SD4FHD & SD4FHW

User Manual

January 1, 2026 Version 1.1

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30+ Years of Fleet Driver Safety System Sales & Service Experience

Before installing and using, be sure to read the Manual, then you will properly use and protect your machine. The first part of the statement concerns the matters to be attention to before installing and using.

- **Attention**
  - To protect your rights, before using and installing, please carefully read the contents of the manual.
  - This product is used for car inside, in order to prevent short-circuit or the risk of electric shock, do not make the machine in the rain or humidity environment.
  - Event of any solid or liquid into the machine, please disconnect the power of the machine immediately, and ask the qualified technical staff to check, then restart it.
  - The product is high-tech equipment; machines can not be repaired by users even very small original part. Once failure occurs, please ask for the qualified technical personnel, or contact with the dealer. Do not repair it by users themselves.
  - Due to the differences in the storage media (HDD and SD card) of each brand, this product is not guaranteed to be compatible with all storage media. When users select a storage medium, they should purchase a small amount of the product and then purchase it in batches. For example, due to their own incompatible storage Due to media problems, our company does not assume any responsibility.
- **Installation Environment**

1 9-36V DC power supply, please confirm the local power supply before power on.

2 If the machine were not used for a long time, please completely disconnect the video's power supply.

3 Please select the appropriate location for the installation of the machine, where the air can flow freely around the machine to avoid overheating or water inflow.

4 Machine can not be installed near the radiators, or near the ventilation road which is near heat, or directly under sunshine, or too much dust, or rain water, or near the area where the mechanical vibration or impact happens.

- **Package List**

Name	Quantity
SD card Mobile DVR	1
User Manual	1
Certificate of approval	1
Remote Control (not include battery)	1
Connecting Cable	3
Key	1

Note: There will be no additional announcement when the specification or parameters update.

Contents

1 Product Overview

The four-channel embedded digital SD card video recorder is designed for car safety. It uses embedded processor and embedded operating system, combined with video / audio compression / decompression, GPS, car recorder, and the capacity SD card storage technology to confirm the high intelligence and high stability. Widely used for bus, ship, train, and other areas of security.

2 Basic functions

2.1 Audio/Video Compression Format

The video adopts latest IS014496-10 (H.264/265) video compression technology, high compression rate to ensure a better image quality under less storage; the audio adopts G711A compression method, output a better voice with low distortion.

2.2 Audio/video recording mode

- Compression format
  The audio video data are stored through special files, encrypted to prevent data loss under frequent power failure circumstances.
- Compression stream
  Image quality with 14 levels and adjustable (192kbps--8.0Mbps/channel).
- Storage
  Support 2xSD card,and up to 512GB each, auto overwritten and cycle storage.

2.3 Image quality when monitoring, recording, playback

- Resolution
  1080P: Monitoring: 1920*1080/CH; Recording: 1920*1080/CH; Playback: 1920*1080/CH
- Frequencies
  The monitoring, recording and playback are all with 25fps PAL or 30fps NTSC
- Horizontal resolution for monitoring
  More than 270TV lines per channel.
- Horizontal resolution for playback
  More than 270TV lines per channel.

2.4 Total Resources

4CH AHD 1080P:

- Support 4 channels 1080P(1920*1080)simultaneous recording, up to 120fps.
- Support 4 channels 1080P(1920*1080)simultaneous playback(This performance may degrade when the device is connected to the network), up to 120fps.

2.5 Audio video synchronous recording

- Support video,audio,GPS positioning data synchronous recording,support synchronize playback of video,audio data in local.The audio,video and GPS positioning data can be played back simultaneously by software which installed on computer.

2.6 Access detection

- After enable the motion detection to trigger the record,the record will start when the camera detect a motion event in its area.Alarm trigger,detection area size,area location and number, the sensitivity of the alarm and other functions, all can be set up.

2.7 Signal loss alarming function

- When the video signal gets lost, the device will send alarm signal via internet. Responding in less than 5 seconds with log information. NOTE this function will not work when a channel is not in recording status or if a channel is displaying in full screen.

2.8 Alarm linkage

- Support 4CH alarm input (9-36v high level voltage to trigger);1CH alarm out (by relay, max. 500mA, NO);When the alarm is triggered,the audio recording will be started automatically (30-330s, adjustable).Alarm out will close for (5s-900s, adjustable) and send alarming signal, responding in less than 1s.

2.9 Alarm Pre-record

- Alarm video mode, alarm support pre-record 5s-60s video, audio, positioning data.

2.10 Full duplex

- Under full loading status, users can index, playback the recorded data with no frame loss.

2.11 Malfunction alarming function

- When the DVR fails,the alarm out will be triggered,external alarms will be continuously triggered for 5 minutes at least.

2.12 Self-test the status and self-recovery

- When the device is working,the "RUN" indicator will constantly flashes and the system will keep checking the working status of the device.Recovery will take less than 3 minutes after the device crashes.

2.13 Front-end device control and multi-channels monitor and switch

- The DVR can control PTZ cameras through default protocols (RS-485, PELCO-D, 9600 baud rate), 4 channels real time, switchable monitoring mode.

2.14 Networking

- Combining the CMS software with built-in 3G/4G module,the car can be monitored remotely.

2.15 Data backup

- Downloading the SD data remotely through network.
- To backup the SD data into computer via SD card reader.Support download and play the media data via our unique DVR player software.Users can also switch the SD files into universal AVI format to make it workable in other players.

2.16 Authority, encryption, data safety

- Enter the DVR by password, default for "6666". Data is stored in a special file system to ensure it’s encrypted and safe..

2.17 Log function

- The log includes the alarming and malfunction information, stored into SD card. It can be checked via computer.

3 Features

3.1 Operating system

- Embedded Linux operating system, high stable, free from virus.
- English/Chinese menu switchable.
- Graphical user interface

3.2 Compression format

- H.264/265 format: more excellent frame rate, quality image output

3.3 Monitoring and Recording

- Monitor:4*1080P(1920*1080)/720P(1280*720)/960H(960*576)
- Record: PAL 100fps, NTSC 120fps, full real-time 4CH D1,960H,720P,1080P recording.
- Record mode:by Event,Real Time, Schedule.
- Support 4CH video and 4CH audio meanwhile recording.
- Record image quality: 14 levels adjustable
- Video recorded in special file system to ensure lifespan and safety of SD card.
- Reliable evidence with unchangeable audio/video data.

3.4 Index and Playback

- Support index and playback by time.
- Support 4CH audio, 1CH video(any channel can be chosen), index and playback at the same time, support amplifying in one channel.
- Data can only be played by DVR playback software

3.5 SD card storage and data backup

- Support two SD cards,and up to 256GB each.
- The SD card data can be backed up via PC software.

3.6 Control

- Dual MCU control, to ensure DVR stability.
- Support remotely control by remote controller

3.7 Others

- Upgrade through SD card, easy maintenance.
- Protect by password, to avoid data damage.
- Delayed shutdown: default 5s, up to 24 hours
- Anti-pulse and low voltage protection
- Real-time timer
- Anti-shock for the PCB panel and parts.
- Watch dog function to avoid system crush.

3.8 Active Safety Assisted Driving System

3.8.1 DSM Driver Status Monitor

Fatigue Driving Alarm：DSM Intelligent Sensing Camera can detect abnormal physiological reactions of the driver, such as yawning, continuous squinting, etc. The MDVR will remind drivers of driving safety through voice alarm automatically.

Answering Phone call Alarm: If the driver is detected answering a phone call during driving , the DSM will see it as Answering Phone call Alarm and there will be voice alarms.

Distracted Driving Alarm: The driver does not look straight ahead (look around or lower the head), the alarm threshold value of not looking straight ahead will be left and right forty degrees, up and down forty degrees. There will be voice alarms if the alarm is triggered.

Abnormal Driver Alarm: The DSM will verify the driver's identity in the case of vehicle start-up, driving process, timed capture, etc. If the captured static images do not match that of database, it will trigger the Abnormal Driver Alarm. And there will be voice alarms if the alarm is triggered.

Smoking Alarm: When the DSM detects the driver's smoking actions, it will trigger the alarm, the actions of cigarette in the mouth and in the hand will trigger this alarm. And there will be voice alarms.

Function Failure Alarm(DSM/ADAS Blocked Alarm): The system will trigger an alarm when it detects that the camera is blocked. And there will be voice alarms.

3.8.2 ADAS Advance Driving Assistance System

Lane Departure Warning (LDW): ADAS intelligent sensing will keep monitoring the current lane position of the vehicle in real time. If generating lane change, over line, and the turn signal is not activated in the process of driving, the system will trigger the lane departure alarm and voice warning.

Headway Monitoring Warning(HMW): Based on the configured speed (30KM/H), if the vehicle is less than the safe distance from the vehicles in front, the system will trigger the first level collision alarm and there will

be voice warnings.

Forward Collision Warning (FCW): Based on the configured speed (50KM/H), if the vehicle is less than the safe distance from the vehicle in front, the system will trigger the secondary collision alarm and there will be voice warnings.

Pedestrian Collision Avoidance Warning (PCW): Camera will recognize and analyze the pedestrian, if the TTC(Time To Collision) is less than 2.7 seconds, the PCW will be triggered and there will be voice alarms.

3.8.3 BSD Blind Spot Detection[Option]

BSD blind spot detection category: Pedestrians, non-motorized vehicles (bicycles, motorcycles, battery-motorcycles, tricycles, etc), can be installed in front, sides and back.

BSD blind spot detection range:

When the vehicle is going straight.

1) Detection area: The lateral distance of vehicle right side is 10 meters, the distance is 20 meters from the camera installation position forward longitudinal.

2）Warning area: The lateral distance of vehicle right side is 0.8 meters (configurable,not over 10m), the distance is 15 meters from the camera installation position forward longitudinal (Configurable, not over 20m).

When the vehicle is turning right.

1) Detection area: The lateral distance of vehicle right side is 10 meters, the distance is 20 meters from the camera installation position forward longitudinal.

Warning area: The lateral distance of vehicle right side is 4 meters (configurable, not over 10m), the distance is 15 meters from the camera installation position forward longitudinal (Configurable, not over 20m).

The system can work at vehicle speed 0 to 60km/h, alarm range: 5 to 50km/h (configurable).

Illumination (>10 lux) can work normally, alarm accuracy >99% is based on the rate of missing report <5%, static distance measurement error is less than 5%.

3.8.4 ADAS/DSM working environment of Intelligent sensing

Type	Function	Content
DSM Intelligent Sensing	Fatigue Driving	★ Able to work normally under all working conditions (such as day, night, down light, side light, back light) ★ Miss detection rate less than 5% and false alarm rate less than 10%, total time delay of identification and alarm less than 2s
	Distracted Driving	★ Able to work normally under all working conditions (such as day, night, down light, side light, back light) ★ Can work normally when the driver is wearing a hat, glasses, sunglasses ★ Miss detection rate less than 5% and false alarm rate less than 10%, total time delay of identification and alarm less than 1s
	Abnormal Driver	★ Able to work normally under all working conditions (such as day, night, down light, side light, back light) ★ Enabled only when the vehicle is moving ★ Miss detection rate less than 5% and false alarm rate less than 10%, total time delay of identification and alarm less than 2s
	Smoking	★Able to work normally under all working conditions (such as day, night, down light, side light, back light) ★Can work normally when the driver is wearing a hat, glasses, sunglasses ★Miss detection rate less than 5% and false alarm rate less than 10%, total time delay of identification and alarm less than 2s
	Answering Phone call	★Able to work normally under all working conditions (such as day, night, down light, side light, back light) ★Can work normally when the driver is wearing a hat, glasses, sunglasses ★Miss detection rate less than 5% and false alarm rate less than 10%, total time delay of identification and alarm less than 2s
	Camera blocked	★Alarm if the lens is detected to be blocked for more than 10s ★Miss detection rate less than 5% and false alarm rate less than 10%, total time delay of identification and alarm less than 5s
	Infrared blocking sunglasses failure alarm	★Able to work normally under all working conditions (such as day, night, down light, side light, back light) ★Can work normally when the driver is wearing a hat, glasses, sunglasses ★Miss detection rate less than 5% and false alarm rate less than 10%, total time delay of identification and alarm less than 2s

ADAS Intelligent Sensing	Lane Departure Warning (LDW)	★The alarm will be triggered if the driver does not turn on the turn signal of the correct direction and change lane or direction. ★The alarm will not be triggered if the driver turn on the turn signal of the correct direction and change lane or direction. 。 ★Lane lines support yellow and white lines,support dashed lines, solid lines, dashed solid lines ★Normal road conditions when driving, should be able to detect the lane line in daytime, night, dusk and dawn and other lighting conditions ★Speed range:Effective when speed exceeds 30km/h ★Detection range: 100 meters during the day, 60-80 meters at night (depending on lighting conditions) ★Miss detection rate less than 5% and false alarm rate less than 10%
	Forward Collision Warning (FCW)	★Distance monitoring and warning, real-time monitoring of the distance between the car and the car in front, when the distance is less than the safe distance will trigger the alarm ★No more alarm when brake pedal is depressed ★Normal road conditions when driving, should be able to detect the lane line in daytime, night ★Detection range: 110 meters during the day, 60-80 meters at night (depending on lighting conditions) ★Miss detection rate less than 5% and false alarm rate less than 4%
	Pedestrian Collision Avoidance Warning (PCW)	★Pedestrian Collision Avoidance Warning PCW ★No more alarm when brake pedal is depressed ★Detection range: 70 meters during the day, 60-80 meters at night (depending on lighting conditions) ★Pedestrians can be identified while standing, crouching, riding, and wearing raincoats ★Average recognition speed within 0.16 seconds ★Miss detection rate less than 5% and false alarm rate less than 4%
	Headway Monitoring Warning (HMW)	★Real-time monitoring of the distance between the car and the car in front, when the distance is less than the safe distance will trigger the alarm ★No more alarm when brake pedal is depressed ★Normal road conditions when driving, should be able to detect the lane line in daytime, night ★Detection range: 110 meters during the day, 60-80 meters at night (depending on lighting conditions) ★Miss detection rate less than 5% and false alarm rate less than 4%

4 Technical Parameters

Items	Device parameters	DVR Performance index (Advanced)
Name	Product Name	**4CH AHD SD card**
System	Operation System	Linux
	Operation Interface	Graphical Interfaces, Chinese/English/Portuguese/Russian/French/Turkish optional
	File System	Proprietary Format
	System Privileges	User Password
Video	Video Input	4ch Independent Input: 1.0Vp-p，75Ω.Both B&W and Color Cameras
	Video Output	1 Channel PAL/NTSC Output, 1.0Vp-p，75Ω， Composite Video Signal
		1 Channel VGA Support 1920*1080 ，1280*720 ，1024*768 Resolution
	Video Display	1 Or 4 Screen Display
	Video Standard	PAL:25fps/CH;NTSC:30fps/CH
	System Resources	PAL:100 Frames; NTSC:120 Frames
Active Safety Assisted Driving	DSM	Support 1CH DSM(Driver Status Monitor) video input, support safety alarm of yawning, calling, smoking,video blocked,Infrared blocking sunglasses failure,device malfunction, etc.
	ADAS	Support 1CH ADAS(Advance Driving Assistance System) video input, support safety alarm of LDW, THW,PCW,FCW, etc.
	BSD(Option)	Support 1CH BSD(Blind Spot Detection) video input, support safety alarm of people, non-motorized vehicles(bicycles, motorcycles, electric bicycles, tricycles, and other traffic participants that can be seen the contours of the human body), including front, side and back.
Audio	Audio Input	4 Channels Independent AHD Input 600Ω
	Audio Output	1 Channel(4 Channels Can Be Convert Freely) 600Ω,1.0—2.2V
	Distortion and Noise	≤-30dB
	Recording Mode	Sound And Image Synchronization
	Audio Compression	G711A
Digital Processing & Storage	Image Compression	H.264/265 Fixed Code Stream
	Image Format	PAL:4*1080P(1920*1080) NTSC:4*1080P(1920*1080)
	Video Stream	192Kbps-8.0Mbit/s(channel)
	Video Taking Up Of Hard Disk	1080P:85M-3.6GByte/hour(H.265)
	Playback Resolution	PAL:1-4*720P(1280*720) or 1-2*1080P(1920*1080) NTSC:1-4*720P(1280*720) or 1-2*1080P(1920*1080)
	Audio Bitrate	4KByte / s / channel
	Audio Taking Up Of Hard Disk	14MByte / hour / channel
	SD Storage	Double SD card storage, Support up to 256GB each
	Image Quality	1-14 level adjustable
Alarm	Alarm in	4 Channels Independent Input. High Voltage Trigger
	Alarm out	1 Channels dry contact output
	Motion Detection	support
Network	Wire line Access	Can expand one 5pin Ethernet Port,can be converted to RJ45 port

Interface	Wifi	Can expand one WIFI Module(IEEE802.11 B/G/N) Inside
	3G/4G	Can Expand One3G/4G(FDD-LTE/TD-LTE/WCDMA/CDMA2000) Module Inside
GPS Interface	GPS	Can expand GPS/BD/GLONASS Module Inside
Extend Interface	RS232	RS232*1, it is convenient to connect with other vehicle equipment
	RS485	RS485*1, it is convenient to connect with other vehicle equipment
	Intercom	Can expand 1*MIC for Intercom function
	G-Sensor	Build-in G-Sensor Module
	CAN BUS	Not support, need to customize
Others	Power Consumption	DC9-36V 8W（without SD）
	Working Temperature	-40℃ ~ +70℃ / ≤80%
	Clock	Built-In Clock, Calendar
Packaging	Product Size	132(L)*137(W)*40(H)mm
	Product Weight	0.6KG(without SD)

Optional functions:

Basic Type (Pin Aviation Connector)

+A：GPS Function

+B：3G/4G Function

+E：LAN Port

+J：Fireproof Box

+L：Wifi hot-Spot

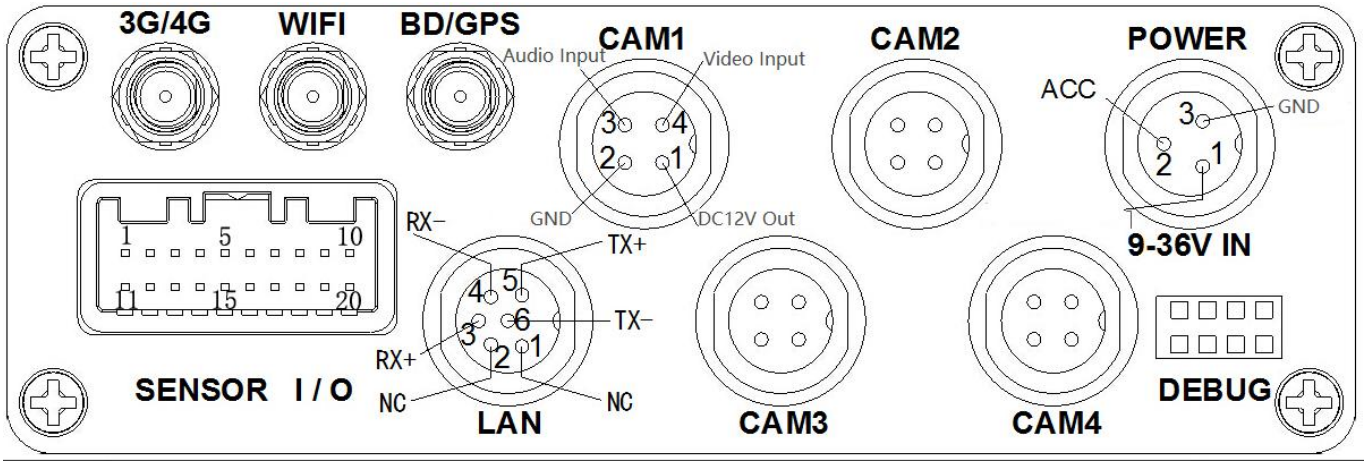
+W：Wifi Function

+R：Face recognition

+V: Built-in ADAS & DSM

5 Instruction of Installation

5.1 Instruction of External Interface Wiring



SENSOR Interface definition：

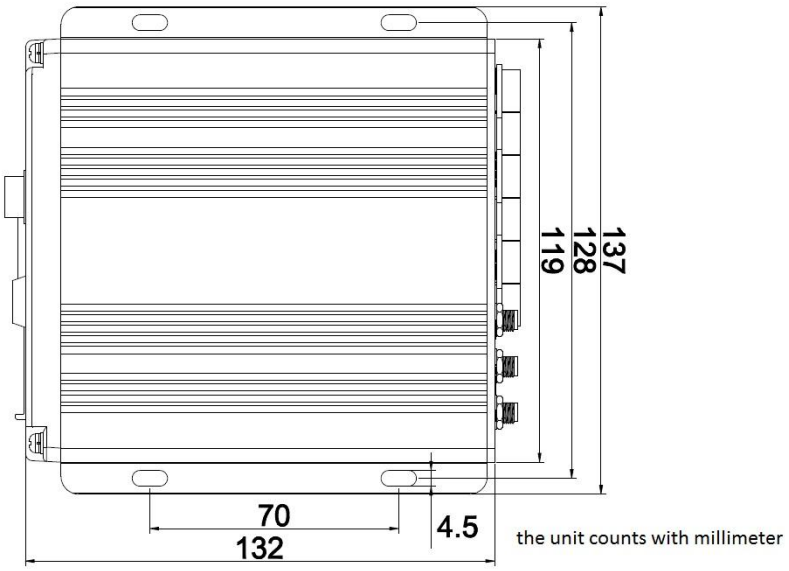
1 VGA_R_OUT	8 A-OUT	15 Alarm input 2
2 VGA_G_OUT	9 V-OUT	16 Alarm input 3
3 VGA_B_OUT	10 DC12V OUT+	17 Alarm input 4
4 RS485+	11 VGA -VS	18 (blank)
5 RS485-	12 VGA -HS	19 Alarm OUT
6 RS232_TX	13 GND	20 GND
7 RS232_RX	14 Alarm input 1	

Remarks:

- If the power supply is 12V, then the current of 12V output can be just 3A. So if there are more than this power, we suggest customers to get power for other cameras from the 12V vehicle power directly or use Our special car power supply.
- 3G/4G 、LAN interface are optional interface, available only when you listed in the order for this interface.
- Ports:

  DEBUG: Testing port **LAN:** Network port **SENSOR:** Alarm port

Description of the size



5.2 Instruction of SD Card Installation

Unlock the main board with key, make sure the "arrowhead" point to the left "turn on"  and then switch it to the "turn off".

Note: The lock in the main board can also control the power. When the main board is locked, it also means the machine starts. So before turn it on, please make sure all the cables in the system are well connected. Otherwise the power in the car once connected, it will damage the machine.

5.3 Installation Instructions of Active Safety Assisted Driving System

5.3.1 Installation Instruction of DSM

Normally,DSM intelligent sensing camera need to be installed directly in front of the driver's seat.However, in the specific project process, due to the different vehicle models, the installation position on dashboard is limited. For this reason, the DSM intelligent sensing installation position generally has three states:

1.Directly in front of the driver's seat.

2.30 degree shift to the left in front of the driver seat

3.30 degree shift to the right in front of the driver seat

As the pictures below

【Left Position】 【Directly in front】 【Right Position】

Adjust the angle of the camera by checking the image through the 7-inch screen,to ensure that the upper half of the driver's body is visible on the screen.

5.3.2 Installation Instruction of ADAS

Firstly,the vehicle driving position or parking position needs to meet the installation requirements as much as possible.Secondly,ADAS intelligent sensing installation location need to meet the following requirements

1.ADAS shall be installed at 1/2 of the front windshield and the same horizontal position of instrument panel, as the picture below.

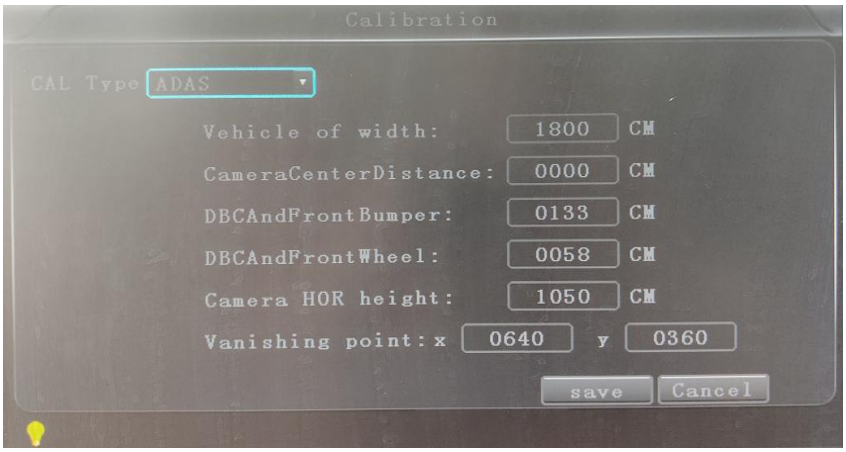
2.ADAS camera image must be half sky, half ground

3.ADAS camera angle can be adjusted by the side knob of the camera

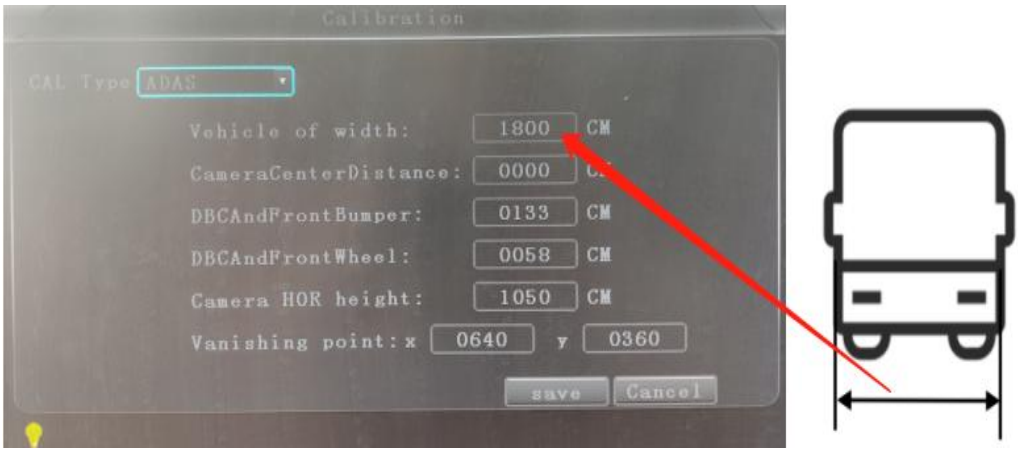
4.ADAS camera installation must be with wiring harness facing down.

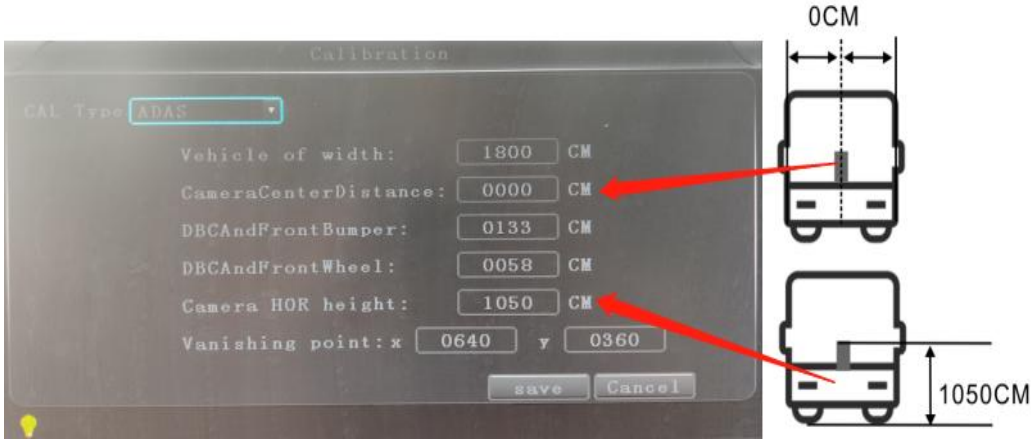
5.ADAS calibration

Access the setting via remote control:System-Alarm-Calibration.Then according to the field measurement value for the relevant parameters setting.



As the example below:





5.3.3 **Special Instructions of ADAS**

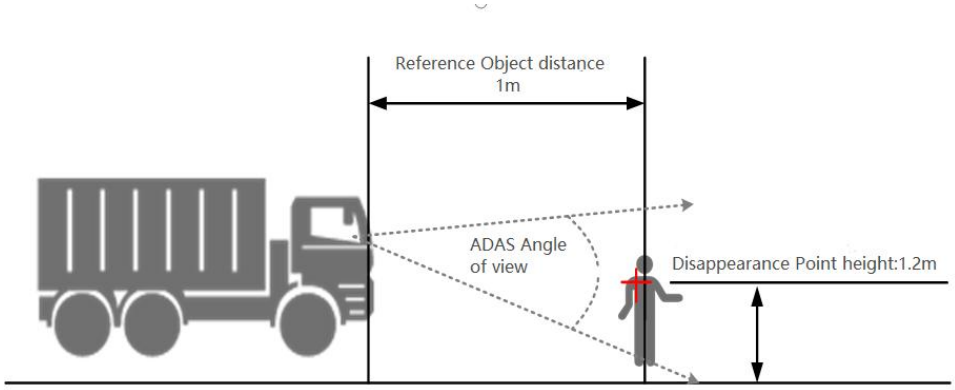
Because the installation is depending on the actual environment, there are some installation locations can not meet the requirements of the installation environment. For example, the vehicle is parked in the parking lot, there are obstacles or fences in front of the vehicle.

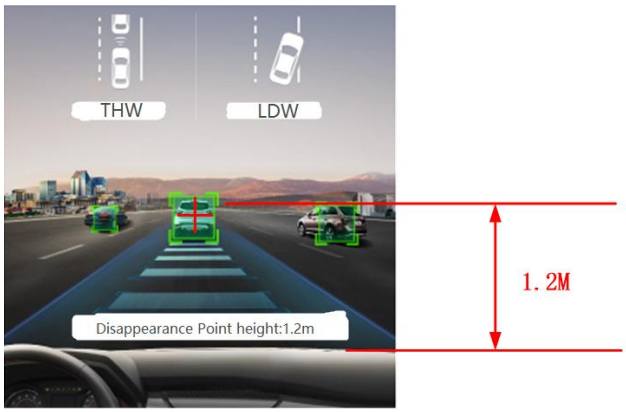
Based on this situation, when ADAS is installed, it can be done in the following ways

Calibration：

1. Man-made reference, 1 meter directly in front of the vehicle.

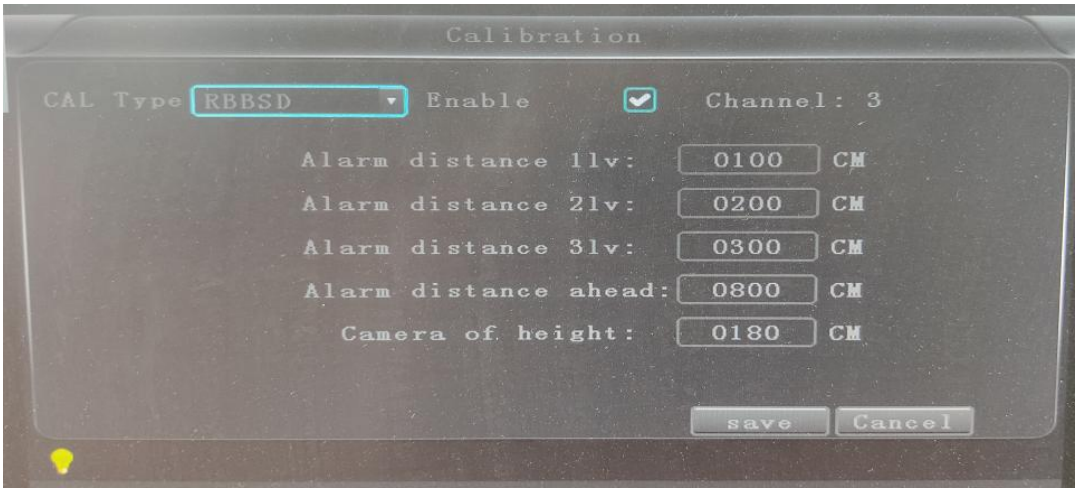
2. The ADAS virtual "cross" visual vanishing point is located at a height of 1.2 meters from the horizontal ground.



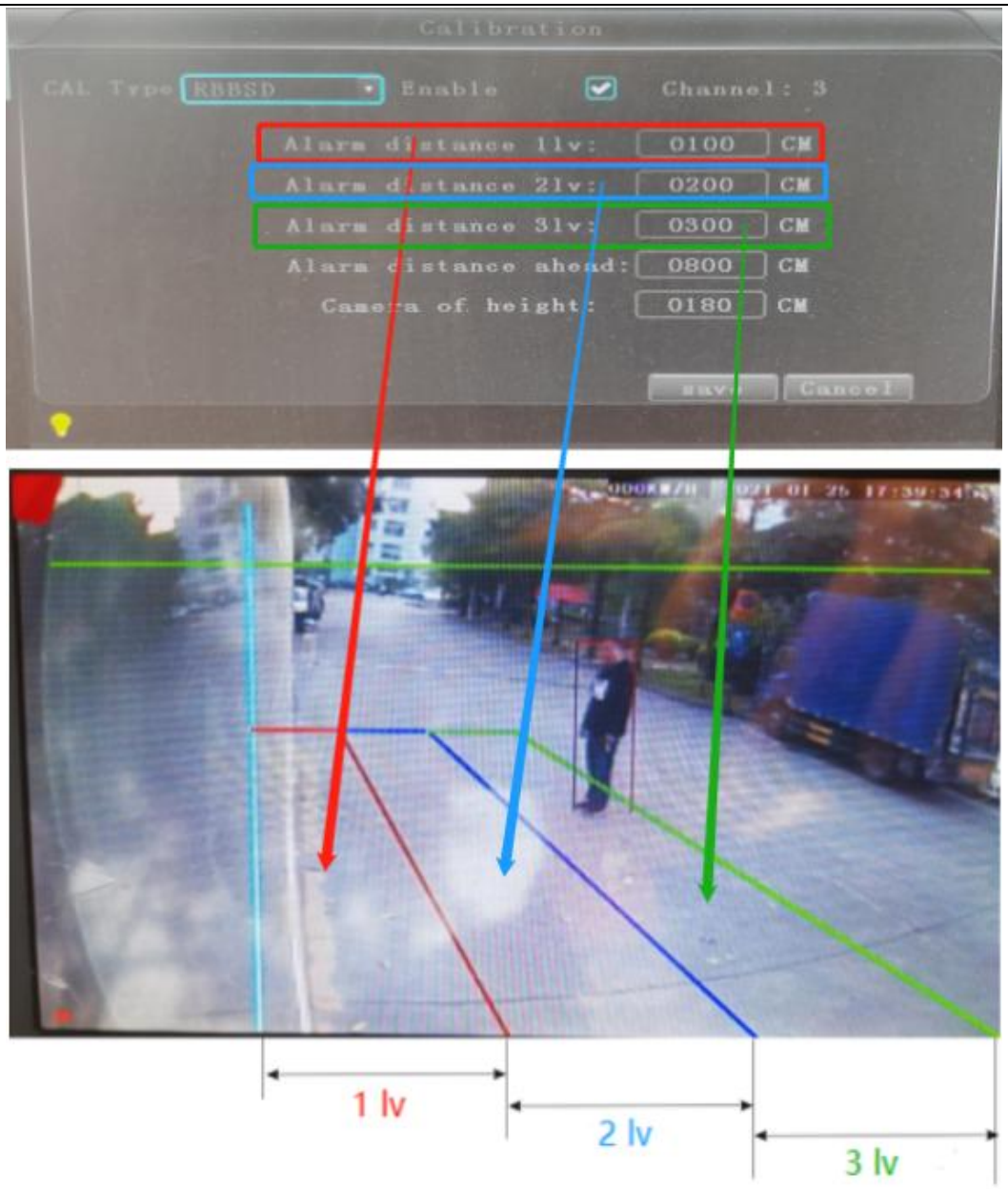


5.3.4 Installation Instruction of BSD

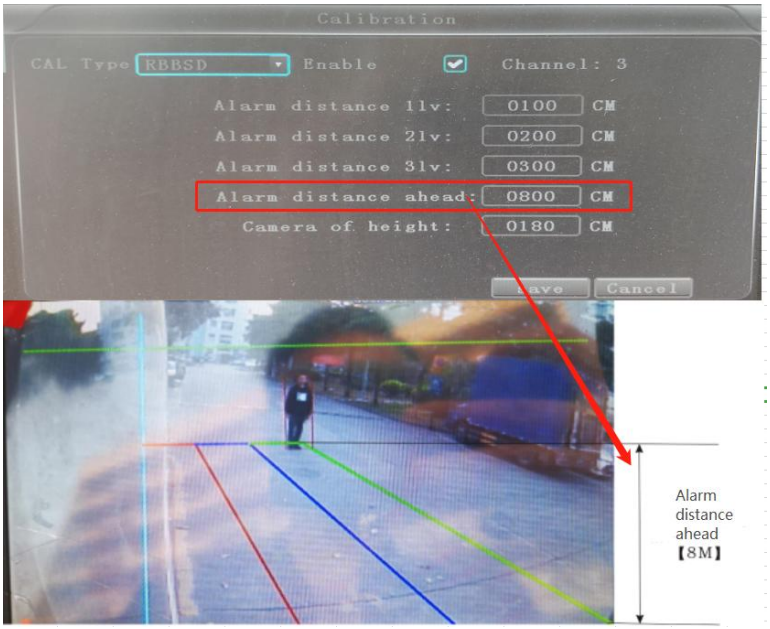
According to the field measurement value for the relevant parameters setting.



1.Set the alarm distance of different levels(1lv/2lv/3lv)(1lv-red box/2lv-blue box/3lv-green box(normally,we recommend to use the default setting)



2.Set the alarm distance ahead(the horizontal distance from the camera position to the front bumper of the vehicle)



3.Check the BSD video image,with some walking into the BSD alarm detection area one by one to confirm the different level alarms.There different alarm voices for different level alarms.

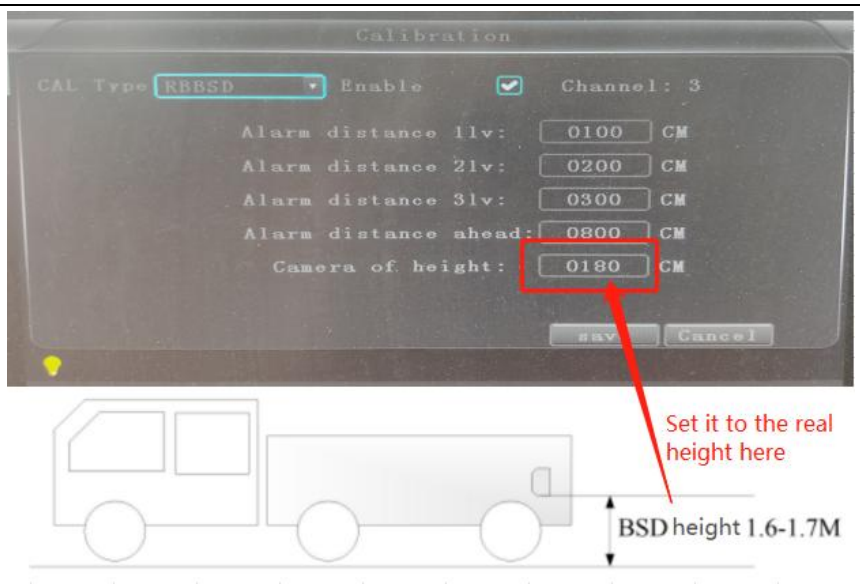
3lv(green box)

2lv(blue box)

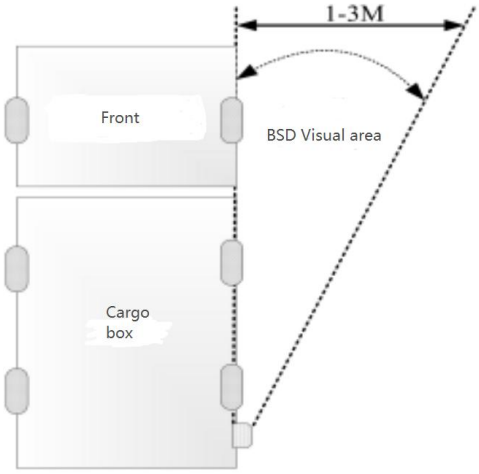
1lv(red box)

5.3.4.1 Installation Instruction of BSD

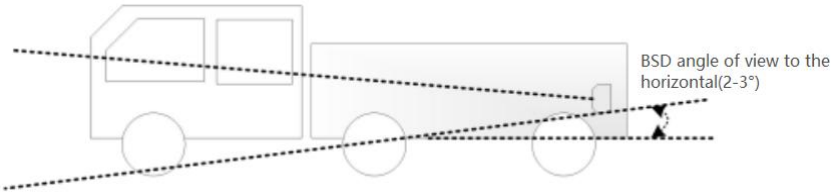
The best installation position of BSD camera is at the rear of the vehicle,with about 1.6-1.7 meter from the ground.



Width of view angle:At least cover the whole three alarm levels area distance.



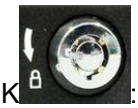
Horizontal visual angle:Keep the angle with the horizontal line at 2-3 degrees,BSD image visualization as horizontal as possible, avoid overhead view.



There will be a blue and green crosshairs on the monitor screen of BSD CH.Please keep the blue line parallel to the vehicle body side, and the green line as parallel to the horizontal plane as possible.

6 Instruction of Using

6.1 Instruction of Front Panel

- **LED**
  - ✓ **PWR LED**: lighting while work starts. Power LED on.
  - ✓ **GPS LED:** GPS working LED indicator
  - ✓ **4G LED**: 3G working LED indicator
  - ✓ **WIFI LED**: when wifi module is running the LED is on.
  - ✓ **SD1 LED**: When recording, playing, backup, LED is flashing
  - ✓ **SD2 LED**: When recording, playing, backup, LED is flashing
- **Key and Other Descriptions**
  - ✓ IR: infrared receiving window.
  - ✓ LOCK  : while removing the hard drive, use the key to unlock in order to remove the hard drive, unlock after machine's auto-disconnects the power, the power auto-connect after being locked.
  - ✓ 1: SD card1 slot
  - ✓ 2: SD card2 slot
  - ✓ A/V OUT: Audio/ Video output, Voice intercom input

6.2 Instruction of Remote Control Operation

		①Lead to menu；②Return
		Record
		Enter the sub-menu to set and confirm
		Playback on the mobile DVR
		①Stop when recording or playback; ②Delete
		Pause/Play when playback
		Fast-forward when playback video , play speed can be x2, x4, x8, press one time is x2, press two times is x4, and press 3 times is x8.
		Fast Backward when playback video, one press back for 10seconds
		For PTZ wiper（customized）
		Enter PTZ control mode.
		Control PTZ Zoom
		Control PTZ focus
		Mute key, to turn on or turn off audio output when playback videos with audio.(The audio input of the playback device must be connected to the audio output of the DVR.)
		① Exit when video playback or backup. ② Exit from PTZ mode.
		①Upward for MENU selection. ②"UP" direction for PTZ control mode.
		①Downward for MENU selection. ②"Down" direction for PTZ control mode.

		①Towards to left for MENU selection or MENU setup. ②"Left" direction for PTZ control mode.
		①Towards to right for MENU selection or MENU setup. ②"Right" direction for PTZ control mode.
		①screen zoom the first channel video when surveillance, record ② Enter password or set system password. ③shortcut keys, press the first key shortcut to switch the number 1, press the second key shortcut to switch the capital letter a, press the third key shortcut toggles the lowercase letters a, press the up and down keys to change value.
		①4 channel display when surveillance, record and playback. ②Enter password or set system password.
	Other numbers button	Press 1，2，3，4switch to CH1，CH2，CH3，CH4
	Other buttons	Not mentioned buttons, not in use.

Remark: When the DVR is in alarm condition, the remote control is invalid.

6.3 Menu Setting Instruction

(Our system support IR remote control and mouse to operation, This document introduces the operation of the remote control, the left click of mouse means to confirm or enter, and the right click means exit or return)

First press"  "key, then press"  " to enter the default password"6666",

then press"OK"to enter the main menu interface;

There are "System"、"Disk"、"Record"、"Playback"、"Network" and "Alarm" options, select the option by pressing these buttons"▲、▼、◀、▶" ,then press "OK"to enter.

- **System Settings:** includes options of "Setup", "Vehicle", "Other", "System info", "Log", "Config","Power".

- **Setup setting:** includes options of "Base", "User" , "Serinal", "PTZ", "GPS", "G-sensor" and "NTP".

- **Base setting:** Set the System time, TV system, Language,etc.

- ✓ **Date FMT:** Offer 3 display methods like "y/m/d, m/d/y, d/m/y" for personal habit.
- ✓ **DST(Daylight saving time):** Suitable for according countries or areas.
- ✓ **Date:** Adjust the date of SD recorder.
- ✓ **Time:** Adjust the time of SD recorder.
- ✓ **Language:** Set "Chinese", "English", "Portuguese", "Russian","Turkish"and "France", have to restart the DVR after setting.
- ✓ **Video Mode:** Set "PAL" or "NTSC", have to restart the DVR after setting.
- ✓ **Delay Time:** DVR Time-lapse turn off function after the car ignition off, the default time is 5S, and30s,1min,2min,5min,6min,10min,20min,30min,60min,2hour,4hour,8hour,16hour,24 hour,NEVER,The longest time is 24 hours, all could be set， have to restart the DVR after setting.
- ✓ **Speed unit**： You can choose MPH or KMH.
- ✓ **Volume**: Adjust the volume output of device.
- ✓ **Speaker:** Switch speaker on or off(Two-way intercom)

(Note: Select OK to save parameters, select Cancel don't save parameters)

Operating Way:

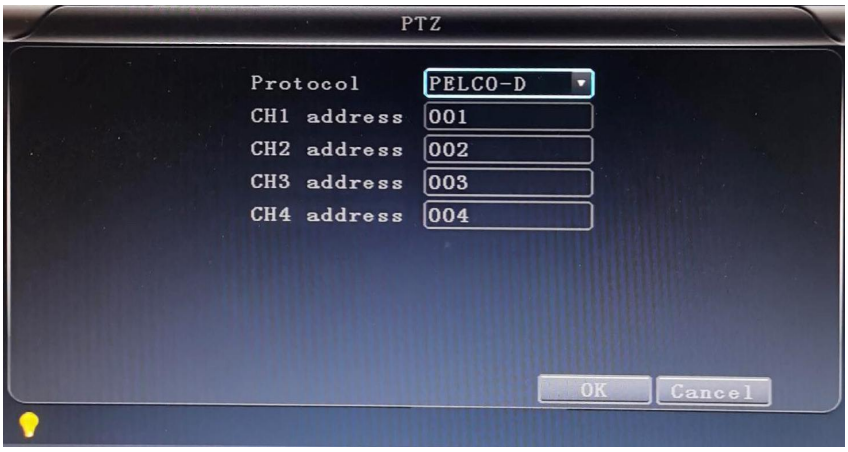
Enter the menu, press"、"to select the options ,then press"OK"to enter the modification mode，adjust the number by pressing"、、、"， press"OK"to save after adjustment。Press"MENU"key to exit after all settings done.

- **User settings:** Set up the user name and password of administrator and common.

- ✓ **Admin user:** set up the user name of administrator.
- ✓ **Password:** Enter the default password before changing the new password.
- ✓ **New password：** Enter the new password.
- ✓ **Common user:** Set up the user name of common(Common user means only can observe parameters of device,can't modify).
- ✓ **Password:** Enter the default password before changing the new password.
- ✓ **New password：** Enter the new password.
- ● **Serial setting:** This is Serial setting to set up the communication protocol with external equipment.

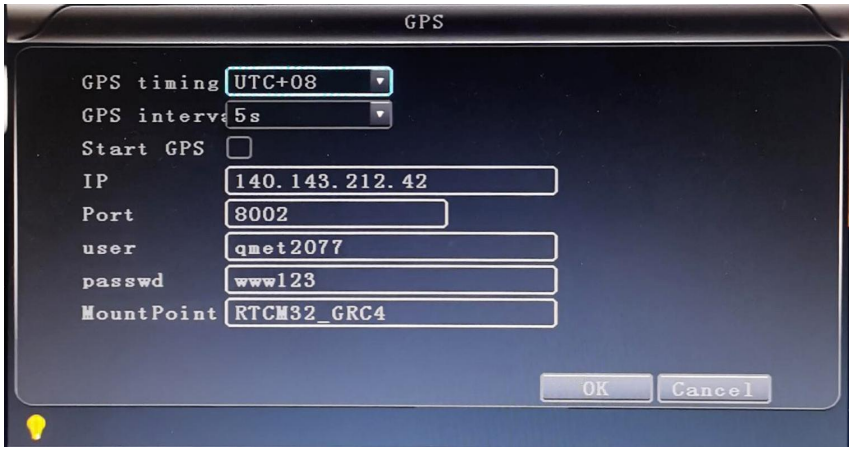
- ✓ **Serial port**: Click the drop-down button will show RS232-1/2、RS485-1/2 can be selected.
- ✓ **Bitrate**: Support 2400bps,4800bps,9600bps,19200bps,38400bps,57600bps,115200bps.
- ✓ **Data bit**: The default value is 8.
- ✓ **Stop bit**: The default value is 1.
- ✓ **Check bit**: The default value is none.
- ✓ **Functional**: Can select TS(Touch screen)、PS(People statistic) and so on.

- **PTZ setting: Adjust and control the camera with external PTZ device.**



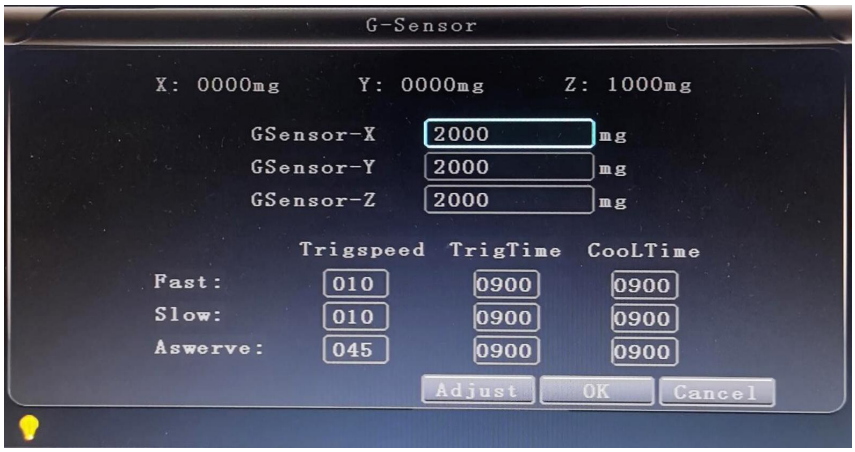
- ✓ **Protocols**: Default PELCO-D, support PELCO-D and PELCO-P.
- ✓ **Channel-Address**: Channel one-Device address.
- ✓ **Channe2-Address**: Channel two-Device address.
- ✓ **Channe3-Address**: Channel three-Device address.
- ✓ **Channe4-Address**: Channel four-Device address.

- **GPS setting**:



- ✓ **GPS Timing:** Different by countries, e.g: China for UTC+08
- ✓ **GPS Interval:** GPS Data upload interval, used with other system interface.
- ✓ **Start GPS:** Start GPS timing function.
- ✓ **IP:** GPS timing server IP.
- ✓ **Port:** GPS timing port.
- ✓ **user:** GPS timing server user name.
- ✓ **Passwd:** GPS timing server password.
- ✓ **MountPoint:** Mount point.

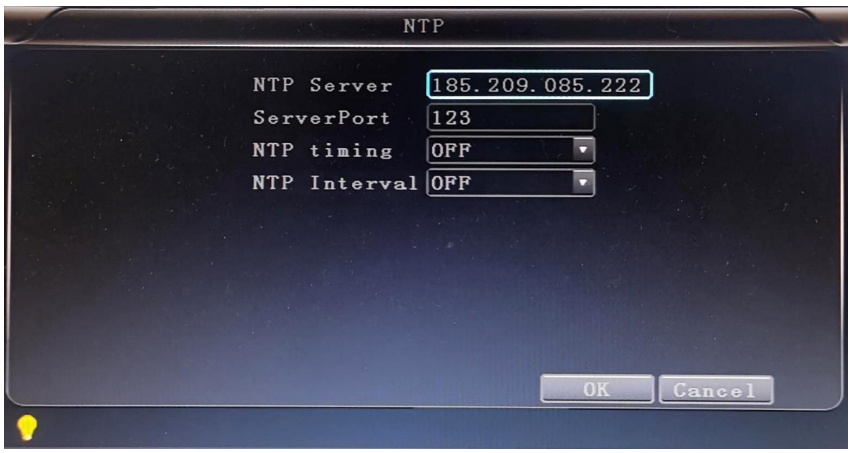
- **G-sensor setting**:



- ✓ **G Sensor-X**：2000mg(default value, this value will change accordingly if the X direction gravity accelerated speed value is changeable).
- ✓ **G Sensor-Y**：2000mg(default value, this value will change accordingly if the Y direction gravity accelerated speed value changeable).
- ✓ **G Sensor-Z**：2000mg(default value, this value will change accordingly if the Z direction gravity accelerated speed value is changeable).
- ✓ **Fast:** Can select Triggerspeed,TriggerTime and CoolTime.
- ✓ **Slow:** Can select Triggerspeed,TriggerTime and CoolTime.
- ✓ **Aswerve:** Can select Triggerspeed,TriggerTime and CoolTime.

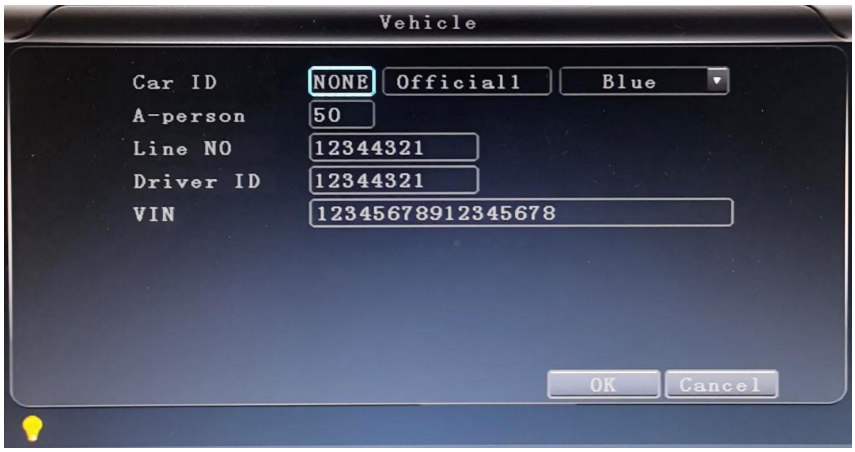
(note: Press the Adjust to adjust G-sensor parameters when first installed)

- **NTP setting**:



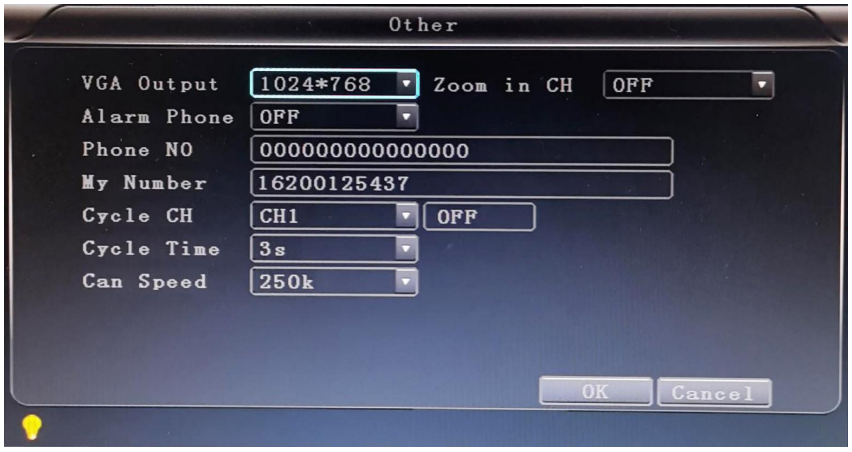
- ✓ **NTP server**: The NTP server IP.
- ✓ **Server port:** Default port is 123.
- ✓ **NTP timing:** Different by countries, e.g: China for UTC+08.
- ✓ **NTP Interval:** Time data upload interval, used with NTP server.

- **Vehicle information**: Details of car plate number, route and driver code.



- ✓ **Car ID**: Can be showed by English, Chinese simplified language, Numbers or common symbols.
- ✓ **A-person:** Setup the original carried person for the vehicles.
- ✓ **Line Num**: The driving route and code.
- ✓ **Driver ID**: Set up the driver code information.
- ✓ **VIN:** VIN number of vehicle.

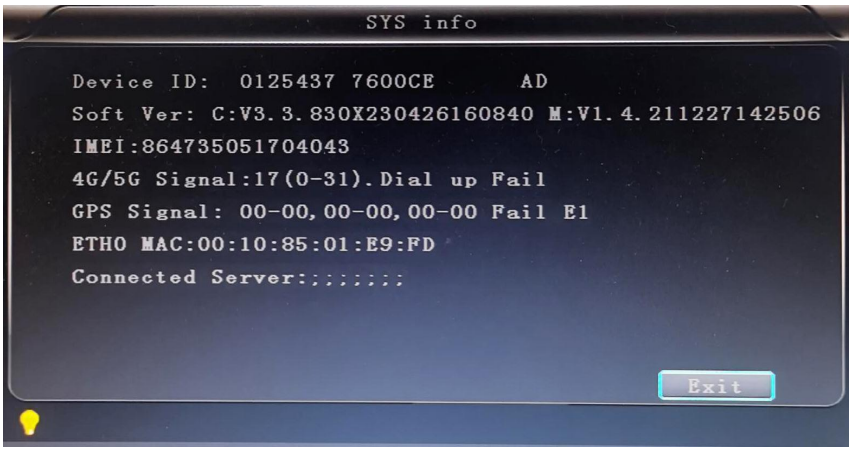
- ● **Other information:**



- ✓ **VGA Output:** 1920*1080,1280*720,1024*768,no output
- ✓ **Zoom in CH:** Choosing which channel to see when power on each time. This is also useful when backing the car. Eg .when you choose CH 1 as the Zoom , when you start the device , it will show CH1 in the whole screen .
- ✓ **Alarm Phone:** Set the action of alarm or not.
- ✓ **Phone number:** Click alarm function, set the phone number for alarm(usually use as the serial number for JT808 protocol).
- ✓ **Cycle CH:** Which channel will cycle display on the monitor
- ✓ **Cycle time:** How often will display the next cycle channel.
- ✓ **Can Speed:** CANBUS speed.

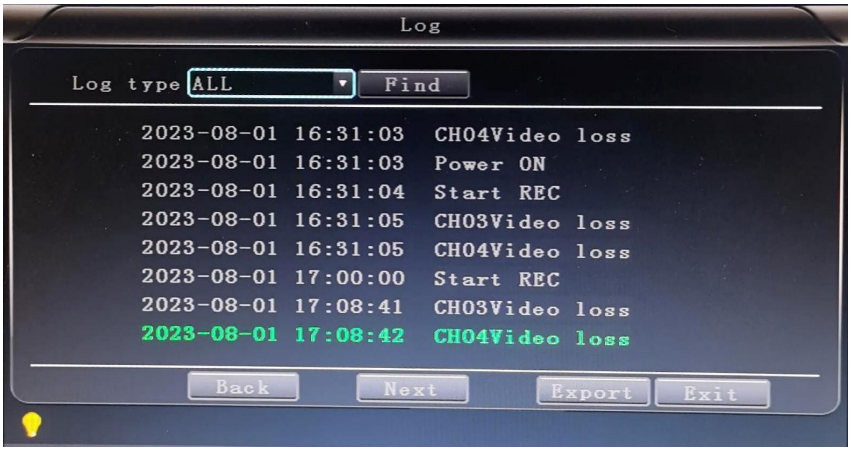
- ● **System information:** Display DVR hardware code number,software version

information(only view, couldn't be changed)



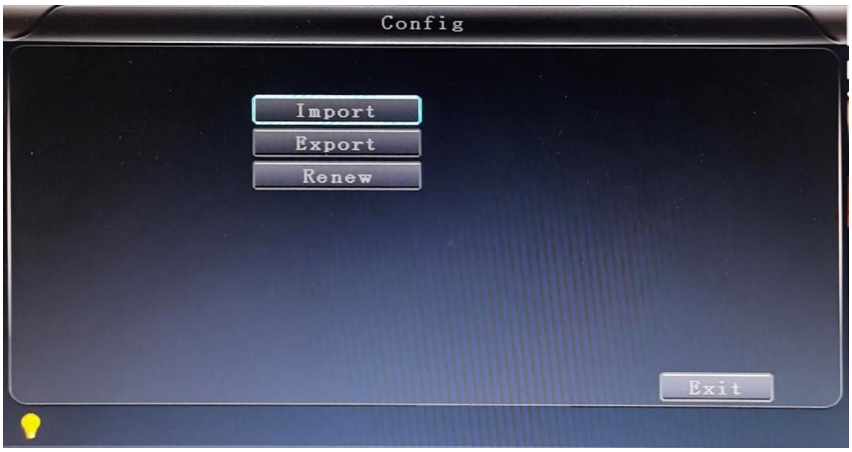
- ✓ **Device ID**: only for this DVR, the code is unique,7600CE is 3G/4G/5G module type, AD means support ADAS and DSM algorithm.
- ✓ **Soft Ver:** The firmware version and MCU version.
- ✓ **IMIE**: IMIE No. of 3G/4G/5G network or module.
- ✓ **4G/5G Signal:** Range 0-31(0 means no signal,31 means most stronger),if it is 99 means abnormal.
- ✓ **GPS signal:** AA-BB(AA: GPS No ;BB: GPS strength. Show signal strength of max3).
- ✓ **ETH0 MAC**: The MAC address
- ✓ **ETH0 IP**：The IP address
- ✓ **Connected Server:** The status of server connection.

- **LOG information**



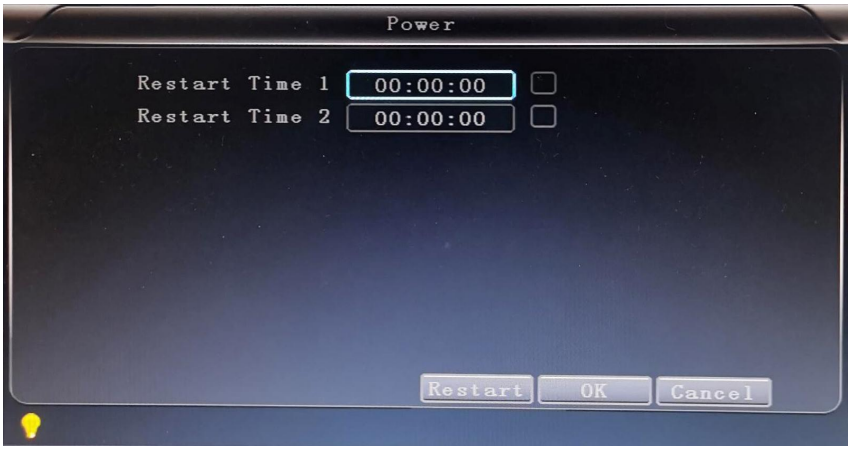
- ✓ **Log type:** User action log, alarm logging, equipment status log.

- **Configuration management**



- ✓ **Import:** Import the configuration parameters.
- ✓ **Export:** Export the configuration parameters.
- ✓ **Renew:** Restore the factory parameter.

- **Power: Timed restart device**



- ✓ **Restart Time 1:** Set the first restart time.
- ✓ **Restart Time 2:** Set the second restart time.

- **Disk：** Check and format

- ✓ **Disk Name：** Display the system recognized SD name.
- ✓ **Overwrite:** Choose YES or NO.

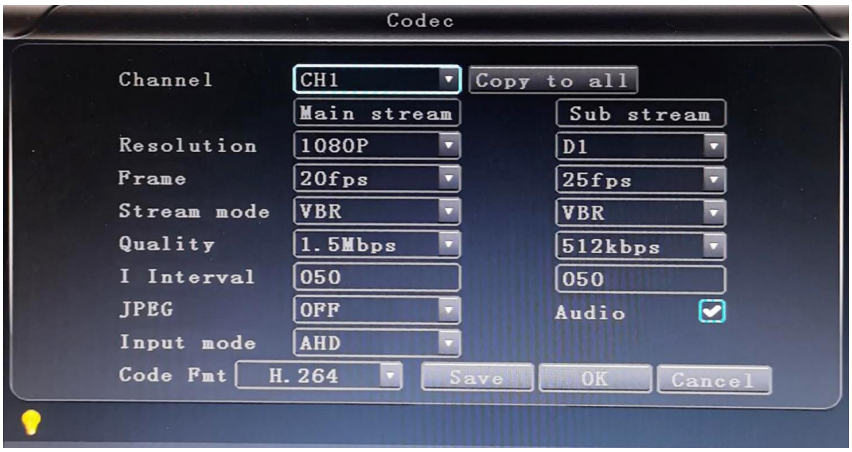
- ✓ **Mirror_Rec:** Can select Mirror_REC(Use sub-stream to mirror recording)/Main_REC(Use main-stream to mirror recording) or no mirror recording.
- ✓ **Total Size:** Display the total size of SD.
- ✓ **Free Size:** Display the remaining Capacity of SD.
- ✓ **Free record time:** It is only an estimate.
- ✓ **Format:** Format SD(only format the head files of SD).

Select this item，there is a format interface after press" 

",confirm to format, cancel to return the original interface.

- **Record:** The video files setting, It includes "codec" , "Channel" and "Record plan".

- **Codec:**



- ✓ **Channel: S**elect the channel setting (the information of each channel could be set independently)
- ✓ **Resolution**：CIF/HD1/D1/960H/720p/1080p；

  The left side is the local storage information, The right side is network transmission information; local "CIF,HD1,D1"is optional, only "CIF" for network transmission.
- ✓ **Frame**：1-25/30fps

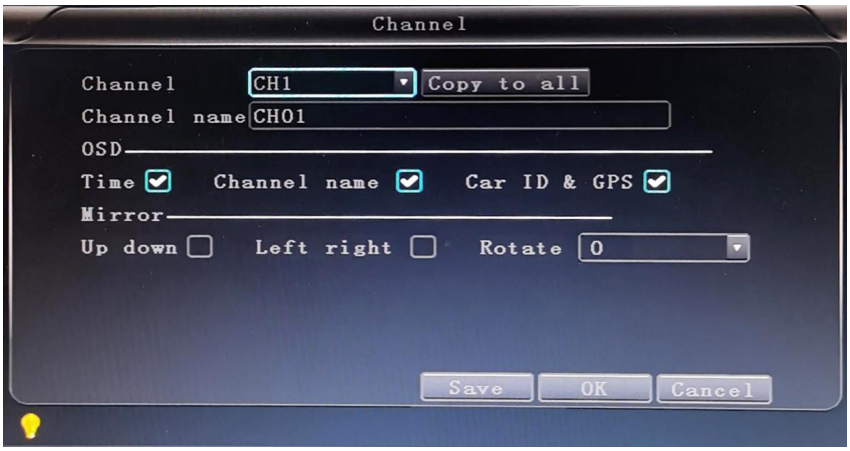
  The left side is local storage information, The right side is network transmission information.
- ✓ **Stream mode:** Constants Bit Rate and Variable Bit Rate.
- ✓ **Quality**：Video quality setting:

  The left side is the local video quality(total 14 grades，192kbps/320kbs/512kbps/768kbps/1.0Mbps/1.2Mbps/1.5bps/2.0Mbps/3Mbps/4Mbps/5Mbps/6Mbps/7Mbps/8Mbps).

  The right side is the network transmission quality(total 15 grades，32kbps/48kbs/64kbps/80kbps/112kbps/144kbps/192kbps/256kbps/320kbps/384kbps/512kbps/768kbps/1Mbps/1.5Mbps/2.0Mbps).
- ✓ **Audio**：Select to record audio or without audio.
- ✓ **I Interval:** Default is 050.
- ✓ **JPEG**：**S**et captured of time and interval, Select a Trigger for alarm triggering to capture, choice time 2s,5s,10s, 30s, 60s.
- ✓ **Input mode**：AHD DVR can choose AHD or analog, the other equipment can’t to be choosed.
- ✓ **Code Fmt:** Real-time recording file format,can select H.264 or H.265.
- ✓ **Copy to all:** Copy to all channels.

  Note: save after finished video parameter setting (have to restart the DVR after setting.)

- **Channel:**



- ✓ **Channel:** Select the channel setting (the information of each channel could be set independently).
- ✓ **Channel name:** The name of each channel.
- ✓ **OSD:** Choose to add the character information or not.
- ✓ **Copy to all:** Copy to all channels.
- ✓ **Mirror:** The image can be flipped up/down, left/right and rotate specific angel,like 0°,90°,180°,270°.

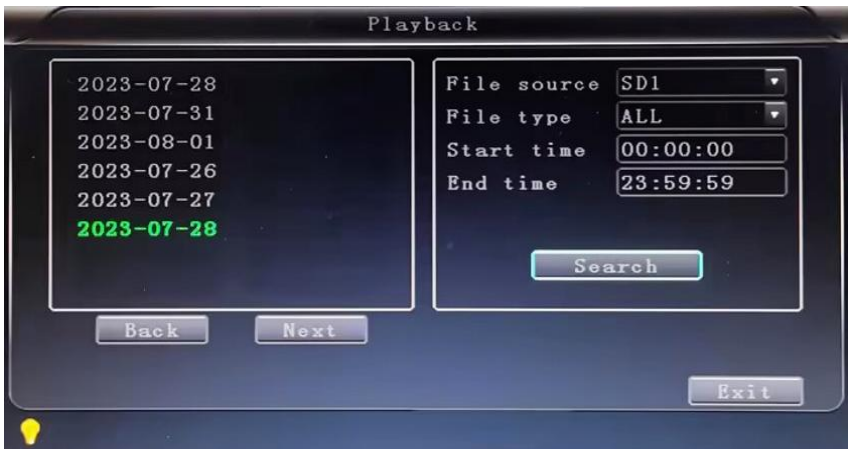
- **Record plan**

- ✓ **Channel:** Select the channel setting (the information of each channel could be set independently).
- ✓ **Record mode:** Real time and event or no record.
- ✓ **File length:** The packaged video files length setting(5/10/15/20/25/30/35/40/45/50/60 minutes optional).
- ✓ **Prerecord:** Before the alarm recording time(no,5s,10,15s).
- ✓ **Event REC time:** Alarm-triggered video duration (30-330s optional,30s unit).
- ✓ **Schedule:** The timer is timing recording,the alarm is alarm recording.
- ✓ **Copy to all:** Copy to all channels.

✓ **Save:** Save after finishing video parameter setting (have to restart the DVR after setting.)

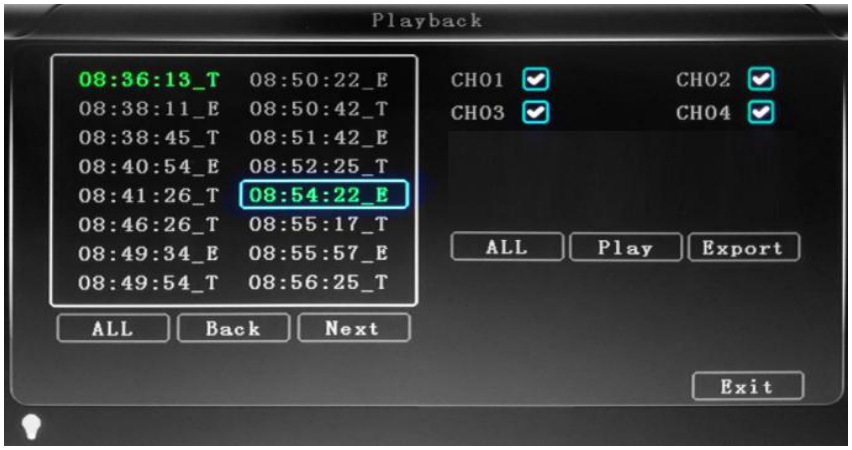
The operating method is similar to the "basic settings" operating.

- **Playback:** The recorded video Playback



There is video date in the menu, it will show the vide time after press "Search", choose the playback time range according to require time ,then press "Play "button to replay the video.

File format suffix "_P" is power off video file , suffix "_E" indicates an alarm trigger video files, suffix "_T" indicates an timing video files.



✓ **Left "ALL":** Select all video file to play.

✓ **Back:** Go back to the last page.

✓ **Next:** Next page.

✓ **CH01~CH04:** Select different channels to playback.

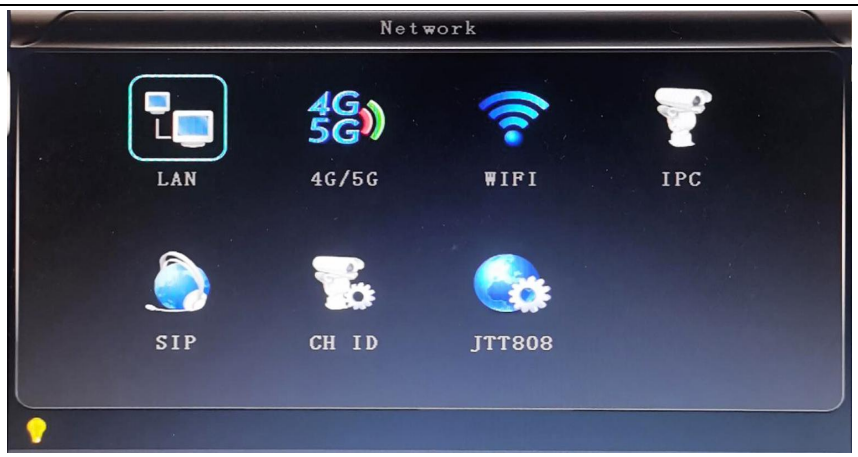
✓ **ALL:** Select all channel.

✓ **Play:** Select the video files and channel to replay.

✓ **Export:** Select the HDD video files backup to USB Disk.

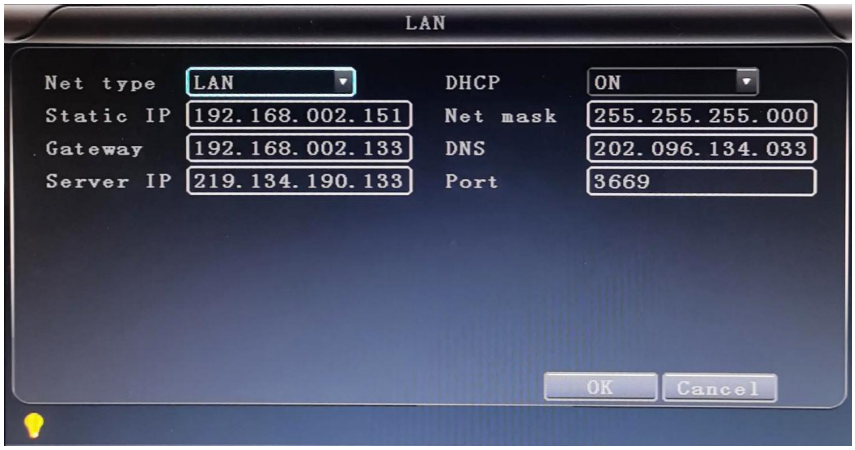
The operating method refers to "local video playback instruction"

■ **Network Setting: LAN, 4G/5G, WIFI, IPC,SIP,CH ID,JTT808**



- ✓ **LAN:** Connecting via RJ45.
- ✓ **4G/5G:** Insert 3G/4G/5G SIM card into the slot.
- ✓ **WIFI:** Connecting the network of WIFI.
- ✓ **IPC:** To connect the IPC camera Settings.
- ✓ **SIP:** Chinese government standard platform.
- ✓ **CH ID**: Chinese government standard platform.
- ✓ **JTT808:** Support device online on platform via JT808 protocol.

- **Local Network Setting（LAN）：**



- ✓ **Network Type:** LAN and 4G/5G-WIFI optional.
- ✓ **DHCP:** Automatically get the IP address(in order not conflict with the LAN, please enable ON, and also enable DHCP on the router, P.S, only one DHCP server can be enable in one LAN).
- ✓ **Static IP:** setup under LAN and WIFI mode.
- ✓ **Net mask:** Subnet mask under LAN or WIFI mode.
- ✓ **Gateway:** Gateway under LAN or WIFI mode.
- ✓ **DNS:** Please input when the server IP is DNS, and not necessary when IP is static.
- ✓ **Server IP:** If the units login on our server, please use cvideoview.com(convert to IP is

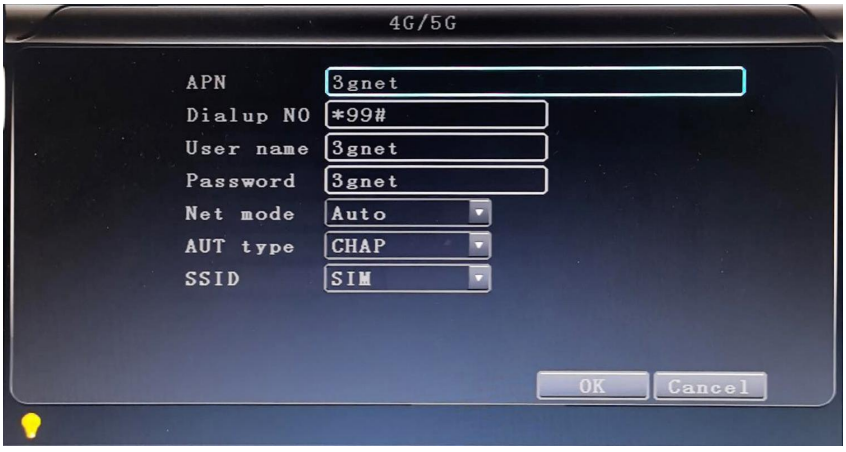
219.134.190.134), and if the units login on your own server, please use yours.

- ✓ **Server Port:** Keep it as default of 8101.

- **3G/4G/5G Network Setting:**

  - ✓ **Net type:** Select 3G-WIFI if you are going to use 3G mode.
  - ✓ **DHCP:** ON

  - ✓ Access into "**Network**"→"**4G/5G**"



  - ✓ **APN:** Access Point Name(You can get from your SIM card supplier).
  - ✓ **Dialup Num:** Get this info from your carrier.
  - ✓ **User Name:** Fill in if you have.
  - ✓ **Password:** Fill in if you have.
  - ✓ **Net mode:** Can select Auto,TD-LTE,FDD-LTE,TD-CDMA.WCDMA,CDMA2000,2G.
  - ✓ **AUT type:** Can select CHAP or PAP.
  - ✓ **SSID:** Can select SIM or ESIM(if you using ESIM function).

Note: please make sure you select the proper SIM card fit for 3G/4G module.

- **WIFI Setting:**

  - ✓ **Net type:** Select 4G/5G-WIFI when the type is under LAN.
  - ✓ **DHCP:** ON

✓ Access Network setup →"**WIFI**"

✓ **SSID:** WIFI router device name.

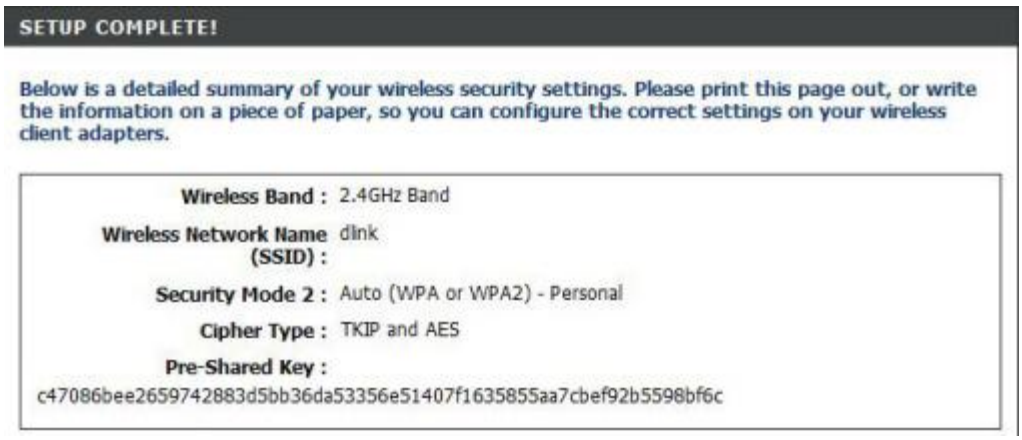
✓ **Password:** using password for SSID.

✓ **Certificate:** Support "WPA-PSK",can select WPA-PSK or WPA-PSK2.

✓ **Encryption:** Support "CCMP TKIP".

✓ **Wifi mode:** Can support to connect with wifi or host-spot.

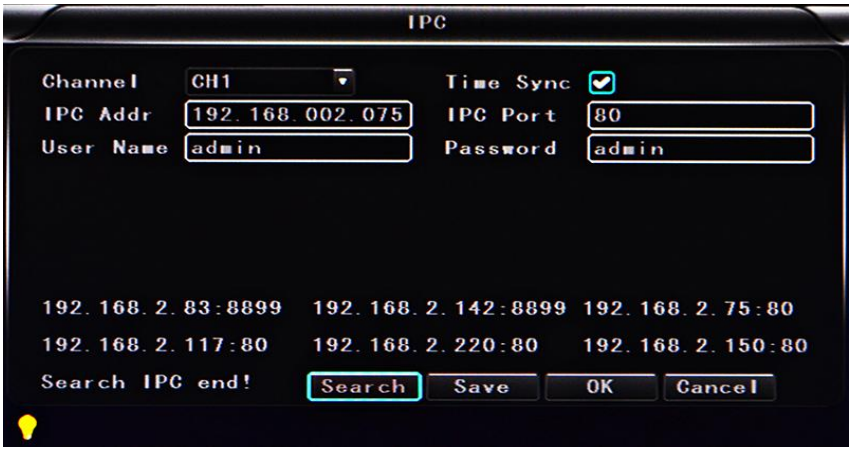
Access router, check its **"WIFI "**encryption.



Notes:

Please make sure the router WIFI encryption keep the same with the setup in MDVR if the units use WIFI.

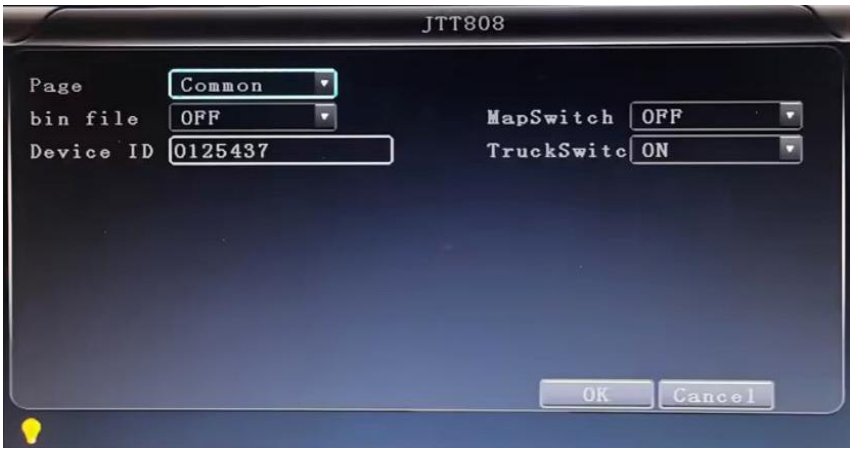
- **IPC Setting**(This function can only suit for Mobile NVR)



- ✓ **Channel:** Main channel , different channel set can choose.
- ✓ **Time Sync:** Turn on/off means if open the time synchronization between ipc and device.
- ✓ **IPC Addr:** Put and modify ipc address when the ip camera and device in one network area.
- ✓ **IPC Port:** The device port which connect with ip camera.
- ✓ **User Name:** The user name which connect with ip camera.
- ✓ **Password:** The user names password.
- ✓ **Search:** It is can search the local network ipc when click the search button.
- ✓ **Save:** Click the save button to keep the sets after set.

Note: the network type must be changed to LAN when connect with ipc.

- **SIP:** Foreign users can't use this standard, it's just suit for Chinese client .
- **CH ID:** Foreign users can't use this standard, it's just suit for Chinese client .
- **JTT808:** Support device online via JT808 protocol



- ✓ **Page:** Can select JT808 protocol link,include main、slave、slave1、slave2、slave3 and slave4,total 5 links,please use the main link if you only use one server.
- ✓ **Bin file:** Bin file upload or not.
- ✓ **MapSwitch:** Map switch on or off.
- ✓ **Device ID:** Device ID,can't be changed.
- ✓ **TruckSwitch:** Chinese standard,ignore it.

- **Alarm setting** ： Sensor alarm, Motion detecting alarm,other alarm,ActiveSafety and Calibration setting

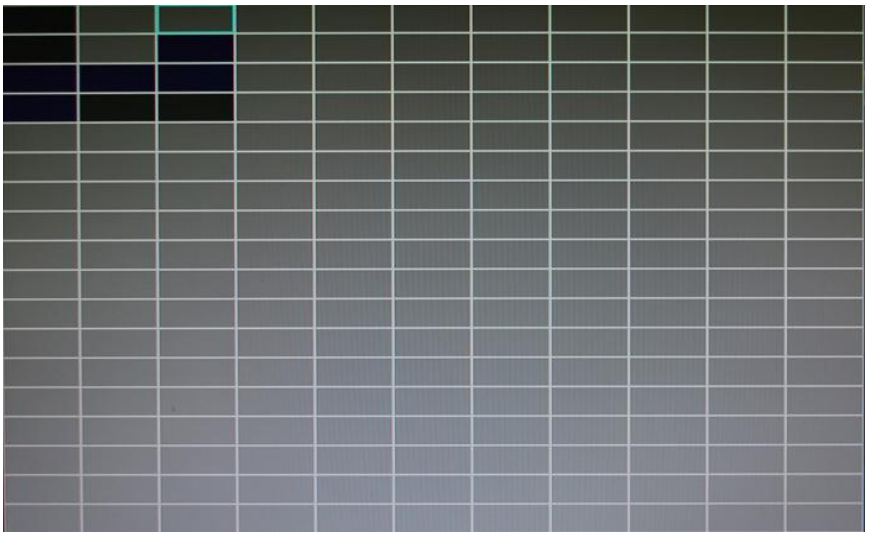
- **Sensor:** An external sensor alarms.
- **MD:** Motion detecting alarm.
- **Other:** Other alarm setting.
- **ActiveSafety:** Active Safety alarm setting
- **Calibration:** Active Safety alarm Calibration setting

- **Sensor Setting**

- ✓ **Channel:** Main channel , different channel set can choose.
- ✓ **Enable:** Turn on/off means if open the sensor alarm.
- ✓ **Sensor Name:** Put and modify the name of sensor.
- ✓ **Trigger level:** High or low level trigger the alarm.
- ✓ **linkage:** Set up ON/ OFF video linkage function.
- ✓ **OSD:** Choose whether to overlay alarm information.
- ✓ **Lock:** Won't cover this alarm video after choose this lock.
- ✓ **Alarm:** Choose whether to overlay alarm information.
- ✓ **Alarm Out:** Choose whether to alarm out .
- ✓ **Save:** Click the save button to keep the sets after reboot

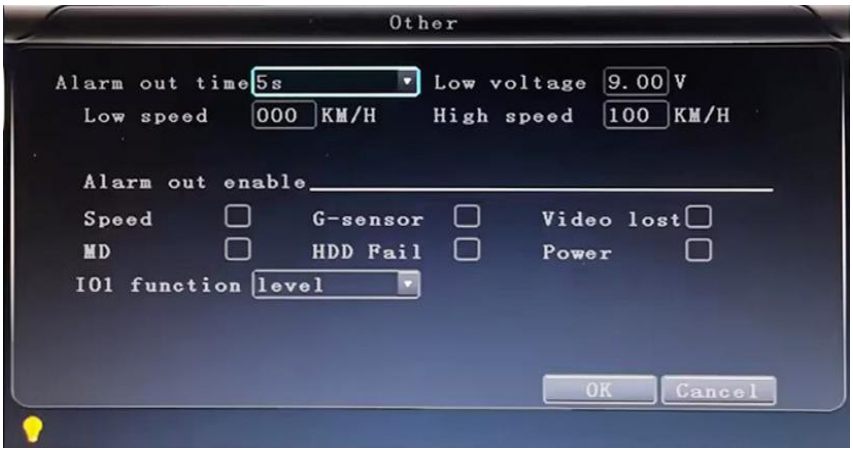
- **MD:** Motion detecting alarm.

- **Channel:** Main channel , different channel set can choose.
- **Enable:** Open and close motion detect record and motion detect sensitivity selection such as"off","high","medium", "low". Opening motion detect recording, also need to set the icon"S"(alarm record)for time range of the detect record in "Record Setting" status except select"High","Medium","Low". "High","Medium","Low" is the grade of detect sensitivity, higher grade,record easier.
- **Area setup**



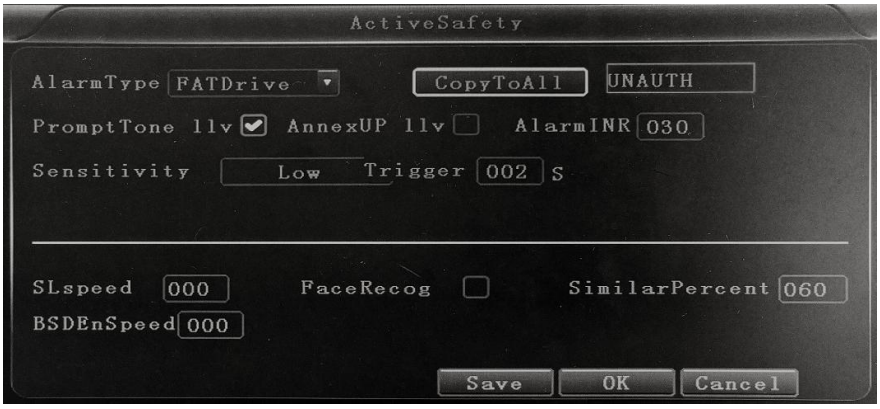
:No detect :Low sensitivity :High sensitivity

- **Other:** Other alarm setting.



- ✓ **Alarm out time：** Alarm output time (5s-900s).
- ✓ **Low voltage：** The low voltage alarm about car battery.
- ✓ **Low speed：** The low speed alarm.
- ✓ **High speed：** The high speed alarm.
- ✓ **Alarm out enable：** Setup the types of speed, G-sensor, video lost, Motion detecting alarm, HDD fail, Power.
- ✓ **IO1 function:** Can select level(high level) or voicelight.

- **ActiveSafty:** Active Safety alarm setting



- ✓ **AlarmType:** The alarm which is mentioned in 3.8.4.
- ✓ **PromptTone 1lv:** The device will trigger first level alarm prompt tone when first level alarm happen after selecting.
- ✓ **AnnexUP 1lv:** The device will upload annex of first level alarm when first level alarm happen after selecting.
- ✓ **Sensitivity:** There are three options:low,middle,high.
- ✓ **Trigger:** How many seconds between alarms before the next one is triggered.
- ✓ **SLspeed:** If the device is not on the road with a vehicle,it needs to be set a simulation speed here for testing.
- ✓ **FaceRecog:** Enable the face recognition function after selecting.
- ✓ **SimilarPercent:** Similarity of face recognition.The recognition will be successful only after the similarity of the captured faces exceeds this value.
- ✓ **BSDEnSpeed:**The BSD will not enable until the vehicle speed exceeds this value.

- **Calibration**
  - ✓ Please check the details in 5.3.2

6.4 DVR Video Playback Instruction

Our company System support 2 video playback ways.

◆ Users can watch the video playback with the IR remote control, the specific steps are as follows:

Enter the main menu, move to "playback" option ,press"OK"to enter, next press the key"▲"or "▼"to select the playback date ,and move to "Search", then press "OK"key to display the video files of the selected date(file named by the record time),same press "▲"or"▼" again to select the time to play. If your required time is not available in the current page, press "◀"or"▶"key to the next page, till you find the required

time, then press "OK"key to move the option "play channel", again press "OK"to select the playback channel. If you need to reselect the files, press keys"▲"or"▼"to repeat the previous steps to select again, then press"OK".Press "◀"or"▶"to select the replay channel, then press"🔍"or press "▼" to button "play" ,next press "OK"to replay, the system will switch to the video playback status, you can see the playback video in the selected channel. Press "1./@、2abc、3def、4ghi"keys to switch the channel, and press "0␣"back to the quad screen. Press"▶II"to stop, press again for replay. Press"■"to exit and back to 4ch record status, press "MENU"and back to the "search/playback" interface, then press "▲"or"▼"to select other video playback.

◆ User can watch the video playback with the mouse, the specific steps are as follows:

Enter the main menu, Click on the "playback" option to enter, next select the playback date, file type and time frame ,then press "Search" to display the video files of the selected date(file named by the record

time).After selected the time and channel , press "Play" to play. If your required time is not available in the current page, press "Back" or "Next" to the other page, till you find the required time.

User press "  " on the playback interface, and then use the mouse to click"  "to implement different functions, such as: before, stop, play, pause, a frame play, fast forward, next and audio(each channel).

6.5 Video Backup

Our company System support 2 video backup ways.

1) Connect the USB disk to the DVR's USB port for backup（Ports on Demand）; Operating method as follows:

   a) Connect USB disk to the DVR's USB port (FAT32 format, backup Max.20G).

   b) On the video playback interface, select the backup video files first, then move to "Export" option, and press "OK "to backup, "Export END" display after backup finished, the USB disk could be taken away, then press"  "to exit if no other operations.

   c) If you need to backup another files, press"  "to repeat the previous steps to backup。

2) Take the SD card out from DVR, then connect the SD reader to the PC, you can check the video playback on PC via the installed our company's local playback analysis software .(Suitable for large

amount data backup, simple and flexible. The proprietary data files also could be converted to the common format, suitable for different reading demands). Specifics refer to the local playback analysis software instruction).

6.6 PTZ control

This function just used to has PTZ function models, there is two ways. Operations are as followings：

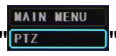
- User can control PTZ camera with the IR remote control, the specific steps are as follows:

When DVR is working，click" 

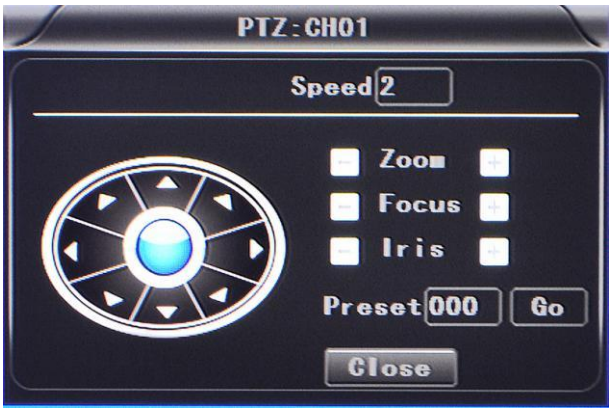
"，enter "PTZ control "mode, If DVR has connect with screen，then on screen's left above would show "PTZ", click"  ", "  ", "  ", "  ", PTZ would scroll as it showes，the PTZ camera would rotate after each command by clicking PTZ icon in the CMS or operating the control board；Control over if wanna quit at all，click" 

"。

- User can control PTZ camera with the mouse, the specific steps are as follows:

When DVR is working，Click the mouse left button, then the screen would show this picture " 

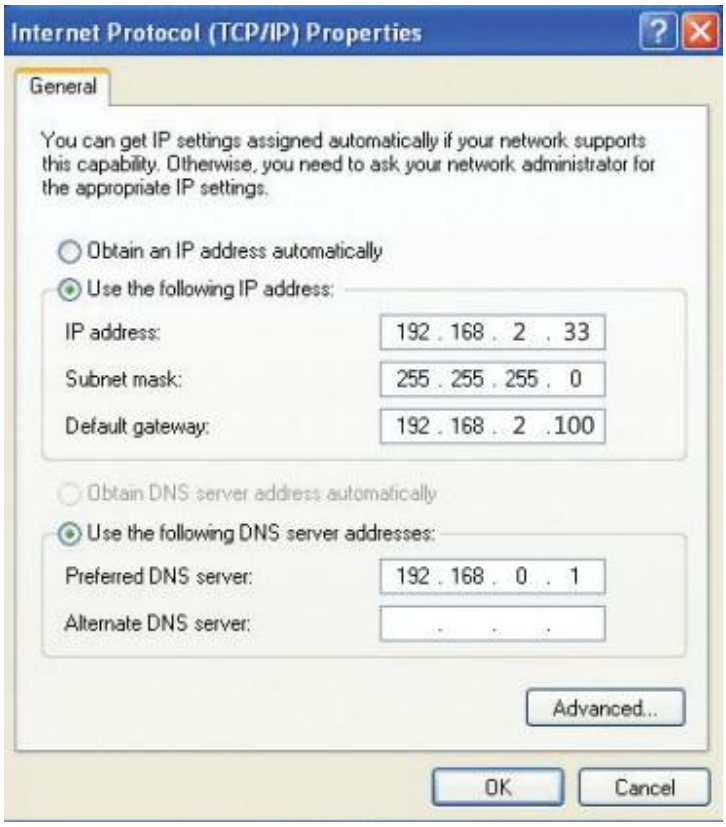
", click "PTZ", There is PTZ control icon would display，the PTZ camera would rotate after each command by clicking PTZ icon；the PTZ control icon will be displayed on the channel which your mouse to click; Control over if want to quit at all，click the mouse right button.



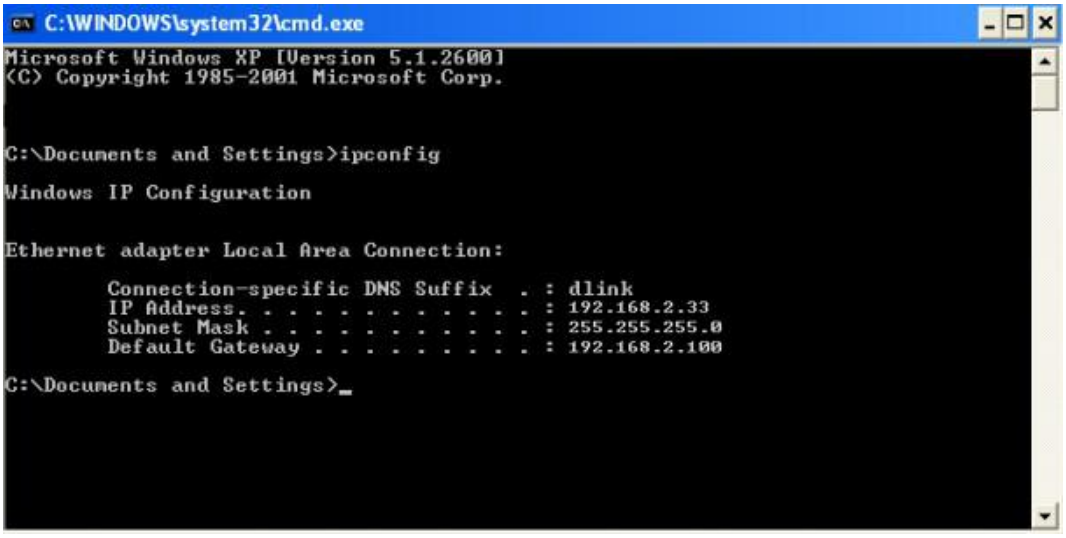
6.7 Extranet Port Mapping

- Install the CMS server in LAN, Pls refer to the manual how to install CMS server.

✓ First, make sure the PC which installed the server use **Static Public IP**, not automatically get.



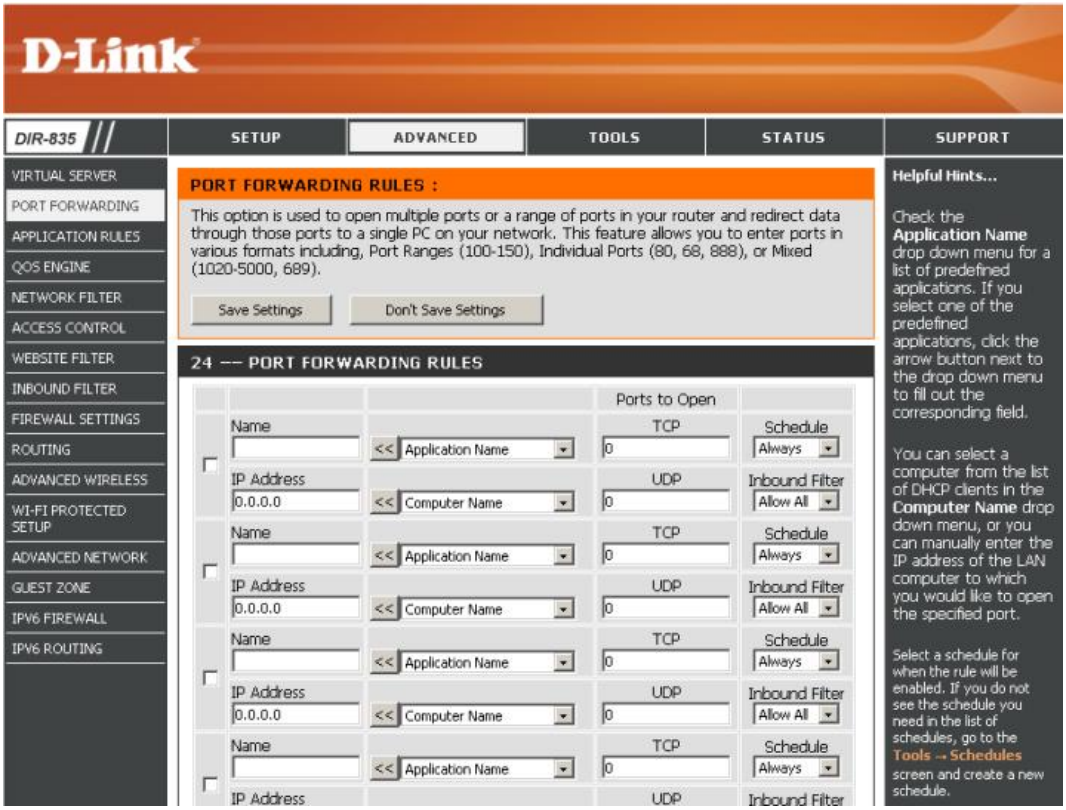
- Access into **"Program"→"Run"→"CMD"**, fill in "ipconfig"→"Enter" to see if the server IP has been set successfully.



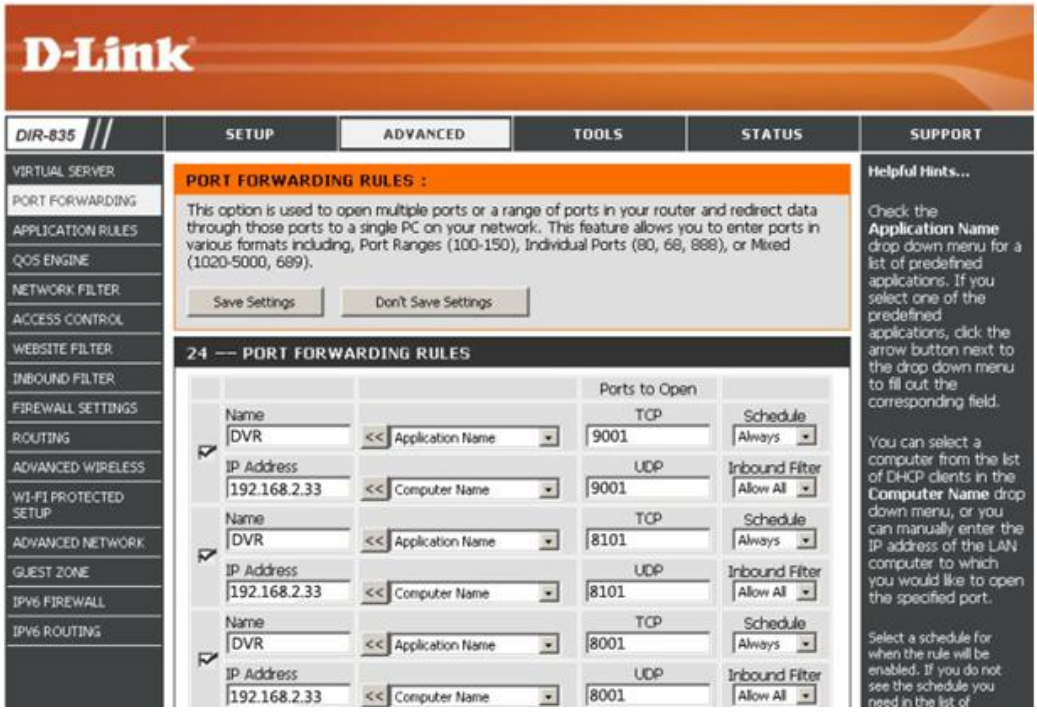
- Open the file of "DVR_Server.cfg" in the server installation path, can check whether the ports have been set successfully.

Port: 9010, 9001, 8101

- Access into router→**"Advanced"→"Port forwarding "**



- Add the ports of 9010, 8101, 9001 to the port forwarding.



a) **Name:** fill in a name for MDVR port.

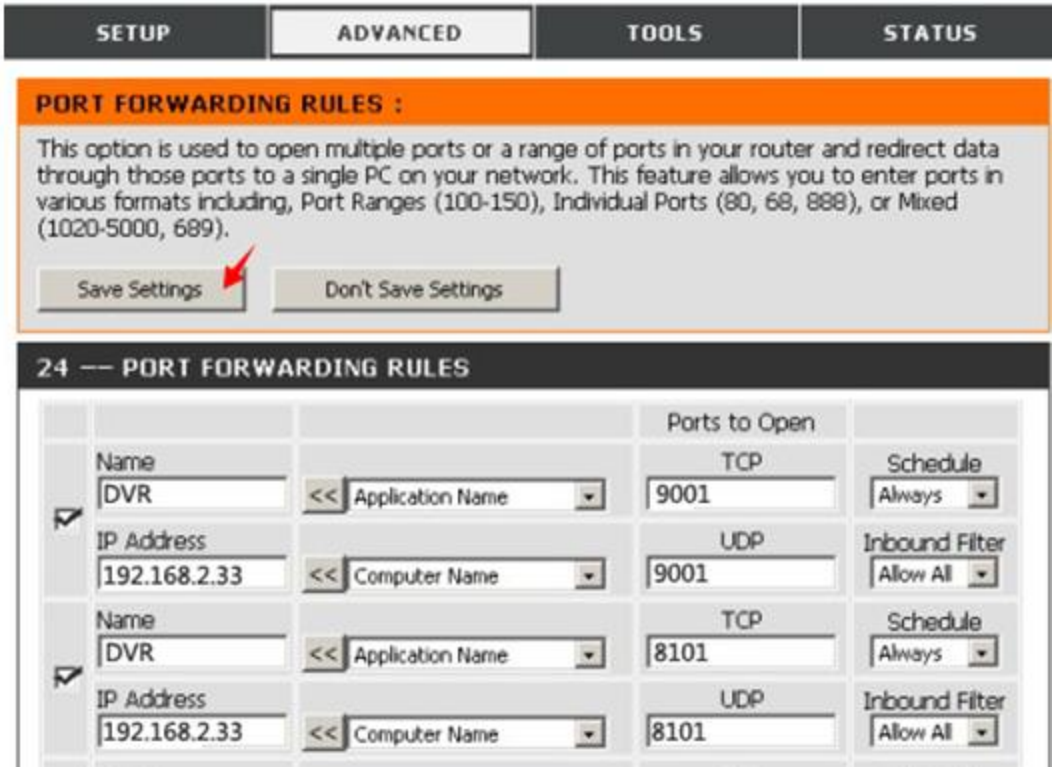
b) **Ports to Open:** 9010, 8101, 9001

c) **IP Address:** Server IP address

d) **Inbound Filter：** TCP、UDP、Allow ALL, Pls select "Allow All"

e) **Schedule：** select "Always"

- Fill in the ports, and click" **Save settings**".



- After the port mapping settings, find the "**IP Address"** in the WAN, the IP Address is your CMS server IP. login the server IP on the CMS client to access.

Notes: When extranet access into LAN server, it need do mapping on the router. Then extranet can access into WAN IP.

- Change the Server IP to the related one, Access into MDVR

"**menu"→"Network setting"→"LAN"→"Server IP"**→XXX.XXX.XXX.XXX

6.8 Domain binding setting

After finished the server set up and the port mapping, you can login via network IP.

There are two ways to access the network as follow.

ADSL dial-up: It will assign a different dynamic IP address for each dial

Leased line: It will assign a static IP address, and you can access directly

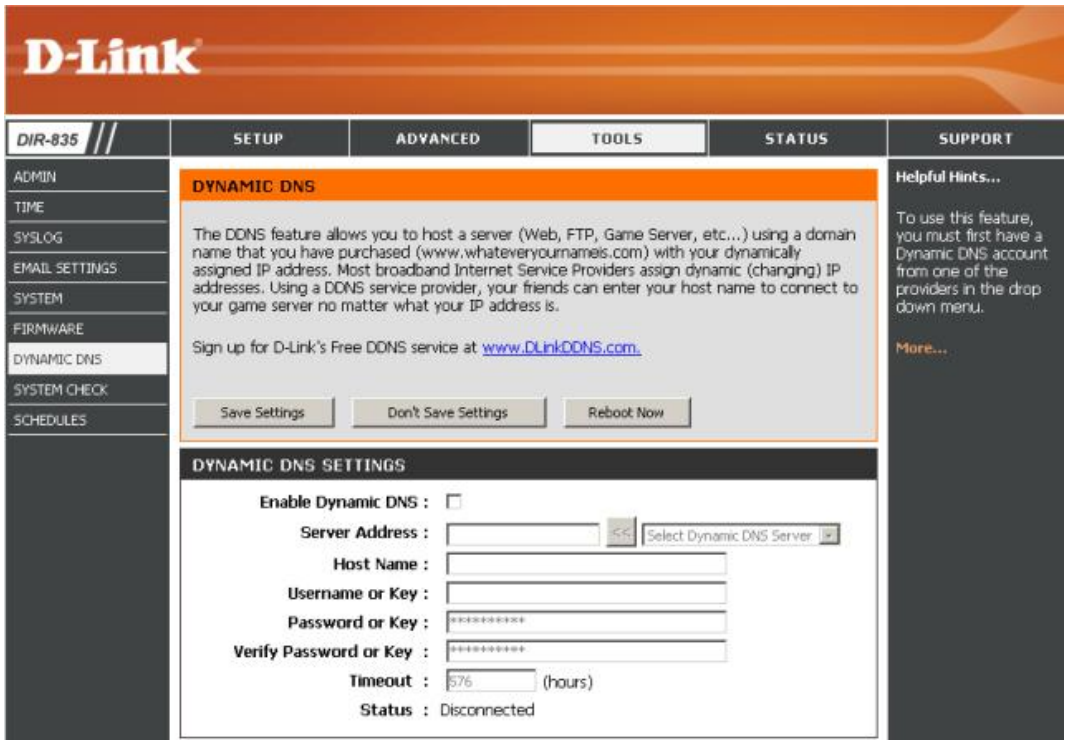
So, when set up the server with the way of ADSL dial-up, you can binding DDNS via domain in order to prevent the distribution of different dynamic IP in each dial.

Note 1 : DDNS is used to mapping the dynamic IP address to a static DNS. Client program will send the dynamic IP to the server program when the user access the network, then the server program will provide the DNS server to realize dynamic DNS.

Note 2 : If the dynamic domain name is free, you will temporarily unable to access via the free domain name when things going wrong with the the domain name service provider's server.

The related parameters below is for routers test. Please refer to actual network environment when installation.

- Access into router setup, select **"Dynamic DNS"** to check the related setup.



a) **Enable Dynamic DNS：** Enable ON if you need to use DDNS

b) **Server Address:** Fill in accordingly

c) **Username or Key:** Fill in applied user name

d) **Password or Key:** Fill in password

e) **Verify Password or Key:** confirm the password

f) **Timeout:** Timeout setting

g) **Status:** Status of connection

Notes: DDNS need to be applied by customers if necessary.

- Fill in the user name and password, use DDNS login, it shows connect successfully if login properly, and will display the applied the DNS.

  Notes: Pls refer to the Oray for the DNS apply.

- After DNS binding, you can access into server via DNS.

6.9 Video Data Volume

The required volumes of video and video-related settings ， please see the following table：

4CH (H.264)				
VIDEO QUALITY	**Total Record Frame**	**Data Size Per Hour of D1**	**Data Size Per Hour of 720P**	**Data Size Per Hour of 1080P**
2.0 Mbps	100frame	3.6GB	5.16GB	6.1GB
1.5 Mbps	100frame	2.65GB	3.87GB	4.58GB
1.2 Mbps	100frame	2.1GB	3.09GB	3.65GB
1.0 Mbps	100frame	1.8GB	2.58GB	3.05GB
768 Kbps	100frame	1.35GB	1.93GB	2.3GB
512 Kbps	100frame	0.9GB	1.29GB	1.5GB
320 Kbps	100frame	0.55GB	0.81GB	0.98GB
192 Kbps	100frame	0.335GB	0.48GB	0.55GB
Note: Based on users matching conditions to apply the appropriate drive and related settings. **Storage capacity calculation formula:** video quality * 3600 * channel / 8/1024 = MB / hour				

Important User Information

Minimum System Requirements for DVR-Player Function:
CPU: Intel Core i5 3.4 GHz, RAM: 6GB (4GB, 8GB would be better),
Video standard: Intel(R) HD Graphics

System Administrator Access Required
Some PC Operating network driven environments, like school districts, limit access permissions and control as well as require applications to be downloaded, opened and run as an Administrator, making Limited User access problematic for the proper operation of the programs. It is the customer responsibility to secure IT authority to run the video player or CMS programs as Administrator, if the customer PC is operating in a limited access user environment. The GUI aka Video Player used to decrypt files and playback the video requires "Administrator" permissions to function properly in a evidence chain of custody. Without Administrator privileges the user will not be able to run the program, unless they operate a standalone PC for use as an isolated video player off the network.

About On Screen GPS Mapping
This feature requires unrestricted access to Google maps, so some highly restricted proxies servers may prevent this. If the Internet access is prevented at the customer side, the free On Screen Mapping feature may be prevented from functioning. This does not affect the speed of the vehicle recorded on the screen during the trip. Also we have found the GPS antenna location needs to be on the vehicle roof to assure the best function.

Memory Storage Required
The RSD4FHD, RSD4FHW and RSD4FHC series are sold WITHOUT memory storage device, as the size of the SD memory cards will not only be up the customer but in many cases customers can source the cards at a lower cost than ABV can. ABV recommends use of Sandisk Extreme SDXC memory cards "U3" processor speed or faster, for optimum use as some other brands have had issues with several mobile DVR brands over the last 10 years.

Basic PC Skills Are Required
The Mobile Digital Video Recorders (MDVR) we provide operate on a PC program viewer program called a Graphical User Interface aka GUI. These programs have been designed to be intuitive and require no formal training to operate the program, include a manual for those who seek additional guidance, as long as the user possesses basic PC skills.
This is where some problems with PC skills begin for some who are not well versed in the use of their district or company computers. Use of these GUI programs are predicated on the assumption/requirement that the customer of this high tech video file evidence management tool has authorized personnel who will be operating this program who are competent with the basic operation of their own company PCs.
Companies lacking a trained PC competent authorized user for this system will need to have their designated persons trained on the basic use of their company PC prior to using this product, as lack of basic PC operation skills and use could compromise the integrity of the product application, the video files and possibly their admissibility as evidence in a court litigation procedure. The manufacturer and their representatives are not responsible, licensed or certified to train users of this program on the basic functions of a customer or company's own company PCs.
ABV does not supply the resources required to teach customers how to operate their PCs to a degree that they may then operate programs running on them. It is the customer's responsibility to learn how to operate their own PC before implementing a product that requires operation on their PC. Simply stated; if the intended customer system operator is incapable of downloading files from the internet, opening programs under Administration access, running or executing application files under Administration access, cannot save a file, cannot transfer a file or browse for a file, nor make a screen capture of the program viewer GUI, cannot send a saved file by e-mail, cannot plug a USB SD card Reader into a removed memory storage device, cannot save a file to a portable

digital storage device, then you are not ready for a digital vehicle surveillance system. Basic PC skills are a requirement of all who intend to operate these products.

Network System Administrator (In-House) Required for CMS Operation (Wi-Fi & Cellular)

Should you have Wi-Fi equipped DVRs but are not using the Wi-Fi Wireless function then this does not apply, as you will not be using the CMS software.

Those customers incorporating the Central Management Software (CMS) Server or Client Software in order to enable the Wi-Fi or Cellular functionality in their mobile video application must have in-house a Network Administrator with at least the training and certification of Microsoft Certified Systems Administrator (MCSA) or Microsoft Certified Systems Engineer (MCSE) to manage all aspects of the Network Server operation including; CMS software install, CMS Network Server configuration, CMS Network Server operation, CMS Network Server Maintenance, troubleshoot the DVR Server & CMS software, and or operate the higher functions of the program capabilities as they require access to your Wi-Fi or Cellular network, your mail server, creating SQL databases and many other network administrator functions. (1st Warning)

It is solely the responsibility of the purchaser to provide competent certified Network Administrator with at least the training and certification of Microsoft Certified Systems Administrator (MCSA) or better yet Microsoft Certified Systems Engineer (MCSE) to install, configure, operate, maintain and troubleshoot the DVR Server & CMS software, and or operate the higher functions of the program capabilities as they require access to your Wi-Fi or Cellular network, your mail server, creating SQL databases and many other network administrator functions.

This is a Customer CMS Server Hosted solution for those who wish to maintain all data in-house, with free software intended for those who know what they are doing only. Cellular CMS Server Network driven solution is not for those who know a little about networks and feel lucky. (2nd Warning)

American Bus Video Inc (ABV) provides network solutions that require at a minimum Microsoft Certified Systems Administrator (MCSA) or better yet Microsoft Certified Systems Engineer (MCSE) in house, to assure you are competent and able to assume all functions of the network server and DVR that communicates with it without assistance, as ABV provides no support, training, technical service, phone support for CMS Server/DVR Server or Client Server software for Wi-Fi/3G/4G /4G LTE systems that we offer. (3rd Warning)

In simple terms, if you do not have a competent in house certified Network Administrator with at least the training and certification of Microsoft Certified Systems Administrator (MCSA) or better yet Microsoft Certified Systems Engineer (MCSE) to install, configure, operate, maintain and troubleshoot the DVR Server & CMS software, and or operate the higher functions of the program capabilities as they require access to your Wi-Fi or Cellular network, your mail server, creating SQL databases and many other network administrator functions, then you should not be purchasing a Wi-Fi or Cellular Network driven system that requires a CMS Server, DVR Server or Client Server. (Final Warning)

Minimum Requirements for CMS Server:

Dell T320 server or better
SQL Server 2003,SQL_server 2005 or newer
Wan IP (Fixed IP): The IP address is never changed.
Small Fleets: Windows 7,Windows 8
Large Fleets will require: Window Server 2012 or newer

Operational Verification

It is solely the responsibility of the user of the product to provide verification of product functionality when installed, each time the vehicle is operated, as well as pulling video files for viewing weekly, as a way to verify the system is operating properly, in order to prevent missing the documentation of important events due to operational problems, that could have been detected before they prevented important video evidence from being documented. Operational verification can be a simple daily visual verification of the DVR LED Status LEDs displaying on the unit faceplate to verify the unit is powered up and recording, or by use of the Remote DVR Status module (option). ABV Recommends weekly verification via memory card files playback test, to insure the cameras are all

properly aimed, that the camera lenses are clean, that the audio is functional for each camera, and that the DVR is recording when the ignition is on.

"Agency implies Stewardship" is a time proven principal, meaning if you own a product, it is your responsibility to maintain the product to insure you are able to obtain value from the use or operation of that product.

ABV recommends daily LED DVR status and weekly video recording system check, to insure all systems are recording properly so when you need them most in an incident you do not learn the DVR blew a 10 cent fuse 7 years ago (actual case) and has not worked a day since.