# Car Digital Hard Disk Recorder

# User Manual


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 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.
- **Installation Environment**
  - 8-36V DC power supply, please confirm the local power supply before power on.
  - If the machine were not used for a long time, please completely disconnect the video's power supply.
  - 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 |
| Certificate of approval | 1 |
| Remote Control (not include battery) | 1 |
| Connecting Cable | 3 |
| Key | 1 |

**Note: When the specification or parameters changes, no other announcement in addition.**

# Contents


1 Product Overview ..... 3
2 Basic functions ..... 3
2.1 Audio/Video Compression Format ..... 3
2.2 Audio/video recording mode ..... 3
2.3 Image quality when monitoring, recording, playback ..... 4
2.4 Total Resources ..... 4
2.5 Alarm pre-recording ..... 5
2.6 Full duplex ..... 5
2.7 Malfunction alarming function ..... 5
2.8 Self-test the status and self-recovery ..... 5
2.9 Front-end device control and multi-channel monitor and switch ..... 6
2.10 Networking ..... 6
2.11 Data backup ..... 6
2.12 Authority, encryption, data safety ..... 6
2.13 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 ..... 8
3.5 HDD storage and data backup ..... 8
3.6 Control ..... 8
3.7 Others ..... 9
4 Technical Parameters ..... 9
5 Instruction of Installation ..... 15
5.1 Instruction of External Interface Wiring ..... 15
5.2 Instruction of HDD Installation ..... 20
6 Instruction of Using ..... 23
6.1 Instruction of Front Panel ..... 23
6.2 Instruction of Remote Control Operation ..... 24
6.3 Menu Setting Instruction: ..... 25
6.4 DVR Video Playback Instruction ..... 46
6.5 Video Backup ..... 49
6.6 PTZ control ..... 49
6.7 Video Data Volume ..... 50
6.8 Extranet Port Mapping ..... 51
6.9 Domain binding setting ..... 55
6.10 WIFI hotspot ..... 56

# 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 IS014496-10 (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 Channel SDI 1080P 、4 Channel 960H：**(1.0Mbps-6.0Mbps/channel)

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

  **8 Channel 960H、12 Channel 960H：**(192Kbps-2.0Mbps/channel)

  **4 Channel 1080P/960P/720P：**(192Kbps-2.0Mbps/channel)

  **8 Channel 720P、12 Channel 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 Channel SDI 1080P:** 1920*1080/CH; Recording: 1920*1080/CH; Playback: 1920*1080/CH

  **4/8/12 Channel 960H:** 960*576/CH; Recording: 960*576/CH; Playback: 960*576/CH

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

  **4 Channel 1080P/960P/720P:** 1920*1080/CH; Recording: 1920*1080/CH; Playback:1920*1080/CH

  **8 /12Channel 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 Channel SDI 1080P：**1920*1080 / channel
  **4/8/12 Channel 960H：** 960*576 / channel
  **4/8 Channel AHD 720P:** 1280*720/CH
  **4 Channel 1080P/960P/720P：**1920*1080 / channel
  **8/12 Channel 720P：** 1280*720/channel

- Horizontal resolution for playback

  **4 Channel SDI 1080P：**1920*1080/ channel

  **4/8/12 Channel 960H：**960*576 / channel

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

  **4 Channel 1080P/960P/720P：**1920*1080/ channel

  **8/12 Channel 720P：** 1280*720/channel

## 2.4 Total Resources

**4 Channel SDI 1080P：**

- Support 4 channels 1080P(1920*1080) simultaneous recording, total 120fps.
- Support 4 channels 1080P(1920*1080) simultaneous playback, total 120fps.

**4 Channel 960H：**

- Support 4 channels 960H (960*576) simultaneous recording, total 120fps.
- Support 4 channels 960H (960*576) simultaneous playback, total 120fps.

**8 Channel 960H：**

- Support 8 channels 960H(960*576) simultaneous recording, total 240fps.
- Support 8 channels 960H(960*576) simultaneous playback, total 240fps.

**12 Channel 960H：**

- Support 12 channels 960H (960*576) simultaneous recording, total 360fps.
- Support 12 channels 960H (960*576) simultaneous playback, total 360fps.

**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 4 channels 720P (1280*720) simultaneous recording, total 200fps.
- Support 4 channels 720P (1280*720) simultaneous playback, total 200fps.

**4 Channel 1080P/960P/720P：**

- Support 4 channels 1080P(1920*1080) simultaneous recording, total 120fps.
- Support 4 channels 1080P(1920*1080) simultaneous playback, total 120fps.

**8 Channel 720P：**

- Support 8 channels 720P (1280*720) simultaneous recording, total 240fps.
- Support 8 channels 720P (1280*720) simultaneous playback, total 240fps.

**12 Channel 720P：**

- Support 12 channels 720P (1280*720) simultaneous recording, total 240fps.
- Support 12 channels 720P (1280*720) simultaneous playback, total 240fps.

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

  **4 Channel SDI 1080P 、4 Channel 960H**：4 channels real time, switchable to monitoring mode.

  **8 Channel 960H**：8 channels real time, switchable to monitoring mode.

  **12 Channel 960H**：12 channels real time, switchable to monitoring mode.

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

  **4 Channel 1080P/960P/720P**：4 channels real time, switchable to monitoring mode.

  **8 Channel 720P**： 8 channels real time, switchable to monitoring mode.

  **12 Channel 720P**：12 channels real time, switchable to monitoring mode.

## 2.10 Networking

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

## 2.11 Data backup

- To backup the HDD data into computer via HDD card reader.
- Downloading the HDD data remotely through network.
- Transfer the HDD data to computer, download and play the media via our unique DVR 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 DVR by password, default for “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 Channel SDI 1080P：** SDI 1080P (1920*1080)

  **4 /8/12Channel 960H：** 960H (960*576)

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

  **4 Channel 1080P：** 1080P (1920*1080)

  **8/12 Channel 720P：** 720P (1280*720)

- Record:

  **4 Channel SDI 1080P：**PAL 100fps, NTSC 120fps, full real-time 4CH 1080P recording.

  **4 Channel 960H：**PAL 100fps, NTSC 120fps, full real-time 4CH 960H recording.

  **8 Channel 960H：**PAL 200fps, NTSC 240fps, full real-time 8CH 960H recording.

  **12 Channel 960H：**PAL 300fps, NTSC 360fps, full real-time 12CH 960H recording.

  **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.

  **4 Channel 1080P/960P/720P：**PAL 100fps, NTSC 120fps, full real-time 4CH 1080P recording.

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

  **12 Channel 720P：**PAL 300fps, NTSC 360fps, full real-time 12CH 720P recording.

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

**4 Channel SDI 1080P 、4 Channel 960H** ：4CH video and 4CH audio meanwhile recording.

**8 Channel 720P、8 Channel 960H**： 8CH video and 8CH audio meanwhile recording.

**12Channel 720P、12 Channel 960H**： 12CH video and 12CH audio meanwhile recording.

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

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

**4 Channel 1080P/960P/720P** ：4CH video and 4CH 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 SDI 1080P 、4 Channel 960H** ：4CH video, 1CH audio (any channel can be chosen),

  **8 Channel 720P 、8 Channel 960H**：8CH video, 1CH audio (any channel can be chosen) ,

  **12 Channel 720P 、12Channel 960H**：12CH video, 1CH audio (any channel can be chosen) ,

  **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),

  **4 Channel 1080P/960P/720P**：4CH 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

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

## 3.6 Control

- Dual MCU control, to ensure DVR 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** | **DVR Performance index** | | | |
|---|---|---|---|---|
| Model | **4CH 1080P-SDI** | **4CH 960H** | **8CH 960H** | **12CH 960H** |
| Product Name | 4 Channel Mobile DVR(HDD Storage) | 4 Channel Mobile DVR(HDD Storage) | 8 Channel Mobile DVR(HDD Storage) | 12 Channel 960H 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 SDI Independent Input: 1.0Vp-p，75Ω.Both B&W and Color Cameras | 4ch 960H Independent Input: 1.0Vp-p，75Ω.Both B&W and Color Cameras | 8ch 960H Independent Input: 1.0Vp-p，75Ω.Both B&W and Color Cameras | 12ch 960H 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 | | | |
| | 1 Channel VGA Support 1920*1080 ， 1280*720 ， 1024*768 Resolution | | | |
| Video Display | 1 Or 4 Screen Display | 1 Or 4 Screen Display | 1 /4/8Screen Display | 1 /4/8/12Screen Display |
| Video Standard | PAL:25frames/Sec;NTSC:30frames/Sec | | | |
| System Resources | PAL:100 Frames; NTSC:120 Frames | PAL:100 Frames; NTSC:120 Frames | PAL:200 Frames; NTSC:240 Frames | PAL:300 Frames; NTSC:360 Frames |

| | | | | |
|---|---|---|---|---|
| Audio Input | 4 Channels Independent Input 600Ω | 4 Channels Independent Input 600Ω | 8 Channels Independent Input 600Ω | 12 Channels Independent Input 600Ω |
| Audio Output | 1 Channel(4 Channels Can Be Convert Freely) | 1 Channel(4 Channels Can Be Convert Freely) | 1 Channel(8 Channels Can Be Convert Freely) | 1 Channel(12 Channels 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*1080P（1920*1080） | 4*960H（960*576），4*D1（704*576） | 8*960H（960*576），8*D1（704*576） | 12*960H（960*576） |
| Video Stream | 1.0M-6.0Mbit/s | 192K-2.0Mbit/s | 192K-2.0Mbit/s | 192K-2.0Mbit/s |
| Video Taking Up Of Hard Disk | 450M-2.6GByte/hour | 85M-900MByte/hour | 85M-900MByte/hour | 85M-900MByte/hour |
| Playback Resolution | 1or4*1080P | 1or4*960H，1or4*D1 | 1or8*960H，1or8*D1 | 1or12*960H, 1or12*D1 |
| 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 5% ≤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) | 2.8KG(without HDD) | 3.0KG(without HDD) | 3.4KG(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) | | | |

| **Device parameters** | **AHD Performance index** | |
|---|---|---|
| Model | **TS-910-AHD-720P** | **TS-918-AHD-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) | |

| Items | Device parameters | NVR Performance index | | |
|---|---|---|---|---|
| Name | Product Name | **4CH 1080P Mobile NVR** | **8CH 1080P Mobile NVR** | **12CH 720P Mobile NVR** |
| System | Operation System | LINUX | | |
| | Operation Interface | Graphical Interfaces | | |
| | Operation Interface | Graphical Interfaces, Chinese/English optional | | |
| | File System | Proprietary Format | | |
| | System Privileges | User Password | | |
| Video | Video Input | 4CH 1080P Digital<br>4CH 960P Digital<br>4CH 720P Digital | 4CH 1080P Digital<br>4CH 960P Digital<br>4CH 720P Digital | 12CH 720P Digital |
| | VGA Output | 1CH Support 1920*1080 ，1280*720 ，1024*768 Resolution | | 1CH Support 704*576 Resolution |
| | CVBS Output | 1 Channel PAL/NTSC Output, 1.0Vp-p，75Ω， Pin Aviation Connector | | |
| | Video Display | 1 Or 4 Screen Display | 1 /4/8Screen Display | 1 /4/8/12Screen Display |
| | Video Standard | PAL:25frames/Sec;NTSC:30frames/Sec | | |
| | System Resources | 1080P/960P/720P PAL：100fps，NTSC：120fps | 1080P PAL：200fps，NTSC：240fps | 720P PAL：300fps，NTSC：360fps |
| Audio | Audio Input | 4CH independent input，600Ω | 8CH independent input，600Ω | 12CH independent input，600Ω |
| | Audio Output | 1ch CVBS output，600Ω，1.0-2.2V | | |
| | Distortion Plus Noise | ⩽-30dB | | |
| | Recording Mode | Sound And Image Synchronization | | |
| | Audio Compression | G711A | | |
| Digital Processing Storage | Image Compression | H.264 | | |
| | Image Format | 4*1080P（1920*1080）<br>4*960P（1280*960）<br>4*720P（1280*720） | 8*1080P（1920*1080） | 12*720P（1280*720） |
| | Video Taking Up Of Hard Disk | 1-8 adjust | | |
| | Video Stream | 192Kbps-2.0Mbit/s（each ch） | | |
| | Video Taking Up Of Hard Disk | 85MB-900MByte/hour | | |
| | Playback Resolution | 4*1080P（1920*1080）<br>4*960P（1280*960）<br>4*720P（1280*720） | 8*10800P（1920*1080P） | 12*720P（1280*720） |

| | | |
|---|---|---|
| | Audio Bitrate | 4KByte/s（each ch） |
| | Audio Taking Up Of Hard Disk | 14MByte/hour（each ch） |
| | HDD Storage | 1 SATA，2.5"HDD ，Max capacity 2TB； |
| alarm interface | Alarm in | 8 Channels Independent Input. High Voltage Trigger |
| | Alarm out | 2 Channels Independent output |
| | Move Detect | available |
| USB interface | Host Access | Can Expand One For USB Disk Backup |
| network interface | Wire line Access | Can Expand One RJ45 Ethernet Port |
| | Wifi | Can Expand One Wifi Module Inside |
| | 4G/3G | Can Expand FDD-LTE/TD-LTE/WCDMA/CDMA2000Module Inside |
| GPS interface | GPS | Can Expand GPS Module Inside |
| extend interface | 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 |
| others | Power Consumption | DC8-36V 5% ≤12W |
| | Working Temperature | -20~85℃ / ≤80% |
| | Clock | Built-In Clock, Calendar |
| | Carton Size | 245（L）*190（W）*71（H）mm |

## 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

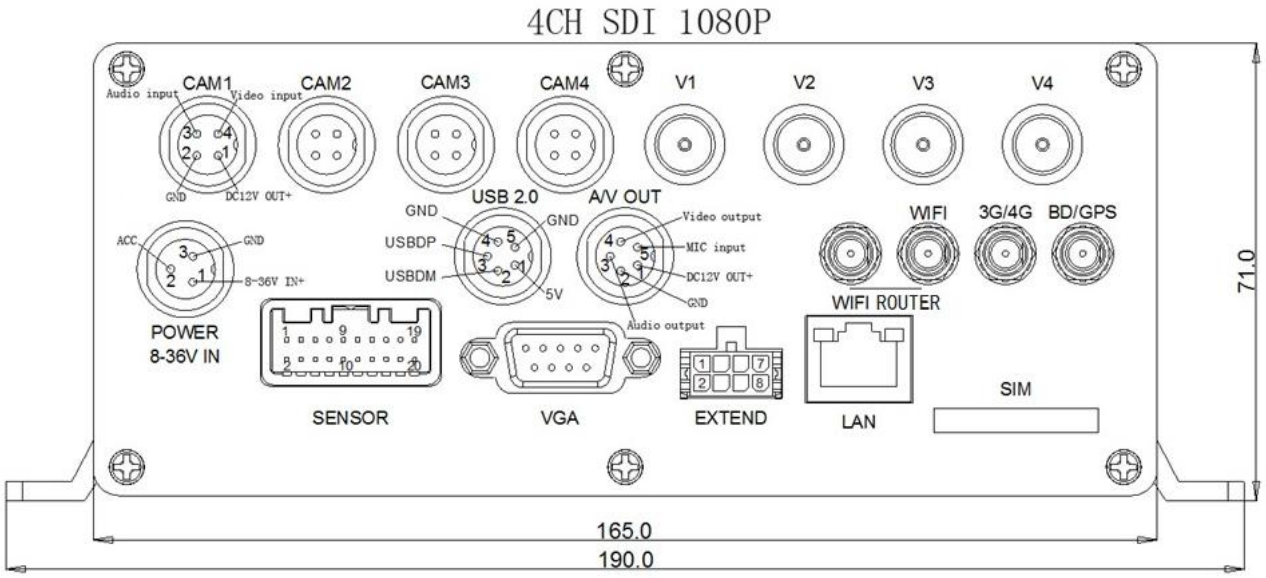
+L：Wifi hot-Spot

+P：POE

+W：Wifi Function

# 5 Instruction of Installation

## 5.1 Instruction of External Interface Wiring



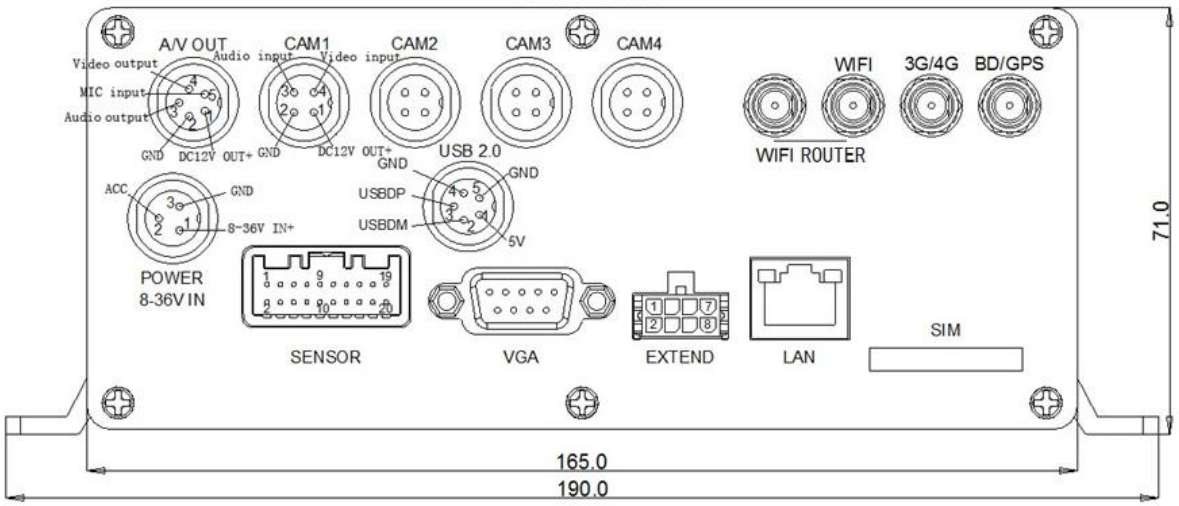

SENSOR Interface definition:

| | | | |
|---|---|---|---|
| 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 |

## 4CH 960H



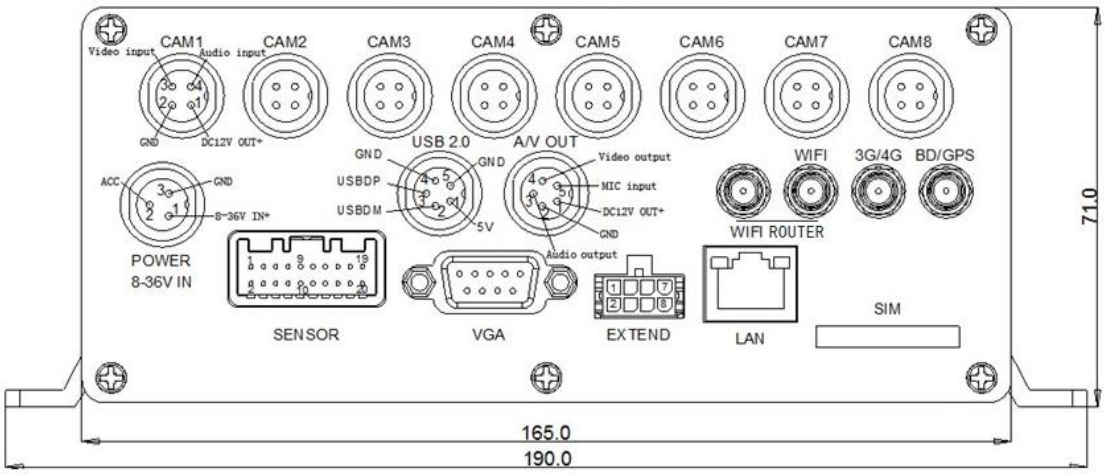

### SENSOR Interface definition:

| | | | |
|---|---|---|---|
| 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 960H



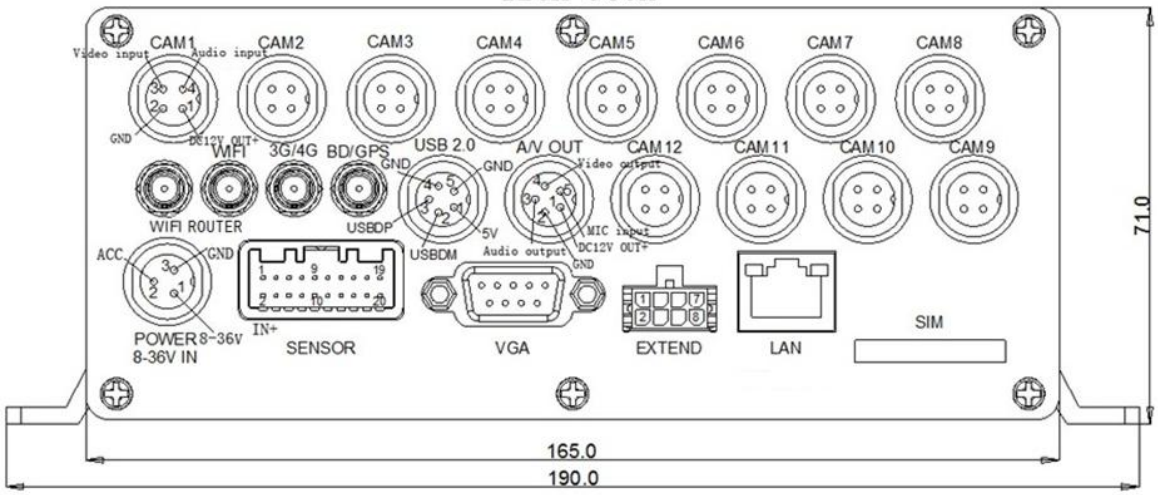

### SENSOR Interface definition:

| | | | |
|---|---|---|---|
| 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 |

## 12CH 960H



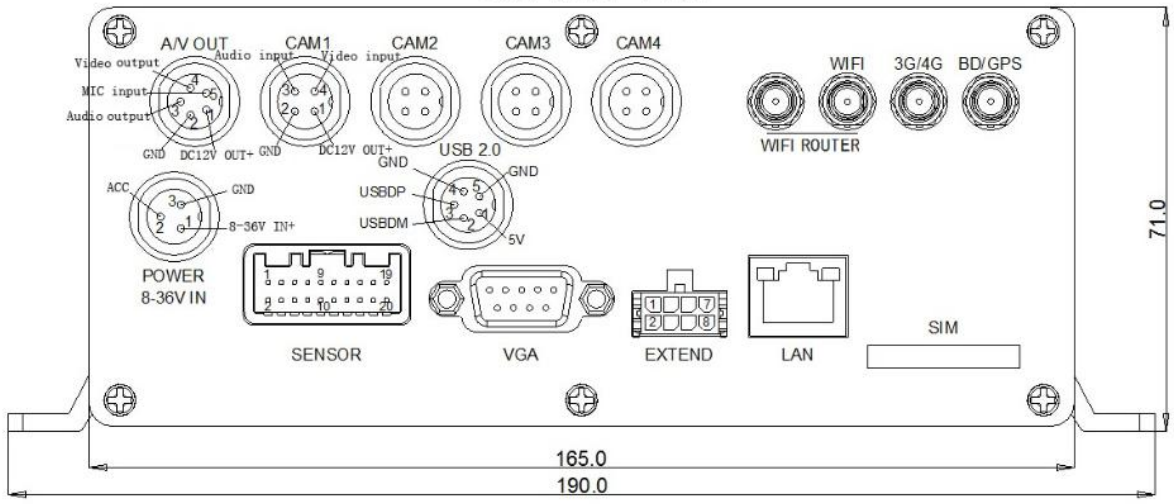

### SENSOR Interface definition:

| | | | |
|---|---|---|---|
| 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 |

## 4CH AHD 720P



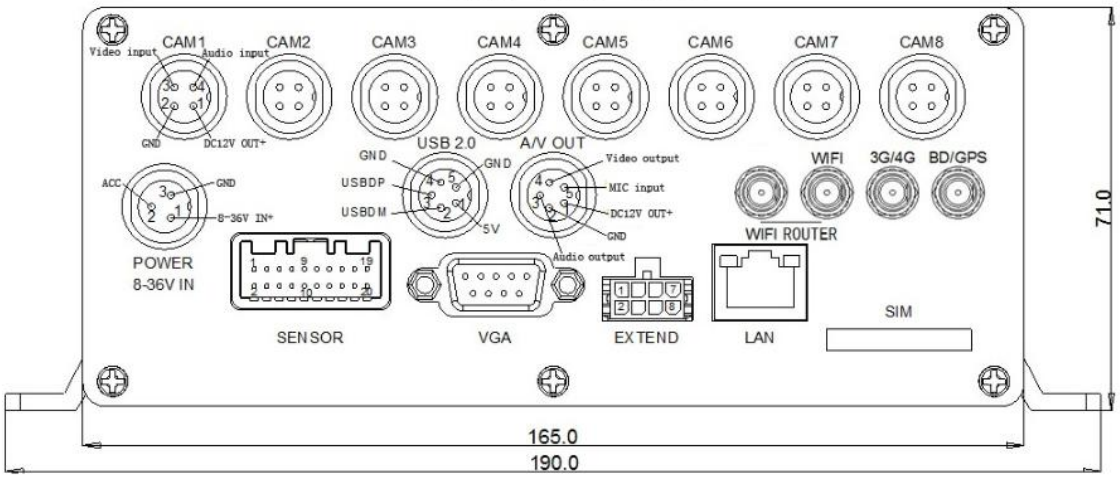

### SENSOR Interface definition:

| | | | |
|---|---|---|---|
| 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



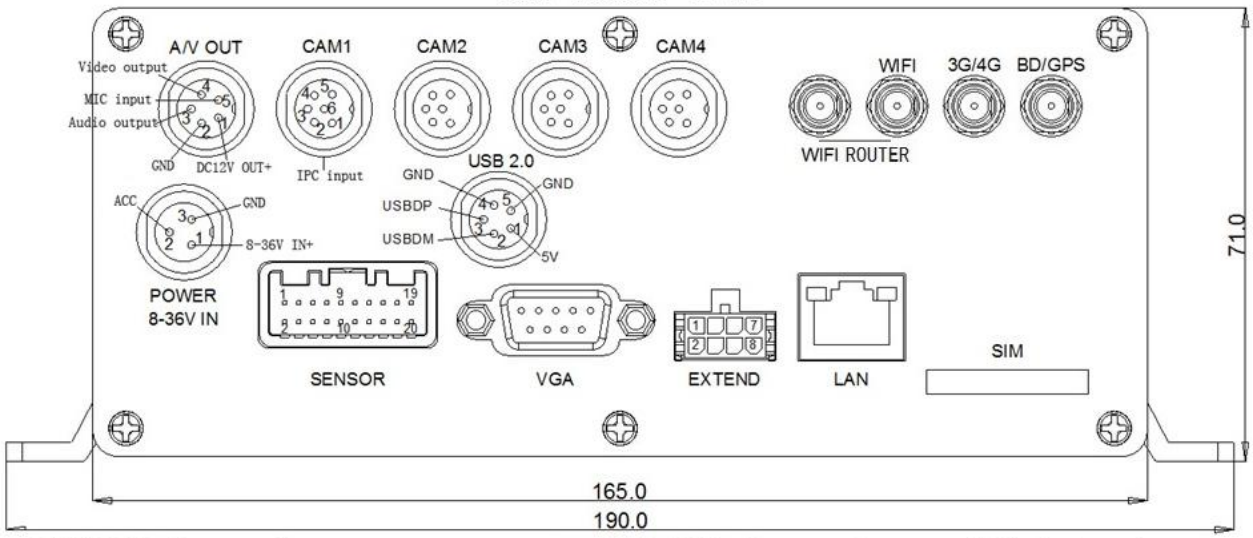

### SENSOR Interface definition:

| | | | |
|---|---|---|---|
| 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 |

## 4CH 1080P-NVR




### 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 |

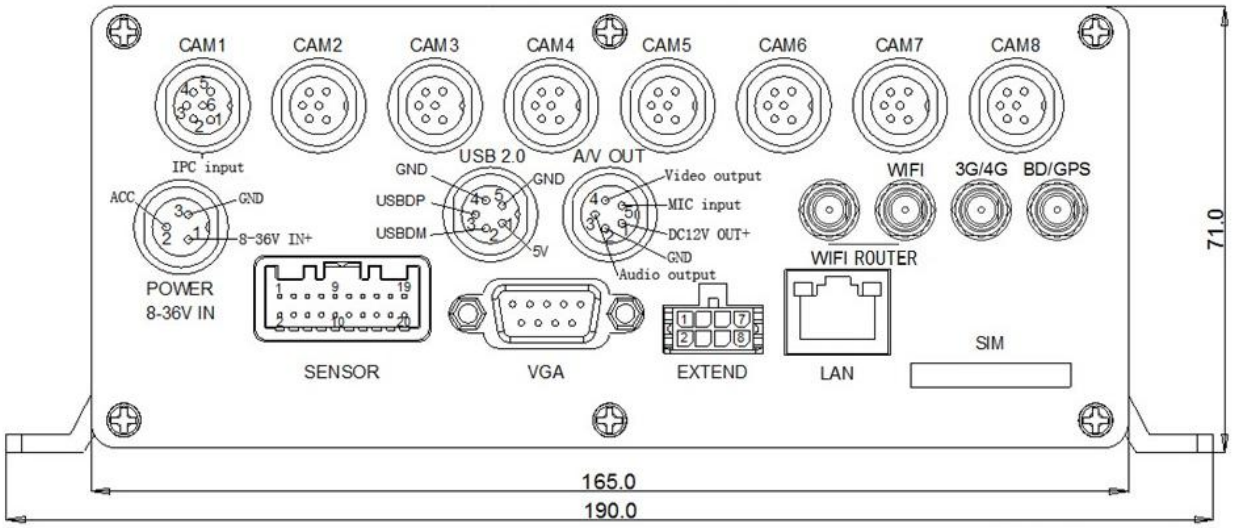
### EXTEND Interface definition:

| | |
|---|---|
| 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 |

### IPC Interface definition:

| | |
|---|---|
| 1 | DC12V OUT+ |
| 2 | DC12V OUT- |
| 3 | RX+ |
| 4 | RX- |
| 5 | TX+ |
| 6 | TX- |

## 8CH 720P-NVR




### 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 |

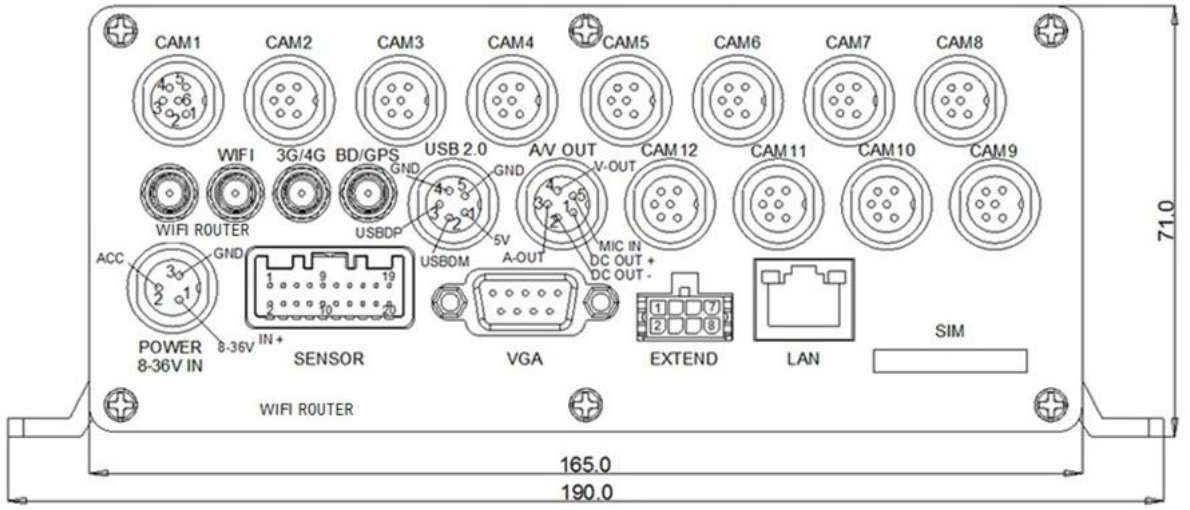
### EXTEND Interface definition:

| | |
|---|---|
| 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 |

### IPC Interface definition:

| | |
|---|---|
| 1 | DC12V OUT+ |
| 2 | DC12V OUT- |
| 3 | RX+ |
| 4 | RX- |
| 5 | TX+ |
| 6 | TX- |

## 12CH 720P-NVR




### 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 |

### IPC Interface definition:

| | |
|---|---|
| 1 | DC12V OUT+ |
| 2 | DC12V OUT- |
| 3 | RX+ |
| 4 | RX- |
| 5 | TX+ |
| 6 | TX- |

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

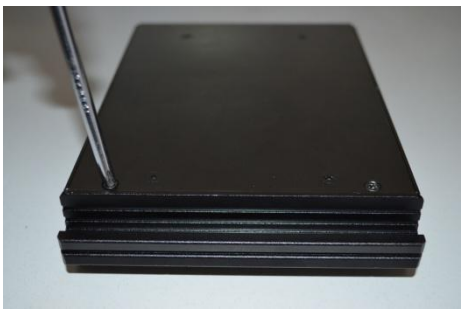
  SENSOR: alarm port

## 5.2 Instruction of HDD Installation

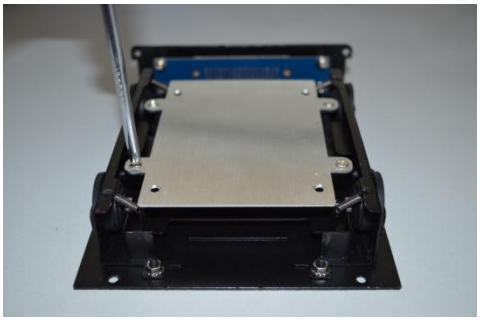
1

2

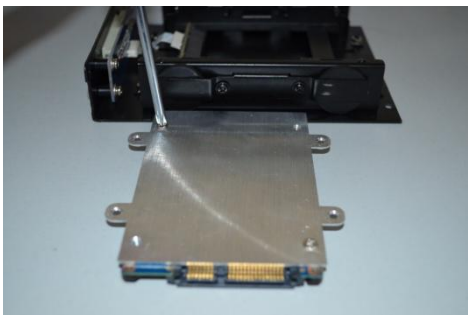
3



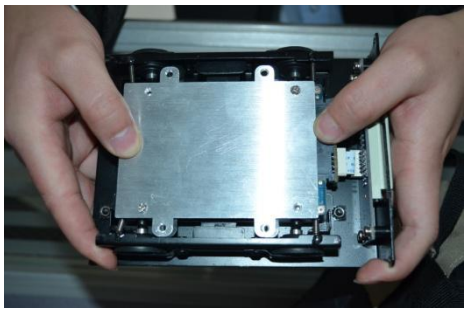
4



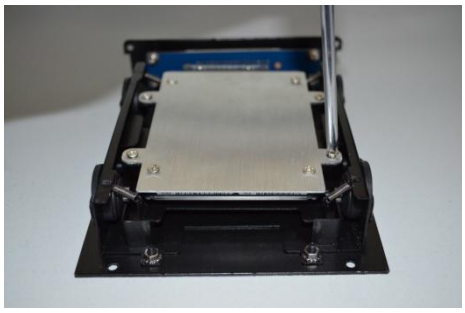
5



6

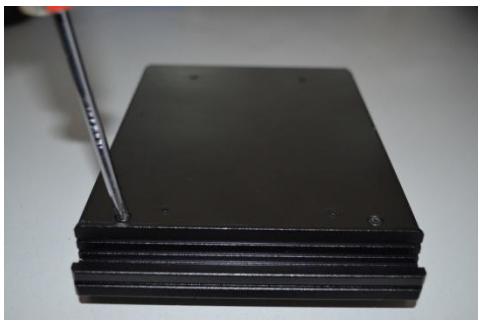


7



8

9



10

11

12

Make sure whether power switch is turned on or turned off, if it is turned on, please use the key, turn the indentation on the “turn off” position.

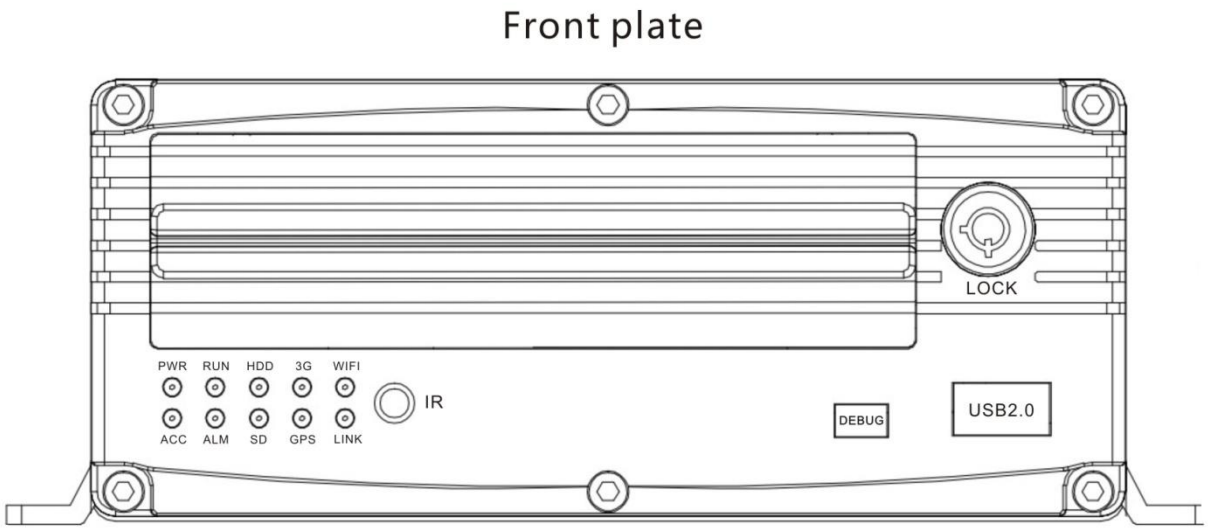
- Pull the front panel of the hard drive box. Carry out the hard drive and drop it on the table.
- Set down the two screws of the hard drive by cross-screwdriver.

- Drop the under backer of hard drive box, and then check the line whether it is on top of the under backer or not.
- Bring here 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 obligate line of hard drive needs longer, the line of hard drive needs to lie on the right position.
- Let the four white screws of the machine through the center hole of the four shockproof rubber pads. Fix hard drive on the four holes of hard drive box, do not make the screws too taut, leave a little space for hard drive to move. So it can reach a perfect effect.
- Insert the hard drive under backer which has hard drive to the hard drive top backer, and then, use cross screwdriver and the screw to fix the under backer and the top backer.
- Aimed the hard drive box towards the groove of the front board, level push. Please note the face and back while pushing. Upturn the silk-screen on the right position.
- Wring the lock of the front board by key. Turn the groove on the “turn on” position, lock hard drive box to prevent hard drive from moving out.

**Note :** Hard drive fixing lock besides fixing the hard drive, also take the place of host power switch .So do this operation, make sure all lines are completely connected. Otherwise, if car‘s power have been connected with the standard input voltage, the machine should be destroyed. So while installation, if the line has not been completely connected, please stop to do this step. More careful when installation. The hard drive can not roll out even it has not been locked.

# 6 Instruction of Using

## 6.1 Instruction of Front Panel




- **LED**
  - ✓ **PWR LED**: lighting while work starts. Power LED on.
  - ✓ **RUN INDICATOR**: flashing when machine work well
  - ✓ **HDD INDICATOR**: record, play, backup data flashing
  - ✓ **3G INDICATOR**: When with 3G/4G or WIFI module, or with LINK, this led will be on if the settings are all right and the network connects well
  - ✓ **Wifi INDICATOR**: When with WIFI module, it will be on if WIFI module works well.
  - ✓ **ACC INDICATOR**: ACC controller signal regularly,it would indicate
  - ✓ **ALM INDICATOR**: When have alarm signal, it would be on，when alarm signal disappear it would be off.
  - ✓ **SD INDICATOR**: When the model has SD card storage function，SD card read normally then it would indicate.
  - ✓ **GPS INDICATOR**: with GPS moduel, DVR work well indicate
  - ✓ **LINK INDICATOR**: when wired network connect normally, it would 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

| | | |
|---|---|---|
|  |  | 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. |
| |  | ① Upward for MENU selection. ②”UP” direction for PTZ control mode. |
| |  | ① Downward for MENU selection. ②”Down” direction for PTZ control mode. |
| |  | ① Towards to left for MENU selection or MENU setup. ②”Left” direction for PTZ control mode. |
| |  | ① Towards to right for MENU selection or MENU setup. ②”Right” direction for PTZ control mode. |
| |  | ①screen zoom the first channel video when surveillance, record<br>② Enter password or set system password.<br>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 when surveillance, record and playback. ② Enter 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 DVR is in alarm condition, the remote control is invalid.**

## 6.3 Menu Setting Instruction:

(Our company system support 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“ 

”to enter the main menu interface;

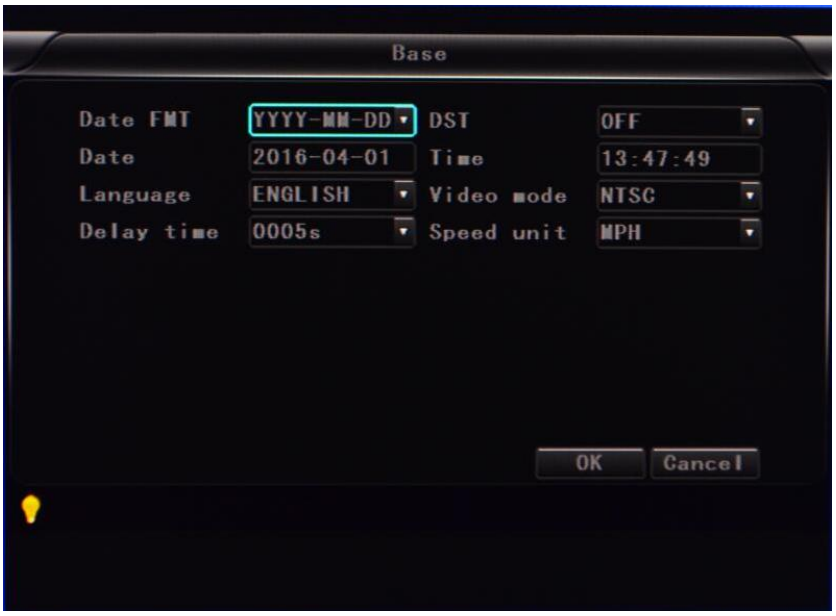
There are "System"、"Disk"、"Record"、"Playback"、"Network" and "Alarm" options, select the option by pressing these buttons"  、  、  、  " ,then press " 

"to enter.


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


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


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



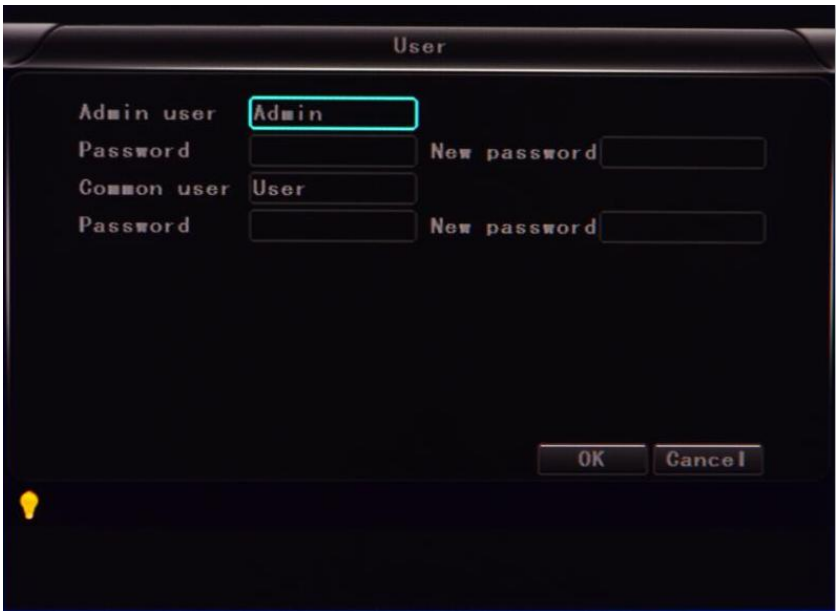

- ✓ **Date format:** Offer 3 display methods like “y/m/d, m/d/y, d/m/y” for personal habit.
- ✓ **Daylight saving time:** suitable for according countries or areas.
- ✓ **Date**: Adjust the date of HDD recorder
- ✓ **Time:** Adjust the time of HDD recorder
- ✓ **Language:** Set "Chinese", "English", "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 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.
- ✓ **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.

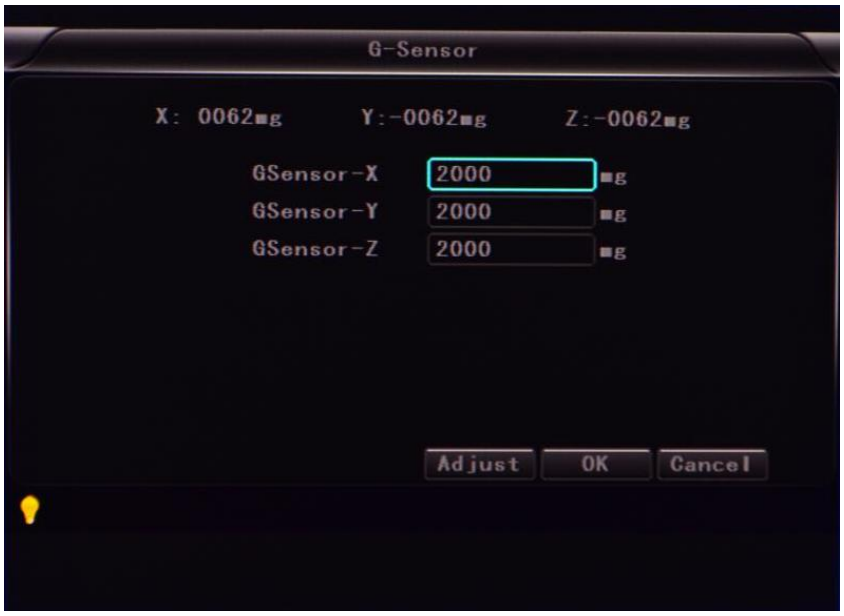
- **PTZ setting**: Adjust and control the camera with external PTZ device.


- ✓ **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: China for UTC+08
- ✓ **GPS Interval**：GPS Data upload interval, used with other system interface.

- **G-sensor setting**:

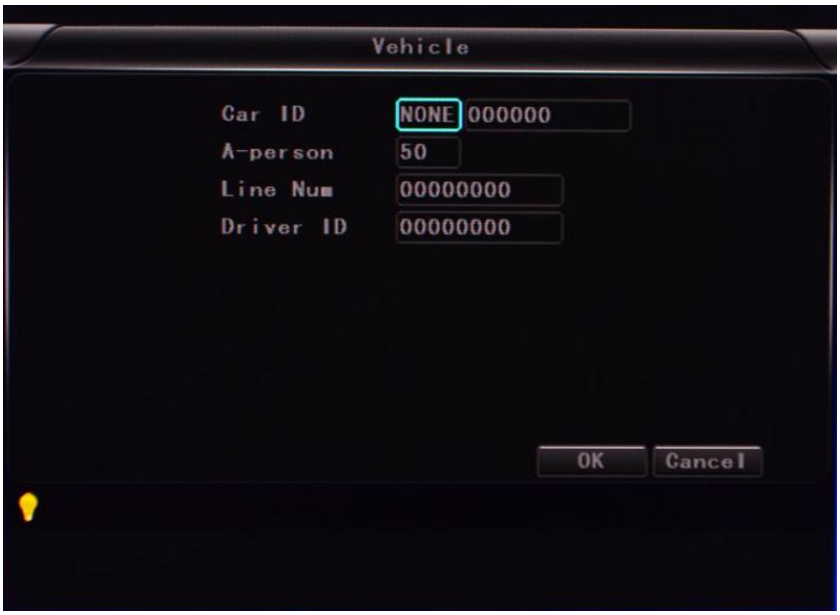



- ✓ **G Sensor-X**：2000mg( default value, this value will change accordingly if the X direction gravity accelerated speed value is changeable).
- ✓ **G Sensor-Y**：2000mg(default value, this value will change accordingly if the Y direction gravity accelerated speed value changeable ).
- ✓ **G Sensor-Z**：2000mg(default 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)

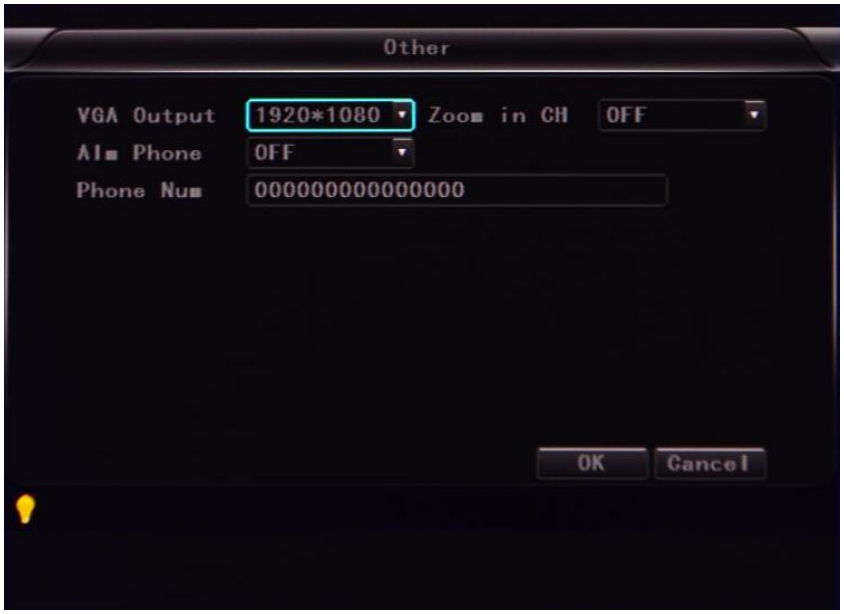
- **NTP setting**:


  - ✓ **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.



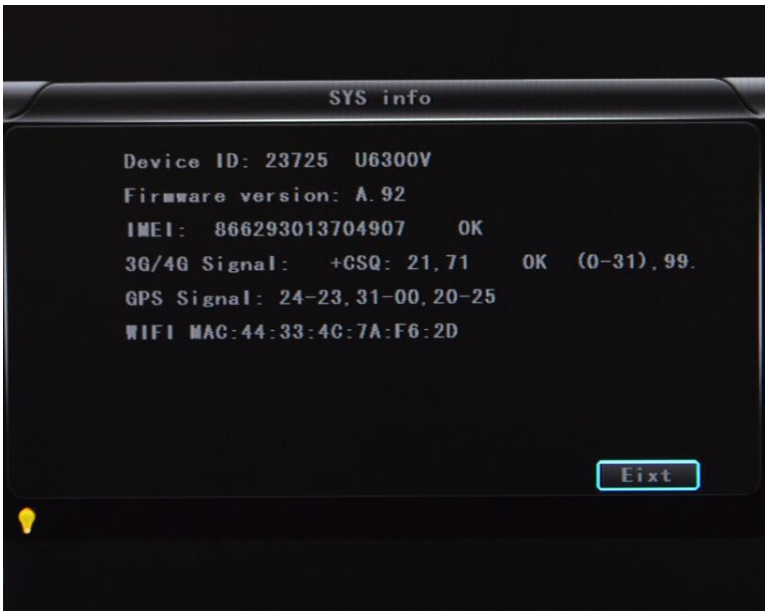

  - ✓ **Car ID**: can be showed by English, Chinese simplified language, Numbers or common symbols.
  - ✓ **A-person**：setup the original carried person for the vehicles.
  - ✓ **Line Num**: the driving route and code.
  - ✓ **Driver ID**: set up the driver code information.

- **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.

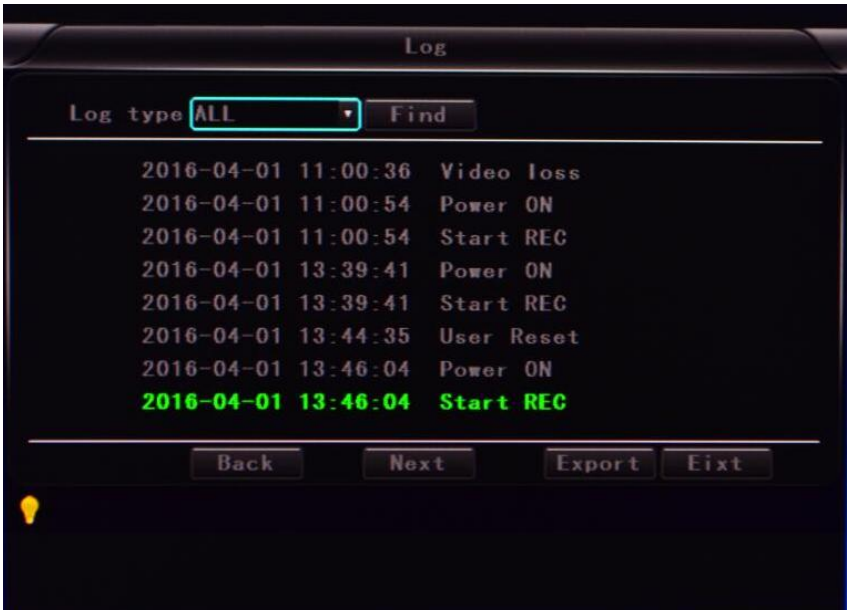
- **System information:** Display DVR hardware code number，software version information( only view, couldn't be changed)




- ✓ **Device encoding**: only for this DVR, the code is unique.
- ✓ **Software version:** the version No. of DVR 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**

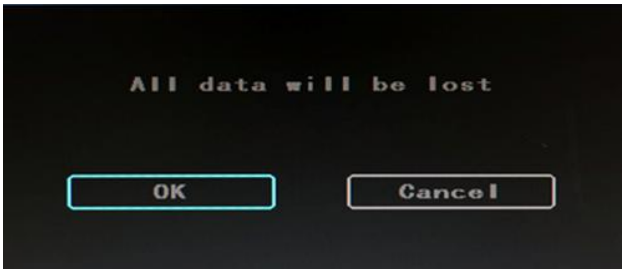

- ✓ **Import**: Import the configuration parameters
- ✓ **Export**: Export the configuration parameters
- ✓ **Renew**: Restore the factory parameter

- **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.




- **Record:** the video files setting, It includes “codec” , ”channel” and ”record plan”.


- **Codec:**


✓ **Channel:** select 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 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/768kbps/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**：Analog, AHD, SDI or IPC
- ✓ **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

- **Record plan**

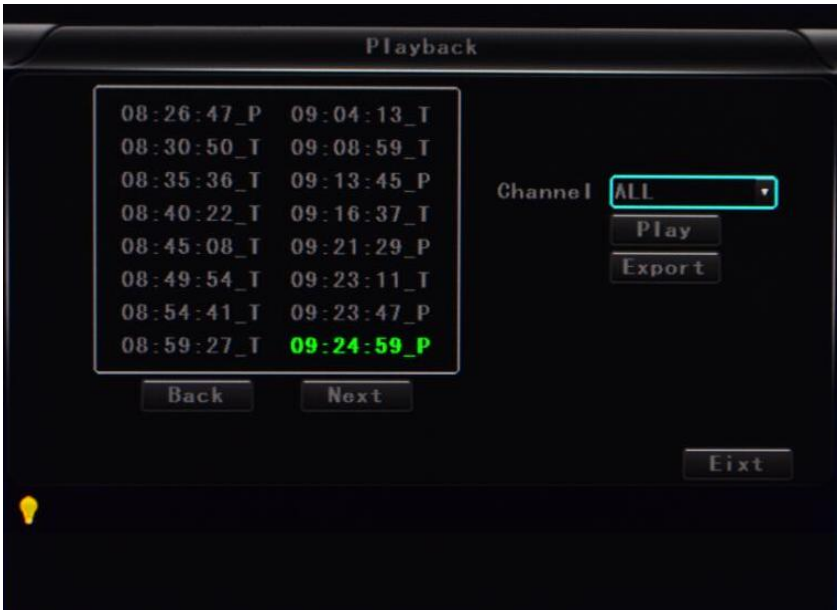

- ✓ **Channel:** select the channel setting (the information of each channel could be set independently)
- ✓ **Record mode**：real time and event or no record
- ✓ **File length**：the packaged video files length setting（5/10/15/25/30/60 minutes optional）
- ✓ **Prerecord**：Before the alarm recording time(no,5s,10,15s)
- ✓ **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**


- ✓ **LAN:** connecting via RJ45.
- ✓ **3G/4G:** insert 3G/4G SIM card into the slot.

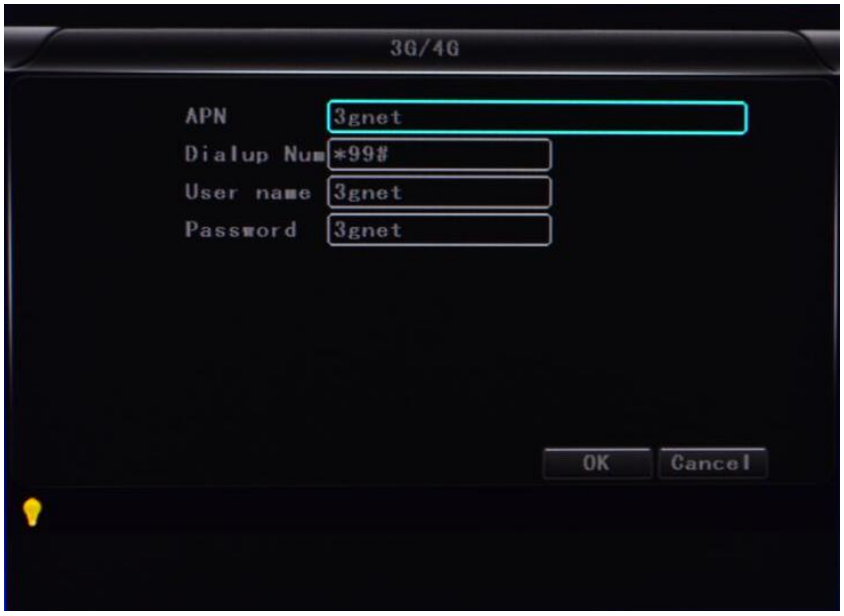
- ✓ **WIFI:** connecting the network of WIFI.
- ✓ **IPC:** To connect the IPC camera Settings.
- ✓ **SIP:** Chinese goverment standard platform
- ✓ **CH ID**: Chinese goverment standard platform infomation

- **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, 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**”

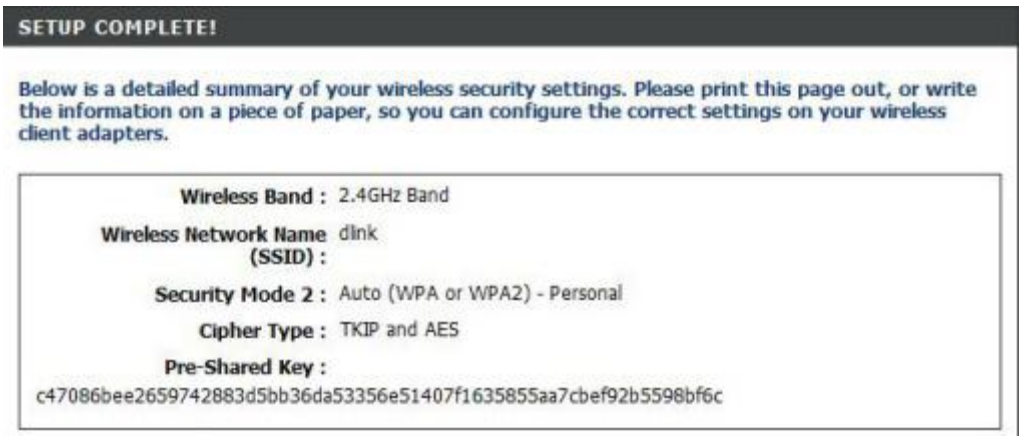

✓ **SSID:** WIFI router device name.

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

✓ **Certificate:** Support both “WPA-PSK” and “WPA2-PSK”.

✓ **Encryption:** Support both “CCMP” and ”TKIP”.

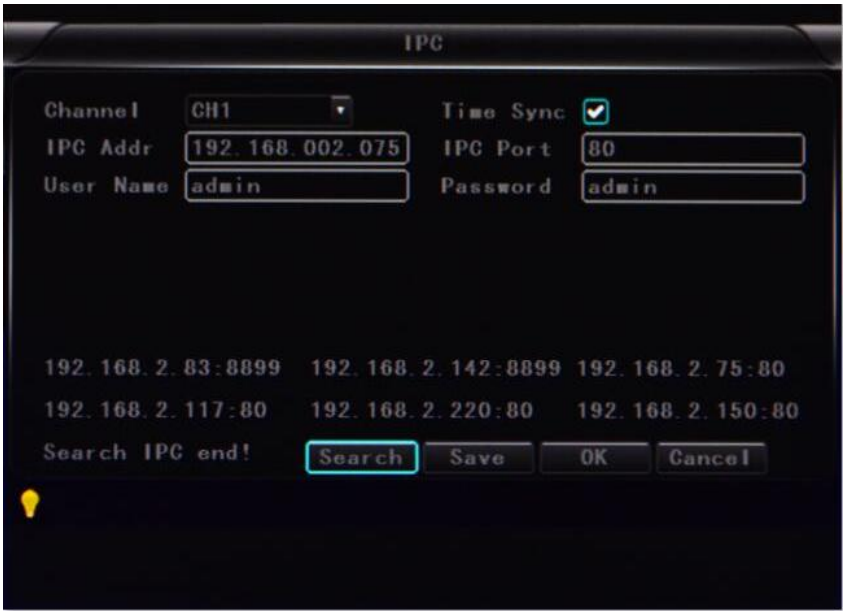
Access router, check its **“WIFI “**encryption.




## 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 )



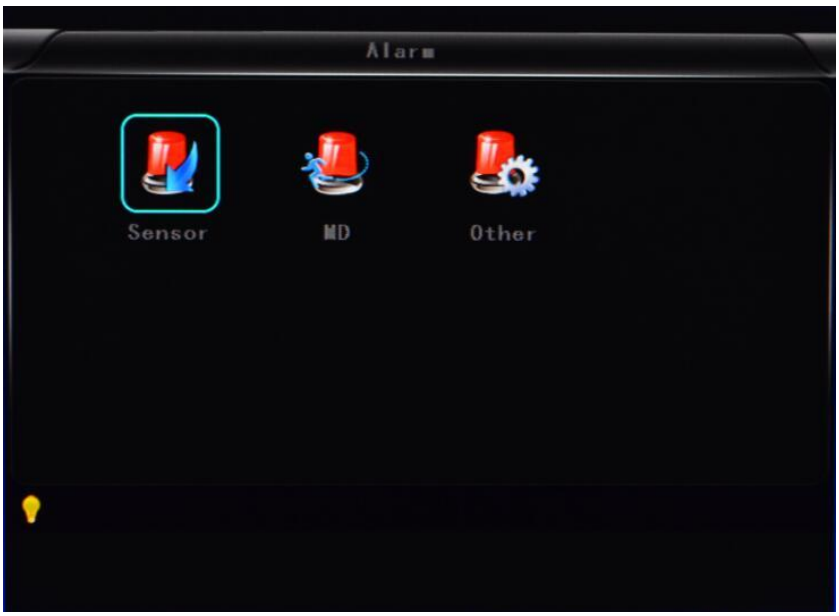

- ✓ **Channel**：main channel , different channel set can choose.
- ✓ **Time Sync**：turn on/off means if open the time synchronization between ipc and device.
- ✓ **IPC Addr**：put and modify ipc address when the ip camera and device in one network area.
- ✓ **IPC Port**：the device port which connect with 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



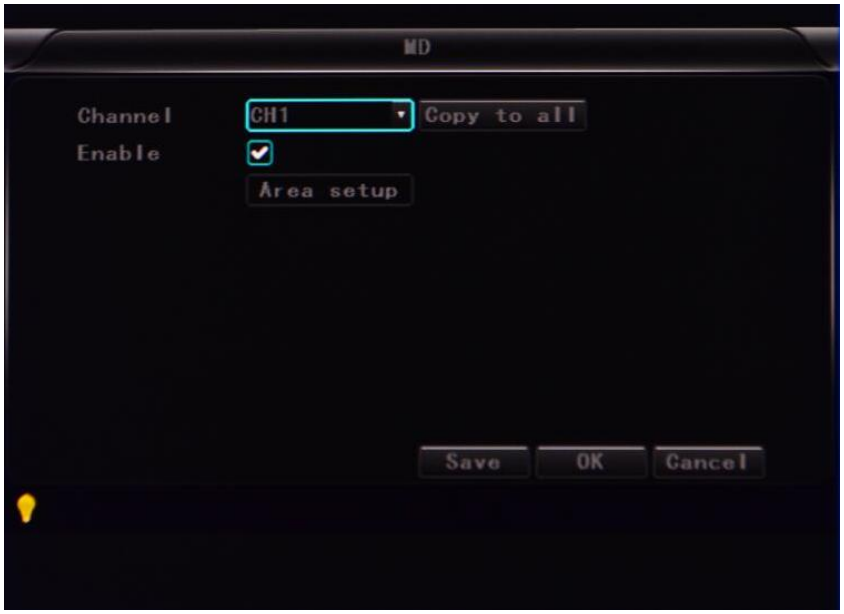

- ✓ **Sensor:** An external sensor alarms.
- ✓ **MD:** Motion detecting alarm.
- ✓ **Other:** other alarm setting.

- **Sensor Setting**

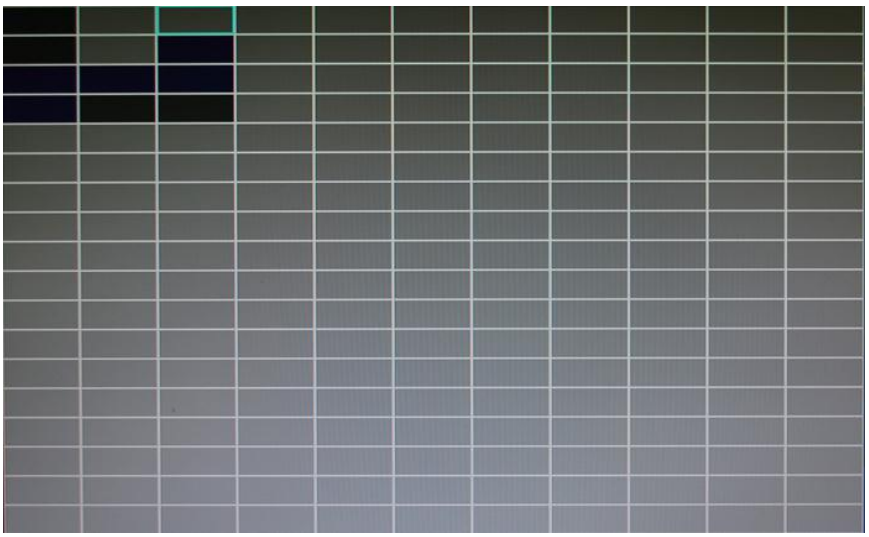

- ✓ **Channel**：main channel , different channel set can choose.
- ✓ **Enable**：turn on/off means if open the sensor alarm.
- ✓ **Sensor Name**：put and modify the name of sensor.
- ✓ **Trigger level**：High or low level trigger the alarm.

- ✓ **linkage：** Set up ON/ OFF video linkage function.
- ✓ **OSD：** Choose 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” , “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

Our company System support 2 video playback ways.

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“ ”.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.


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, 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：

   - 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。

2) Take the HDD box out from DVR, then connect the HDD 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：

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

When DVR is working，click" 

"，entre "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" 

"。

2) 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：

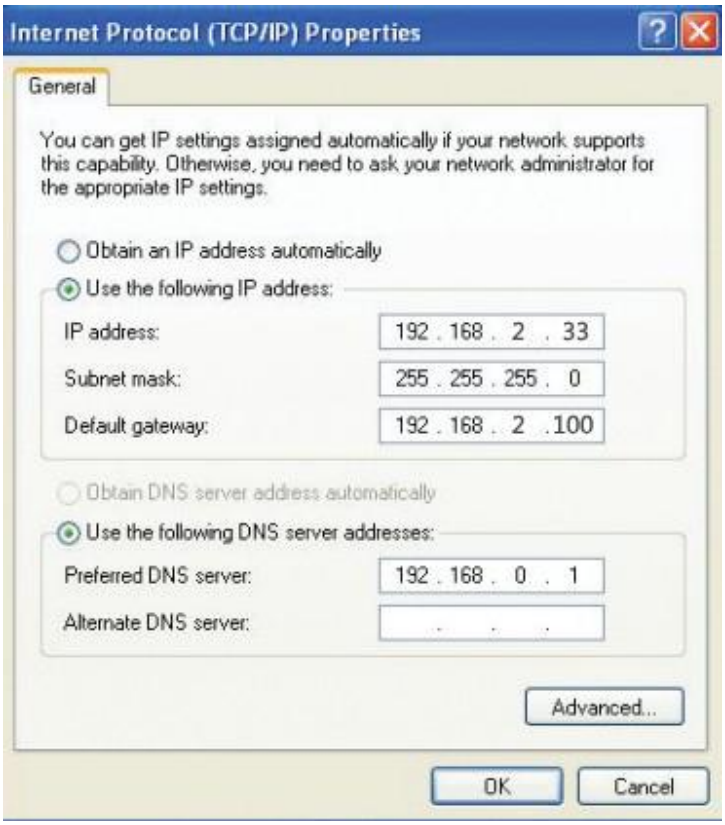
| 4 CH SDI 1080P | | | 4CH 960H | | | 8CH 960H | | 12CH 960H | | |
|---|---|---|---|---|---|---|---|---|---|---|
| VIDEO QUALITY | Total Record Frame | Data Size Per Hour | VIDEO QUALITY | Total Record Frame | VIDEO QUALITY | Total Record Frame | Data Size Per Hour | VIDEO QUALITY | Total Record Frame | 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 | 10.8GB |
| 5.5 Mbps | 100 frame | 9.9GB | 1.5 Mbps | 100 frame | 2.65GB | 200 frame | 5.3GB | 1.5 Mbps | 300 frame | 7.95GB |
| 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 | 4.05GB |
| 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 | 1.65GB |
| 1.0 Mbps | 100 frame | 1.8GB | 192 Kbps | 100 frame | 0.335GB | 200 frame | 0.67GB | 192 Kbps | 300 frame | 1.01GB |
| 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. | | | | | | | | |

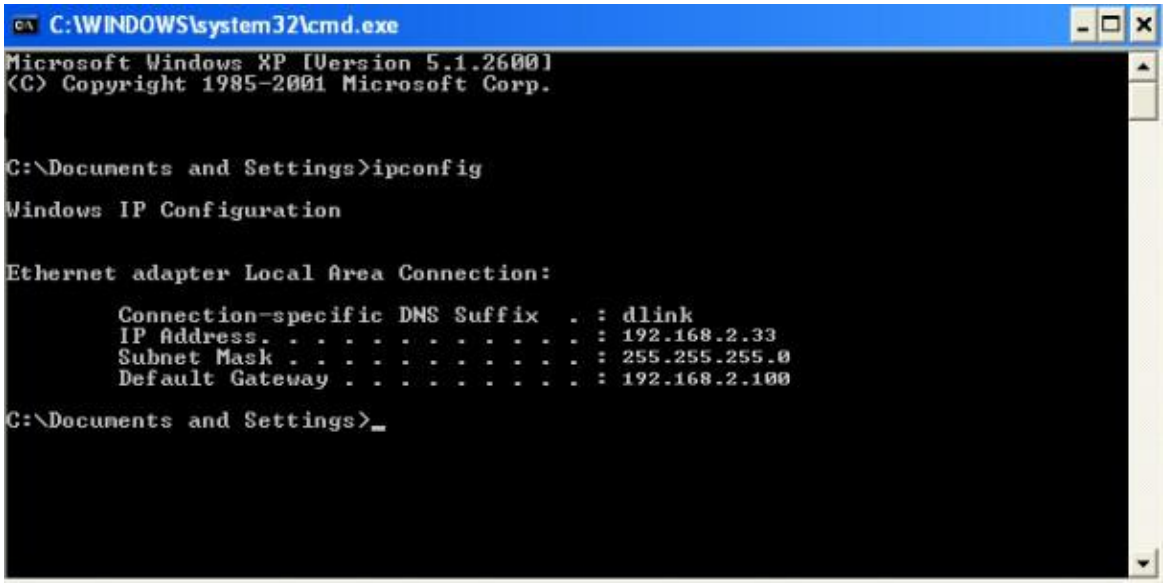
## 6.8 Extranet Port Mapping

- ✓ 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 Public IP**, not automatically get.




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

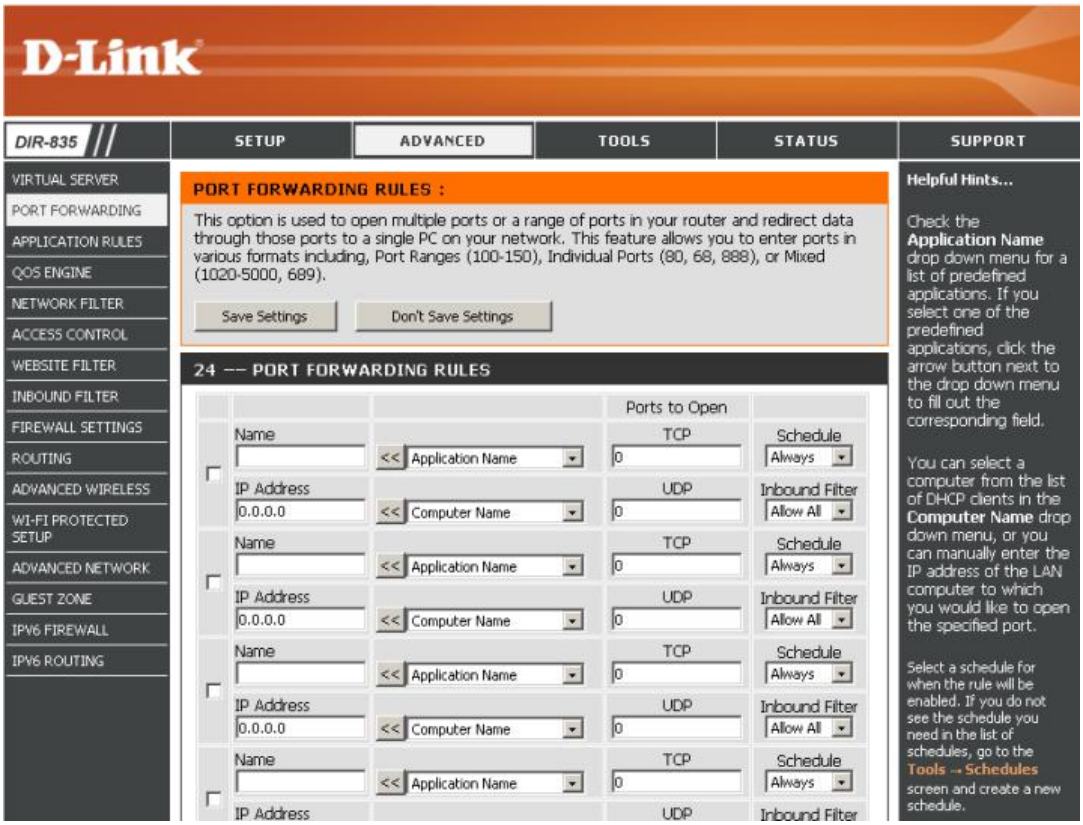
successfully.



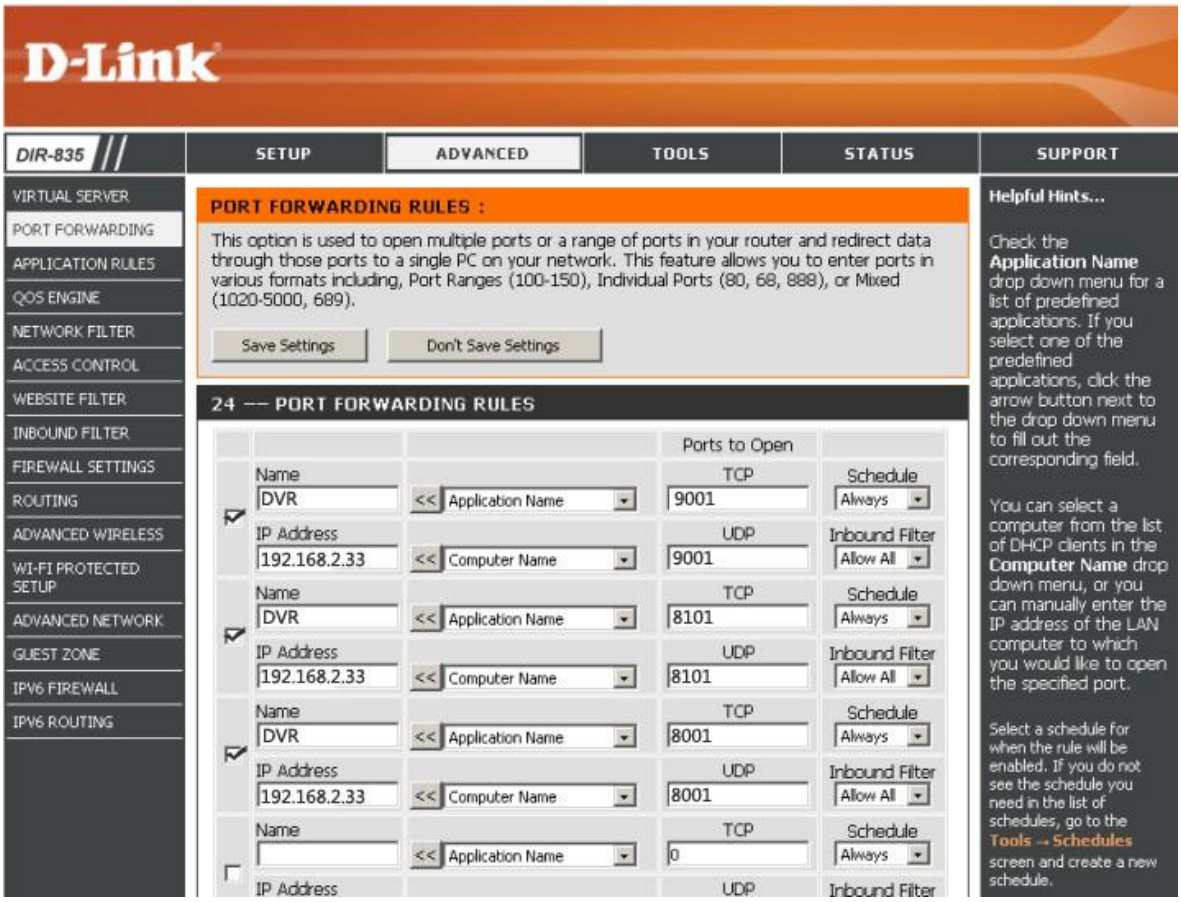

✓ Open the file of “DVR_Server.cfg” in the server installation path, can check whether the ports have been set successfully.

Port: 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.

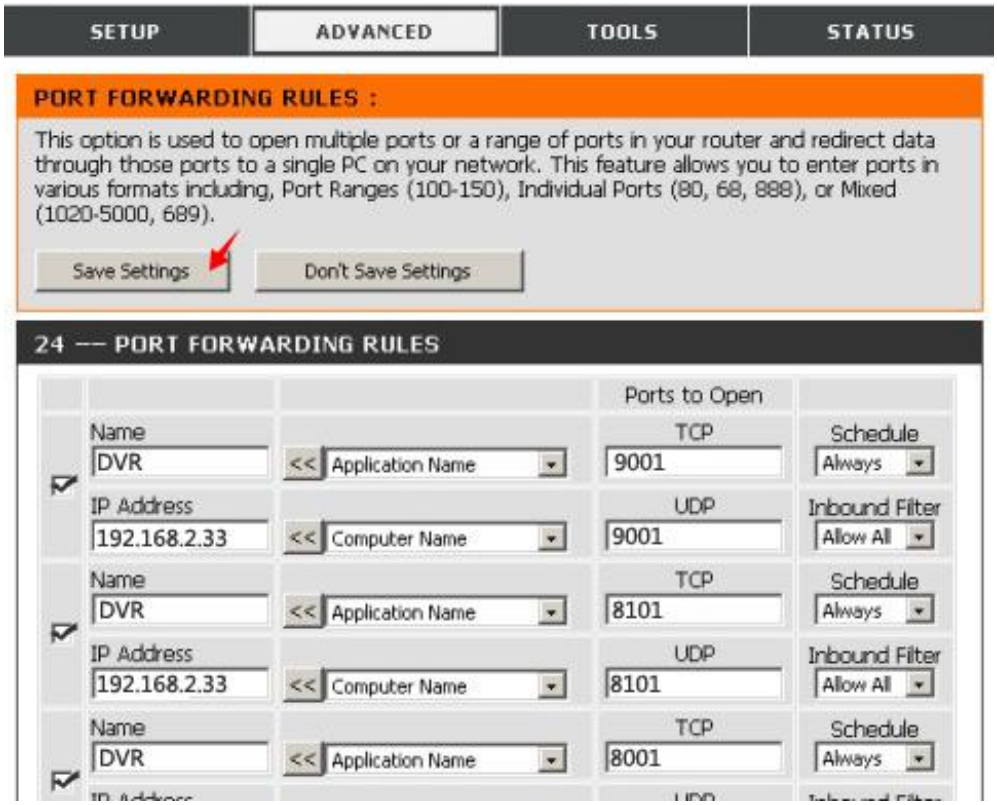
b) **Ports to Open:** 8001, 8101, 9001.

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

**Leased line: I**t will assign a static IP address, and you can access directly

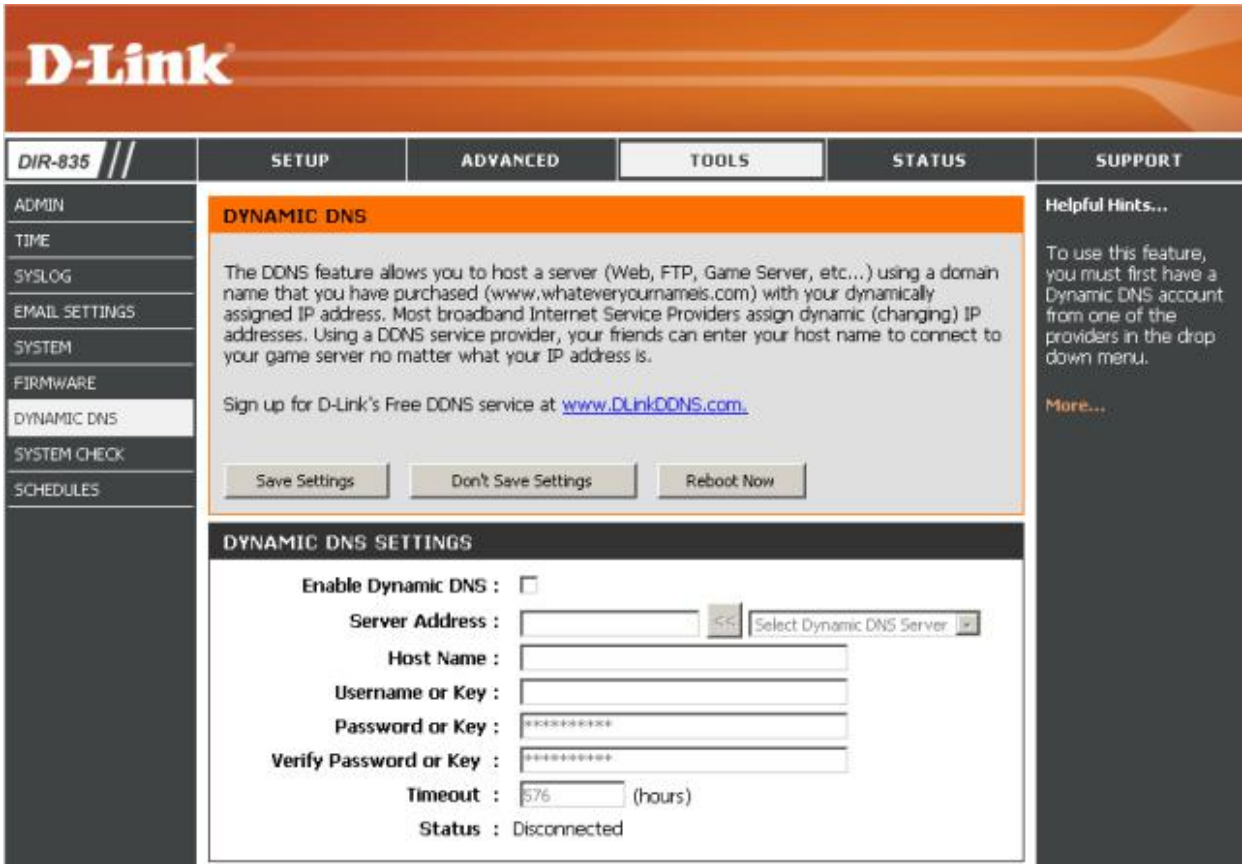
So, when set up the server with the way of ADSL dial-up, you can binding DDNS via domain in order to prevent the distribution of different dynamic IP in each dial.

**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:** please refer to the Oray for the DNS apply.

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

## 6.10 WIFI hotspot

1. To use the Wifi hot spot function, user has to set the "Netype" as "LAN" and the "DHCP" as "ON"in the DVR, 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:

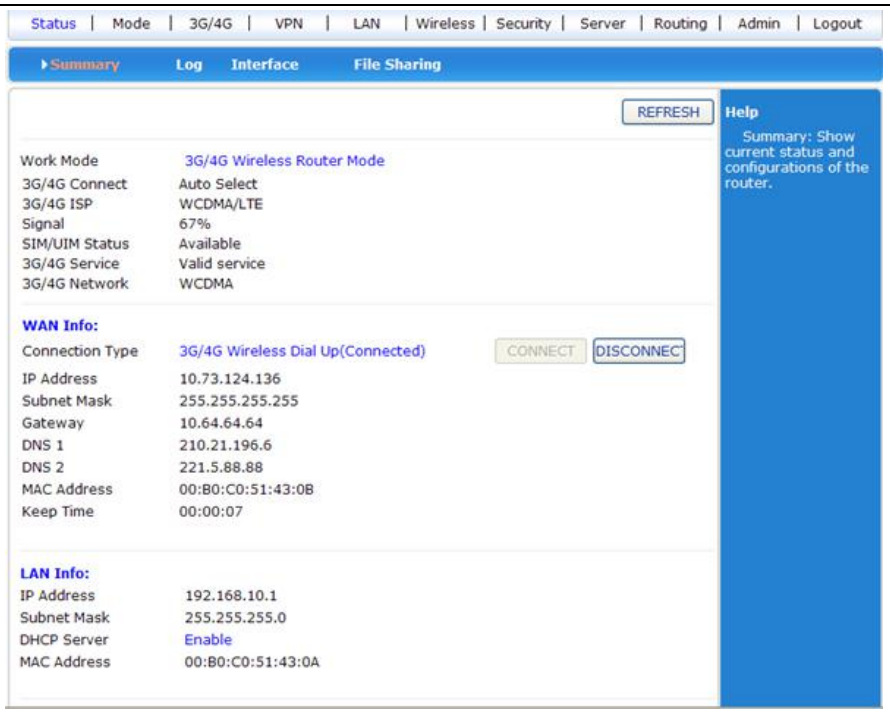
Router IP: 192.168.10.1

Name: admin

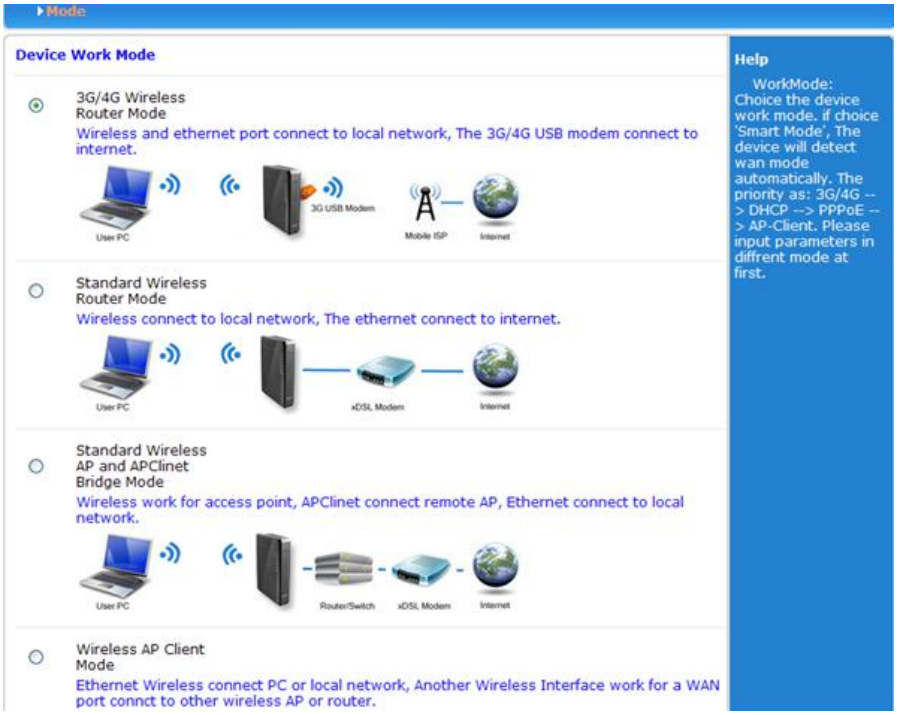
Password: admin

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

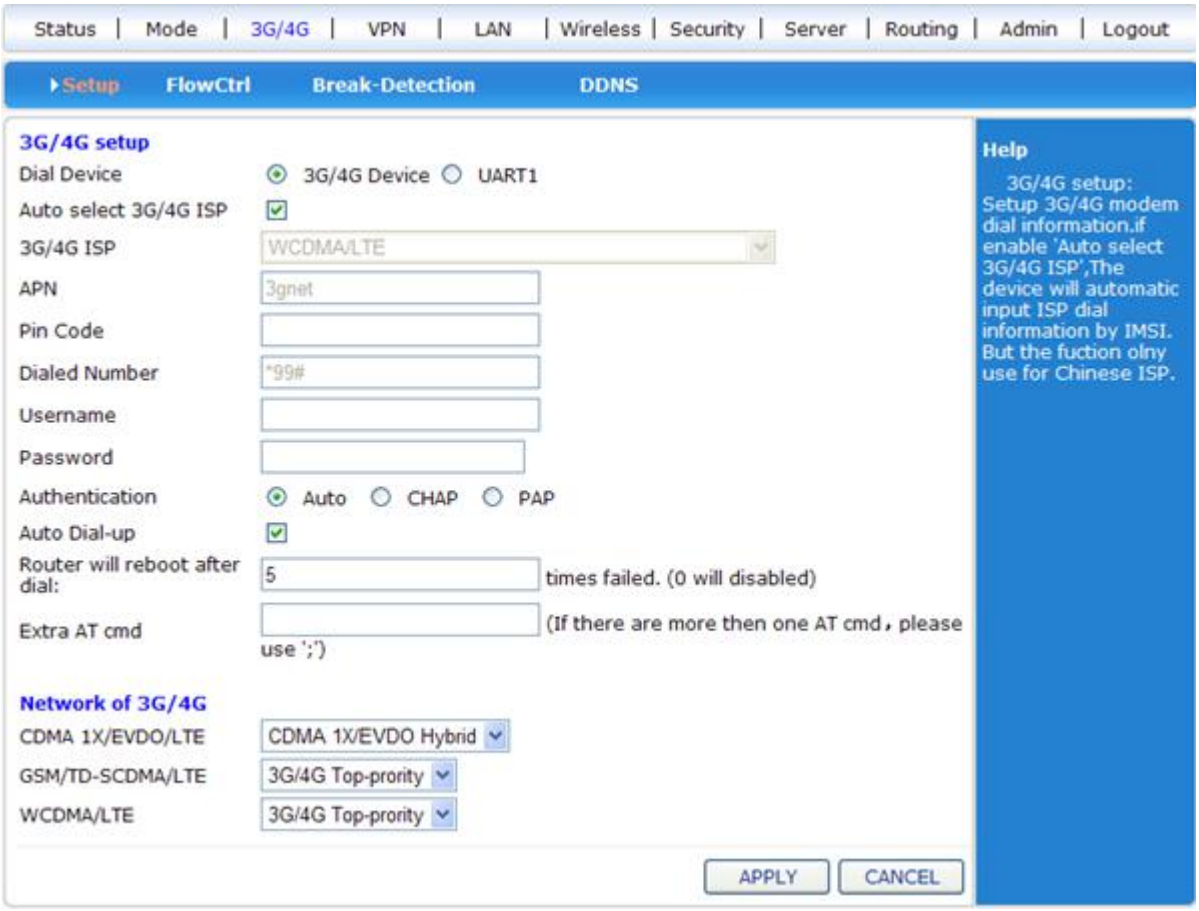
2. Input the default router IP 192.168.10.1 in IE and enter the router menu by inputting default user name and password. The device working condition and 3G/4G dial up connection condition can be checked, see below picture:



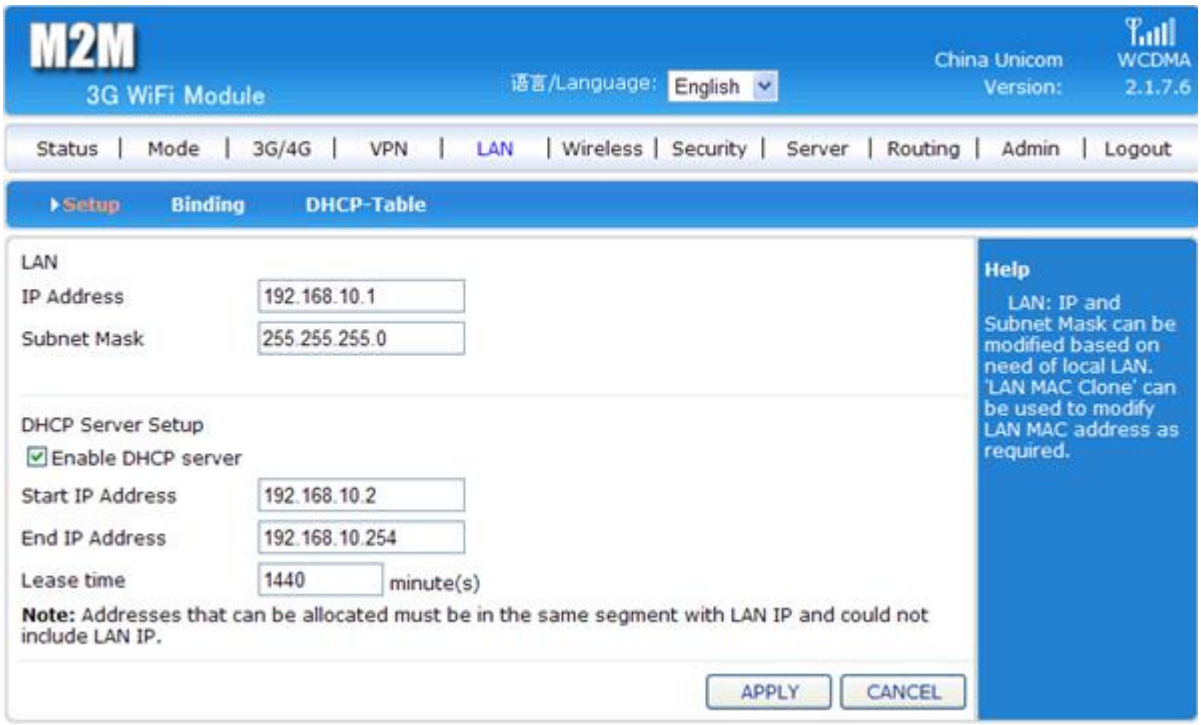

3. Click “mode”, there are options “3G/4G Wireless Router Mode”, “Standard Wireless Router Mode”, “Standard Wireless AP and AP Client Bridge Mode” and “Wireless AP Client Mode”, default is “3G/4G Wireless Router Mode”.



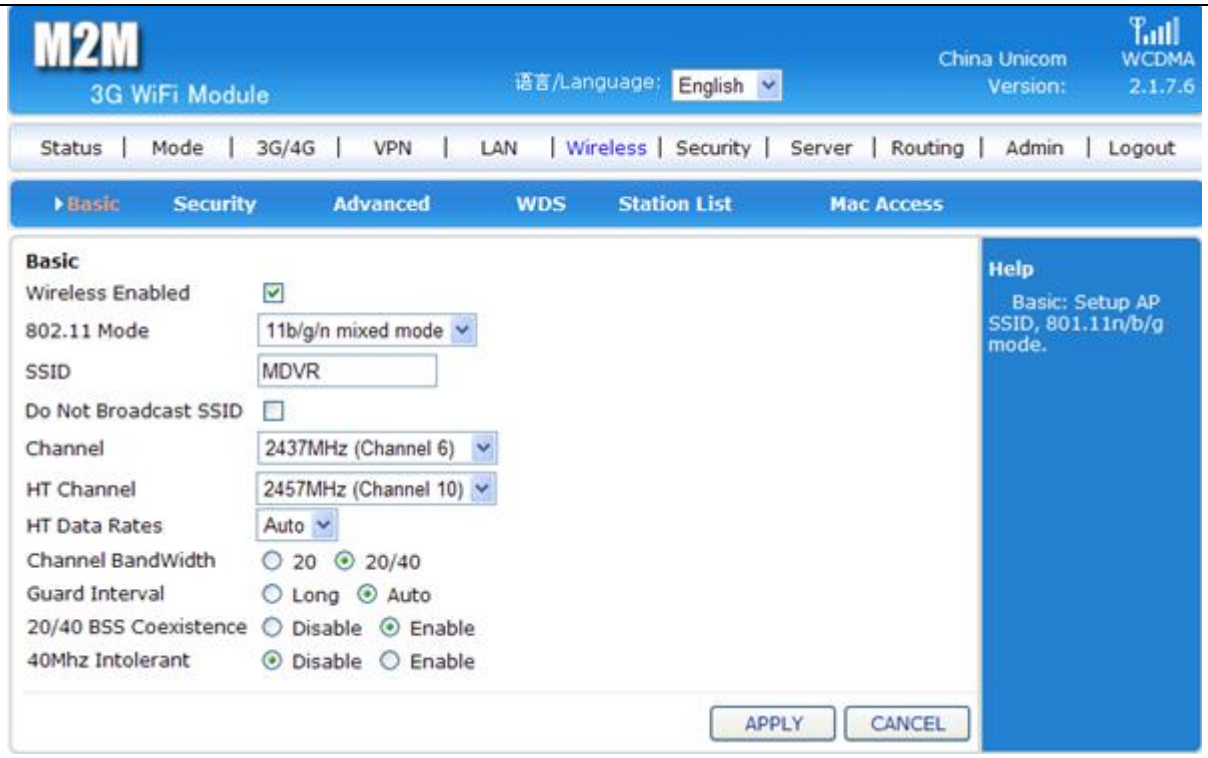

4. 3G/4Gs set up，choose“3G/4G Device” in “Dial Device” and select “Auto select 3G/4G ISP” without changing the default settings.




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”.