

2.4G Digital 720P 7" LCD Wireless Monitor

User Manual



SM7

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

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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 -30 to + 80°C or -22 to +176°F . The operating temperature is -20 to +70°C or -4 to 158°F with the humidity under RH90%.
2. Never 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 warrantee.

● 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. Never use strong solvents such as thinner or benzine, 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.

FCC WARNING

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

NOTE: 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.

To maintain compliance with FCC's RF Exposure guidelines, This equipment should be installed and operated with minimum distance between 20cm the radiator your body: Use only the supplied antenna.

2 Accessories



Antenna



U-Support Bracket



Sun Shield



**Angle Adjustment
Screws**



Cigarette Lighter



Arm Suction Cup



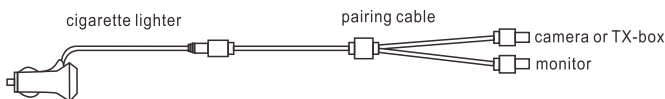
Pairing Cable



**BMW connector
adaptor**



User Manual



Please pair the camera with the monitor by using external 12V power supply and provided Pairing Cable before installing this system on your RV.

The product is under continuous improvement and the specifications will change without notice. Picture for reference only. Please refer to the actual product and accessories.



Special Notice

Accessories supplied in kit may be different for each application.

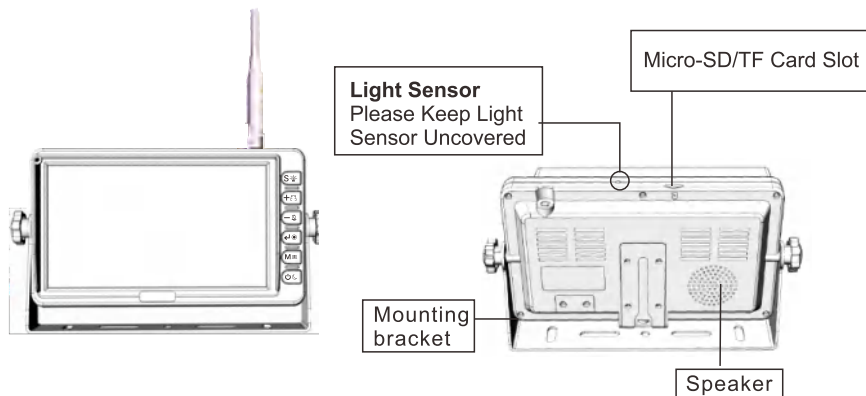
3 Features

1. NORMAL, MIRROR, FLIP and MIR-FLIP viewing available.
2. Split mode, auto-scan mode and single-display mode available.
3. Auto pairing: Auto pairing happens when camera is activated.
4. Support 4-channel composite and single-channel recording in AVI signal format.
5. Auto dim function available.
6. 4 wireless camera inputs.
7. Video input: 720P.
8. Wide voltage input: 10 - 32V.
9. The back light of monitor buttons can be turned ON/OFF.
10. Camera night LED can be turned ON/OFF via monitor.
11. AI ZOOM can be turned ON/OFF.
12. AI BEEP can be turned ON/OFF.

4 Specifications

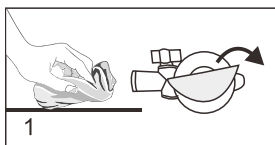
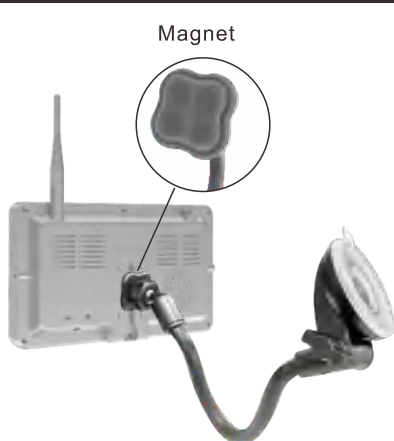
LCD size	7" 16:9
Resolution	1024 x 3 (RGB) x 600
Contrast	800:1
Brightness	1000 cd/m ²
Viewing Angle	U/D: 85, R/L: 85
Aspect Ratio	16:9
Channel	4 channels
Operating Frequency	2400 - 2483 MHz
Receiving Sensitivity	-85 dBm
Video Compression	H.264
Latency	200ms
Transmitting Distance	984ft line of sight
Micro-SD /TF Card	Max. 256G
Video Format	AVI
Power Supply	DC 10-32V
Power Consumption	Max. 8W
Loudspeaker	1W/8Ω
Operating temperature	-20~+70°C,RH90%
Storage temperature	-30~+80°C,RH90%

5 Functions of each part

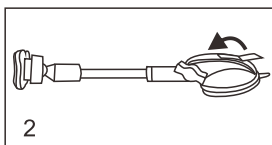


Button	Function
S	<ul style="list-style-type: none"> • Short press S button for channel selection. • Press S button for 2 seconds to turn ON/OFF camera night light. • When night light turned ON, display shows “” • When night light turned OFF, display shows “”
+	Right or UP Button Press and hold “+ ” button for 2 seconds to turn ON/OFF AI ZOOM.
-	Left or Down Button Press and hold “- ” button for 2 seconds to turn ON/OFF BEEP MUTE.
↶	Choose or Confirm Shortcut to Recording: Short-press to start recording, press again to pause recording. Shortcut to Pairing: Press the button for 3 seconds to enter pairing.
M	Enter MENU or return to previous MENU Press the button for 2 seconds to turn ON/OFF monitor triggering function (It needs to be used together with Haloview SENS 3 WADAS system).
⏻	Turn ON/OFF monitor or standby. Press for 3 seconds to enter screen standby recording.

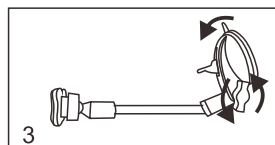
6 Basic Operation



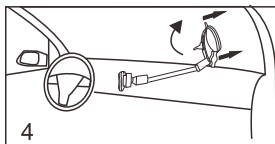
- Clean the surface of the place where you plan to put the suction cup.
- Remove the film on the suction cup.



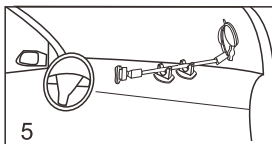
Open the buckle.



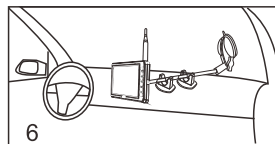
Put the suction cup on a certain place.



Close the buckle.



Mount the fixture base.

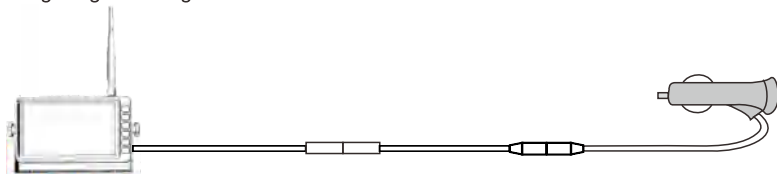


Magnet the monitor with the arm suction cup mount.

7 Wiring Instruction

Monitor Wiring:

Connect the monitor with BMW connector adaptor, connect the DC connector of BMW connector adaptor to cigarette lighter. Power the monitor by vehicle 12V through cigarette lighter.



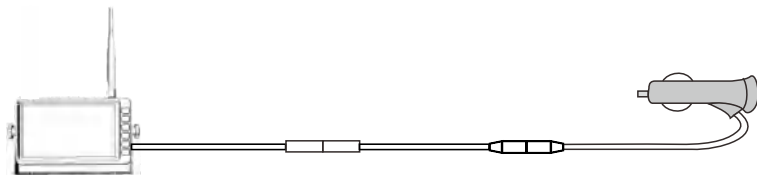
For more cameras, extra cameras can be paired separately to CAM1/CAM2/CAM3/CAM4. Please refer to page 20 PAIRING.

8 Installation

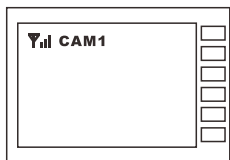
Please find best signal reception position before installation

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

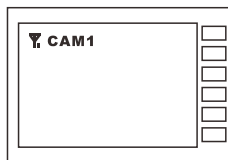
- ① Please connect monitor and camera as below picture



- ② Pairing the camera to the monitor, please refer to page 20 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.

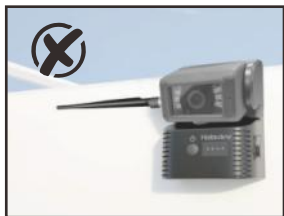


Good signal



Poor signal

If signal strength of the position that you planned to install a camera is under 3 bars, please change to another position, or mount the camera higher to make sure the antenna highest of the top without being blocked. Please refer to below pictures:



Installation Position 1: Mount the camera higher than your vehicle's roof, keeping the antenna vertical.

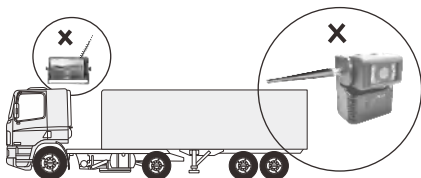
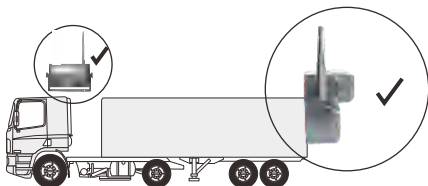
Installation Position 2: Mount the camera lower but as close as possible to vehicle's roof, and move the antenna outward **15-30 degree**. The antennas proximity to any metal surfaces on the vehicle may affect signal strength.

Special Notice

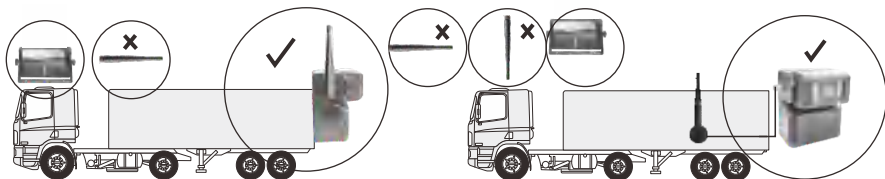
After position adjustment, you can start installation if your signal strength is still above 3 bars.

Installation

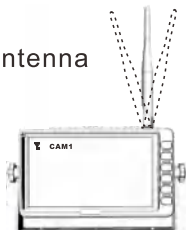
- 1) Antennas should be vertically lined to the ground. Make sure there is no obstacle around antennas.



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



Antenna

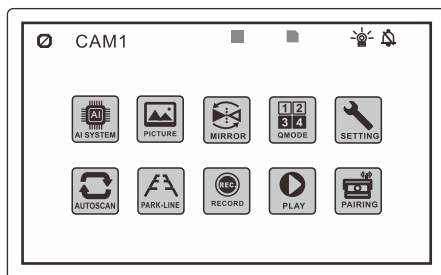


If you get poor signal reception, or signal cannot reach at least 3 bars, please adjust the angle of antenna to find best signal reception position.

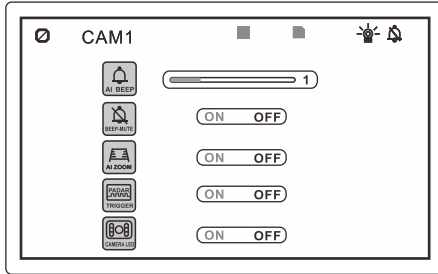
9 Menu

9.1 Menu

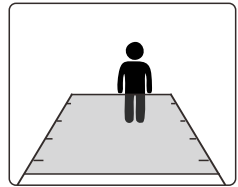
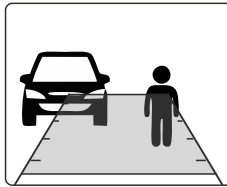
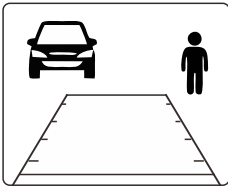
Press “ **M** ” button to enter below interface. MENU is only allowed for operation under single image mode instead of quad mode.



9.2 AI System



1. Press ENTER button to enter AI BEEP, Press “+” or “-” to adjust beep volume.
2. Press “+” or “-” to choose BEEP MUTE, press ENTER button to confirm. When BEEP MUTE is turned ON, the beeper will not make a sound.
3. When AI ZOOM is turned ON, trapezoid alarm zone will appear in display. Once people or vehicle enter the alarm zone, it will change from blue to red with alarm sound. (Notice: if BEEP MUTE is set, it will not make a sound)



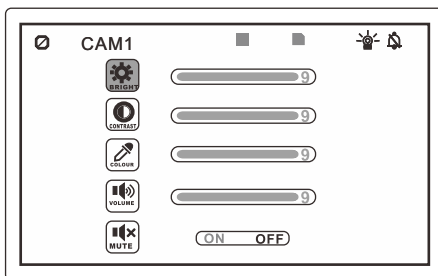
4. When RADAR Trigger is turned ON, there is a yellow icon “ ” on the monitor.

RADAR Trigger is a function that needs to be used together with Haloview SENS 3 WADAS system. For customers who purchase 720P wireless system and Haloview SENS 3 WADAS system, turn on the RADAR Trigger function can achieve the high-end functional linkage for safety driving.

5. If CAM LED is turned ON, the camera LED will be automatically turned on when the ambient brightness is low.

9.3 Picture

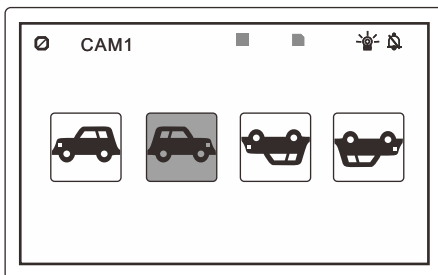
- 1) Press “**M**” button to enter menu interface.
- 2) Press “**+F3**” or “**-F3**” to select PICTURE, Press “**←○**” to enter.



- 3) Press “**+F3**” or “**-F3**” to select BRIGHTNESS/CONTRAST/COLOR/VOLUME. Press “**←○**” to confirm. Press “**+F3**” or “**-F3**” to adjust settings.

9.4 Mirror

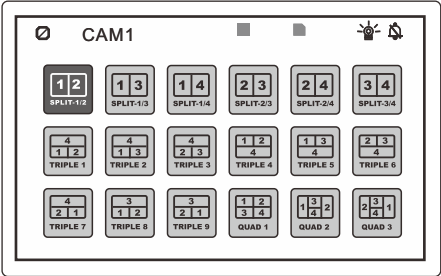
- 1) Press “**M**” button to enter menu interface. Press “**+F3**” or “**-F3**” to select MIRROR. Press “**←○**” button to enter MIRROR setting.



- 2) Press “**+F3**” or “**-F3**” to select NORMAL/MIRROR/MIR-FLIP/FLIP.
- 3) The AI Camera does not have MIRROR function.

9.5 QMODE

- 1) Press “**M**” button to enter menu interface. Press “**+F3**” or “**-F3**” and “**◀▶**” button to enter QMODE.



- 2) Press “**+**” or “**-**” to select display mode.
Press “**◀▶**” to confirm.
- 3) After setting, you can switch to the mode you set by pressing “**S**” button.
- 4) Quad or Split Audio Setting
When the monitor display Quad or Split picture, you can press “**+F3**” or “**-F3**” button to play audio of any of the CAM channel.

CAM1	🔊	CAM2	
CAM3	CAM4		

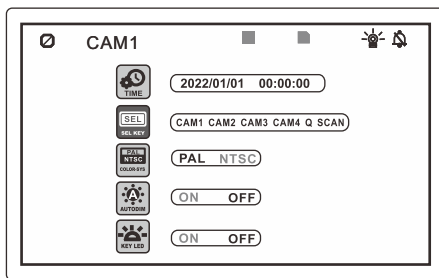
CAM1	CAM2	🔊	
CAM3	CAM4		

CAM1	CAM2		
CAM3	🔊	CAM4	

CAM1	CAM2		
CAM3	CAM4		🔊

9.6 Setting

- 1) Press “**M**” button to enter menu interface. Press “**+F3**” or “**-F3**” to select SETTING. Press “**◀▶**” button to enter SETTING.
- 2) SEL KEY: User defined CAM switching. For example, if CAM1, CAM2, Q(QUAD MODE) are selected, When pressing SEL key, the display will switch from CAM1 to CAM2, and QUAD MODE, it will skip CAM3, CAM4, and SCAN.
- 3) Press “**+F3**” or “**-F3**” to move selection, press “**◀▶**” key to select or cancel.
The bottom yellow dot indicates current selection.



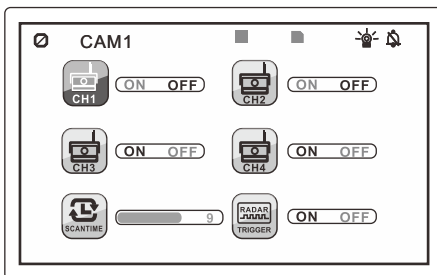
ICON	FUNCTION
	Set the time of each recording clip.
	SEL KEY: User define CAM switching. For example, if CAM 1 is disabled, when pressing SEL key, the display will switch to the available channels and skip CAM 1.
	Set video format of the camera. Please refer to below table.
	When the option is turned “ON”, monitor will automatically decrease brightness in low light. Or you can turn “OFF” the auto-dim function.
	The back light of monitor buttons can be turned ON/OFF at your will.

VIDEO FORMAT	COUNTRY
PAL	Argentina, Australia, Austria, Belgium, Brazil, Bulgaria, China, Cyprus, Czechoslovakia, Denmark, Dubai, Egypt, Finland, France, Germany, Gibraltar, Greece, Hungary, Iceland, India, Indonesia, Ireland, Israel, Italy, Jordan , Kuwait, Luxembourg, Malaysia, Netherlands, New Zealand, Norway, Sultanate of Oman, Poland, Portugal, San Marino, Saudi Arabia, Singapore, Spain, Sweden, Switzerland, Turkey, United Kingdom,
NTSC	Bolivia, Canada, Chile, Colombia, Costa Rica, Ecuador, Japan, South Korea, Mexico, United States

4) Press “+” or “-” and “←” button to set TIME/PAL-NTSC/AUTODIM.

9.7 AUTO SCAN

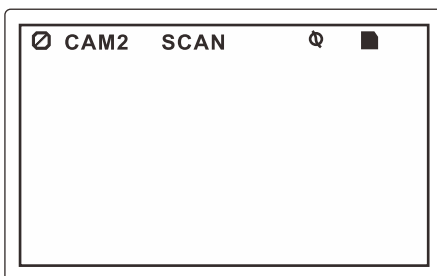
- 1) Press “**M**” button to enter menu interface. Press “**+F3**” or “**-F4**” and “**↵**” button to enter SCAN setting.



- 2) Press “**+F3**” or “**-F4**” and “**↵**” button to set SCAN channels and SCANTIME.
- 3) Press “**S**” button to switch to SCAN interface. A SCAN icon will appear on the display. Press again to exit SCAN mode.

When RADAR Trigger is turned ON, there is a yellow icon “**⚡**” on the monitor.

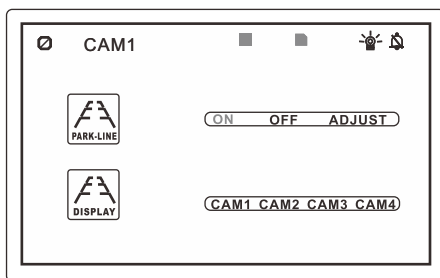
RADAR Trigger is a function that needs to be used together with Haloview SENS 3 WADAS system. For customers who purchase Byte Tango system and Haloview SENS 3 WADAS system, turn on the RADAR Trigger function can achieve the high-end functional linkage for safety driving.



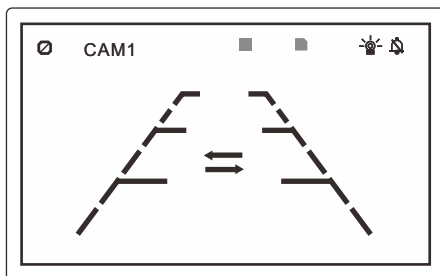
9.8 Park-line

- 1) Press “**M**” button to enter menu interface. Press “**+F3**” or “**-F4**” and “**↵**” button to enter PARK-LINE.

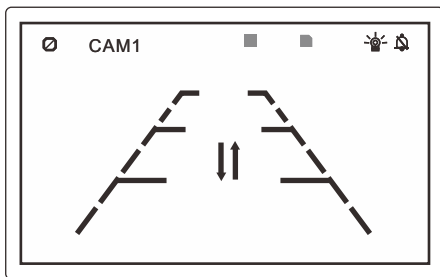
Display: To set the park line display in a certain channel of CAM. Press “**+F3**” or “**-F4**” button to select, press “**↵**” button to confirm.



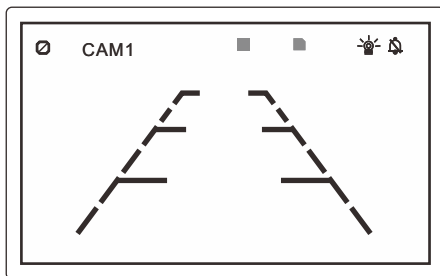
2) Turn on/off parking lines or enter adjust parking lines setting.



3) Press “+” or “-” button to adjust the position of parking lines.



4) Press “+” or “-” button to adjust the position of parking lines

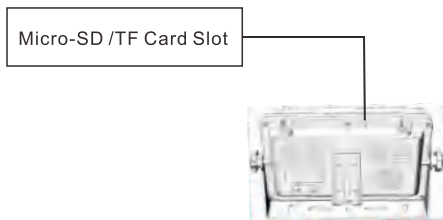


5) **Note:** Park line display in CAM4 as default, but it is settable if you want it display in other channels of CAM.

9.9 Record

1) Insert TF Card

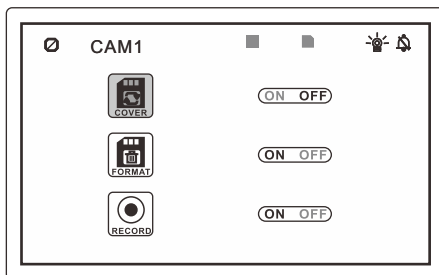
Please insert TF card in TF card slot, max 256G Micro-SD/TF Card



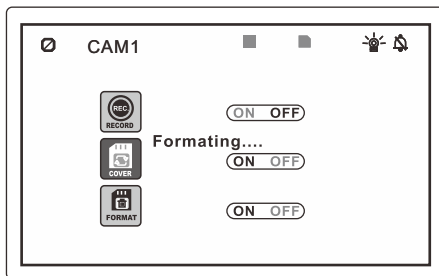
2) Format the TF card.

Note: TF card must be formatted before using.

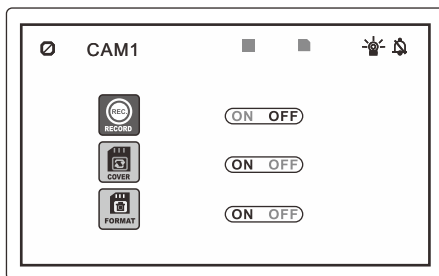
Press “M” button to enter menu interface, and enter RECORD setting



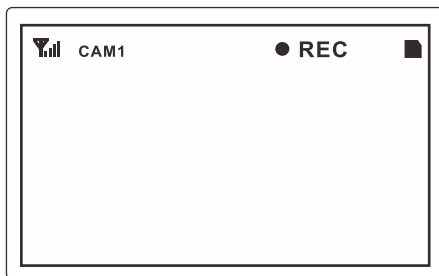
When COVER is turned on, overwrite function will be activated. Previous recorded video files will be overwritten when TF card memory is full.



After TF card formatted, a yellow folder icon will be shown on the screen, indicating TF card is available now.



3) After setting, turn on RECORD to start recording or pause recording, or, you can press “◀▶” button to start recording or pause recording.

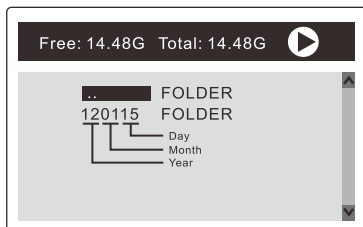


Note: Pressing “◀▶” button in QUAD or SPLIT display, the monitor will record all displayed channel of CAM at the same time.

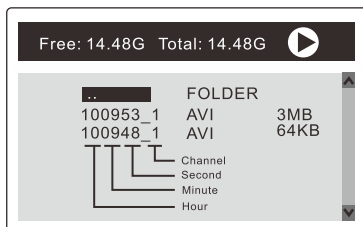
9.10 Play Recorded File

Recorded videos can be played by monitor.

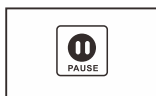
- 1) Press “+” or “-” and “⏮” button to enter PLAY.
- 2) Press “+” or “-” and “⏮” button to select a file.



- 3) Press “+” or “-” to select TIME& CHANNEL, Press “⏮” to enter.



- 4) Press “⏮” button to PLAY or PAUSE the file.



	091811_2	AVI	8MB
	092312_2	AVI	6MB
	092812_2	AVI	5MB
	092312_2	AVI	5MB
	092812_2	AVI	5MB

Read the SD card through the computer, there will be two formats of files. It is suggested to play the AVI format files for higher video resolution.

9.11 Pairing

Camera and monitor are paired at the channel of CAM 4 as factory default setting. When you open the box, power on the monitor and camera, press “S-” button to switch to CAM 4, the image will be displayed. Otherwise, please try below methods for pairing.

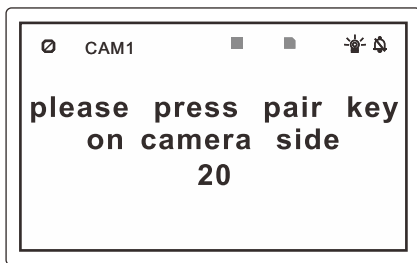
Please finish pairing before installtion.

1) Press “S-” button to select a channel that needs to be paired.

2) Monitor Pairing

Method 1: Enter menu interface and select PAIRING, press “↩” to confirm, you will have 20 seconds for pairing.

Method 2: Press “↩” button for 3 seconds to enter PAIRING status, you will have 20 seconds for pairing.



3) Camera Pairing

Method 1: Press the pairing button on the bottom of the camera.

Method 2: Power off the camera and power on it again.



PAIR button

4) 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 20 seconds, otherwise you need to re-power the camera for pairing.

10 Troubleshooting

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

Symptoms	Possible Causes/Solutions
No picture No sound	Improper connection of automobile adapter. Use of unauthorized power supply. Power switch is OFF. Please re-pairing the system. Refer to page 20 PAIRING.
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. Refer to page 20 PAIRING.
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.
Button invalid	All Button invalid when trigger wire is activated. Please deactivate trigger wire signal to get the button function valid. For example, if you connect the camera to left turn signal light, the camera will automatically displayed on the monitor every time the left turn signal light turned on. Buttons invalid during triggering. Once triggering released, buttons will be operational again.
Unable to record	Please check whether TF card inserted Please check whether TF card formatted before recording Please check whether TF card storage full

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

Haloview

User Manual



SC150

1 SAFETY INFORMATION



WARNING

Do not follow the safe operation may cause fire ,electric shock ,damage or hurt.

1. When a mobile power supply is first used or stored for a long time, it may be gradually discharged automatically. It should be charged before use. Please note that the best performance can be achieved only after two or three full charging and discharging cycles.
2. It should be charged in a ventilated position Too high temperature /Too low temperature will af ect the performance of the battery.
3. When charging, the housing off the mobile power will slightly heat, which is a normal phenomenon.
4. Do not move the mobile power near the fire source or other heat sources, so as to avoid any danger.
5. Don't collide with hard objects.
6. If you find there is bulge on SC150 or device , please stop using it.

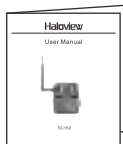
2 ACCESSORIES



Metal plate with
3M tape



Power Adapter



User Manual

② FUNCTIONS

1. Lithium-ion Rechargeable Cell
2. TI Solution
3. Ultra low power consumption for standby (only 30uA)
4. Magnetic mount
5. Waterproof Rating: IP67
6. Over-charge Protection
7. Over-discharge Protection
8. Camera angle can be adjusted by 70 degrees
9. 12X LED Night Vision Lights

③ SPECIFICATIONS

Battery Capacity	25.9 Wh
Charging Voltage	DC9~16V
Charging Time	4H@12V
Dimension	79(W)*92.4(H)*58(D)mm
Weight	520g
Mounting	Magnetic mount
Connection	DC connection
Waterproof Rating	IP67
Charging Temperature	-10~45°C
Discharging Temperature	-10~60°C
Storage Temperature	-20~60°C

④ CAMERA SPECIFICATION

Image Device	1/2.9" CMOS	
TV System	25fps	30fps
Effective Pixels	1280×720 pixels	
Pixel Size	3.0um×3.0um	
Video Output	8bits YUV	
Scanning System	Progressive Scanning	
Sync. System	Internal	
Gamma Consumption	0.45	
AGC	Auto	
White Balance	Auto	
BLC	Auto	
Electronic Shutter	Electronic Rolling Shutter	
Operation Frequency	2400-2483MHz	
Transmission Distance (barrier free)	300m(984ft)	
Transmission Power	18dBm	
Video Codec	H.264	
Spread Spectrum	DSSS	
Latency	200ms	
RF Bit Rate	12Mbps	
Minimum Illumination	0Lux	
Night vision distance	8~10m	
Viewing Angle	120°	
Audio	Yes	

5 FUNCTIONS

5.1 Power Indicator:

1. Battery capacity indicating while charging
Capacity < 25%, four indicators flash in cycle
 $25\% \leq \text{Capacity} < 50\%$, one indicator keeps on, three indicators flash in cycle
 $50\% \leq \text{Capacity} < 75\%$, two indicators keep on, two indicators flash in cycle
 $75\% \leq \text{Capacity} < 100\%$, three indicators keep on, one indicator flash
Capacity = 100%, four indicators keep on.
2. Battery capacity indicating while discharging
 $75\% < \text{Capacity} \leq 100\%$, four indicators keep on.
 $50\% < \text{Capacity} \leq 75\%$, three indicators keep on.
 $25\% < \text{Capacity} \leq 50\%$, two indicators keep on.
 $10\% < \text{Capacity} \leq 25\%$, one indicator keeps on.
Capacity < 10%, one indicator flash.
Capacity = 0, all indicators off.

5.2 Discharging While Charging

Charging the battery with 9-16V adaptors when it is discharged with under 650mA, charging and discharging works normally at the same time.

5.3 Short circuit Protection

When the camera is short-circuited, the 50% and 75% battery indicators flash simultaneously. The product automatically cuts off the power to protect the battery from damage.

5.4 Over-voltage Protection

In charging status, if the battery is charged by adaptors over 17V, 100% capacity indicator keeps on, 50% capacity indication flashes. After 6 seconds, all indicators off, and charging and discharging function shut off.

5.5 Over-charge Protection

In charging status, once the battery cell is over 4.2V, it will shut off automatically to protect the battery cell from damage.

5.6 Over-discharge Protection

In discharging status, once the battery cell is under 3V, the 12V output will be shut off to protect the battery cell from damage.

5.7 Temperature Protection

If no action takes within 5 minutes, the battery will automatically turns off with all indicators off to enter low power consumption status. You need to turn on the power button manually.

When temperature above 65°C, 25% indicator light on and 100% indicator flash.

When temperature below -23°C, 25% indicator flash and 100% indicator keep on.

When temperature sensor damage or poor contact, 25% and 100% indicator both flash.

5.8 Maximum Charging Current

Using adaptors 9V-16V to charge the battery, the input charging current can reach up to 0.65A, and it decreases as the battery voltage increases. (Adapters with minimum 1.0A output current recommended).