

Rearview System for Vehicle Installation & Operations User Manual

Model No. HDSKM9001DVR



Important – Please Read This Manual Before Installing.



Objects Viewed In Monitor Are Closer Than They Appear.

This is Not Intended To Replace Any of Your Vehicles Mirrors or Other Safety Devices.

It is Not A Substitute For Proper Defensive Driving Techniques.

Please Obey All Traffic Laws And Motor Vehicles Safety Regulations.

Do Not Open Monitor or Camera Housing.

There Are No Parts That Can Be Serviced.

Opening Monitor Or Camera Housings Will Void Your Warranty.

Red Power Wire Must Be Connected To Accessory That is Turned Off When Key is Removed From Vehicle To Prevent Power Draw.



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1. Precautions

● Storage and Keeping

1. Do not expose the monitor to excessive heat or cold. The storage temperature of this device is -30~+80°C, and the operating temperature is -20~+70 °C. Battery operating temperature is 0-70°C. The 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 environments with excessive moisture, dust or smoke.
4. Avoid dropping or striking this device.
5. Avoid using 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.

● 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.
3. The back-up battery can be recharged when the power is on.
4. When it is fully charged, recharging is automatically stopped.
5. It may take longer to charge batteries unused for a long time.



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.

● 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.



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.

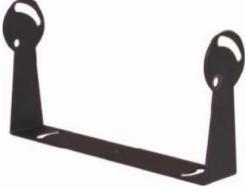


This symbol is intended to alert the user not to waste electrical and electronic equipment.

CAUTION

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

2. Accessories

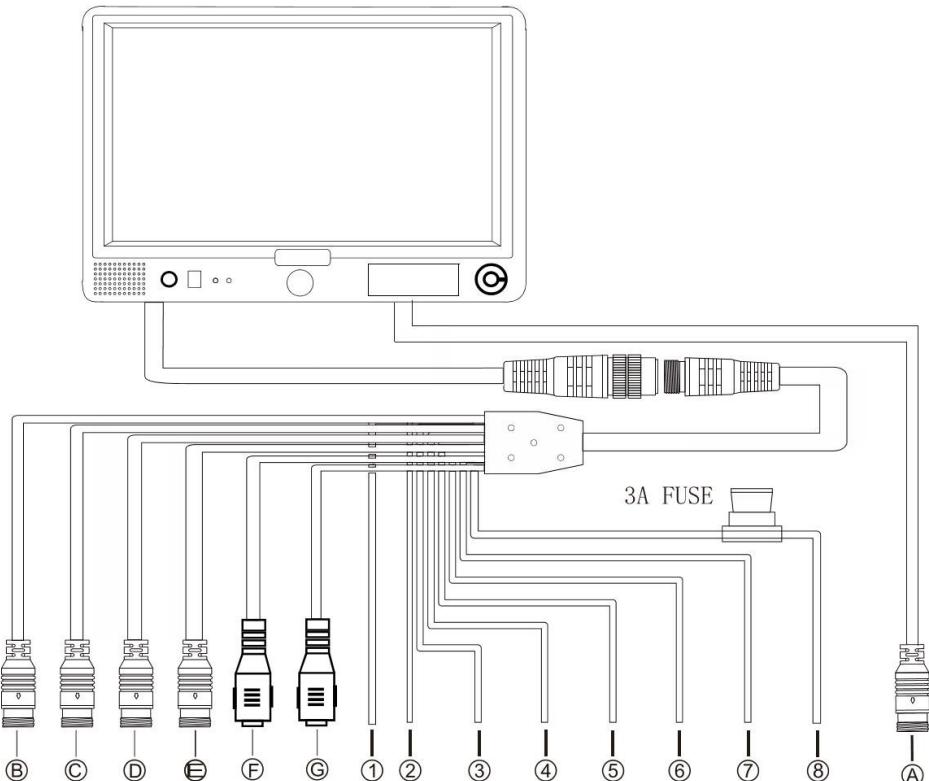
	
<p>U-Support Bracket</p>	<p>Center Mount Bracket</p>
	
<p>Sun Shield</p>	<p>Power cable</p>
	
<p>Angle Adjustment Screws</p>	<p>IR Remote control</p>
	
<p>Keys</p>	



Special Notice

Accessory supply may be different for different application.

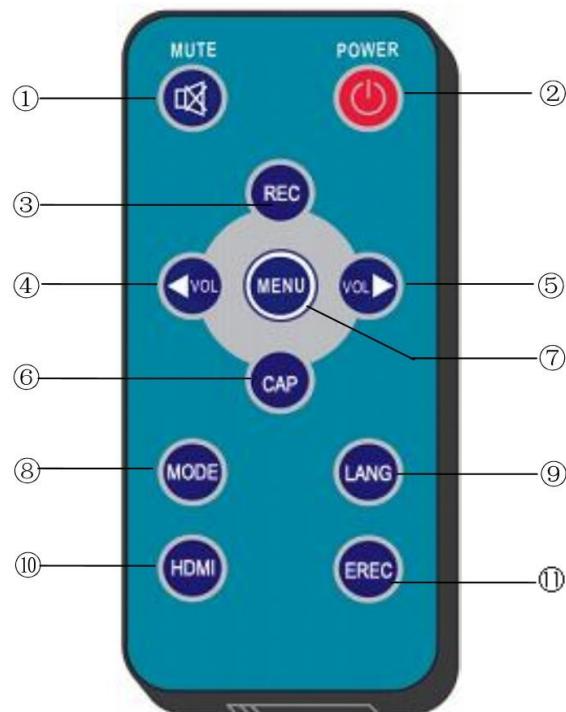
3. Connections



A: GPS	GPS Input
B: Camera1	White 4 PIN Female
C: Camera2	Blue 4 PIN Female
D: Camera3	Green 4 PIN Female
E: Camera4	Brown 5 PIN Female / 4 PIN Female
F: Video Out	Yellow RCA Female
G: Audio Out	White RCA Female

① White: Camera 1 trigger
② Blue: Camera 2 trigger
③ Green: Camera 3 trigger
④ Brown: Camera 4 trigger
⑤ Orange : HDMI trigger
⑥ Purple: Speed
⑦ Black : Ground
⑧ Red: VCC

4. Remote Control



① Mute	⑦ Menu
② Standby	⑧ Display Mode Selection
③ Recording	⑨ Language Selection
④ Volume Decrease	⑩ HDMI Switch
⑤ Volume Increase	⑪ Event Recording
⑥ Snapshot	

5. Controls



- ①AUX Input
- ②Remote Receiver
- ③LDR
- ④Recording Indicator
- ⑤Power
- ⑥Lock

- ⑦Emergency Hole
- ⑧Micro SD Slot
- ⑨HDMI Input
- ⑩Insert Direction
- ⑪Slot Number
- ⑫Sketch of slots & micro SD card direction

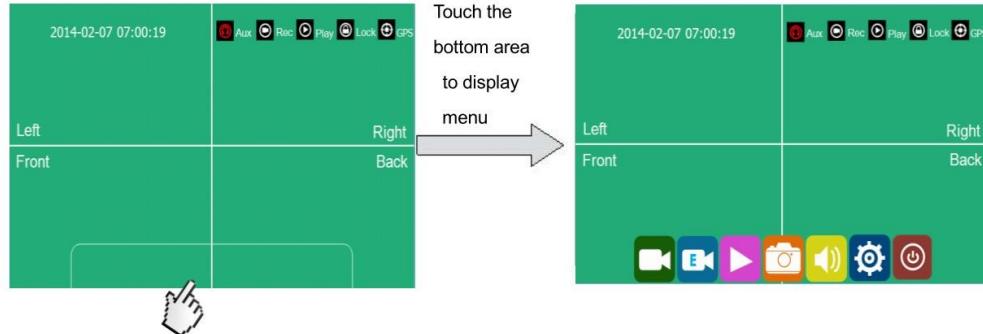
Power Function:

- a/ Short press the power button to turn the monitor on when the panel LED is red.
- b/ Press the power button for 5 seconds and enter the password in the pop-up window to turn off the monitor.
- c/ Short press the power button to turn off the backlighting when monitor is on.

LDR:Light dependent resistor.

Emergency Hole:Press the emergency hole using some needle can reset the whole machine, in case the system halted.

6. Operation



6.1 Time and Indicators

Top left displays date and time.

Top right displays 5 indicators: AUX/Rec/Play/Lock/GPS

AUX indicator turns red when AUX audio is inserted on the front panel.

Rec indicator turns red when recording.

Play indicator turns red when playing back.

Lock indicator turns red when menu is locked.

GPS indicator flickers when searching signal.

GPS indicator turns red when GPS signal is received.

6.2 Menu Operation



Click this icon to start or stop recording. Video files are saved in normal list of player menu.

If event recording is activated (trigger signal, motion detection, collision etc.), regular recording will be paused and then retrieved when event recording is finished.



Click this icon to start a event recording manually. The video buffer 15 seconds before the click will also be saved in this event record mode. The event recording will stop when the pre-set recording time is up. Video files are saved in event list of player menu.

Click the icon again when the event recording is not ended, the monitor will switch to normal recording after pre-set recording time is up.

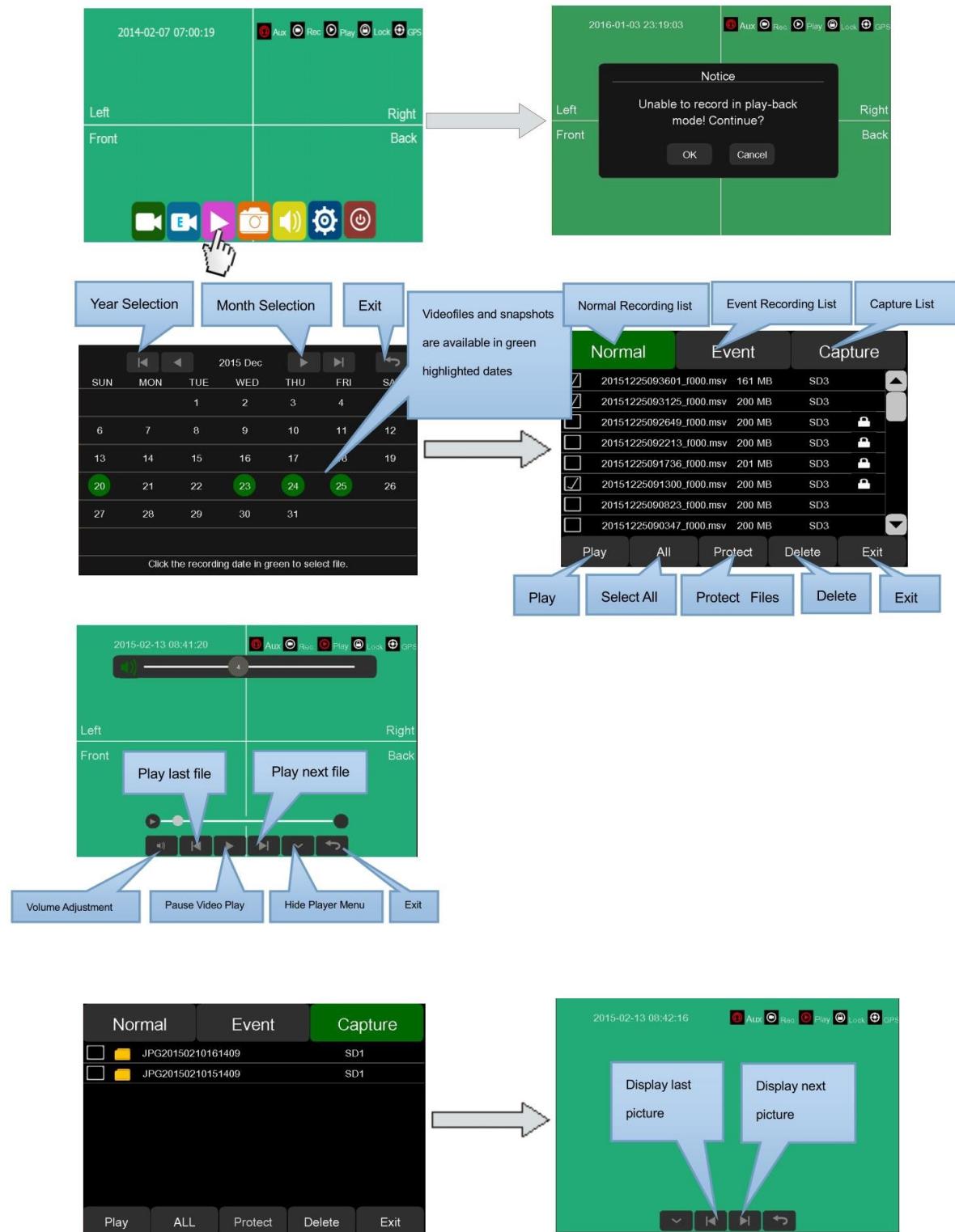


Click this icon to play back video. A prompt dialog will show "Can not record in play mode! Continue?" Click OK to enter recording calendar menu. Video files are available in green highlighted dates. Click the date to select, play or delete video files or snapshots. Multiple video files can be selected to play back in sequence, while snapshots must be viewed in folder one by one.



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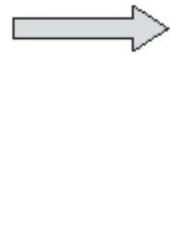




Click this icon for snapshot under live recording and playback mode. "Snapshot Success" will display when snapshot is done. Pictures are saved in capture list of player menu.



Click this icon to adjust volume under live recording and playback mode.



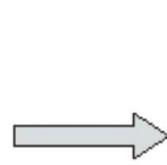
Click this icon to set menu. A prompt dialog will display " Unable to record in set-up mode! Continue?" Click OK to enter.



Click this icon and enter the password in the pop-up window to turn off the monitor.

7. Main Menu

7.1 Record



Record	Display	Storage	System
Power On Rec.	Off	Event Rec. Time	15s 30s 60s
Cyclic Rec.	On	Motion Sensitivity	L M H
Trig.4 Rec.	Off	G-sensor Sensitivity	L M H
Motion Rec.	Off	Video Quality	L M H
Record Channel	Setup		OK

Power On Rec:

Recording will start when power is on if setting the Power On Rec ON.

Cyclic Rec:

New video files will overwrite the previous ones when SD cards are full if setting the Cyclic Rec ON. Recording will stop when SD cards are full if setting the Cyclic Rec OFF. Overwriting will not cover event recording files.

Trig.4 Rec:

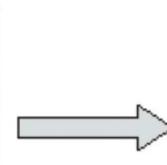
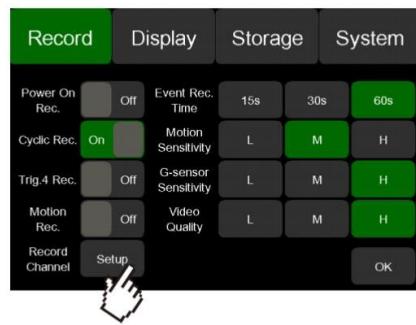
Event recording will start if setting the Trig.4 Rec ON.

Motion Rec:

Event recording will start if set the Motion Rec ON.

Event Record Time:

Event recording time can be set from 15 seconds, 30 seconds to 1 minute.



Record	Display	Storage	System
Record Channel Select			
Left	Right	Front	Back

Record Channel:

Select any camera channel for recording. Default setting is recording ALL channels under normal record and power on record mode, while it is ALL channels for event recording and can't be changed.

Motion Sensitivity:

Motion Sensitivity is optional for low, middle, high level.

If there is motion in the video and it reaches the threshold, it will trigger to record.

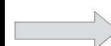
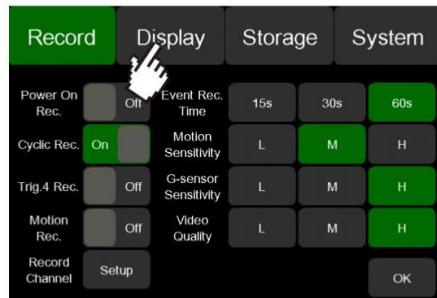
G-sensor Sensitivity:

G-sensor Sensitivity is optional for low, middle, high level, which stands for $+-1g$, $+-2g$, $+-4g$.

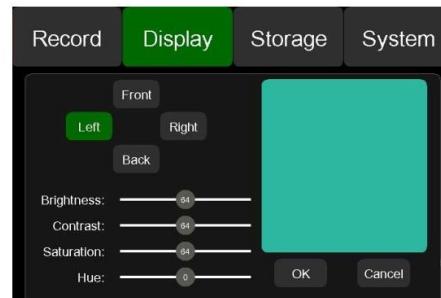
Video Quality:

Resolution of video quality is classified into low /middle /high. Default quality is high.

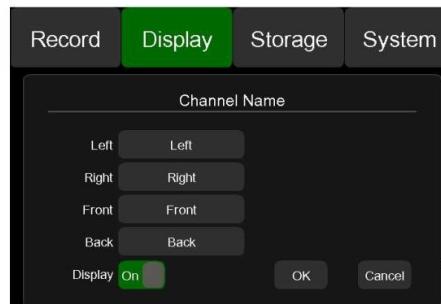
7.2 Display



Camera Display Setting



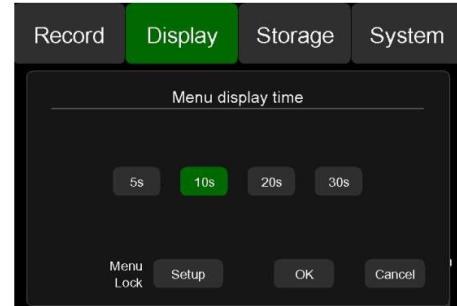
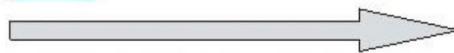
Camera Name Setting



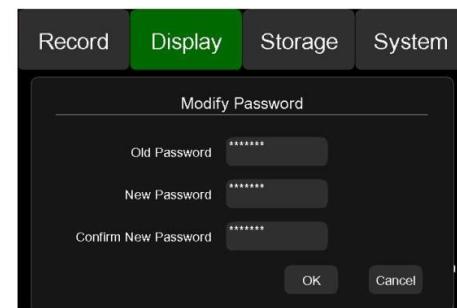
Click the camera name in the gray box and input new one with maximum 8 digits.



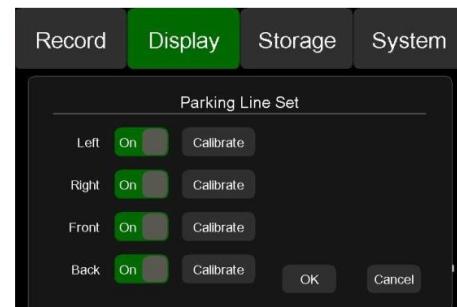
Click this icon to set menu
Display time



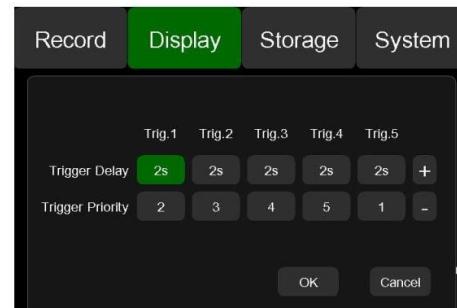
Click Menu Lock Setting to set menu
password. Default Password is 123456



Click this icon to turn on / off camera
parking lines. Click Calibrate to adjust
parking lines.



Click this icon to set trigger delaying
time and priority, 5 is the highest
priority.

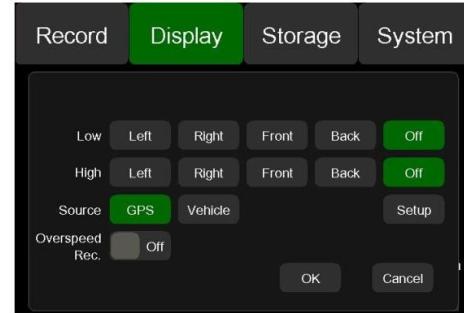




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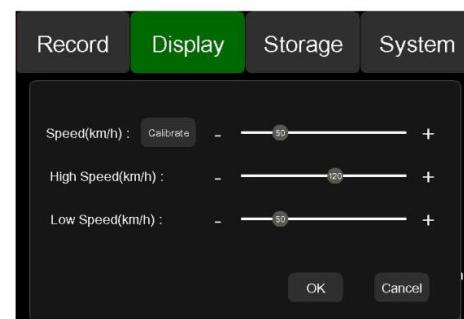
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Connect the vehicle speed wire with the monitor speed wire before operation. A full screen of selected camera will be displayed when the vehicle is over speed or underspeed. Click the Option icon to set the speed threshold. Speed recording will start if setting the Speed Rec. ON. There are 2 speed sources: GPS and vehicle speed sensor.

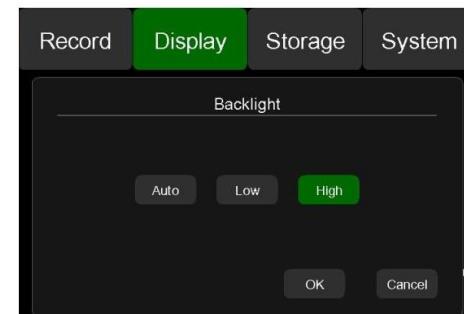


Speed Switch—Setup...

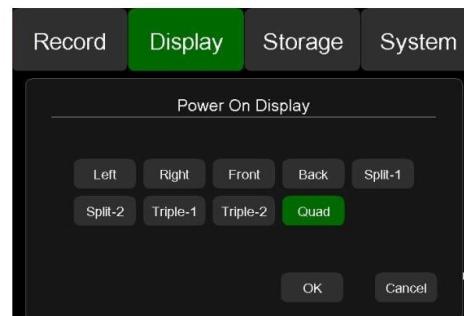
Click the Calibrate icon to calibrate the current speed for the monitor. Then you can set the threshold of High Speed and Low Speed to display the corresponding camera.



Click this icon to set blacklighting value.



Click this icon to set power on display mode.





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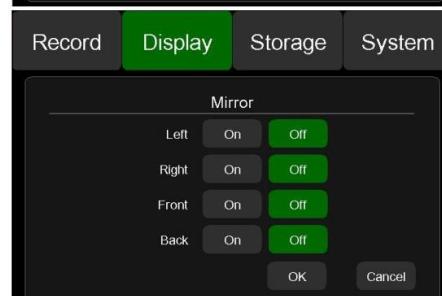
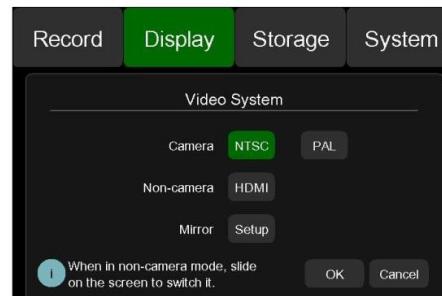
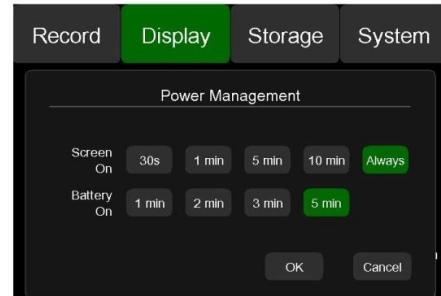


Click this icon to set screen on duration and battery power supply duration after external power is off.

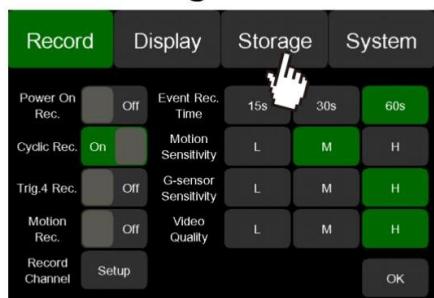


Click this icon to select video system Under camera mode or HDMI input under non-camera mode.

Under Mirror sub-menu, each video input can be set to display in either mirror or non-mirror image.



7.3 Storage



Record	Display	Storage	System
Power On Rec.	Off	Event Rec. Time	15s 30s 60s
Cyclic Rec.	On	Motion Sensitivity	L M H
Trig.4 Rec.	Off	G-sensor Sensitivity	L M H
Motion Rec.	Off	Video Quality	L M H
Record Channel	Setup		OK

ALL: Capacity and free capacity for all cards.

TF1~4: Capacity and free capacity for each individual micro SD card.

Format : Format micro SD card.

All: Format all micro SD cards.

TF1~4: Format any individual micro SD card. Format icon will be gray if SD card is not found.

TF SLOT: Micro SD card slot position.

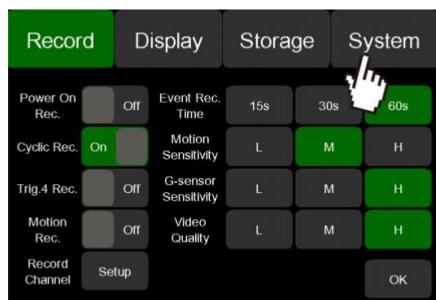
Warning: Micro SD cards must not be taken out during recording or playback.



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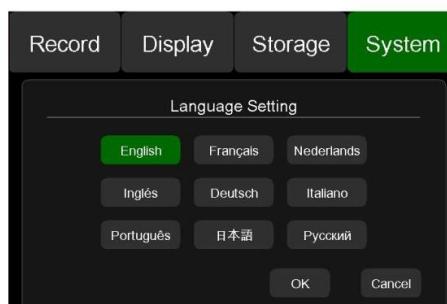
7.4 System



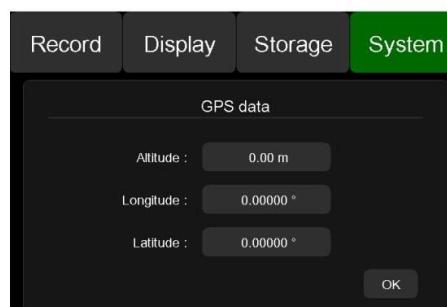
Click this icon to display the monitor
Software version



Click this icon to select language



Click this icon to display GPS information





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Click this icon to set audio out channel.



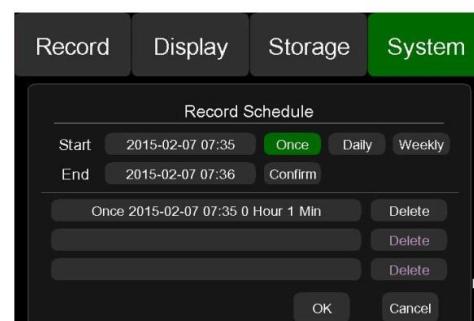
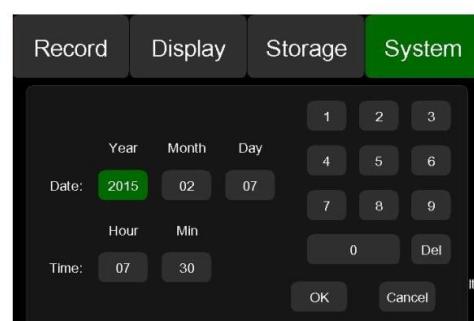
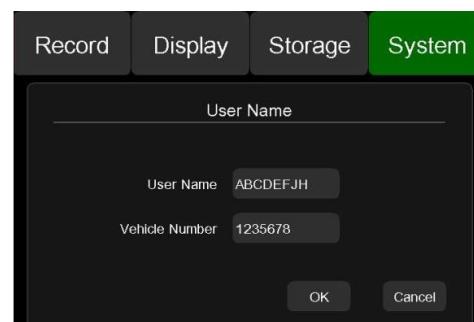
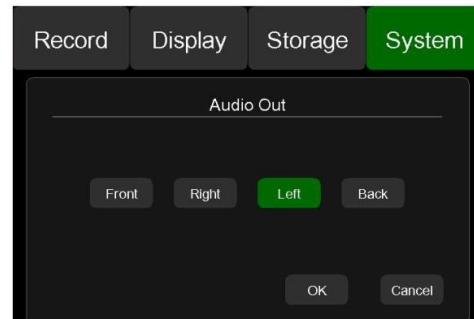
Click this icon to set device ID and license plate number. The information will be displayed on all the video files to distinguish different vehicles and drivers.



Click this icon to set date and time.
Year should range between 2000-2037



Click this icon to set scheduled recording.



Start: Start time of scheduled recording.
End: End time of scheduled recording.

Confirm: Add scheduled recording

Scheduled recording:

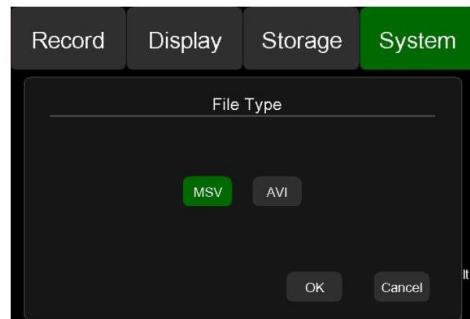
* Add a scheduled recording with maximum of 3. Scheduled recording can be set once, daily or weekly.

* Single scheduled recording will display as expired, completed or deleted.

- * Overlapped scheduled recording is not allowed.
- * Recording setting must be resumed if interrupted.
- * Scheduled recording can be stopped by the control button for regular recording.
- * If event recording is activated (trigger signal, motion detection, collision etc.), scheduled recording will be paused and then retrieved when event recording is finished. Scheduled recording will not be retrieved if its set time is up.



Click this icon to select file type.



Update: Click this icon to update software.

Note: System will reboot after being upgraded. Before reboot is finished (approx. 40s of dark screen) do not cut off the power, in case the device will not start due to upgrade failure.



Factory Default: "Confirm to reset?" Click this icon to restore factory setting.

8. Recording Time

There are 3 levels of image quality available: high, middle and low. The recording time for different image quality is as follows (4 x 128G micro SD cards to record 4 channels):

Chart 1

Image Quality	Recording Time (H)	
	PAL	NTSC
Low	448	372
Middle	328	296
High	164	144

The 3 levels of resolution for different image quality is as follows (the high image quality has the same resolution as the middle, but has twice of the bit rate):

Chart 2

Image Quality	Resolution	
	PAL	NTSC
Low	352 × 288	352 × 240
Middle	704 × 576	704 × 480
High	704 × 576	704 × 480

RESOLUTION—QUALITY COMPARISON



Pictures above are an example of the image quality and resolution selected.

Based on 10 hr.workshift the days of recording before video is overwritten on SD Card.

<u>Image Quality</u>	<u>Recording Time (H)</u>	128GB SD Card		
		24 hr. day	10 hr. day	8 hr. day
LOW	372 hrs	15.5 days	37.2 days	46.5 days
MEDIUM	296 hrs	12.3 days	29.6 days	37 days
HIGH	144 hrs	6 days	14.4 days	18 days
64GB SD Card				
24 hr. day				
LOW	372 hrs	7.75 days	18.6 days	23.25 days
MEDIUM	296 hrs	6.15 days	14.8 days	18.5 days
HIGH	144 hrs	3 days	7.2 days	9 days
32GB SD Card				
24 hr. day				
LOW	372 hrs	3.88 days	9.3 days	11.3 days
MEDIUM	296 hrs	3.08 days	7.4 days	9.25 days
HIGH	144 hrs	1.5 days	3.6 days	4.5 days

<u>Image Quality</u>	<u>Resolution</u>
LOW	352 X 240
MEDIUM	704 X 480
HIGH	704 X 480

The class of micro SD card is higher than or equal to class 6. The maximum bit rate (for total 4 channels) is less than 10Mb/s.