
Attention

- This product is for vehicle interior use only, in order to prevent short-circuits or the risk of electric shock. Do not use in a wet or extreme-humidity environment.
- If any liquid or foreign object enters the unit, please disconnect the power immediately, and seek qualified service personnel before operating.
- The product is high-tech equipment; with no user-serviceable components. Refer to qualified technical personnel.
- **Installation Environment**
- 8-36V DC power supply. Please confirm the power supply voltage before powering on.
- If the unit will not be used for an extended period, please disconnect the power supply.
- Select an appropriate location for installation, on a flat horizontal surface, with good ventilation and dry conditions.
- Do not install near sources of heat, wet areas or in an area of mechanical vibration or shock.

■ Packing List

Name	Quantity
Dual SD card Mobile DVR	1
User Manual	1
Certificate of Approval	1
Remote Control (not including battery)	1
Connecting Cables	3
Key	1

Note: Specifications or parameters are subject to change without notice, in the interest of product improvements. Please check with us for the latest information.

Contents

1	Product Overview	4
2	Basic functions	4
2.1	Audio/Video Compression Format	4
2.2	Audio/video recording mode	4
2.3	Image quality during monitoring, recording, playback	4
2.4	Total Resources	5
2.5	Audio/Video synchronous recording	5
2.6	Access detection	5
2.7	Signal Loss Alarming	5
2.8	Alarm Linkage	5
2.9	Alarm Pre-recording	5
2.10	Full Duplex	6
2.11	Malfunction Alarming	6
2.12	Self-test Status and Self-recovery	6
2.13	Front-end Device Control and Multi-channel Monitor/Switch	6
2.14	Networking	6
2.15	Data Backup Methods	6
2.16	Authority, Encryption and Data Safety	6
	Log Function	6
3	Features	7
3.1	Operating System	7
3.2	Compression format	7
3.3	Monitoring and Recording	7
3.4	Index and Playback	7
3.5	SD card storage and data backup	7
3.7	Others	7
4	Technical Parameters	8
5	Installation Instructions	11
5.1	External Interface Wiring	11
5.2	SD Card Installation	11
6	Usage Instructions	11
6.1	Front Panel	11
6.2	Remote Control Operation	11
6.3	Menu Settings	12
6.4	Video Playback	18
6.5	Video Backup	18
6.6	PTZ control	19
6.7	Video Data Volume	19
6.8	Extranet Port Mapping	19
6.9	Domain binding setting	20

1 Product Overview

This four-channel embedded digital SD card video recorder is designed for vehicle surveillance. It uses an embedded processor/embedded operating system, combined with video/audio compression/decompression, GPS, event recorder, and high-capacity SD card storage technology to ensure high performance and stability. Widely used for passenger vehicles, buses, transit, shipping, rail and other areas that require surveillance.

2 Basic functions

2.1 Audio/Video Compression Format

The video adopts the latest ISO14496-10 (H.264) video compression technology with high compression rates, to ensure better image quality under less storage. The audio adopts G711A compression method, to output superior sound with low distortion.

2.2 Audio/video recording mode

- **Compression format**
- Audio and video data are stored within special files, and encrypted to prevent data loss in the event of power interruptions.
- **Compression stream**
- Image quality with 8 levels and adjustable (192kbps--2.0Mbps/channel) to meet different requirements.
- **Storage**
- Supports 2 x 128GB SD cards, auto over-writing or cycle storage.

2.3 Image quality during monitoring, recording, playback

- **Resolution**
- **960H:** Monitoring: 960*576/CH; Recording: 960*576/CH; Playback: 960*576/CH
- **720P:** Monitoring: 1280*720/CH; Recording: 1280*720/CH; Playback: 1280*720/CH
- **Frequencies**
- The monitoring, recording and playback are all at 30fps
- **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 960H:**
- Supports 4 channels 960H (960*576) simultaneous recording, total 120fps.
- Supports 4 channels 960H (960*576) simultaneous playback, total 120fps.
- **4CH 720P:**
- Supports 4 channels 720P (1280*720) simultaneous recording, total 120fps.
- Supports 4 channels 720P (1280*720) simultaneous playback, total 120fps.
- **6CH 960H:**
- Supports 6 channels 960H (960*576) simultaneous recording, total 180fps.
- Supports 6 channels 960H (960*576) simultaneous playback, total 180fps.
- **2CH 720P&4CH 960H:**
- Supports 2 channels 720P (1280*720) and 4 channels 960H (960*576) simultaneous recording, total 180fps.
- Supports 2 channels 720P (1280*720) and 4 channels 960H (960*576) simultaneous playback, total 180fps.
-

2.5 Audio/Video synchronous recording

- Records and plays back the audio/video/GPS positioning data simultaneously. The information can be checked by our CMS software.

2.6 Access detection

- If motion detection is enabled and a camera detects movement, the monitoring area can start recording and trigger the alarm. Warning-area size, location, number and area parameters are user-settable.

2.7 Signal Loss Alarming

- In the event of video signal loss, the system will send an alarm signal via internet 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. Requires 3G/4G options.

2.8 Alarm Linkage

- Supports 4CH alarm input (8-36v high level voltage to trigger): 1CH alarm out (by relay, max. 500mA, switch ON). When an alarm is triggered, the audio recording will be started automatically (30-330s, adjustable). Alarm-out will close for (5s-900s-- adjustable) and send an alarm signal. Response time is less than 1s.

2.9 Alarm Pre-recording

- Alarm video mode, alarm pre-records more than 5s 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

- If the DVR encounters an error, the alarm switch will activate, displaying alarm information for a minimum of 6 minutes.

2.12 Self-test Status and Self-recovery

- When in working status, the “RUN” indicator will constantly flash and check the system. Recovery will take no more than 3 minutes if the system crashes.

2.13 Front-end Device Control and Multi-channel Monitor/Switch

- The DVR can control PTZ cameras through standard protocols (RS-485, PELCO-D, 9600 baud rate), 4 or 6 channels real time, switchable to monitoring mode.

2.14 Networking

- If using CMS software with a built-in 3G module, the vehicle can be monitored remotely.

2.15 Data Backup Methods

- Backing up the SD card data into a computer via SD card reader.
- Downloading the SD data remotely through the network.
- Transfer the SD card data to a computer, download and play the media via our free DVR player software. Users can also convert the SD files into universal AVI format to make them viewable in standard media players.

2.16 Authority, Encryption and Data Safety

- Enter the DVR menu with a password (default is “6666”). Data is stored in a special file system to ensure that it is encrypted and secure.

- **Log Function**

- The log includes alarm and malfunction information, and is stored into the SD card. It can be reviewed via your computer.

3 Features

3.1 Operating System

- Embedded Linux operating system for high stability and reliability.
- Graphical user interface.

3.2 Compression format

- H.264 format: Superior frame rate and best-quality image output.

3.3 Monitoring and Recording

- Monitor: MAX 6CH 960H (960*576), MAX 4CH 720P (1280*720)
- Recording: PAL 150fps, NTSC 180fps, full real-time 6CH CIF, HD1,D1,960H,720P recording.
- Record modes: By alarm, schedule, manual, motion detection.
- Supports 6CH video and 6CH audio meanwhile recording.
- Record image quality: 8 levels adjustable
- Video recorded in special file system, to ensure lifespan and safety of SD card.
- Reliable evidence, with unalterable audio/video data.

3.4 Index and Playback

- Index and playback by time.
- Supports 4CH/6CH audio, 1CH video (selectable), index and playback are simultaneous. Supports audio playback for one channel (selectable).
- Data can be played only by our software to ensure chain of custody control.

3.5 SD card storage and data backup

- Supports two SD cards, up to 128GB maximum, each (total 256GB).
- SD card data can be backed up via our free viewing software.
- Dual MCU control, to ensure DVR stability.
- IR Remote Control included.

3.7 Others

- Upgrade through the SD2 card, for easy maintenance and upgrades.
- Password-protected, to avoid data corruption and system tampering.
- Delayed shutdown: Default is 5s, and user-adjustable.
- Surge and brownout protection.
- Real-time timer.
- Advanced shock-mounting for the PCB panel and components.
- Watchdog function to avoid system crashes.

4 Technical Parameters

Items	Device parameters	DVR/NVR Performance index		
Name	Product Name	4CH 960H SD Mobile DVR	4CH IP 720P SD Mobile DVR	4CH AHD 720P SD Mobile DV R
System	Operation System	Linux		
	Operation Interface	Graphical Interface		
	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		
	Video Display	1 Channel VGA Supports 1920*1080 , 1280*720 , 1024*768 Resolution		
	Video Standard	1 or 4 Screen Display		
	System Resources	PAL:25frames/Sec NTSC:30frames/Sec		
Audio	Audio Input	PAL: 100 Frames; NTSC: 120 Frames		
	Audio Output	Four Channels Independent Input 600Ω		
	Basic Output Level	1 Channel (any of the Channels can selected)		
	Distortion Plus Noise	1.0—2.2V		
	Recording Mode	≤-30dB		
	Audio Compression	Sound And Image Synchronization		
Digital Processing & Storage	Image Compression	G711A		
	Image Format	H.264 Fixed Code Stream		
	Video Stream	PAL: 4*960H (960*576) NTSC:4*960H (960*480)		
	Video HDD Usage	PAL:4*720P (1280*720) NTSC: 4*720P (1280*720)		
	Playback Resolution	PAL:4*720P (1280*720) NTSC: 4*720P (1280*720)		
	Audio Bit rate	192Kbps-2.0Mbit/s (channel)		
	Audio HDD Usage	CIF:85M-394MByte/hour D1、960H:85M- 675MByte/hour		
	SD Storage	720P:85MB-900MByte/hour		
	Image Quality	PAL: 1 or 4*960H(960*576) NTSC: 1 or 4*960H(960*480)		
	Motion Detection	PAL: 1 or 4*720P (1280*720) NTSC: 1 or 4*720P (1280*720)		
Alarm	Alarm in	4KByte / s / channel		
	Alarm out	14MByte / hour / channel		
	Motion Detection	Double SD card storage, Supports Max 2* 128GB		
		Choose from eight levels		
Alarm	Alarm in	4 Channels Independent Input. High Level Trigger		
	Alarm out	1 Channels Independent output		
	Motion Detection	available		

Network Interface	Wired Net Access	Can Expand One 6-pin Ethernet Port
	WiFi	Can Expand One WiFi Module Outside, 802.11 B/G/N
	3G/4G	Can Expand One FDD-LTE/TD-LTE/WCDMA/CDMA2000 Module Inside
GPS Interface	GPS	Can Expand GPS Module Internally
Extend Interface	RS232	Extensible for connection to other vehicle equipment
	RS485	Extensible for connection to other vehicle equipment and PTZ Camera
	Intercom	Optional Intercom Module
	G-Sensor	Optional G-Sensor Module
	CAN Bus	Not Natively Supported--Custom Order Only
	Others	Power Consumption
Working Temperature		-20°F ~ +185°F
Clock		Built-In Clock/Calendar
Packaging	Product Size	5.19 (L) x 4.69 (W) x 1.57 (H) Inches
	Product Weight	1.32 lbs (without SD)

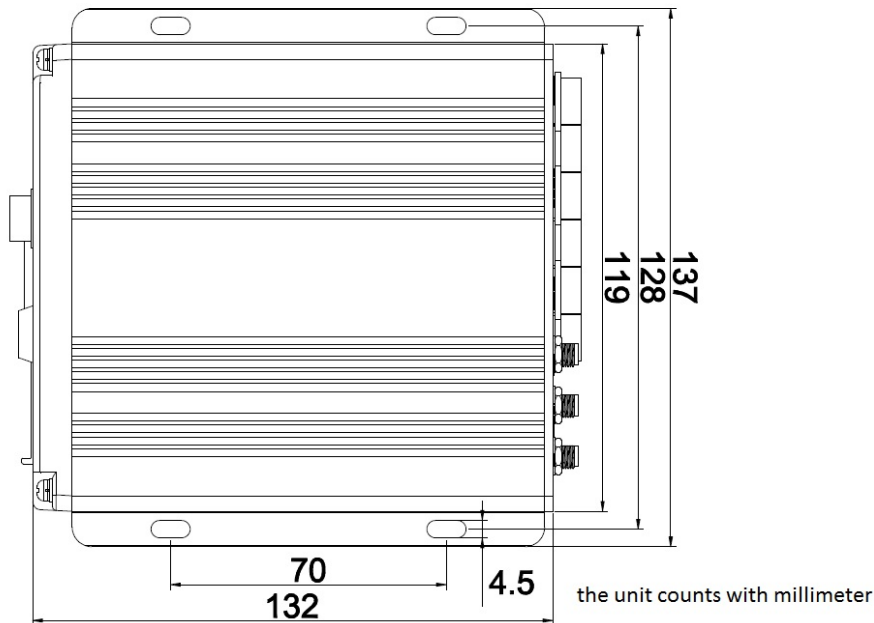
Items	Device parameters	SDVR Performance index	
Name	Product Name	6CH 960H SD Mobile DVR	2CH IP 720P+4CH Analog 960H SD Mobile DVR
System	Operation System	Linux	
	Operation Interface	Graphical Interfaces	
	File System	Proprietary Format for security & chain of custody	
	System Privileges	User Password	
	Video Input	4/6ch Both B&W and Color Cameras	
Video	Video Output	1 Channel PAL/NTSC Output, 1.0Vp-p, 75Ω, Composite Video Signal 1 Channel VGA Supports 1920*1080 , 1280*720 , 1024*768 Resolution	
	Video Display	1, 4 or 6 Screen Display	
	Video Standard	PAL: 25 frames/sec NTSC: 30 frames/sec	
	System Resources	PAL: 150 Frames NTSC: 180 Frames	
Audio	Audio Input	Six Channels Independent Input	
	Audio Output	1 Channel (of 4/6 Channels Can Be Selected)	
	Basic Output Level	1.0—2.2V	
	Distortion Plus Noise	≤-30dB	
	Recording Mode	Sound And Image Synchronization	
	Audio Compression	G711A	
Digital Processing & Storage	Image Compression	H.264 Fixed Code Stream	
	Image Format	PAL: 6*960H (960*576) NTSC: 6*960H (960*480)	PAL: 2*720P (1280*720) +4*960H (960*576) NTSC: 2*720P (1280*720) +4*960H (960*576)
	Video Stream	192Kbps-2.0Mbit/s (channel)	
	Video Taking Up Of Hard Disk	CIF: 85M-394MByte/hour D1: 960H:85M-675MByte/hour	720P:85MB-900MByte/hour

	Playback Resolution	PAL: 1 or 4*960H(960*576) NTSC: 1 or 4*960H(960*480)	PAL: 1 or 2*720P (1280*720) +4*960H (960*576) NTSC: 1 or 2*720P (1280*720) +4*960H (960*576)
	Audio Bit Rate	4KByte / s / channel	
	Audio usage of Hard Disk	14MByte / hour / channel	
	SD Storage	Double SD card storage, supports Max 2* 128GB	
	Image Quality	Select from eight levels	
Alarm	Alarm in	4 Channels independent Input. High level trigger	
	Alarm out	1 Channel Independent output	
	Motion Detect	<u>available</u>	
Network Interface	Wire net access	Can Expand One 6-pin Ethernet Port	
	WiFi	Can Expand One WiFi Module Externally, 802.11 B/G/N	
	3G/4G	Can Expand One FDD-LTE/TD-LTE/WCDMA/CDMA2000 Module Internally	
GPS Interface	GPS	Can Expand GPS Module Internally	
Extend Interface	RS232	Extensible for convenient connection to other vehicle equipment	
	RS485	Extensible for convenient connection to other vehicle equipment & PTZ cameras	
	Intercom	Can Expand Intercom Module internally	
	G-Sensor	Can Expand G-Sensor Module internally	
	CAN bus	Not Supported, custom order only	
	Power Consumption	DC8-36V 8W (without SD)	
Others	Working Temperature	-14°F to 185°F	
	Clock	Built-In Clock, Calendar	
Packaging	Product Size	132(L)*119(W)*40(H) mm	
	Product Weight	0.6KG(without SD)	

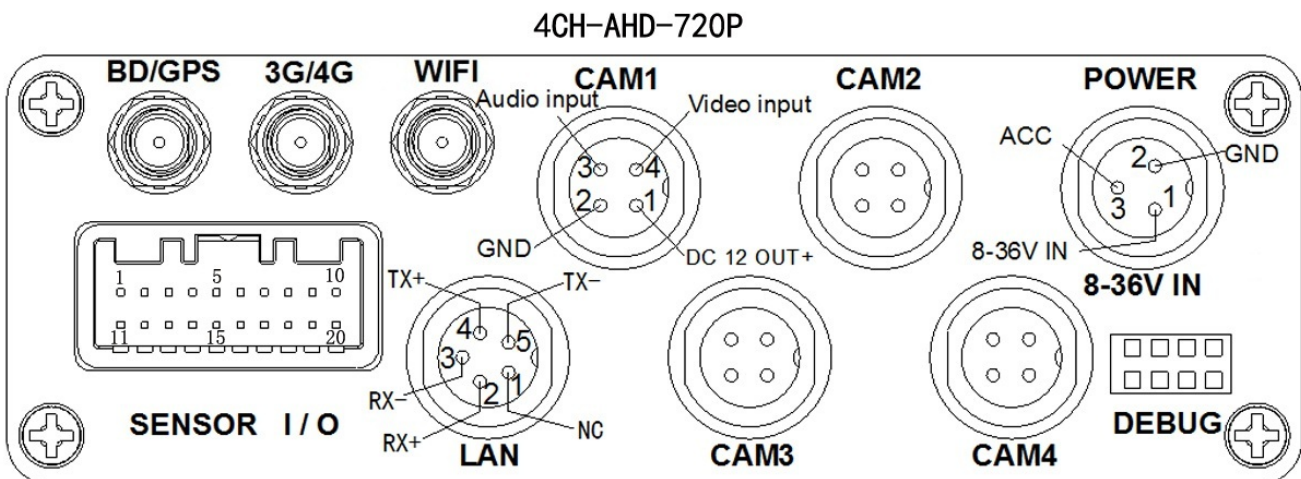
Optional Features:

Basic Type (Pin Aviation Connector) / +A: GPS / +B: 3G/4G / +E LAN Port / +W: Wifi

5 Installation Instructions



5.1 Rear Panel Connections



SENSOR Interface definition:

1 VGA_R_OUT	8 A-OUT	15 Alarm input2
2 VGA_G_OUT	9 V-OUT	16 Alarm input3
3 VGA_B_OUT	10 DC12V OUT+	17 Alarm input4
4 RS485+	11 VGA-VS	18 Alarm output COM1
5 RS485-	12 VGA-HS	19 Alarm output COM1
6 RS232 (TX)	13 GND	20 GND
7 RS232 (RX)	14 Alarm input1	

5.2 External Interface Wiring

- If the power supply is 12V, then total current of 12V outputs can be max 3A. If more power is required for cameras, we suggest that customers get power for other cameras from the 12V vehicle power directly, or use our optional vehicle power supply.
- 3G/4G/LAN interfaces are optional and available only at time of order.
- Ports: **DEBUG**: Testing port **LAN**: Network port **SENSOR**: Alarm port

5.3 SD Card Installation

Unlock the SD cover with the key, making sure the arrow points to the left, in “Off” position.

Note: The lock also controls the power to the system. When the lock is ON, it activates the system. Before turning ON, please ensure that all the cables in the system are well connected; otherwise, the system can be damaged.

6 Usage Instructions

6.1 Front Panel



- **PWR LED**: Lighted upon application of power/ignition.
- **GPS LED**: When lighted, GPS is active
- **4G LED**: When lighted, 3G is active
- **WIFI LED**: When lighted, the WiFi module is active
- **SD1 LED**: When recording, playing, backup, LED is flashing
- **SD2 LED**: When recording, playing, backup, LED is flashing
- **Key and Other Descriptions**
- **IR**: Infrared remote control receiving window.
- **LOCK**: Use the key to remove the hard drive. **Wait until the DVR is no longer in recording mode before unlocking, to avoid data corruption.**
- 1: SD card1 slot
- 2: SD card2 slot
- A/V OUT: Audio/ Video output, Voice intercom input
- MIC input

6.2 Remote Control Operation

		① Enter main menu; ②Return
		Record
		Enter the sub-menu to set and confirm
		Playback clips
		① Stop when recording or playback ②Delete
		Pause/Play during playback
		Fast-forward when playback video, play speed can be x2, x4, x8, press one time = x2, two times = x4, and 3 times = x8.
		Fast Reverse during play back, press back once for 10 seconds
		For PTZ wiper (customized)
		Enter PTZ control mode.
		Control PTZ Zoom
		Control PTZ focus
		Mute key, toggles audio output during playback of audio-enabled recordings.
		① Exits 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 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.	
	① 4 channel display during surveillance, record and playback. ② Enter or set system password.	
Other number buttons	Press 1, 2, 3, 4, 5, 6, 7, 8 switch to CH1, CH2, CH3, CH4, CH5, CH6, CH7, CH8	
Other buttons	Undefined and not used.	

Note: When the DVR is in an alarm condition, the remote control is disabled.

6.3 Menu Settings

(Our system supports IR remote control and mouse for operation, This document explains the operation of the remote control. (The left 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 "" to enter the Main Menu.

Select from "System" "Disk", "Record", "Playback", "Network" and "Alarm" menus by pressing these buttons"、 、 、 " , then press "" to enter.

- **System:** Select from "Setup", "Vehicle", "Other", "System info", "Log", "Config"
- **Setup:** Select from "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 vehicle 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: Choose to save / not-save parameters)
- **Operating Method:** Enter the menu, press "、" to select the options, then press "" to enter the modification mode, adjust the number by pressing "、 、 、", press "" to save changes。 Press " " key to exit when 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.
- **Password:** Enter the default password before changing the new password.
- **New password:** Enter the new password.
- **Serial setting:** Sets up the communication protocol with external equipment.
- **RS232 set:** Supports dispatch, led panel, ID card, OBD, person count.
- **Bit rate:** Supports 2400bps,4800bps,9600bps,19200bps and 38400bps.
- **Data bit:** Default value is 8.
- **Stop bit:** Default value is 1.
- **Verify:** Default value is none.
- **RTS/CTS:** Default value is none
- **RS485 set:** Supports PTZ, led screen, oil sensor, ID card, OBD, person count.
- **Bit rate:** Supports 2400bps,4800bps,9600bps,19200bps and 38400bps.
- **PTZ setting:** Adjust and control the camera with external PTZ device.

-
- **Protocols:** Default PELCO-D, Supports PELCO-D and PELCO-P.
 - **Channel1-Address:** Channel one-Device address.
 - **Channel2-Address:** Channel two-Device address.
 - **Channel3-Address:** Channel three-Device address.
 - **Channel4-Address:** Channel four-Device address.
 - **GPS setting:**
 - **Time zone:** different by countries, eg: China for UTC+08
 - **GPS Interval:** GPS Data upload interval, used with other system interface.
 - **G-sensor setting:**
 - **G Sensor-X:** 2000mg (default value--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 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, eg: China for UTC+08
- **NTP Interval:** time data upload interval, used with NTP server.
- **Vehicle information:** details of vehicle plate number, route and driver code.
- **Vehicle ID:** Numbers or common symbols.
- **A-person:** Sets the original carried person for the vehicles.
- **Line Num:** the driving route and code.
- **Driver ID:** Sets driver identification 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 vehicle. Eg, when you choose CH 1 as the Zoom , when you start the system, it will display CH1 in full screen .
- **Alarm Phone:** Sets the action of alarm or not.
- **Phone number:** Click alarm function, sets the phone number for alarm.
- **System information:** Displays DVR hardware code number, software version information (read only, can't be changed)
- **Device encoding:** Unique code for this DVR.
- **Firmware version:** Version Number of DVR software.
- **IMIE:** IMIE Number 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 max 3).
- **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 factory defaults.
 - **Disk:** Check and format
 - **Disk Name:** Display the system-recognized HDD name.
 - **Overwrite:** Choose ON or OFF
 - **Total Size:** Displays the total size of HDD.
 - **Free Size:** Displays the remaining Capacity of the HDD.
 - **Free record time:** It is only an estimate.
 - **Format:** Format HDD (only format the head files of HDD) . Confirm to format, cancel to return the original interface.
 - **Record:** Video file setting, Includes “codec” , ”channel” and ”record plan”.
 - **Codec:**
 - **Channel:** Select the channel setting (the information of each channel can 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 10 levels,192kbps/320kbs/512kbps/768kbps/1Mbps/1.2Mbps/1.5bps/2Mbps/3Mbps/4Mbps)
 - The right side is the network transmission quality (total 13 levels 64kbps/80kbps/112kbps/144kbps/192kbps/256kbps/320kbps/384kbps/512kbps/768kbps/1024kbps)
 - **Audio:** Select to record with/without audio.
 - **JPEG:** Set capture of time and interval. Select a trigger for alarm to capture, choose time: 10s, 30s, 60s, 120s, 300s.
 - **Input mode:** AHD DVR can choose AHD or Analog input.
 - **Copy to all:** Copy to all channels. **Note:** Must restart the DVR after setting.
 - **Channel:** Select the channel (the information for each channel can be set independently)
 - **Channel name:** The “friendly” name of each channel.
 - **OSD:** Choose to use on screen display 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 recording
 - **File length:** The packeted video files length setting (5/10/15/25/30/60 minutes options)
 - **Prerecord:** Alarm recording time (none, 5s, 10s, 15s)
 - **Event REC time:** Alarm-triggered video duration (30-330s options, 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 (must restart after setting)
 - **The operating method is similar to the "basic settings" operating**
 - **Playback:** Play back recorded video.
 - There is video date in the menu, it will show the video time after pressing "Search", choose the playback time range according to desired time, then press the "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 for backup to USB Disk
 - The operating method refers to "local video playback instruction"
 - **Network Setting: LAN, 3G, WIFI, IPC**
 - **LAN:** Connected 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.
 - **Local Network Setting (LAN: Network Type: LAN and 3G/4G-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. Only one DHCP server can be enabled in one LAN).
 - **Static IP:** Setup under LAN and WIFI mode.
 - **Net mask:** Subnet mask within LAN or WIFI mode.
 - **Gateway:** Gateway within LAN or WIFI mode.
 - **DNS:** Use when the server IP is DNS mode--not necessary with static IP.
 - **Server IP:** IP to use for remote server (CMS)
 - **Server Port:** Keep it at default of 8101.
 - **3G Network Setting:**
 - **Net type:** Select 3G-WIFI to use 3G mode.
 - **DHCP:** ON
 - Access "Network" → "3G"
 - **APN:** Access Point Name.
 - **Dial-up Number:** Get this info from your carrier.
 - **User Name:** Fill in if required.
 - **Password:** Fill in if required.
 - **Note:** Please make sure to select the proper SIM card type 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:** User password for SSID.
 - **Certificate:** Supports "WPA-PSK".

-
- **Encryption:** Supports "TKIP". Access router, check its "**WIFI**" encryption. **Notes:**

Please make sure the router WIFI encryption is identical to the setup in MDVR if the units use WIFI.

■ **IPC Setting** (This function is suitable for a Mobile NVR only)

- **Channel:** Main channel--selectable.
- **Time Sync:** Synchronize IPC and device.
- **IPC Addr:** Set and modify IPC address when the ip camera and system in the same network area.
- **IPC Port:** The device port which connects with ip camera.
- **User Name:** the user name which connects with ip camera.
- **Password:** The user names password
- **Search:** Search the local network IPC
- **Save:** Saves edits. **Note:** Network type must be set to **LAN** when using IPC.
- **Alarm setting:** Sensor alarm, motion detecting alarm and other alarm settings.
- **Sensor:** External sensor alarms.
- **MD:** Motion detecting alarm.
- **Other: Other** alarm settings.
- **Sensor Setting**
- **Channel:** Main channel--selectable.
- **Enable:** Turn on/off sensor alarm.
- **Sensor Name:** Set and modify the name of sensor.
- **Trigger level:** High or low level trigger for an alarm.
- **linkage:** Set up ON/ OFF video linkage function.
- **OSD:** Choose whether to overlay alarm information.
- **Lock:** Disable selected alarm.
- **Alarm:** Choose whether to overlay alarm information on screen.
- **Alarm Out:** Choose whether to output alarm.
- **Save:** Save edits and reboot.
- **MD:** Motion detecting alarm.
- **Channel:** Main channel-- selectable.
- **Enable:** Enable/Disable motion detection recording and sensitivity. Options: "Off", "High", "Medium", "Low". Must set the icon "S" (alarm record) for time range of detection in "Record Setting" status except Select "High", "Medium", "Low" "High", "Medium", "Low" = 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 vehiclebattery.
- **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 loss, motion detection alarm, HDD failure, power.

6.4 Video Playback

The System supports two video playback methods. 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 “”to enter, next press the key “”or “”to select the playback date ,and move to “Search”, then press “”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 “”key to move the option “play channel”, again press “”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 “”.Press “”or“”to select the replay channel, then press “”or press “” to button “play” ,next press “”to replay, the system will switch to the video playback status, you can see the playback video in the selected channel. Press “、、、”keys to switch the channel, and press “”back to the quad screen. Press “”to stop, press again for replay. Press “”to exit and back to 4ch record status, press “”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 System Supports 2 video backup methods.

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

Connect USB disk to the DVR’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 could be taken away, then press “ ”to exit if no other operations.

If you need to backup another files, press “” to repeat the previous steps to backup .

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 shows, 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 Video Data Volume

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

VIDEO QUALITY	Total Record Frame	4CH 960H Data Size Per Hour	4CH 720P Data Size Per Hour
2.0 Mbps (HIGHEST)	100 frame	3.6GB	5.16GB
1.5 Mbps (HIGHER)	100 frame	2.65GB	3.87GB
1.2 Mbps HIGH (default)	100 frame	2.1GB	3.09GB
1.0 Mbps (BETTER)	100 frame	1.8GB	2.58GB
768 Kbps (NORMAL)	100 frame	1.35GB	1.93GB
512 Kbps (LOW)	100 frame	0.9GB	1.29GB
320 Kbps (LOWER)	100 frame	0.55GB	0.81GB
192 Kbps (LOWEST)	100 frame	0.335GB	0.48GB

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, 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 "**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.

- Name:** fill in a name for MDVR port.
 - Ports to Open:** 8001, 8101, 9001
 - IP Address:** Server IP address
 - Inbound Filter:** TCP、UDP、Allow ALL, Pls select “Allow All”
 - 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 finishing the server set up and the port mapping, you can login via network IP. There are two ways to access the network as follows.

ADSL dial-up: Assigns a different dynamic IP address for each dial up number.

Leased line: 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 router setup, select ”**Dynamic DNS**” to check the related setup.
- **Enable Dynamic DNS:** Enable ON if you need to use DDNS
- **Server Address:** Fill in accordingly
- **Username or Key:** Fill in applied user name
- **Password or Key:** Fill in password
- **Verify Password or Key:** confirm the password
- **Timeout:** Timeout setting
- **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.