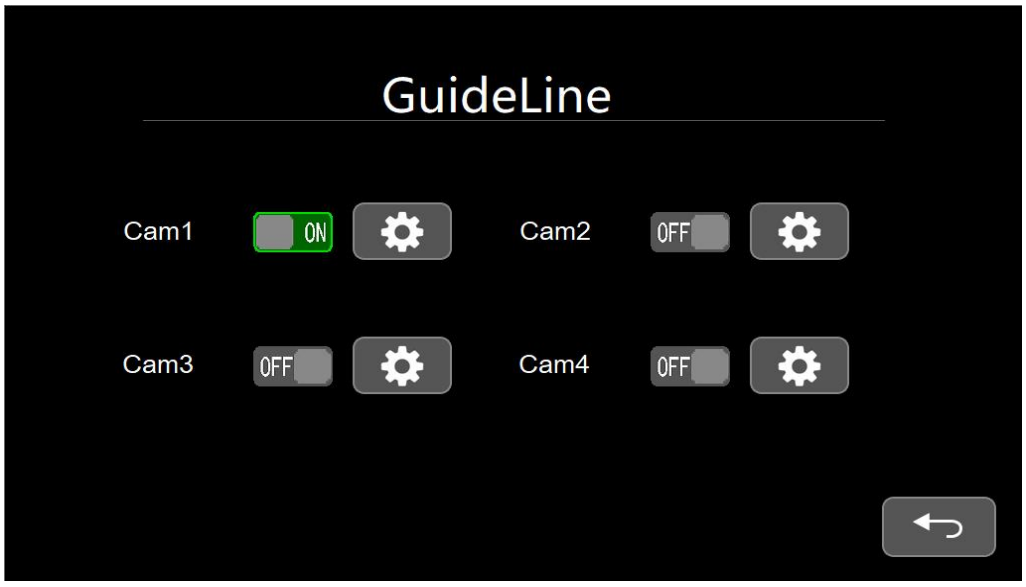


- : Indicates that currently the cursor can be adjusted left or right by left/right keys.
- : Indicates that currently the cursor can be adjusted up and down by left/right keys.
- : Indicates that currently the cursor size can be adjusted by left/right keys.

Feature Instructions:

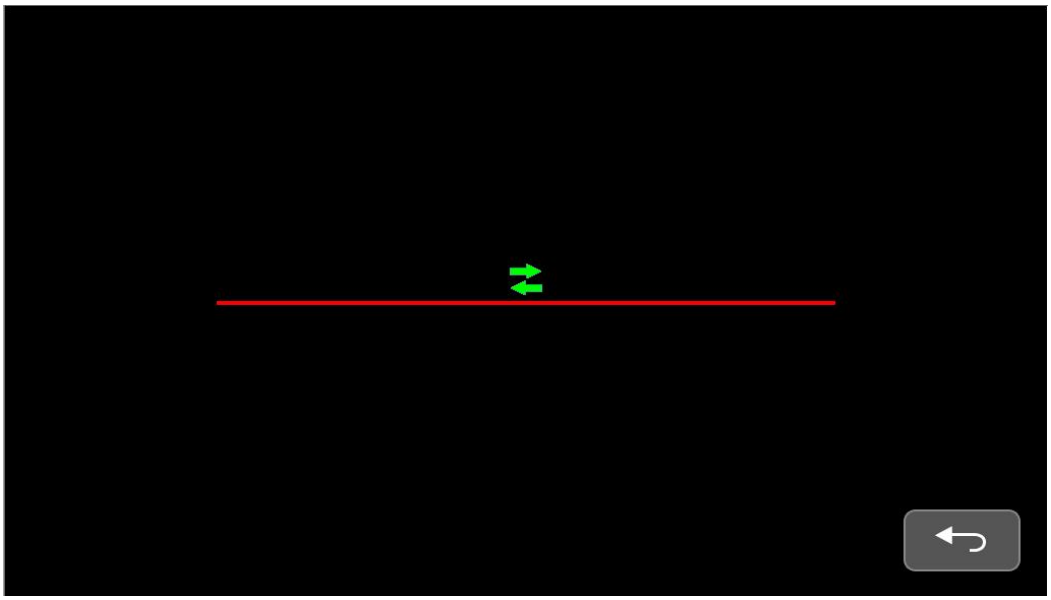
- The OK key is used to switch between different modes.
- The cursor position can be adjusted by sliding with one finger, and the cursor size can be adjusted with two fingers. The status of icons in the middle of the cursor does not affect the adjustment.

8.3.10 Guide Line



Feature Instructions:

- When the switch is ON, the single view will display the guide line.



Other Instructions:

- : The left and right keys enable the cursor to move left and right.
- : The left and right keys enable the cursor to move up and down.
- : The left and right keys enable the adjustment of cursor size.

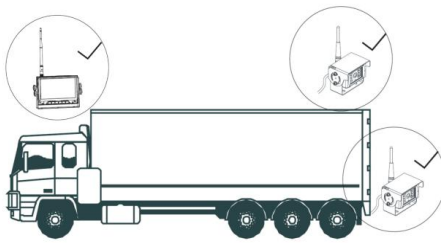
Feature Instructions:

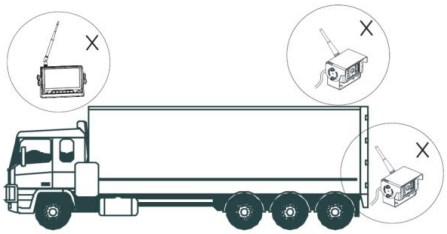
- The OK key is used to switch between different modes.
- The cursor can be adjusted by sliding on the screen with one finger, and the cursor size can be adjusted with two fingers. The status of icons in the middle of the cursor does not affect touch adjustment.

9. Installation Tips

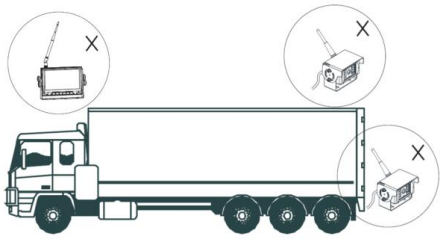
9.1 Antenna Installation Guide

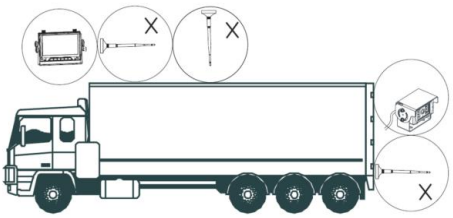
- Antennas should be vertically lined to the ground. Make sure there is no obstacle around antennas.





- Magnet based extension antenna should be attached on the top of the vehicle. Make sure there is no obstacle around or between 2 antennas.





9.2 Monitor and Camera Pairing Guide

- Pair the monitor with the camera before installing the wireless system on vehicle:

1) Before pairing, power off the unpaired camera and switch the monitor channel to the one to be paired;
2) Enter MENU interface, select PAIRING and then press OK; then the monitor enters the PAIRING countdown of 20 seconds, during which the camera to be paired shall be connected to the power supply; after 5 seconds, the camera will be paired with the monitor and the images of the paired camera will be displayed on the monitor if the pairing succeeds. Otherwise, repeat the above code pairing operation steps.
3) After one channel of the monitor is paired successfully, switch to the next channel to be paired; power off the previous paired camera and repeat operation steps above.
4) After pairing all channels, connect all paired cameras with power supply; press SEL button on the monitor to switch channels; check images of each channel; and then install the wireless system on vehicle after confirming that there is image on each channel.

9.3 Solutions for Poor Monitor Signal

- Please confirm the height of the camera from the ground is more than 1 meter, the antennas of the display and camera are perpendicular to the ground, and the antennas are tightened.
- If there is metal shielding between the monitor and the camera, an extended antenna should be used to bypass the metal shielding to ensure smooth transmission of antenna signal in space.
- When using the flat extension antenna, the patch antenna of the monitor and camera shall be installed on the same side of the vehicle, which is conducive to the transmission of antenna signal.

10. Troubleshooting

Symptoms	**Possible Causes / Solutions**
No picture, no sound	Improper connection of automobile adapter. Use of un-authorized power supply. Power switch is on OFF position.
No signal	Check whether the camera has power supply. Pair the monitor and the camera again.
No sound	Check whether the sound volume is turned off or set too low.
Dark picture	Check whether brightness and contrast are adjusted correctly.
No color	Adjust the HUE settings.