AHD MDVR
Vehicle DVR

User Manual

Before installing and using the AHD MDVR, be sure to read the Manual. The first part of the statement concerns the matters to be attention before installing and using.

➢ **Attention**

● The unit will not function (turn on) if the lock is not turned to the locked position, use the MDVR key for this.

● This product is used for inside a vehicle, in order to prevent short-circuit or the risk of electric shock, do not put the machine in the rain or humid environment.

● In the event of any solid or liquid going into the machine, please disconnect the power of the machine immediately, please contact your place of purchase.

● The product is high-tech equipment; machines can not be repaired by users even very small original part. Once failure occurs, please contact your place of purchase, or contact with the dealer. Do not repair it by users themselves.

➢ **Installation Environment**

● 8-36V DC power supply, please confirm the local power supply before power on.

● 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.

● 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
HDD Mobile DVR	1
User Manual	1
Remote Control (not include battery)	1
Connecting Cable	3
Key	1

Contents

1 Product Overview

The four-channel /eight –channel /twelve–channel Embedded Digital Hard Disk Video Recorder、 Embedded Network Hard Disk 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 hard disk 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 ISO14496-10 (H.264) 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 8 levels and adjustable

  4 /8Channel AHD 720P： (192Kbps-2.0Mbps/channel)

  to meet different requirements.

- Storage

  2.5 inch SATA hard disk，2TB maximum.

2.3 Image quality when monitoring, recording, playback

- Resolution

  Monitoring:

  4/8 Channel AHD 720P: 1280*720/CH; Recording: 1280*720/CH; Playback: 1280*720/CH

  Frequencies

  The monitoring, recording and playback are all with 25fps or 30fps

- Horizontal resolution for monitoring
  4/8 Channel AHD 720P: 1280*720/CH
  Horizontal resolution for playback
  4/8 Channel AHD 720P: 1280*720/CH

2.4 Total Resources

4Channel AHD 720P:

- Support 4 channels 720P (1280*720) simultaneous recording, total 100fps.

- Support 4 channels 720P (1280*720) simultaneous playback, total 100fps.

8Channel AHD 720P:

- Support 8 channels 720P (1280*720) simultaneous recording, total 200fps.

- Support 8 channels 720P (1280*720) simultaneous playback, total 200fps.

2.5   Alarm pre-recording

- Alarm video mode, alarm pre - recorded more than 5s video, audio, positioning data.

2.6 Full duplex

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

2.7 Malfunction alarming function

- When the MDVR fail to work, the alarm switch is ON, showing alarm information for 5 minutes at least.

2.8 Self-test the status and self-recovery

- When in working status, the "RUN" indicator will constantly flashes and check the device. Recovery will take no more than 3 minutes when device crashes.

2.9　Front-end device control and multi-channel monitor and switch

- The MDVR can control PTZ cameras through default protocols (RS-485, PELCO-D, 9600 baud rate),

    4 /8Channel AHD 720P：4 channels real time, switchable to monitoring mode.

2.10　Networking

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

2.11　Data backup

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

2.12　Authority, encryption, data safety

- Enter the MDVR default password, default is "**6666**". Data is stored in a special file system to ensure it's encrypted and safe.

2.13　Log function

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

3 Features

3.1 Operating system

- Embedded Linux operating system, high stable, free from virus.

- English/ Chinese/ Russian/ Portuguese menu switchable.

- Graphical user interface.

3.2 Compression format

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

3.3 Monitoring and Recording

- Monitor:

  4/8 Channel AHD 720P：4/8CH AHD 720P (1280*720)

- Record:

  4 Channel AHD 720P：PAL 100fps, NTSC 120fps, full real-time 4CH 720P recording.

  8 Channel AHD 720P：PAL 200fps, NTSC 240fps, full real-time 8CH 720P recording.

- Record mode: by alarm, schedule, manual, motion detection.
- Support

4 Channel AHD 720P：4CH video and 4CH audio meanwhile recording.

8 Channel AHD 720P：8CH video and 8CH audio meanwhile recording.

- Record image quality: 8 levels adjustable.
- Video recorded in special file system to ensure lifespan and safety of HDD.
- Reliable evidence with unchangeable audio/video data.

3.4 Index and Playback

- Index and playback by time.
- Support ：

  4 Channel AHD 720P：4CH video, 1CH audio (any channel can be chosen),

  8 Channel AHD 720P：8CH video, 1CH audio (any channel can be chosen),

  index and playback at the same time, support amplifying in one channel.
- Data only played by DVR playback software.

3.5 HDD storage and data backup

- Supports 2.5inch HDD max 2TB.
- The HDD data can be backed up via PC software.
- Supports USB backup.

3.6 Control

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

3.7 Others

- Upgrade through USB , easy to maintain.

- Protect by password, to avoid data damage.

- Delayed shutdown: default for 5s, adjustable.

- Anti-pulse and low voltage protection.

- Real-time timer.

- Anti-shock for the PCB panel and parts.

- Watch dog function to avoid system crush.

4 Technical Parameters

Device parameters	AHD Performance index	
Model	**AHD MDVR-720P**	**AHD MDVR-720P**
Product Name	4 Channel Mobile DVR(HDD Storage)	8 Channel Mobile DVR(HDD Storage)
Operation System	Linux	
Operation Interface	Graphical Interfaces, Chinese/English optional	
File System	Proprietary Format	
System Privileges	User Password	
Video Input	4CH AHD Independent Input: 1.0Vp-p，75Ω.Both B&W and Color Cameras	8CH AHD Independent Input: 1.0Vp-p，75Ω.Both B&W and Color Cameras
Video Output	1 Channel PAL/NTSC Output, 1.0Vp-p，75Ω， Pin Aviation Connector	
Video Display	1 Or 4 Screen Display	1 Or 8 Screen Display
Video Standard	PAL:25frames/Sec;NTSC:30frames/Sec	
System Resources	PAL:100 Frames; NTSC:120 Frames	PAL:200 Frames; NTSC:240 Frames
Audio Input	4 Channels Independent Input 600Ω	8 Channels Independent Input 600Ω
Audio Output	1 Channel(4 Channels Can Be Convert Freely)	1 Channel(8Channels Can Be Convert Freely)

Basic Output　Level	1.0—2.2V	
Distortion Plus Noise	≤-30dB	
Recording Mode	Sound And Image Synchronization	
Audio Compression	G711A	
Image Compression	H.264 Fixed Code Stream	
Image Format	4*720P（1280*720）	8*720P（1280*720）
Video Stream	192K-2.0Mbit/s	
Video Taking Up Of Hard Disk	85M-900MByte/hour/CH	
Playback Resolution	1or4*720P	1or8*720P
Audio Bitrate	4KByte / s / channel	
Audio Taking Up Of Hard Disk	14MByte / hour / channel	
HDD Storage	Support Max 2TB	
Image Quality	Eight Grades to Choose	
Alarm in	8 Channels Independent Input. High Voltage Trigger	
Alarm out	2 Channels Independent output	
Move Detect	available	
Host Access	Can Expand One For USB Disk Backup	
Wire line Access	Can Expand One RJ45 Ethernet Port	
Wifi	Can Expand One Wifi Module Inside	
3G	Can Expand One FDD-LTE/TD-LTE/WCDMA/CDMA2000 Module Inside	
GPS	Can Expand GPS Module Inside	
RS232	Extensible,it is convenient to connect with other vehicle equipment	
RS485	Extensible,it is convenient to connect with other vehicle equipment and PTZ Camera	
Intercom	Can Expand Intercom Module Inside	
G-Sensor	Can Expand G-Sensor Module Inside	
Canbus	Can Expand Canbus Module Inside	
Power Consumption	DC8-36V　　≤12W	
Working Temperature	-20℃ ~ +85℃　≤80%	
Clock	Built-In Clock, Calendar	
Product Size	245(L)*190(W)*71(H)mm （with Holder）	
Product Weight	2.8KG(without HDD)	3.0KG(without HDD)
Package	Each In a Box, 5 sets/ Canton	
Box Size	245(L)*190(W)* 71(H)mm	
Carton Size	650(L)*375(W)* 255(H)mm	
Carton Weight	14kgs/ 18kgs (without HDD)	

Optional functions:

Basic Type (Pin Aviation Connector)

+A：GPS Function   +B：3G/4G Function

+E：Lan Port   +F：HDD + SD Card

+J：Fireproof Box   +K：Canbus

+L：Wifi hot-Spot   +P：POE

+W：Wifi Function

5 Instruction of Installation

5.1 Instruction of External Interface Wiring

SENSOR Interface definition:

1	Canbus+	11	Alarm input 1
2	Canbus-	12	Alarm input 3
3	RS485+	13	Alarm input 2
4	RS485-	14	Alarm input 4
5	Alarm outputCOM1	15	Alarm input GND
6	Alarm outputCOM1	16	Alarm input GND
7	Alarm outputCOM2	17	Alarm input 5
8	Alarm outputCOM2	18	Alarm input 7
9	Alarm input GND	19	Alarm input 6
10	Alarm input GND	20	Alarm input 8

EXTEND Interface definition:

1	DC12V OUT+
2	DC12V OUT-
3	Audio input
4	Audio output
5	RS232(RX)
6	Video output
7	RS232(TX)
8	Video/Audio GND

8CH AHD 720P

SENSOR Interface definition:

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4	RS485-	14	Alarm input 4
5	Alarm outputCOM1	15	Alarm input GND
6	Alarm outputCOM1	16	Alarm input GND
7	Alarm outputCOM2	17	Alarm input 5
8	Alarm outputCOM2	18	Alarm input 7
9	Alarm input GND	19	Alarm input 6
10	Alarm input GND	20	Alarm input 8

EXTEND Interface definition:

1	DC12V OUT+
2	DC12V OUT-
3	Audio input
4	Audio output
5	RS232(RX)
6	Video output
7	RS232(TX)
8	Video/Audio GND

Remarks:

- If the power supply is 12V, then the current of 12V output can be just 1A. So if there are more than 3pcs cameras, we suggest customers to get power for other cameras from the 12V vehicle power directly or use Our special car power supply.

- RS485 、RS232 、LINK、CANBUS interface are optional interface, available only when you listed in the order for this interface.

- Ports:

  DEBUG: testing port

  EXTEND: intercom connecting port

  SENSOR: alarm port

5.2 Instruction of HDD Installation

1

2

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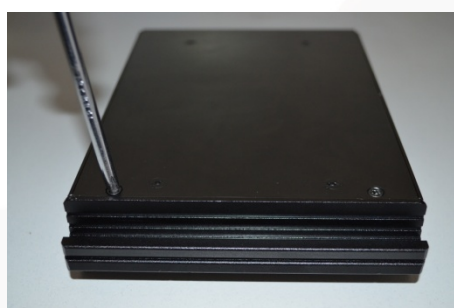
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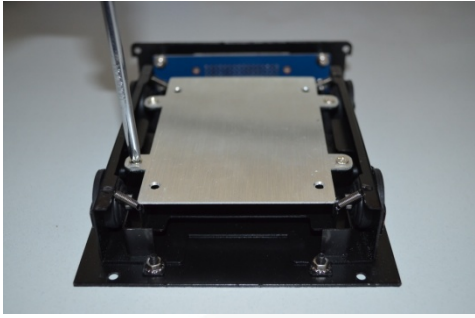
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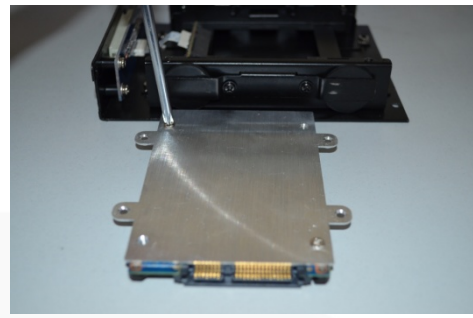
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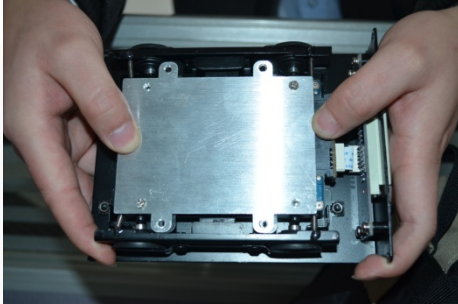
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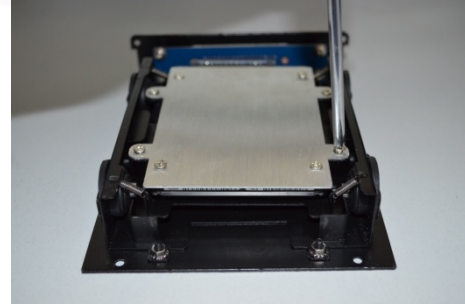
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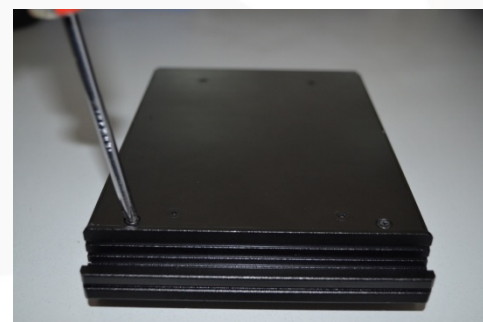
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11

12

Make sure power switch is turned on or turned off, if it is turned on, please use the key, turn to the "turn off" position.

- Pull the front panel of the hard drive box. Carry out the hard drive.
- Set down the two screws of the hard drive using a cross-screwdriver.

- Remove the under backer of hard drive box, and then check the line is on top of the under backer or not.

- Plug in the SATA hard drive which needs installation; connect the line joint of hard drive box to the hard drive. Please note the heading of the line while connecting. Make sure all of the connecting is complete done.

- Put the hard drive in the hard drive box, the line of hard drive needs to lie on the right position.

- Put the four white screws of the machine through the center hole of the four shockproof rubber pads. Fix the hard drive to the four holes of the hard drive box, do not tighten the screws too much, leave a little space for hard drive to move.

- Insert the hard drive under the backer which has the hard drive to the hard drive top bracket, and then, use cross screwdriver and the screw to fix the under backer and the top backer.

- Aim the hard drive box towards the groove of the front board, level push. Please note the face and back while pushing.

- Turn the key to the "turn on" position, lock hard drive box to prevent hard drive from moving out.

Note : Hard drive fixing lock is beside the hard drive, also take the place of host power switch .So do this operation, make sure all lines are completely connected. Otherwise, if vehicle's power has have been connected with the standard input voltage, the machine could not work. So while installation, if the line has not been completely connected, please stop to do this step. Be careful when installing. The hard drive can not roll out even it has not been locked.

6　Instruction of Using

6.1　Instruction of Front Panel

Front plate
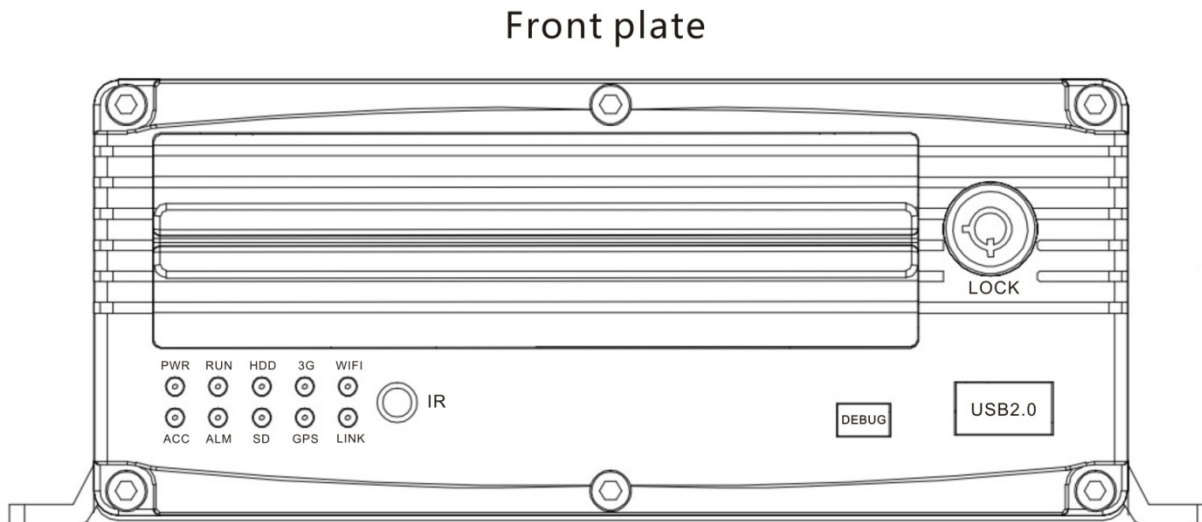
- **LED**
  - ✓ **PWR LED**: lit while work starts. Power LED on.
  - ✓ **RUN INDICATOR**: flashing when unit is working
  - ✓ **HDD INDICATOR**: record, play, backup data flashing
  - ✓ **3G INDICATOR**:　When with 3G/4G or WIFI module, or with LINK, the led will be on if the settings are all right and the network connects fine.
  - ✓ **Wifi INDICATOR**: When you have the WIFI module this will be on if WIFI module works well.
  - ✓ **ACC INDICATOR**: ACC controller signal regularly.
  - ✓ **ALM INDICATOR**: When you have alarm signal, it will be on，when alarm signal disappear it will be off.
  - ✓ **SD INDICATOR**: When the model has SD card storage function，SD card read normally then it will indicate.
  - ✓ **GPS INDICATOR**:　When you have the GPS module,This will show all working fine.
  - ✓ **LINK INDICATOR**: when wired network connect normally, it will indicate.
- **Key and Other Descriptions**
  - ✓ **DEBUG**：Debug interface.

✓ **SIM interface:** 3G/4G interface.

✓ **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.

✓ **USB:** backup the video data of hard drive via USB .

NOTE: Recommend to use the SanDisk brand of the USB disk , the minimum volume 256M, must support the FAT32 file system.

6.2 **Instruction of Remote Control Operation**

	MENU	①Lead to menu；②Return
	REC	Record
	OK	Enter the sub-menu to set and confirm
	Q	Playback on the MDVR
	■	①Stop when recording or playback；②Delete
	▶II	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
	F1	For PTZ wiper（If supported on PTZ camera）
	PTZ	Enter PTZ control mode.
	Zoom	Control PTZ Zoom
	Focus	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 MDVR.)
		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 ②Enter 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 1，2，3，4，5，6，7，8 switch to CH1，CH2，CH3，CH4，CH5， CH6，CH7，CH8
	Other buttons	Not mentioned buttons, not in use.

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

6.3 Menu Setting Instruction

(Our company 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" MENU "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" .

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

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

✓ **Date format:** Offer 3 display methods like "y/m/d, m/d/y, d/m/y" for personal habit.

✓ **Daylight saving time:** suitable for according countries or areas.

✓ **Date**: Adjust the date of HDD recorder

✓ **Time:** Adjust the time of HDD recorder

✓ **Language:** Set "Chinese", "English", "Portuguese", "Russian" and "French", 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, and 30s,1min,2min,5min,10min,20min,30min,2hour,4hour，The longest time is 24 hours, all could be set，have to restart the DVR after setting.

(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 Users.
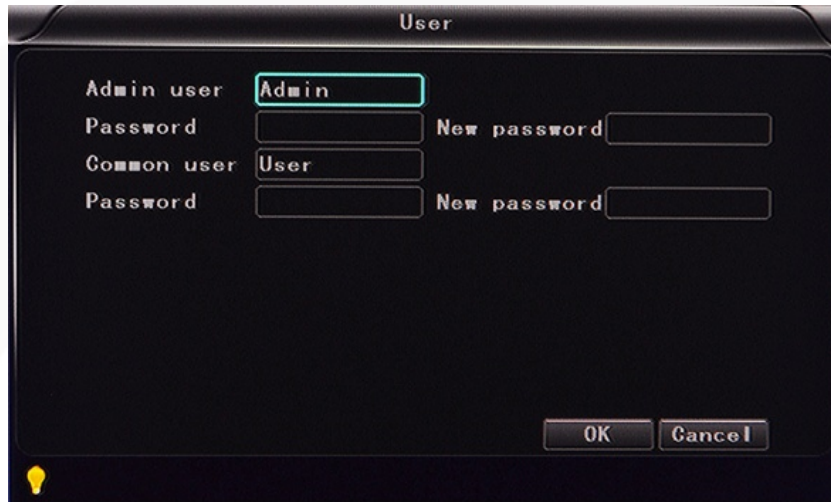
- ✓ **Admin user:** set up the user name of administrator

- ✓ **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 user.

- ✓ **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.
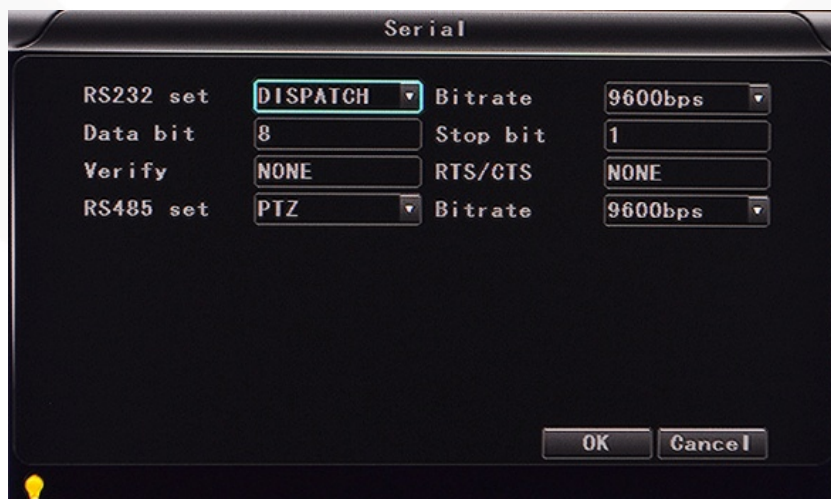

- ✓ **RS232 set**: support dispatch, led panel, ID card, OBD, person count.

- ✓ **Bitrate**: support 2400bps,4800bps,9600bps,19200bps and 38400bps.

- ✓ **Data bit**: the default value is 8.

- ✓ **Stop bit**: the default value is 1.

- ✓ **Verify**: the default value is none.

- ✓ **RTS/CTS**: the default value is nont.

- ✓ **RS485 set**: support PTZ, led screen, oil sensor, ID card, OBD, person count.

- ✓ **Bitrate**: support 2400bps,4800bps,9600bps,19200bps and 38400bps.

- ● **PTZ setting**: Adjust and control the camera with external PTZ device.
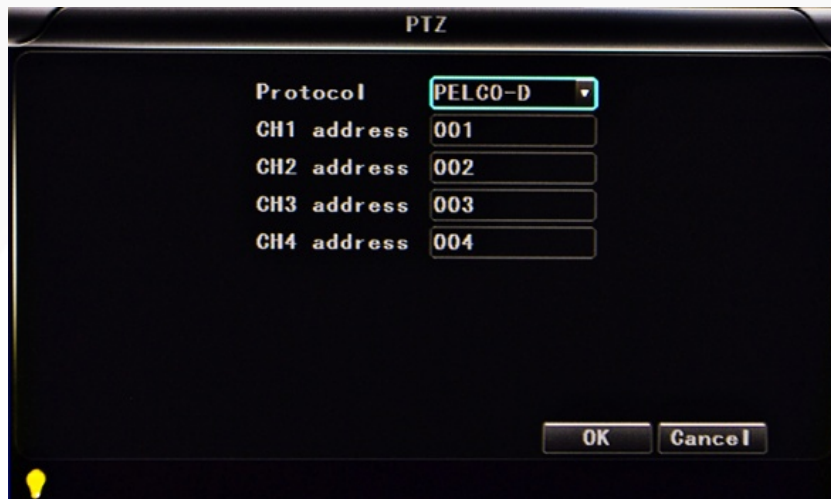
- ✓ **Protocols**: default PELCO-D, support PELCO-D.PELCO-P.

- ✓ **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**:
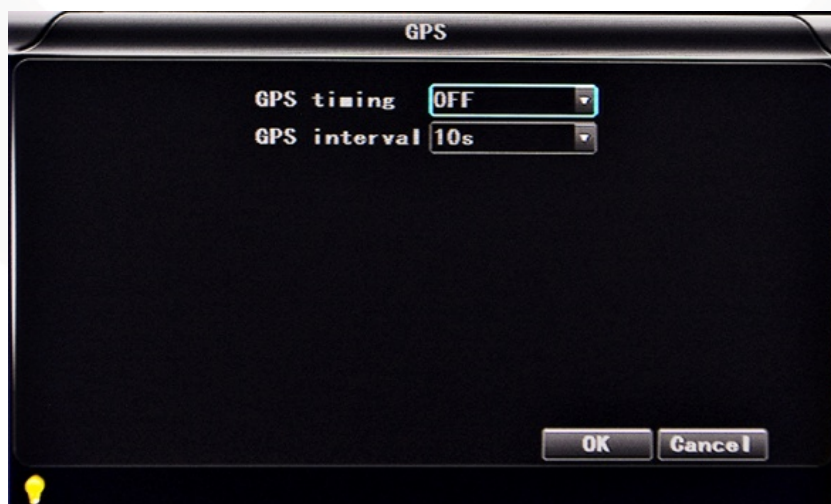
- ✓ **Time zone**: different by countries, e.g: London for UTC 00

- ✓ **GPS Interval**：GPS Data upload interval, used with other system interface.

- **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).

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

- **NTP setting**:
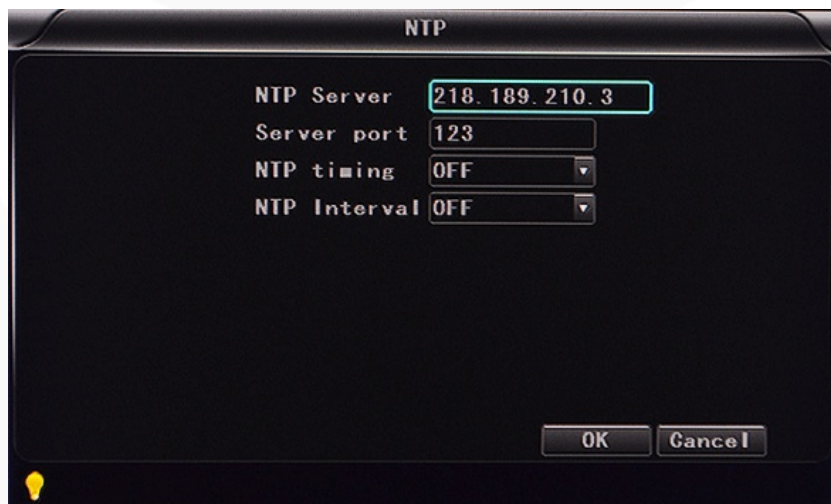
✓ **NTP server**: the NTP server ip

✓ **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 shown in English, Numbers or common symbols.

- ✓ **A-person**：setup how many people will be in the vehicle.

- ✓ **Line Num**: the driving route and code.

- ✓ **Driver ID**: set up the driver code information.

- **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.

- **System information:** Display MDVR hardware code number，software version information.
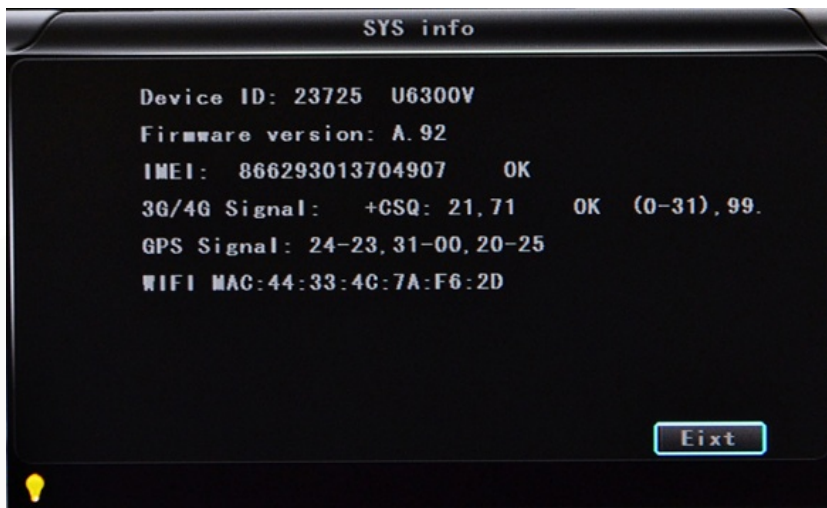
- ✓ **Device encoding**: only for this MDVR, the code is unique.
- ✓ **Software version:** the version No. of MDVR software.
- ✓ **IMIE**: IMIE No. of 3G/4G network or module
- ✓ **Strength of 3G/4G signal:** strength value:99, unknown: 0-31
- ✓ **Strength of GPS signal:** AA-BB(AA: GPS No ;BB: GPS strength. Show signal strength of max3).
- ✓ **WIFI MAC**: the MAC address
- **LOG information**

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

● **Configuration management**

✓ **Import**: Import the configuration parameters

✓ **Export**: Export the configuration parameters

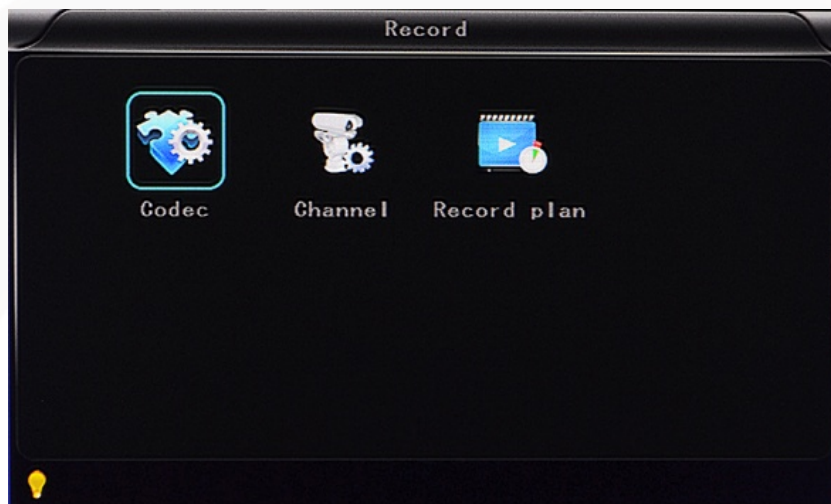✓ **Renew**: Restore the factory parameter

■ **Disk**：Check and format

✓ **Disk Name**：Display the system recognized HDD name.

✓ **Overwrite:** Choose on and off

✓ **Total Size:** Display the total size of HDD.

✓ **Free Size:** Display the remaining Capacity of HDD.

✓ **Free record time:** It is only an estimate.

✓ **Format:** Format HDD(only format the head files of HDD) .

Select this item，there is a format interface after press" ",confirm to format, cancel to return

the original interface.

All data will be lost

OK   Cancel

■ **Record:** the video files setting, It includes "codec" , "channel" and "record plan".

Record

Codec   Channel   Record plan

● **Codec:**

Codec

Channel	CH1	Copy to all
	Main stream	Sub stream
Resolution	960P	D1
Frame	25fps	25fps
Stream mode	CBR	CBR
Quality	1.0Mbps	256kbps
Audio	☑	☑
JPEG	30s	
Input mode	Analog	

Save   OK   Cancel

✓ **Channel:** select the channel setting (the information of each channel can be set independently)

✓ **Resolution**：CIF/HD1/D1/960H/720p；

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 10 grades，

192kbps/320kbs/512kbps/768kbps/1Mbps/1.2Mbps/1.5bps/2Mbps/3Mbps/4Mbps)

The right side is the network transmission quality (total 13 grades，

32kbps/48kbs/64kbps/80kbps/112kbps/144kbps/192kbps/256kbps/320kbps/384kbps/512kbps/76

8kbps/1024kbps)

- ✓ **Audio**：Select to record audio or without audio.
- ✓ **JPEG**：set captured of time and interval, Select a Trigger for alarm triggering to capture, choice time 10s, 30s, 60s, 120s, 300s.
- ✓ **Input mode**：AHD DVR can choose AHD or analog.
- ✓ **Copy to all:** Copy to all channels

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

- ● **Channel:**
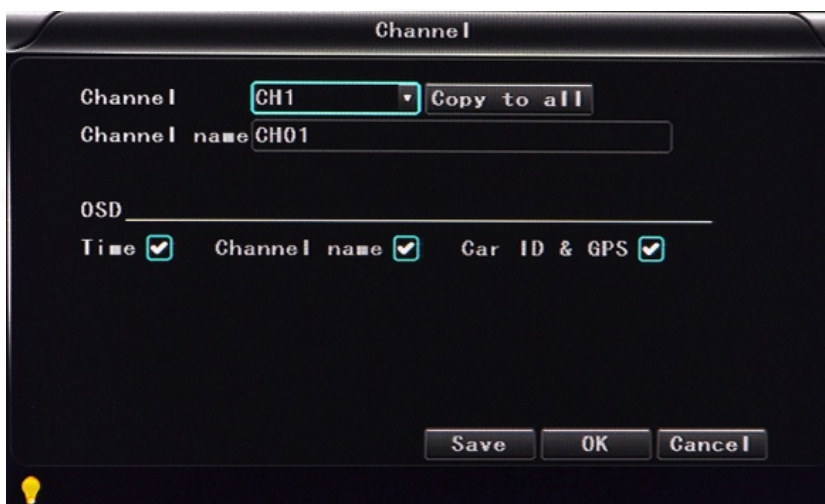
- ✓ **Channel**: select the channel setting (the information of each channel can be set independently)
- ✓ **Channel name**: the name of each channel
- ✓ **OSD**: choose to add the character information or not.
- ✓ **Copy to all**: Copy to all channels
- ● **Record plan**
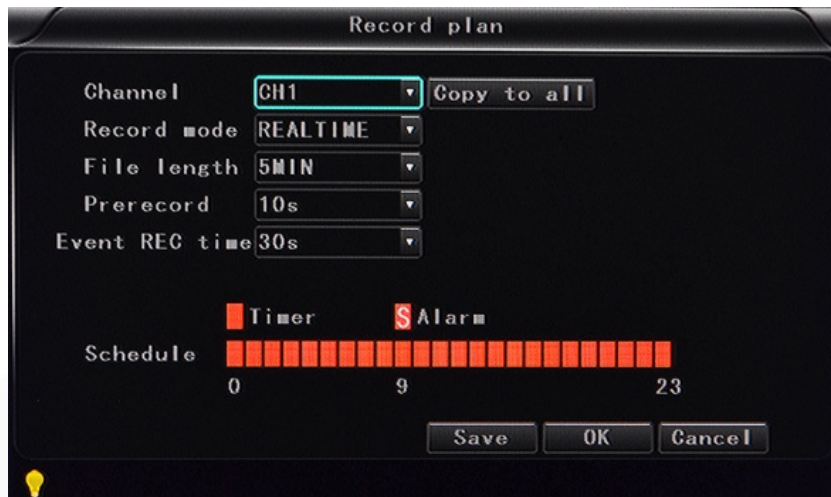
- ✓ **Channel:** select the channel setting (the information of each channel can be set independently)

- ✓ **Record mode**：real time and event or no record

- ✓ **File length**：the packaged video files length setting（5/10/15/25/30/60 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
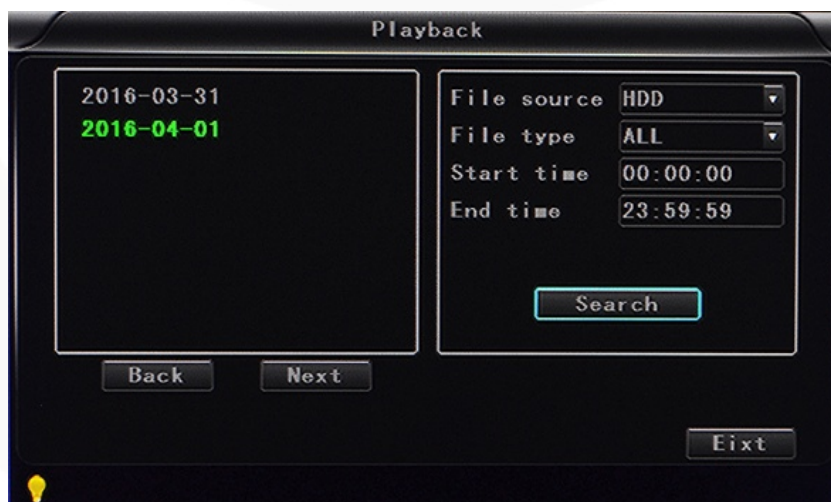
There is video date in the menu, it will show the vide time after press "Search", choose the playback time

range according to require time ,then press "Play "button to replay the video.

 File format suffix "_P" is power off video file , suffix "_S" indicates an alarm trigger video files, suffix "_T" indicates an timing video files.
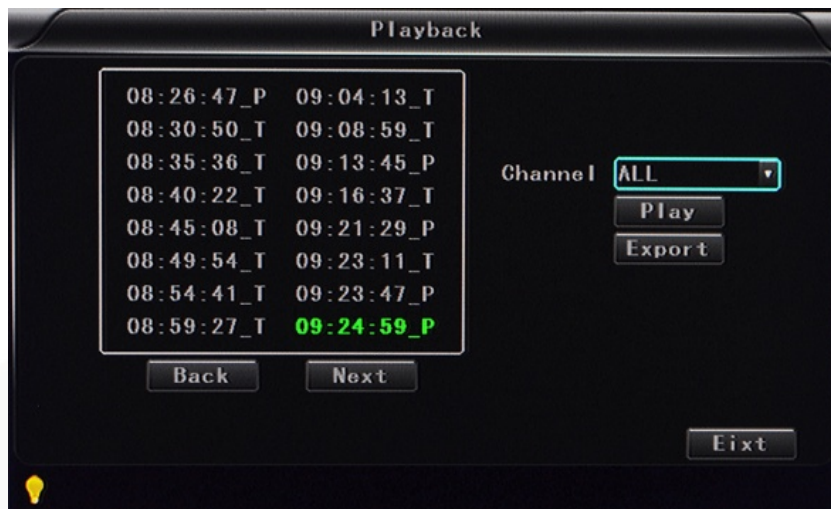
- ✓ **Channel:** 1CH/4CH/8CH/12CH　Video playback；video playback on each channel or full screen, playback and record simultaneously
- ✓ **Play:** Select the video files and channel to replay
- ✓ **Export:** Select the HDD video files backup to USB Disk

The operating method refers to "local video playback instruction"

■ **Network Setting: LAN, 3G, WIFI, IPC (Not supported on AHD MDVR)**

- ✓ **LAN:** connecting via RJ45.
- ✓ **3G/4G:** insert 3G/4G SIM card into the slot.
- ✓ **WIFI:** connecting the network of WIFI.
- ✓ **IPC:** To connect the IPC camera Settings. (No supported on MDVR)
- ✓ **SIP:** Chinese government standard platform
- ✓ **CH ID**: Chinese government standard platform information
- ● **Local Network Setting（LAN）：**
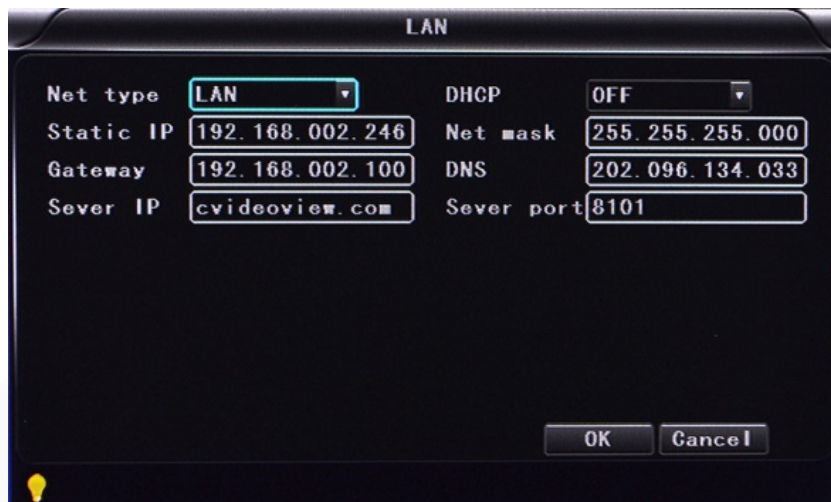
- ✓ **Network Type:** LAN and 3G/4G-WIFI optional.
- ✓ **DHCP:** Automatically get the IP address (in order not to conflict with the LAN, please enable ON, and also enable DHCP on the router, P.S, only one DHCP server can be enable in one LAN).
- ✓ **Static IP:** setup under LAN and WIFI mode.
- ✓ **Net 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, and if the units login on your own server, please use yours.
- ✓ **Server Port:** Keep it as default of 8101.

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

Access into "**Network**"→"**3G**"
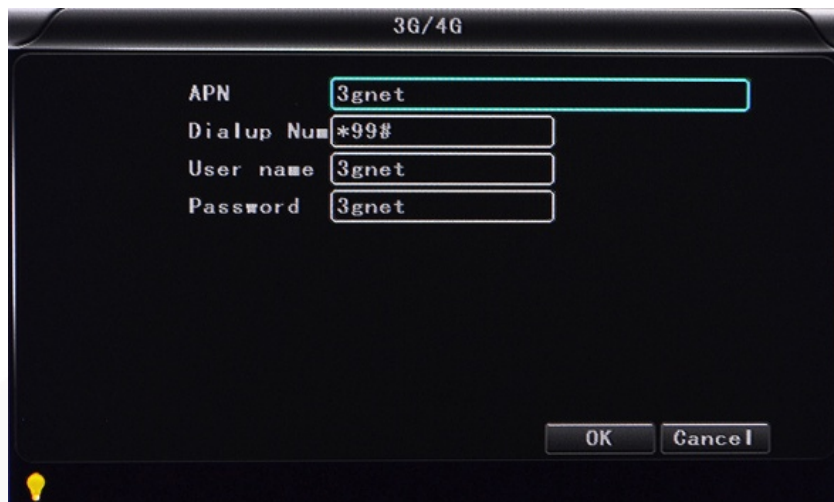
- ✓ **APN:** Access Point Name.

- ✓ **Dialup Num:** Get this info from your carrier.

- ✓ **User Name:** Fill in if you have.

- ✓ **Password:** Fill in if you have.

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

- ● **WIFI Setting:**

  - ✓ **Net type:** Select 3G-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".

- ✓ **Encryption:** Support "TKIP".

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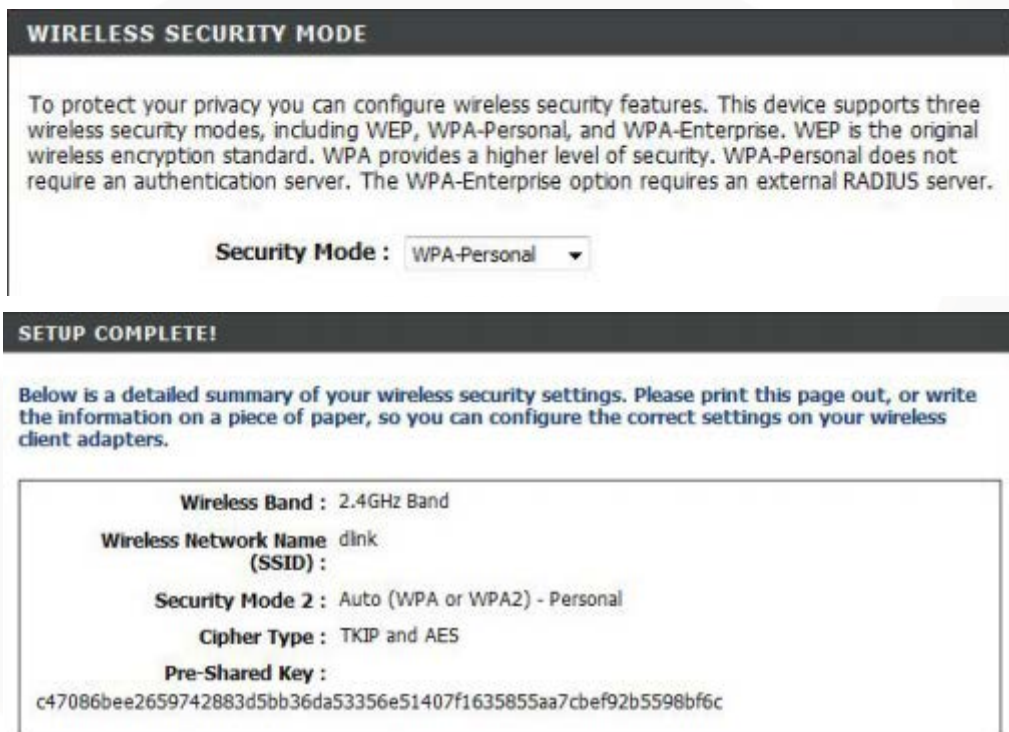
Notes:

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, not supported on AHD MDVR)
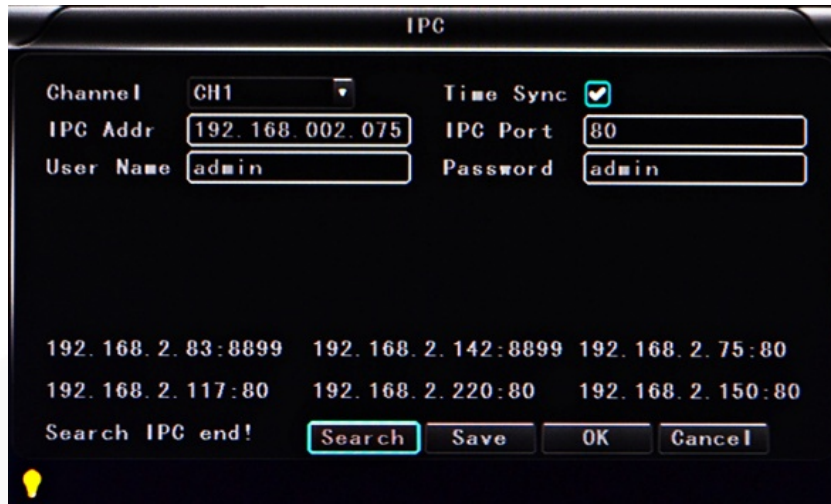
- ✓ **Channel**：main channel , different channel set can choose.

- ✓ **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 .

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

- ✓ **Sensor:** An external sensor alarms.

- ✓ **MD:** Motion detecting alarm.

- ✓ **Other:** other alarm 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 to overlay alarm information.

- ✓ **Lock**：Won't cover this alarm video after choose this lock.

- ✓ **Alarm:** Choose to overlay alarm information.

- ✓ **Alarm Out**：Choose 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" , "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" ,"Low". "High" ,"Low" is the grade of detect sensitivity, higher grade record easier.

✓ **Area setup**
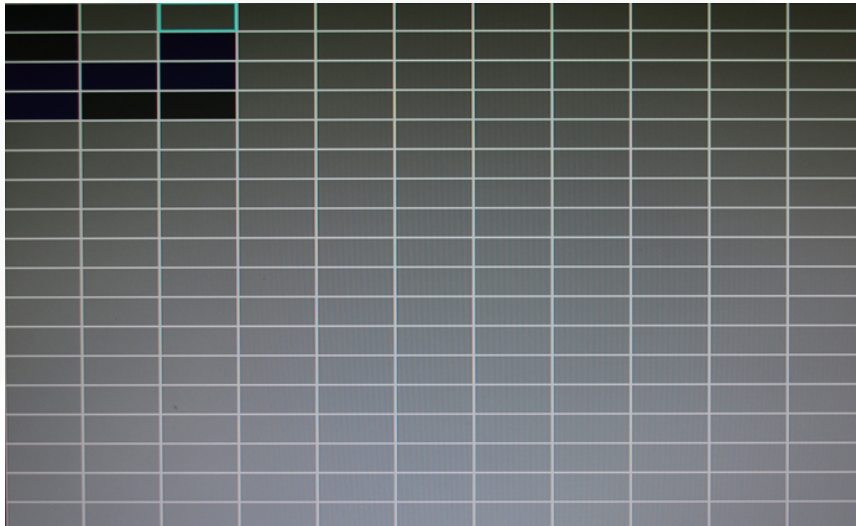
█ : No detect　　　█ : Low sensitivity　　　█ : High sensitivity

● **Other:** other alarm setting.
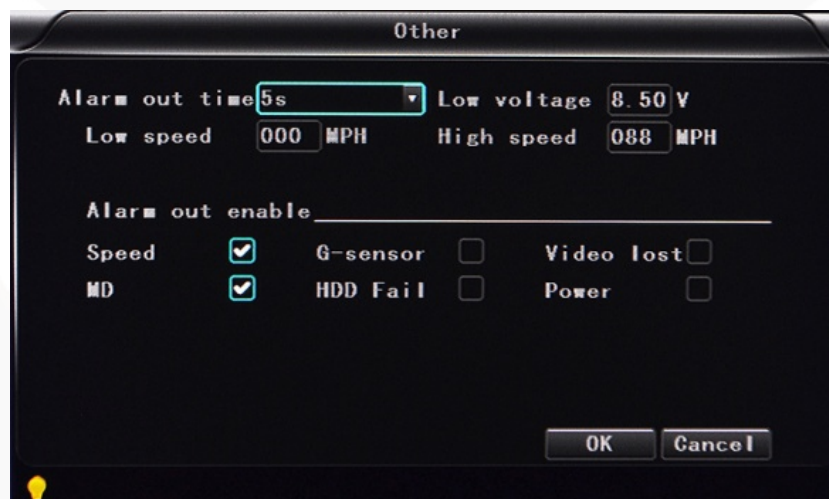
✓ **Alarm out time**：Alarm output time　(5s-900s).

✓ **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 alarms linkage, speed, G-sensor, video lost, Motion detecting alarm, HDD fail, power.

6.4 DVR Video Playback Instruction

The AHD MDVR supports 2 video playback methods

1)   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" [Q] "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.
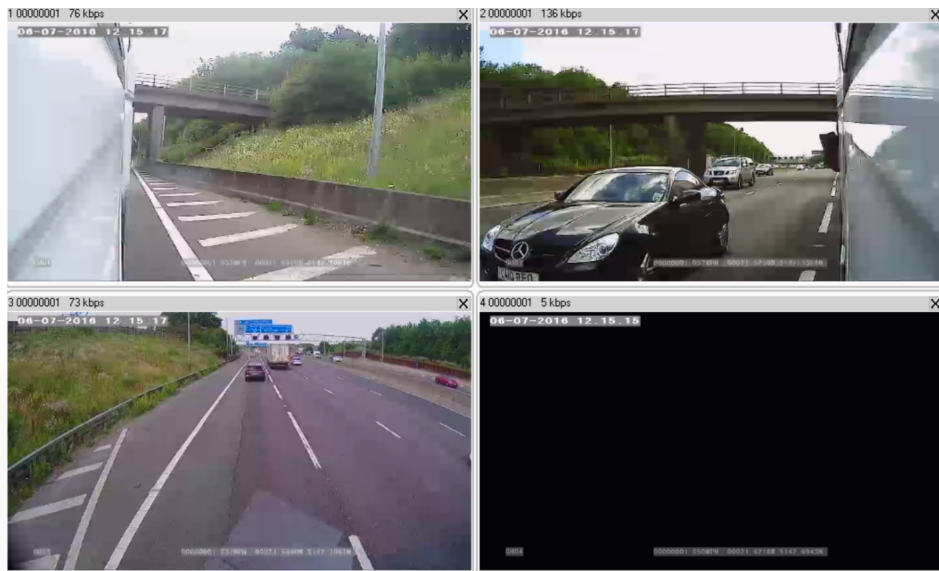
2) User can watch the video playback with the mouse, the specific steps are as follows:

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, untill you find the required time.
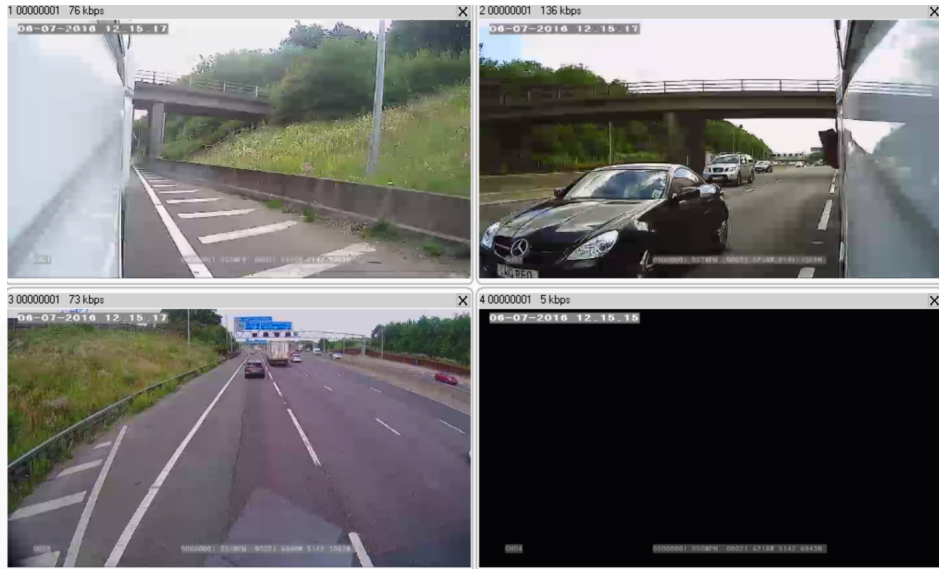
User press " 🔒 " on the playback interface, and then use the mouse to click " ⏮ ⏹ ▶ ⏸ IFP ⏩ ⏭ 🔊 "to implement different functions, such as: before, stop, play, pause, a frame play, fast forward, next and audio(each channel).

6.5 Video Backup

Our company System support 2 video backup ways.

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

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

■ 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 can be removed, then press" **MENU** "to exit if no other operations.

■ If you need to backup another files, press" **ESC** "to repeat the previous steps to backup。

2) Take the HDD box out from MDVR, then connect the HDD reader to the PC, you can check the video playback on PC via the 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 instructions.
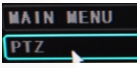
6.6 PTZ control

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

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

When MDVR is working，click"   "，entre "PTZ control "mode, If MDVR has connect with screen，then on screen's left above would show "PTZ", click"   ", "   ", "   ", "   ", PTZ would scroll as it shows，the PTZ camera would rotate after each command by clicking PTZ icon in the CMS or operating

the control board；Control over if you want to quit at all，click"   "。

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

When MDVR 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 it all，click the mouse right button.

6.7 Video Data Volume

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

4 CH SDI 1080P			4CH 960H			8CH 960H			12CH 960H		
VIDEO QUALITY	Total Record Frame	Data Size Per Hour	VIDEO QUALITY	Total Record Frame	VIDEO QUALITY	Total Record Frame	Data Size Per Hour	VIDEO QUALITY	Total Record Frame	Data Size Per Hour

6.0 Mbps	100 frame	10.8GB	2.0 Mbps	100 frame	3.6GB	200 frame	7.2GB	2.0 Mbps	300 frame	10.8 GB
5.5 Mbps	100 frame	9.9GB	1.5 Mbps	100 frame	2.65GB	200 frame	5.3GB	1.5 Mbps	300 frame	7.95 GB
5.0 Mbps	100 frame	9.0GB	1.2 Mbps	100 frame	2.1GB	200 frame	4.2GB	1.2 Mbps	300 frame	6.3 GB
4.5 Mbps	100 frame	8.1GB	1.0 Mbps	100 frame	1.8GB	200 frame	3.6GB	1.0 Mbps	300 frame	5.4 GB
4.0 Mbps	100 frame	7.2GB	768 Kbps	100 frame	1.35GB	200 frame	2.7GB	768 Kbps	300 frame	4.05 GB
3.0 Mbps	100 frame	5.4GB	512 Kbps	100 frame	0.9GB	200 frame	1.8GB	512 Kbps	300 frame	2.7 GB
2.0 Mbps	100 frame	3.6GB	320 Kbps	100 frame	0.55GB	200 frame	1.1GB	320 Kbps	300 frame	1.65 GB
1.0 Mbps	100 frame	1.8GB	192 Kbps	100 frame	0.335GB	200 frame	0.67GB	192 Kbps	300 frame	1.01 GB
Note: Based on users matching conditions to apply the appropriate drive and related settings.										

4CH 1080P-NVR			8CH 720P-NVR			12CH 720P-NVR		
VIDEO QUALITY	Total Record Frame	Data Size Per Hour	VIDEO QUALITY	Total Record Frame	Data Size Per Hour	VIDEO QUALITY	Total Record Frame	Data Size Per Hour
2.0 Mbps	100frame	6.1GB	2.0 Mbps	200frame	10.32GB	2.0 Mbps	300frame	15.48GB
1.5 Mbps	100frame	4.58GB	1.5 Mbps	200frame	7.74GB	1.5 Mbps	300frame	11.61GB
1.2 Mbps	100frame	3.65GB	1.2 Mbps	200frame	6.18GB	1.2 Mbps	300frame	9.27GB
1.0 Mbps	100frame	3.05GB	1.0 Mbps	200frame	5.16GB	1.0 Mbps	300frame	7.74GB
768 Kbps	100frame	2.3GB	768 Kbps	200frame	3.86GB	768 Kbps	300frame	5.79GB
512 Kbps	100frame	1.5GB	512 Kbps	200frame	2.58GB	512 Kbps	300frame	3.87GB
320 Kbps	100frame	1GB	320 Kbps	200frame	1.62GB	320 Kbps	300frame	2.43GB
192 Kbps	100frame	0.58GB	192 Kbps	200frame	0.96GB	192 Kbps	300frame	1.44GB
Note: Based on users matching conditions to apply the appropriate drive and related settings.								

6.8 Extranet Port Mapping

✓ Install the CMS server in LAN, please refer to the manual how to install CMS server.

✓ First, make sure the PC which installed the server use **Static IP**, not automatically get.
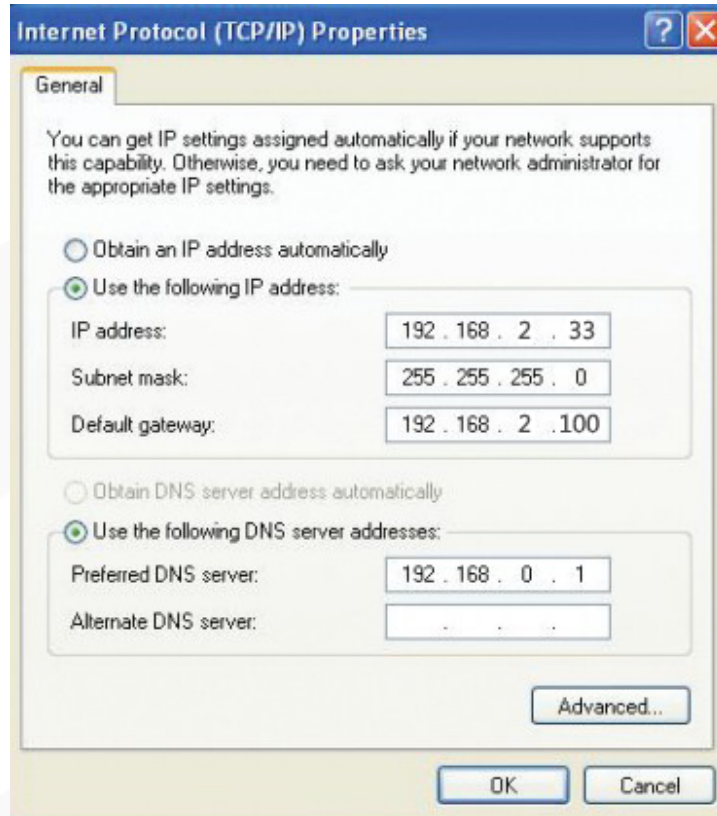
✓ Access into **"Program"→"Run"→"CMD"**, fill in "ipconfig"→"Enter" to see if the server IP has been set successfully.
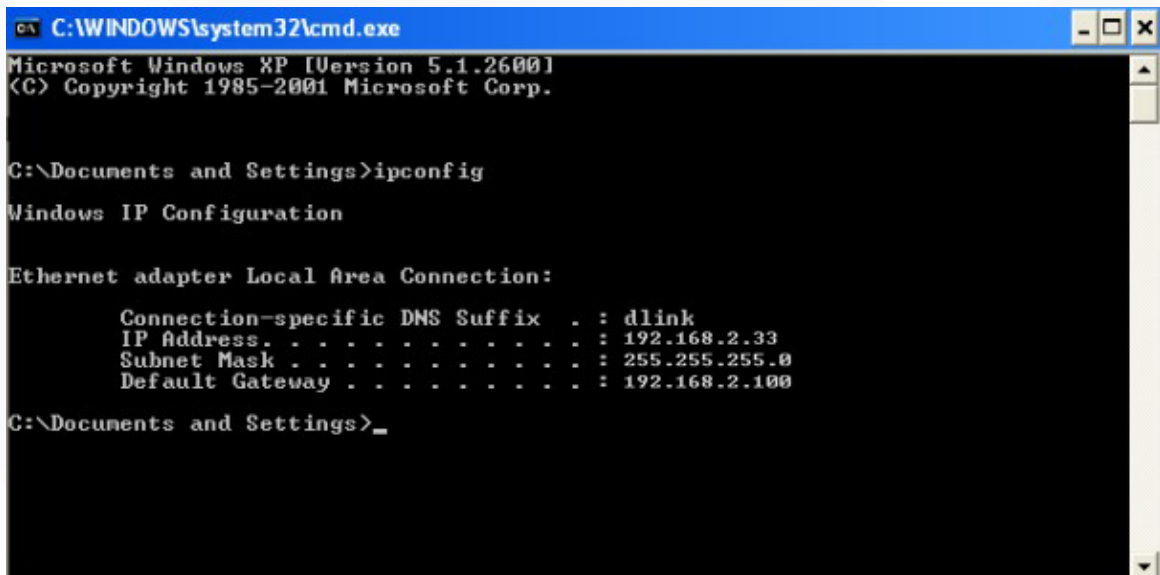
✓ Open the file of "DVR_Server.cfg" in the server installation path, can check whether the ports have been set successfully.

Port: 8001, 9001, 8101

✓ Access into router→"**Advanced**"→ "**Port forwarding** ":

✓ Add the ports of 8001, 8101, 9001 to the port forwarding.

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

b) **Ports to Open:** 8001, 8101, 9001.

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

d) **Inbound Filter**：TCP、UDP、Allow ALL, please 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.
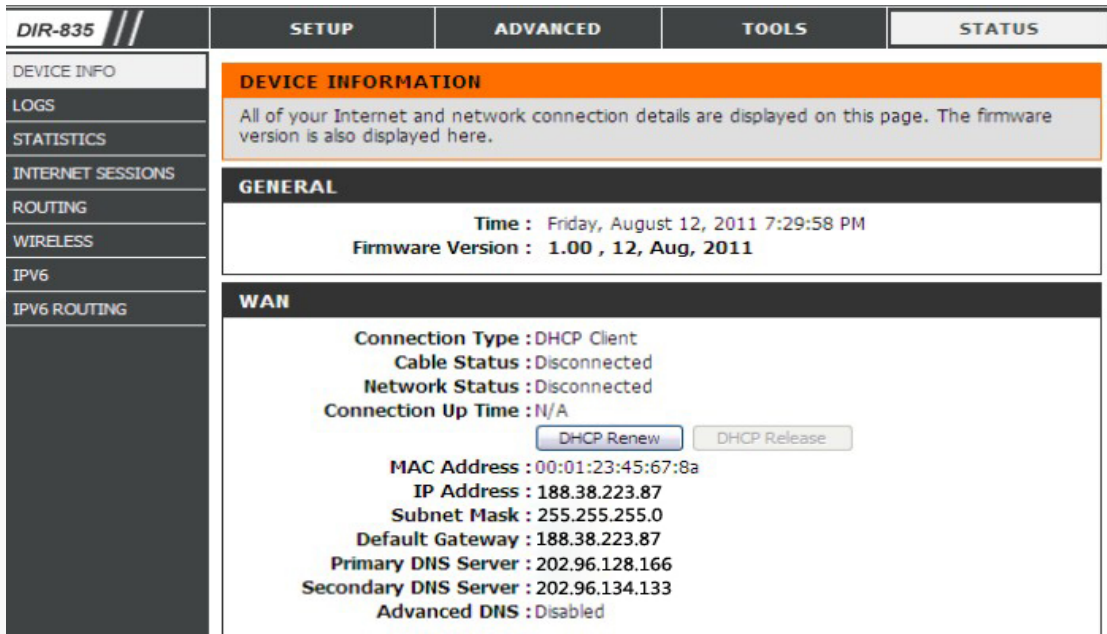
Notes: When extranet access into LAN server, it need do mapping on the router. Then extranet can access into WAN IP.

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

"**menu"→"Network setting"→"LAN"→"Server IP"**→XXX.XXX.XXX.XXX
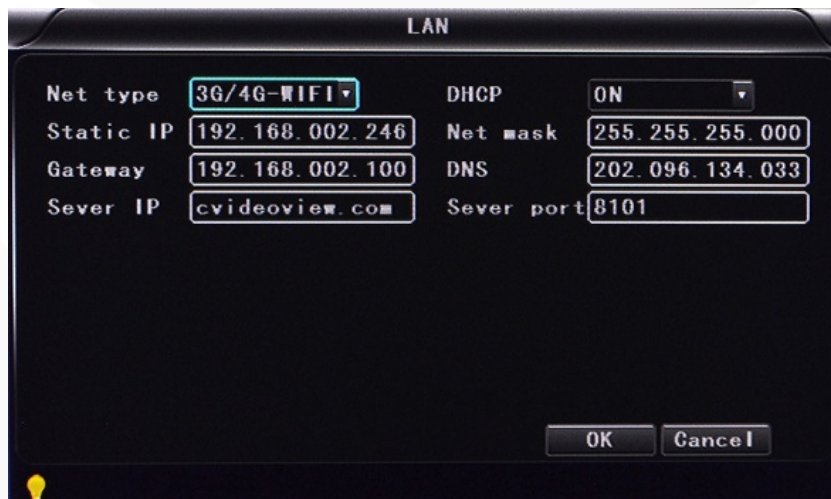
6.9   **Domain binding setting**

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 It will assign a different dynamic IP address for each dial

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

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

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: please refer to the Oray for the DNS apply.

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

6.10 WIFI hot spot (Optional extra)

1. To use the Wifi hot spot function, user has to set the "Netype" as "LAN" and the "DHCP" as "ON"in the MDVR, see below picture:
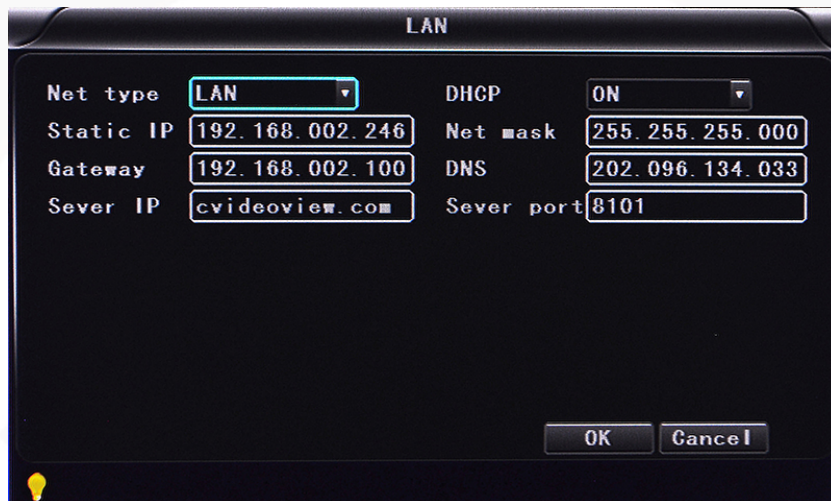
Mark: Wifi hot spot only work for the mobile dvr with this function

WIFI hot spot default settings：

SSID: MDVR

Password: admin888

WIFI router default settings：

Router IP：192.168.10.1

Name：admin

Password：admin

User can modify the SSID name and password by referring to the above settings via connecting with router.

2. Input the default router IP 192.168.10.1 in IE and enter the router menu by inputting default user name and password. The device working condition and 3G/4G dial up connection condition can be checked, see below picture:

3. Click "mode", there are options "3G/4G Wireless Router Mode", "Standard Wireless Router Mode", "Standard Wireless AP and AP Client Bridge Mode" and "Wireless AP Client Mode", default is "3G/4G Wireless Router Mode".

4. 3G/4Gs set up，choose"3G/4G Device" in "Dial Device" and select "Auto select 3G/4G ISP" without changing the default settings.

5. Choose "Lan" to do the related settings.

6. Choose"Wireless" to modify the SSID name and password.

7.   Choose "Wireless"-- "Security" to modify the "Encrypt type" and "WPA-PSK key", then click "APPLY".

7. MDVR Spec

4CH Mini AHD Dual SD Cards Mobile DVR　　SVD400HD/SVD400HDL

Model

Model: SVD400HD/SVD400HDL

Specification

- 4CH video local recording and playback, support 720P(1280*720)
- Meet the ISO7637-2 Electrical Resistance Standard. Adopt high quality positioning and communication module with good stability
- Support speed, turn, brake, reversing, doors opening and closing
- Watermark prevents data from being tampered to ensure the veracity and the legal efficiency of the data
- Support break points GPS data transmitting after reconnecting, can realize remote video surveillance, video download, remote alarm, equipment time-correcting, network setting and remote updating etc.
- Support local and remote upgrading
- Adapt 3G network bandwidth dynamic changes automatically, improving video streaming consistency
- Mini size (132*137*40mm) breaks industrial extremity ,convenient for transportation and Installation

Product parameters

Items	parameters	Performance standard
Name	Product name	SVD400HD/SVD400HDL
System	Operation system	LINUX
	Operation interface	Graphical menu operation interface (OSD Menu)
	File system	SW error correction encryption file management system
Video	Video input	4 channels
	Video output	3 channels (2 channels 1.0Vp-p, 75Ω,1 channel 1080P)
	Video display	1 or 4 channels
	Signal system	PAL:25FPS;NTSC:30FPS
	Total resources	PAL:100FPS;NTSC:120FPS
Audio	Audio input	4 channels
	Audio output	2 channels
	Record format	synchronized video & audio recording
	Audio compression	ADPCM
Digital processing and storage	Video compression	H.264
	Image resolution	PAL: 4*720P(1280*720) ；　NTSC: 4*720P(1280*720)
	Image quality	1-8 levels adjustable (1 is the best)
	Video bit-rate	720P: 192K~4M bps(each channel)
	Video storage	720P: 84M~1.75GB Byte/hour(each channel)
	Playback resolution	PAL:1 or 4*720P(1280*720); NTSC: 1 or4*720P(1280*720)
	Storage	Support 2 SD cards ,max 128GB each
Alarm	Alarm input	N/A
	Alarm output	N/A
	Motion detection	High/middle/low sensitivity adjustable
LAN	RJ45	N/A
	Wifi	Optional
	3G/4G	HSPDA/EVDO/CDMA2000/FDD-LTE/TDD-LTE Module optional
GPS	GPS	GPS/ Glonass module optional
Extension interface	RS232	N/A
	RS485	N/A
	Intercom	Available
	G-Sensor	Available
	Canbus	Optional
Others	Power supply and consumption	DC8-36V 5%≤8W
	Operating temperature/humidity	-20~+85℃/≤80%
	Dimension	132（L）*137（W）*40（H）mm
	Package	L178*W120*H178mm/unit
	Net weight	0.6KG/set
	Gross weight	0.9KG/set

4/8CH AHD HDD Mobile DVR SVD420HD/SVD420HDL/SVD820HD/SVD820HDL

Model

Model: **SVD420HD/SVD420HDL/
SVD820HD/SVD820HDL**

Specification

- Support 4/8CH Full 720P AHD real-time recording and playback. 4/8CH audio synchronous recording.
- Support 2.5 inch HDD,max 2TB,SD card and HDD dual storage (Optional).
- H.264 video format,Linux system,dual stream.
- Support remote download and playback function(Video file can be accurate to optional seconds, saving the time and data)
- TES correction encrypted file management system, preventing data from being loss and damaged caused by sudden power off
- Meet the ISO-7637-2 Electrical Resistance Standard. Adopt high quality positioning and communication module with good stability
- Support pre-alarm record,motion detection and alarm linkage.
- Support extendable devices like LED screen, ID reader(support break-point resume), bus station reporter, people counting camera etc.
- Automobile black box function,record speed, GPS position, acceleration of gravity, brake,back the car, swerve,alarm etc.
- 1x VGA Port, support max 1080P video output
- Support optional built-in 3G/4G, WiFi and GPS/Glonass modules .
- RS232×1, RS485×1, USB 2.0 port×1,Canbus 2.0B×1.
- C8-36V wide range voltage supply, standard industrial embedded design,military level anti-vibration technology

Product parameters

Itmes	Equipment parameter	performance standard	
Name	Product name	SVD420HD/SVD420HDL	SVD820HD/SVD820HDL
System	Operation system	LINUX	
	Operation interface	Graphical menu operation interface(OSD Menu)	
	Language	Chinese/English/Portuguese/Russian optional	
	File system	SW Error correction encrypted file management system	
Video	Video input	4 channels AHD input	8 channel AHD output
	VGA output	1 channel,support 1920*1080，1280*720，1024*768	
	CVBS output	1 channel PAL/NTSC output，1.0Vp-p，75Ω,Pin Aviation Connector	
	Video display	1 or 4 channels	1 or 8 channels
	Signal system	PAL：25 FPS；NTSC：30 FPS	
	Total resources	720P PAL：100FPS，NTSC：120FPS	720P PAL：200FPS，NTSC：240FPS
Audio	Audio input	4 channels，600Ω 8 channels，600Ω	
	Audio output	1 channel aviation to CVBS output，600Ω，1.0-2.2V	
	Record format	Synchronized video&audio recording	
	Audio compression	G711U	
Digital processing and storage	Video compression	H.264	
	Image resolution	4*720P（1280*720）	8*720P（1280*720）
	Image quality	1-8 level adjustable (1 is the best)	
	Video bit-rate	720P: 192K～2M bps(each channel)	
	Video storage	720P: 85M～900M Byte/hour(each channel)	
	Playback	1 or 4*720P	1 or 8*720P
	Audio stream bit-rate	4KByte/s/channel	
	Hard disk storage	2.5inch SATA hard disk×1,max 2TB	
Alarm	Alarm input	8channels(activated by high voltage)	
	Alarm output	2 channels	
	Motion detection	High/Middle/Low sensitivity adjustable	
USB	HOST port	The front panel used for files backup and firmware upgrading	
Lan	RJ45	Optional(used for video monitoring)	
	Wifi	Optional	
	3G/4G	FDD-LTE/TD-LTE/WCDMA/CDMA2000 module optional	
GPS	GPS	GPS/Glonass module optional	
Extension interface	RS232	RS232 interface×1	
	RS485	RS485interface×1	
	Intercom	Available	
	G-Sensor	Available	
	CANBUS	Optional	
Others	Power supple and consumption	DC8-36V 5% ≤12W	
	Operating temperature/humidity	-20~85℃ / ≤80%	
	Package	245（L）*190（W）*71（H）mm	
	Net weight	2.8KG（not including hard disk）/set	3.0KG（not including hard disk）/set
	Gross weight	3.0KG（not including hard disk）/set	3.2KG（not including hard disk）/set

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