USER MANUAL

MDVR 5 Channels

Mobile Digital Video Recorder

Summary

1. PRODUCT CHARACTERISTICS

1.1. OVERVIEW

MDVR 5 Channels is an advanced and function-extensive Mobile Digital Video Recorder specially designed for network high definition, analog audio & video input and excellent extension. It uses high-speed processor and embedded operating system, combining with H. 264 video compression / decompression technology, network technology and GPS locating technology. It can realize 720P high definition, CIF, HD1, D1, WD1 video recording and vehicle driving information recording, as well as wireless data upload. With center software it also achieves alarm linkage central monitoring, remote management and playback analysis. It is powerful with modular design, flexible installation, easy maintenance and high reliability.

1.2. FEATURES

1) All the modules are connected with exquisite connectors, supporting quick disconnection, which is safe and easy to maintain.
2) The machine will alarm automatically when each modules have faults the modules are in errors.
3) Waterproof With sealed waterproof design for the shield.
4) Combines physical, electrical and software anti-vibration
5) Supports DC8~36V wide voltage input; suitable for 12V and 24V vehicle.
6) Watermark technology: prevent data tampering and guarantee the video authenticity and legal efficiency.

1.3. FUNCTIONS

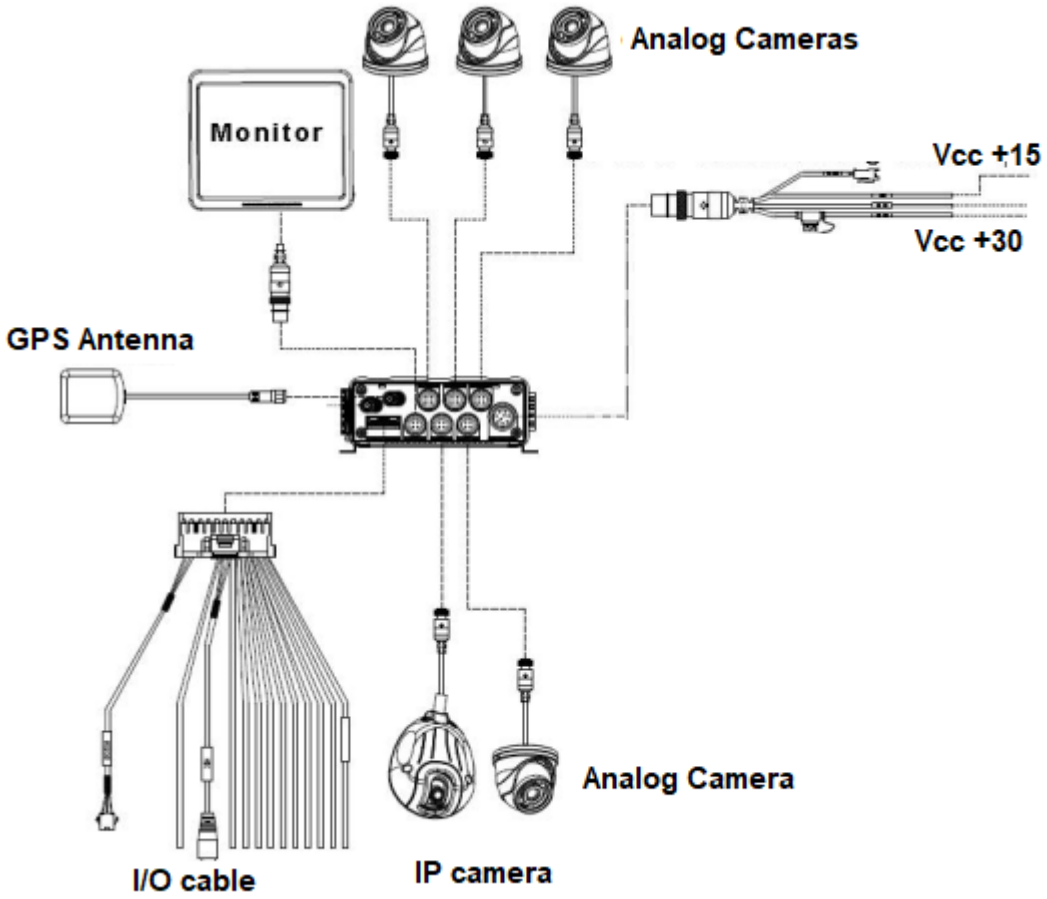
1) Local recording and video playback: D1/HD1/CIF resolution optional.
2) Driving recording: provide statistics on speed, turning, brake, reverse, opening door, etc.
3) Network function: support break point uploading continually, which can realize the remote video surveillance, video download, remote alarming and network timing of the equipment, network setting and remote upgrade, etc.
4) High-speed backup: support high-speed backup through USB2.0, as well as backup through SD card.
5) User log: on-off status of the device, video loss, recording start time / end time, user log in / log out, modification of the device parameters, timing, bus stop announcement and GPS status.
6) Import and export of the configuration file: U disk import/export device parameters.
7) Device upgrade: support local and remote upgrade.
8) Alarm linkage: support linkage switch value output, image display, etc.
9) Storage formatting: formatting external USB devices.

1.4. SPECIFICATIONS

Function Overview		Preview, Recording, Playback, Network, Locating
System	OS	Linux 3.0.8
	Control Mode	Easy Check, network, TFT touch screen, mouse
Video	Input	4 channels WD1+1 channel 720P
	Output	1 channel CVBS
	Total Resource	4 channels AHD+1 channel 720P
	Video Signal Standard	Electrical level: 1Vpp Impedance: 75Ω NTSC/PAL Optional
Audio	Input	5channels (1 channel IPC audio input)
	Output	1channel
	Audio Signal Standard	Electrical level: 2Vpp Input impedance: 4.7kΩ
Display	Display Split	1/4/9
	OSD	GPS information, alarm, vehicle No., speed, date/time
	Operation Interface	Semi-transparent GUI
Recording	Video/Audio Compression	Video: H.264
		Audio: ADPCM, G.711A G.711U
	Image Resolution	PAL: (4x25)FPS WD1+30FPS 720P(IPC) Or (4x12)FPS 720P(AHD)+30FPS 720P(IPC) NTSC: (4x30)FPS WD1 +30FPS 720P (4x15)FPS 720P(AHD)+30FPS 720P(IPC)720P(1280X720);
	Image Quality	1-8 levels adjustable (1 is the best)
	Recording Mode	Boot up/Manual/Schedule/Alarm
	Pre-recording	0-60minutes
	Post-recording	0-30 minutes
	Mirror/Dual Recording	Support
Playback	Playback Channel	1 channel by local playback
	Search Mode	Date/time, channel, event
Network	IPC Ethernet	6-pin DJ M12(100M x 1, PON power supply)
Locating	GPS	Location tracking, speed detection and time sync
Storage	SD	SD card x 2
Interface	USB	USB2.0 x 1
	RS232	RS232 × 1
	Sensor	8 inputs, 2 outputs
	Speed	1 channel pulse speed detection
	Intercommunication	I MIC interface
Power	Input	DC8-36V, Ignition signal

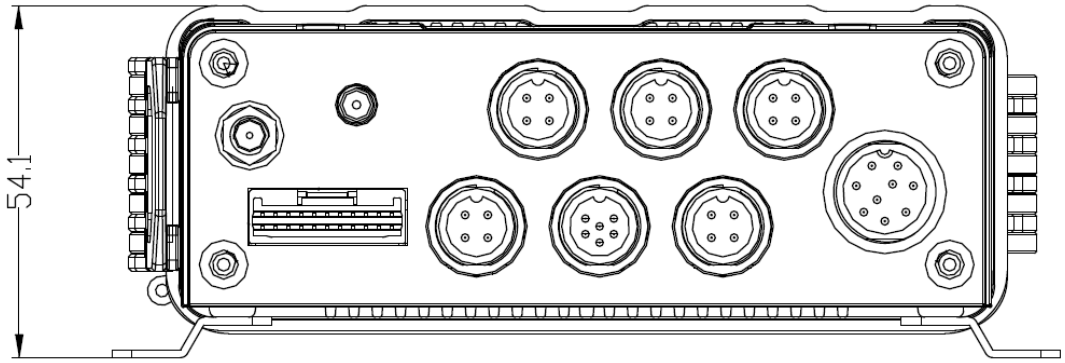
	Output	5V@500mA
	Max Power Consumption	29W
	Standby Power Consumption	≈0W
Physical Characteristic	Dimension (L × W × H)(mm)	167.3 x 146.3 x 54.1
	Weight	0.83Kg
Environment	Operating Temperature	-40°C- +70°C
	Operating Relative Humidity	8%-90%（No Condense）

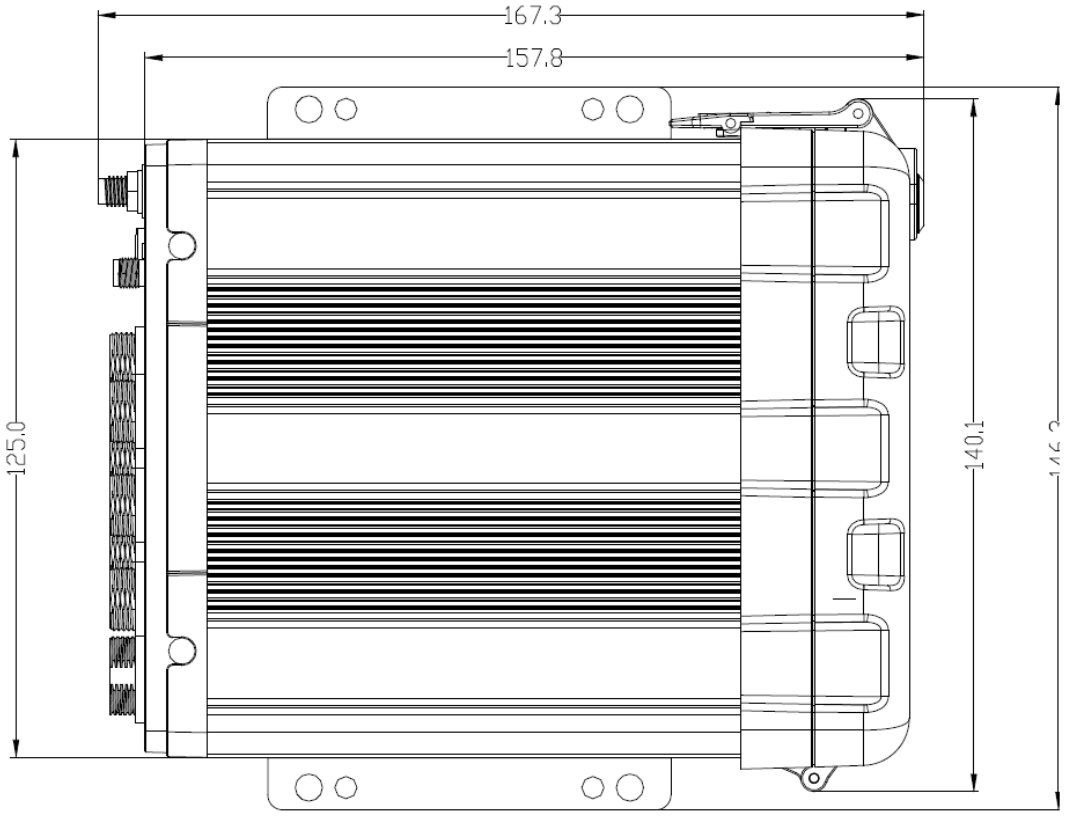
1.5. SYSTEM DIAGRAM



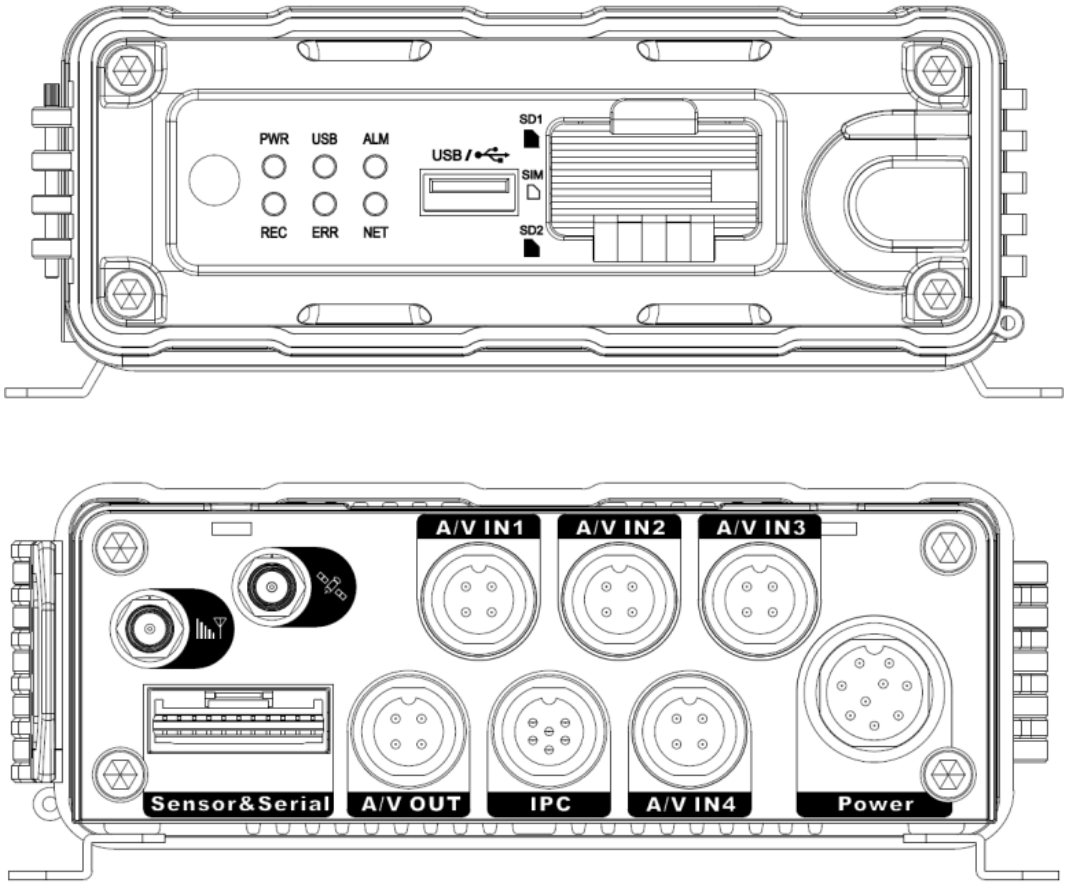
1.6. EXTERNAL INTERFACE

1) Dimension (Unit: mm)





2) Front Panel and Rear Panel



2. OPERATING INSTRUCTIONS

2.1. LOCAL LOGIN

When operating the device, user needs to have permission certified.

1) Press the remote control 【LOGIN / LOCK】or【SETUP】, the login screen will pop up.
2) Right click the mouse, the shortcut menu will pop up, left click login picture, login screen will pop up.
3) Left click on the login button to login and right click to log out

➢ **Login Notice：**

1) Software is automatically assigned by user name and password, it can be divided into user and administrator privileges.
2) Password options can not be closed, but it can be set to null; when it is empty, user do not need to enter the password to login。

■ **Login interface Introduction：**

➢ **User name：**

1) Select users from the drop-down box. There are admin and user as defaults.
2) Currently, it can show two users and one admin.

➢ **Password：**

1) User can enter the operation interface if entering the right password;
2) User must enter the right password again if entering the wrong ones;
3) Click cancel to exit the login interface;

➢ **Language：**

1) Currently, it supports Chinese and English;

➢ **Default password and permission table is as follows:：**

Default Password	Related User	Related Authority
Admin	admin	All Authorities
User	user	Search and playback

➢ **The password input Instruction：**

1. If the password are numbers, user can enter it by remote control directly.
2. User can click 【ENTER】 or the left click mouse on the remote control.

a. Move the cursor to the number position, press【Enter】or left click mouse button to select the corresponding number.
b. Move the cursor to 【123】, press 【Enter】or mouse to choose input type, such as the Numbers, letters, or special characters.

【ab】means lower case letters,【123】means numbers,【AB】means capital letters; the highlighted place of background refers to the current cursor position.

c. Move Cursor to  , Press【Enter】or left click mouse to move between the contents that have entered.
d. Move Cursor to  , Press 【Enter】or left click mouse to delete the previous input contents.
e. Move Cursor to  , Press 【Enter】or the left click mouse to exit the keypad, the entered contents will be written to the edit box.
f. Move Cursor to【Esc】 position, Press【Enter】or the left click mouse to exit the keypad, the entered contents will not be written to the edit box

2.2. RECORD SEARCH AND EXPORT:

Video search interface contains video file search, video data backup and video playback function. When there is a SD card, enter the video search interface. Following is the REC Search interface:

In the calendar, the color below the dates means:

a. No color means no video.
b. Green means common video.
c. Red means alarm video.
d. Yellow means there are alarms and the video files are automatically lock (lock video).

Source: select the source of the video, there are main video, sub video and mirror video.

The main record means SD card record while sub record and mirror record are dual-stream records.

Select the date with record, click next, then enter the following interface:

Following is the record search detail and record search result interface:

- Record search detail interface：
  - **Record Type:** User can choose all record, alarm record or normal record.
  - **Channel choose：** The channel is optional and mark with color that has record. The channel with gray cannot be chosen if there is no record. As to different record type, it will show different relates.

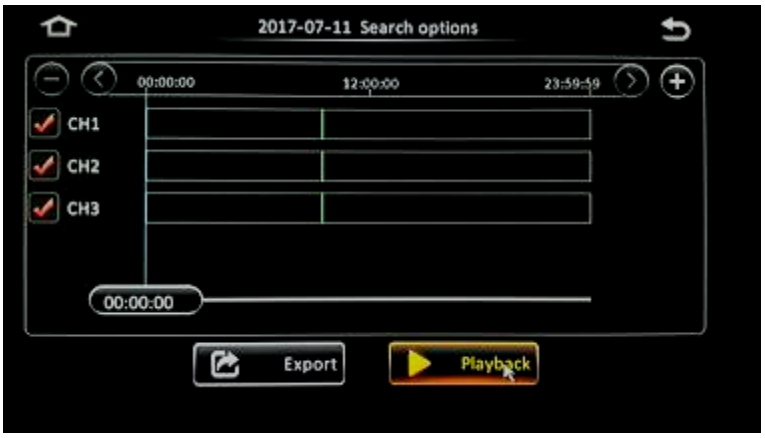
- Click search button in the record search detail page, user can enter then record search result page.
  - **Time Bar:** Time bar shows three time points, 0 o'clock, 12 o'clock, 24 o'clock. It shows what type of videos during the time according to the marked channel.
  - **Channel No:** According to the situation of video for each channel video the day , the video will be displayed on the time line. Tick the channel if user wants to playback the video.

Note: channel number is displayed from 1~5, please up page up/page down button to change channel

- Button description
  - **Video playback:** Choose the channel No., select start time to play < default start from 0 >, click the playback button to playback the video.

In playback interface, user can choose fast forward or fast backward to play the video, the button in the middle of screen can switch the channels. The image stops and it will not exit automatically when playing to the last video of the day.

- **Time period settings:** Click the time setting button, select start time and end time, it will backup or playback the video in the selected time period. Click clip to export the video, the file format can be.264< comprehensive file >, also can be.avi format**.**

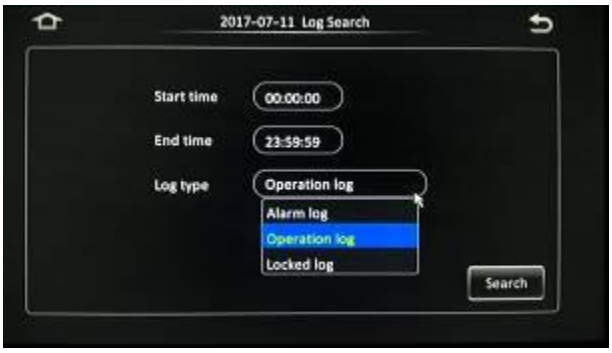


- **Video export:** Select the channel that has the video files, click this button, all the video files in the effective time period will be exported to the external USB peripherals, file format can be.264<comprehensive file >, also can be avi format.

User can also pull out the SD card, export and playback the video by professional software.

2.3. LOG SEARCH AND EXPORT

In the log search interface, it records and displays all alarm events and login operation log. Enter the "log query", the interface will be shown as following :



- Log Search interface instruction:
  - **Calendar**: the date with log will be marked on the calendar with green color.
    Remark: There is no color classification in the “log mark”, and all are green ones.

- Log search interface instruction:
  - Start time: the start time for searching log files
  - End time: the end time for searching log files
  - Log types: classification of log search, including the operation log and alarm log and locking log

- **Operation log** search interface instruction
  - Log includes the following information:
    - Log time: the time when event is triggered
    - Log name: event content
  - Supports page up/page down and export all log files of the specified date.
  - Do not support link to video file.
- **Log search**
  - **Alarm type:** It includes all alarms, IO alarm , panic alarm and over speed alarm.
  - Log includes the following information:
    - Log time :the time when event is triggered
    - Log name：event content
  - Supports page up/page down and export all log files of the specified date.
  - Supports link to video file, click on  button to playback video files
- **Lock log search**
  - Log includes the following information:
    - Log time: the time of when event triggered.
    - Log name: event content
      Log will be recorded according to channel number, each channel will have a lock log file.
  - Support page up and page down.
  - Can't export all log files of the specified date.
  - Can link to video file, click on  button to playback video files.
  - **Unlock:** Select log, and unlock it. Then the alarm log of lock will be cleared.

Remark:

When lock the video file, system will record alarm log and lock log. The locked video file can only be unlocked from alarm log.

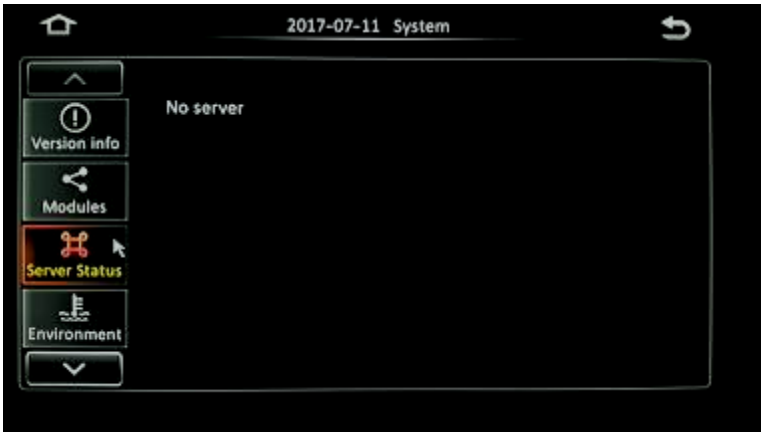
2.4. SYSTEM STATUS

User can login the interface with no access restrictions.

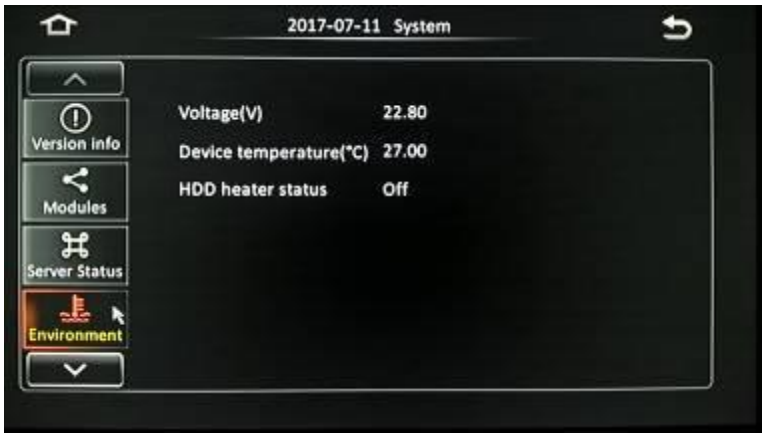
- System- Version information

- System- Modules

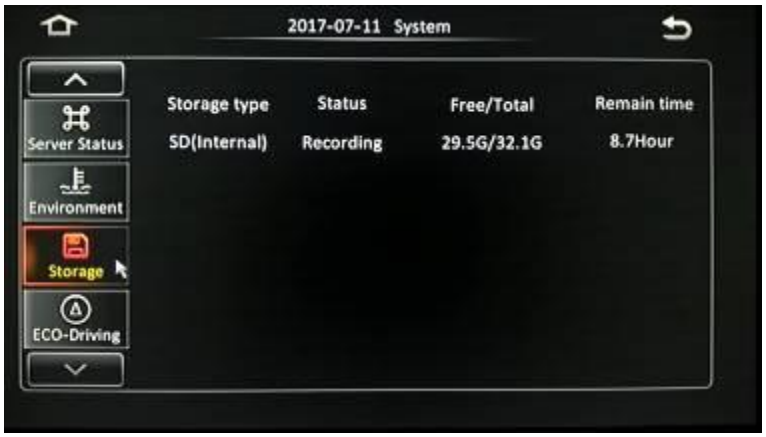
- System-Server status



- System - Environment



- System-Storage:



- System-ECO-Driving:

2.5. BASIC SETUP

Click setup button and enter the following interfaces:

2.5.1. REGISTER INFOMATION (SETUP VEHICLE INFORMATION)

- Register information-Device info:

- **Device ID:** Currently, it is not useful.

- Register information- Vehicle info

- **Vehicle Number**：When connected with PAD, the vehicle number is needed**.**
- **Vehicle plate**：Input manually**.**
- **Line number**：Input manually**.**

- Register information—About the driver's information:

- **Driver number:** Input manually**.**
- **Driver name:** Input manually**.**

2.5.2. TIME SETUP

- Time setup-General
  - **Date format:** Setup the date format of device
  - **Time format:** 24 hours or 12 hours
  - **Time zone:** Range from -12th district ~ +13th district

- Time-Time Sync

- **Date/Time:** Device time, from 2000-01-01 to 2037-12-31
- **Satellite:** Synchronize time with GPS satellite. Once GPS signal changes to valid**, device** will synchronize time
- **Center** Server: synchronize time with center server
- **NTP server:** synchronize time with NTP server

Remark:

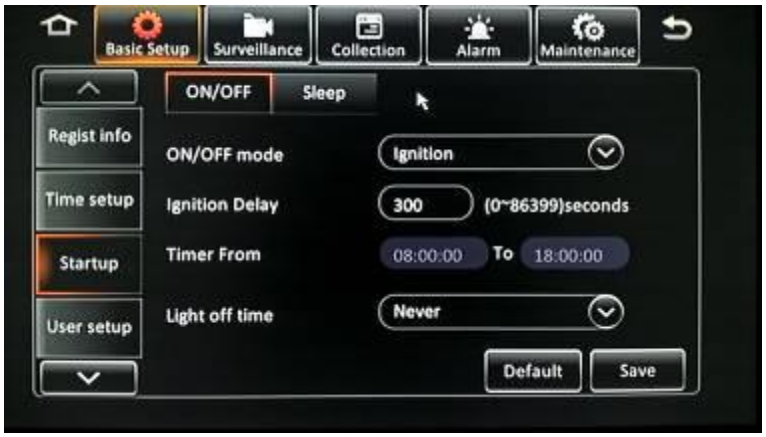
1) Synchronize time according to time zone
2) Multi-mode can be selected for time synchronization. If one works, the others take no affect.

➢ Time setup-DST

- **Enable:** Select to enable
- **Offset:** After enabling DST, adjust the hour manually
- **Mode:** Setup DST according to week or date
- **Start:** Time to start DST
- **End:** Time to end DST

2.5.3. START UP

➢ Startup-ON/OFF



ON/OFF mode: 3 modes, including ignition, timer and ignition or timer.

Ignition: Input ignition delay time for shutdown delay function

Timer: When setup the start mode as Timer, please setup the start time and end time

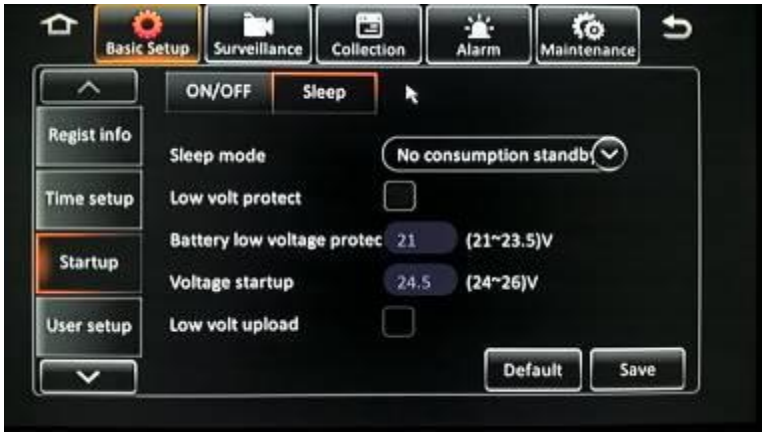
Under this mode, MDVR's start up or shut down time will not affect the ignition.

Remark:

If use setup as Ignition or Timer Mode, Ignition ON or Timer start time can trigger MDVR start up.

And only when Ignition off and Timer end time, MDVR will shut down.

- Start-Sleep



- **Sleep Mode:** Currently, there is only no consumption standby mode available.
- **Low Voltage Protection:** Enabling the low voltage shutdown protection mode selected.
- **Low Battery Protection:** Protect the vehicle battery. When consistently below the standard value, it will countdown shutdown. As for a 12V vehicle , the default is 9V, while a 24V vehicle is 21V.
- **Recovery boot voltage values:** low-voltage protection, when the battery voltage is consistently greater than the standard value, it will automatically boot. As for a 12V vehicle , the default is 12.5V, while a 24V vehicle is 24.5V.
- **Low voltage will be reported or not:** The low-voltage protection will be reported to the platform after it is ticked.

2.5.4. USER SETUP

In the basic settings, click user settings, enter the following interface, user can enter setting menu.

- **User name:** The default ones are admin and user.
- **User Group:** It is divided into administrator and ordinary user.
- Supports delete user function. Select the user and click "Delete User" button. Please be noted that the administrator can not be deleted.
- Supports add user function. Click "Add User" button, then enter the following interface

Remark:

1) Only administrators can add users.
2) Users can add up to two.
3) User name cannot be empty, not the same with the existed user name while the user password can be empty.

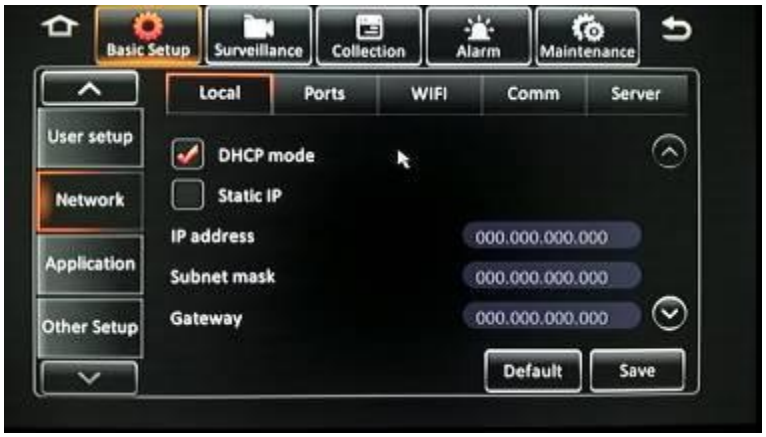
➢ User name and password can be modified. Select a user, click the "Edit User" button, enter the following interface:

Modify the user name and password to confirm the operation temporarily. There is no need to verify the old password, Administrator user name can no t be modified.

2.5.5. NETWORK SETTINGS

In the basic settings, click Network Settings, enter the following interface, user can set network parameters.

➢ Network Settings - wired network and port interface description



- **Automatically obtain IP:** Dynamic acquisition, DNS can also be statically configured to dynamically obtain.
- **Use the following IP:** Static IP, need to use a static DNS.

Remark:

Switch from static IP to automatically obtain IP mode, it can display dynamic IP, but the static IP parameters will not be covered, to restore the last saved static IP after switching back.

- Network Settings - Port Interface Description:

- **WEB port No.:** The default is 80, will be used in IE to access this port.

- Network Settings- Instruction of WiFi network (when module is available):：

- **Enable :** Select to enable WIFI
- **ESSID**：Manually input the address of AP
- **Encryption:** It supports NONE, WEP and WPA
- **Password:** Manually input
- **Static IP**: Select to use static IP, or MDVR will get dynamic IP

➢ Network-3G/4G network interface (when module is available):

Dialing wireless network, user needs to choose the module type and setup dialing parameters

- No Service. When entering the dialing setup interface, it search the wireless module type automatically. It shows No Service when ther is no module.
- **Network type:** The default one is Mix, 2G/3G ot 2G/3G/4G optional.
- **Dialing parameter**：It includes access point, user name, password, data service number, and enter SIM parameters provided by the manufacturer. The default is empty, the program comes with empty arguments by dialing.
- **Certification**：Supports PAP or CHAP.

  Remark:

  When there is SIM and normal 3G/4G signal, it will dial automatically.

➢ Network- server

Server's IP address and port are needed for device registering to server. Select CMS if there is wire or WIFI. Set up central IP and port, Select 4G CMS when dialing wireless network.

By default, there is only one server, but user can add other server up to 6. Server 1 can't be deleted.

3. VIDEO SURVEILLANCE

3.1. REAL-TIME SURVEILLANCE

Surveillance-->Real-time Surveillance

- Real-time Setting Interface：

- **Audio:** Enable the audio when live view the video
- **Image Setting:** Set the live-view parameters, including brightness, contrast, etc.
- **Startup Screen:** Set the live-view screen, it can be single-screen or quad screen or nine screen
- **Channel:** Set the channel when live-view

- Auto Loop Setting Interface:

- **Screen:** Totally 32 screens can be added.。
- **Mode:** 1x1, 2x2, 3x3 optional.
- **Channel:** Included channel number.
- **Residence time:** Residence time for each screen.
- **Edit:** Delete or Edit.
- **Add screen:** Add polling screen
- **Auto Loop:** Enable the auto pulling

- Live-view OSD - Setting Interface:

Display the information on screen, default is only the time, and the position can be set.

3.2. RECORD

Surveillance-->Record

- Record Setting Interface:

- **Video type:** Default is PAL, NTSC optional
- **Overwrite:** Enable the SD card to be overwritten when it is full
- **Lock file retention:** Protect the record file to be deleted by fault, default is 7 days
- **Pre-recording:** Pre-record before the alarm happens. Default is 15min, 0-60min optional.

- Main Stream Setting Interface:

- **Channel:** 1-20 channels can be chosen and set the record parameters
- **Enable:** Enable the main stream record function
- **Resolution:** The analog channel supports D1/HD1/CIF/WD1/WHD1/WCIF while the digital one supports 720P
- **Frame Rate:** Frame Rate of the record
- **Picture Quality:** Picture Quality of the record
- **Record Type:** Ignition, Time, Event optional. Each channel can be set separately. The sub-stream and mirror record are the same
- **Audio:** Enable the audio. Note: Audio can not be record separately
- **I frame only without alarm**: Enable to let the frame rate invalid, record file is I frame only

➢ Record- Dual stream

- **Storage:** The storage type for second stream, internal SD, or external SD
- **Record mode:** Mirror record, alarm back-up, and sub stream

  Mirror record: Channel is selectable. Video resolution and frame rate are the same with main stream.

  Alarm backup: Channel is selectable. The parameters are the same with main stream

  Sub-stream: Channel is selectable. Recording parameters are configurable
- **Mirror channel:** It is selectable according record mode

➢ Dual stream-Sub-stream

Parameters includes channel number, enable or not, audio, resolution, frame rate and image quality Can't record I frame only, record parameters is completely separated from main stream.

Remark:

Main stream +sub-stream total resource can't over 12M

- Record-OSD

Embedded key information to video file for easily check when playback.

3.3. IPC SETUP

- IPC setup:

- **Channel:** 1-3 are default for analog cameras. If selected, then analog camera is invalid. 4-5 channel are for IP cameras
- **Enable IPC**: Enable to operate
- **IP and port:** Display channel number and port
- **Setup:** Search and edit IP camera recording parameters
- **Fast setup:** Search all the IP cameras in LAN network, and auto assign IP address to IP camera

3.4. PTZ

Surveillance-->PTZ

- **Channel Enable:** Enable to operate.
- **Operate:** Serial, N9M and ONVIF.
- **Protocol type:** Choose the Serial Protocol type. Pelco-D and Pelco-P.

3.5. DATA COLLECTION

GENERAL

➢ General- IO sensor

- **Sensor number:** 1~8 optional.
- **Sensor name:** IO sensor name.
- **OSD name:** The information embedded to video image.
- **Copy:** Copy the configuration and use it for other sensors.

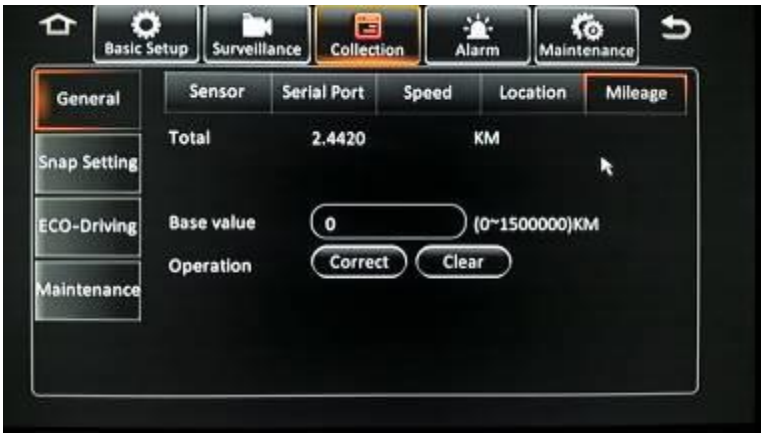
- General- Serial port:

- General- speed

- **Unit:** KM/H and MPH selectable.
- **Source:** GPS, pulse or both optional.
- **Calibration mode:** No need to calibrate if setup as satellite mode.

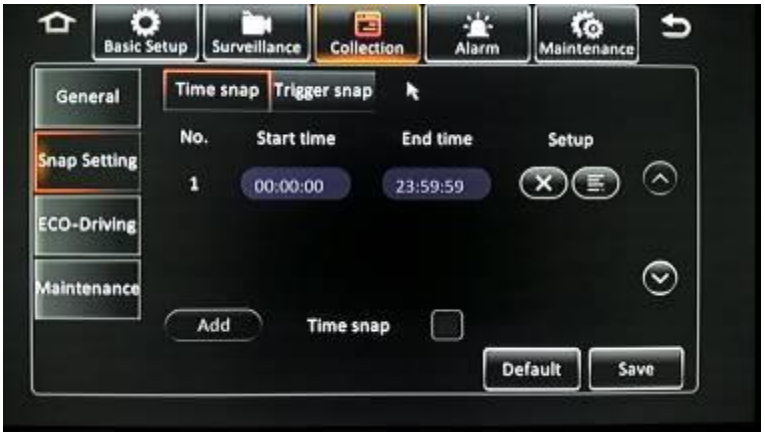
- General- Location

- General- Miliage

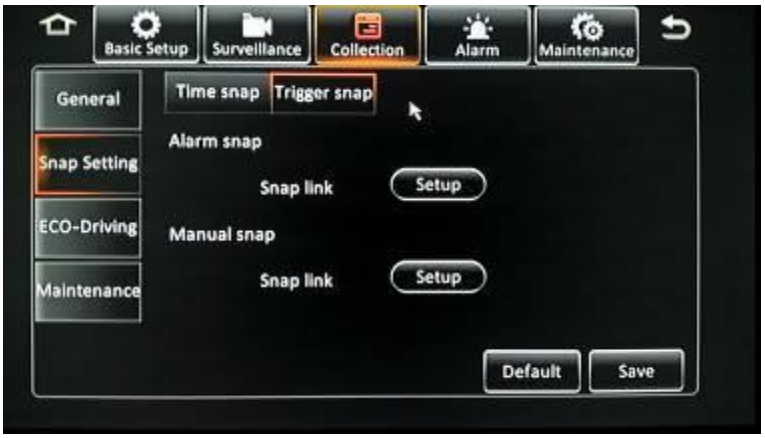


  - **Correct:** Set the miliage.
  - **Clear:** Reset the mileage.

- Snap Setting- Time snap



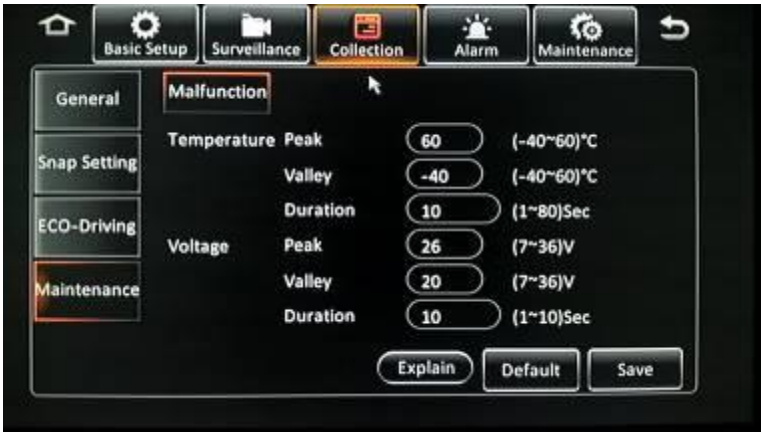
- Snap Setting- Trigger snap



- ECO-Driving - OBDII

- ECO-Driving - GDSPlatelet

- Maintenance - Malfunction



3.6. ALARM

BASE

- Base --Speed alarm

- **Name:** The current name is Overspeed
- **Enable**：Enable or disable, tick to enable
- **Alarm type:** 3 levels
- **Trigger:** Low or high voltage to trigger alarm
- **Linkage:** When alarm triggered, link to alarm output, full screen live video, report to server and so on

- Base- Panic alarm :

- **Name**：The current name is panic.
- **Enable**：Enable or disable
- **Alarm type:** 3 levels
- **Trigger:** Low or high voltage to trigger alarm.
- **Linkage:** When alarm is triggered, link to alarm output, full screen live video, report to server and so on

- Base – IO alarm interface:

- **Name:** From Sensor1 to Sensor8
- **Enable:** Enable this sensor or not, tick to enable
- **Alarm type:** 3 levels
- **Trigger:** Low or high voltage trigger alarm
- **Linkage:** Link to sensor out, report alarm or full screen

- IO sensor- Alarm linkage interface

- **CH**：Associate recording, optional
- **Post-recording**：When the alarm is canceled, the time continue to record
- **Lock**：Only for alarm video
- **3G Network**: It means when the alarm triggered, should it active the 3G module to dial or not.
- **Linkage output**: When alarm triggered, associate with which sensor output
- **Output time**：It means when the alarm canceled, how long the sensor output can stand
- **Alarm Upload**：Upload the alarm info to center server or not
- **Full screen**：When the alarm triggered, associate with a single channel to full screen or not
- **Alarm duration time:** When alarm canceled, the alarm duration time, during this time, if this alarm trigger again, It won't be record again

- Video – Videoloss Alarm Trigger

- Video – Motion Alarm Trigger

- Video – Cover Alarm Trigger

- Advanced – ACC alarm Trigger


Basic Setup
Surveillance
Collection
Alarm
Maintenance
Base
Video
Advanced
ACC alarm
Electricfence
Name
Enable
Alarm type
Trigger
Linkage
ACC alarm
Alarm
Setup
Setup
ACCEL invalid
Calibrate
Default
Save

➢ Advanced – Electricfence Alarm Trigger

3.7. MAINTENANCE

After login, click setup>Maintenance, and then enter into the page as follow.

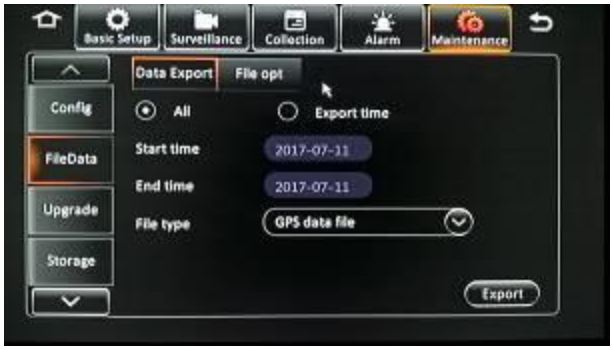
➢ Maintenance - Config

In the configuration page, user can export and import the configuration file.

- Insert the USB drive, and then click “EXPORT”, it will export the configuration file to the root folder of USB driver, the file name is MDVFCFG.CFG
- Import all the parameters
- Insert the USB drive that with configuration file into MDVR, and login this page and click the “IMPORT” to import the parameters, and it will display the notice when import success.
- Remark: it won’t import the register info and speed adaption info.

➢ Maintenance - Data export

In the Data export page, you can export the appointed file in any time, such as black box data, log file and so on.



- Maintenance - Upgrade

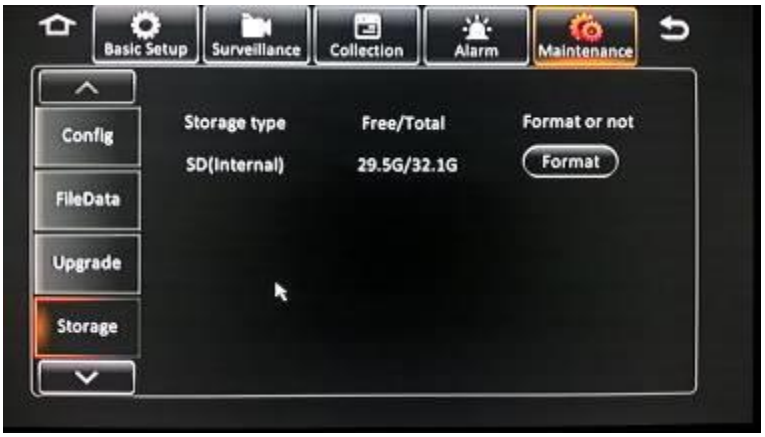
  In the page of upgrade, you can upgrade the firmware, MCU for MDVR

Remark:

1) Make sure don't power off during upgrading.
2) Put the upgrade file into the folder "upgrade", which is at the root directory if the USB drive
3) It support upgrade firmware, LOGO, MCU, and MCU for CP4.
4) Firmware and MCU will package in one file, and it will upgrade MCU first, and then firmware.
5) The name of the LOGO are: logo_update(10.12.15).jpg and logo_cvbs(11.12.15).jpg
6) Please don't put many files in the same folder when it is upgrading, otherwise, it will upgrade one randomly.

- Maintenance - Storage

  In this page, user can format all the storage.



- **Storage type:** SD card (Internal), SD card(External), USB drive
- **Free/Total:**

  Not exist: Didn't find the SD card (not install or broken)

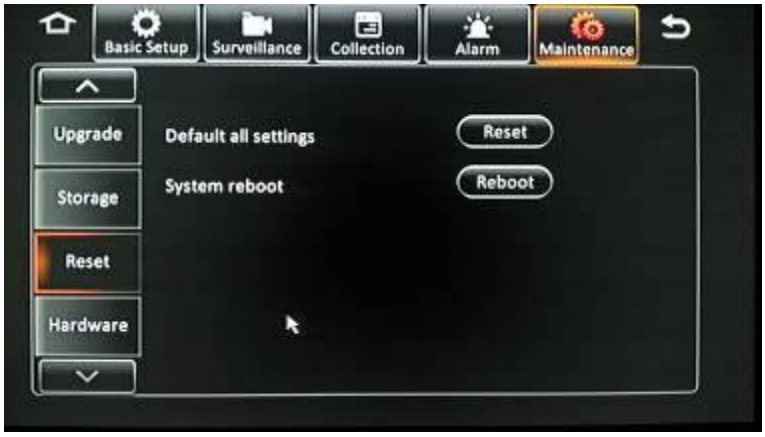
  Unformatted: Means the SD card has been detected, but unformatted.(New SD card)

  Capacity info: Display the correct info means HDD working fine

- **Format:** Click the Format button to start format, if format successful, it will start to recording, and don't need to restart, the format time will be around 10 seconds.

Remark: The new SD card must be format manually at the first time.

➢ Maintenance - Reset



- Maintenance - Hardware

4. REFERENCE APPENDIX

4.1. STORAGE CAPACITY CALCULATION

1) Image Quality & Streams

	Image	1	2	3	4	5	6	7	8
Stream (Kbps)	D1	2048	1536	1230	1024	900	800	720	640
	HD1	1280	960	768	640	560	500	450	400
	CIF	800	600	480	400	350	312	280	250

2) Record File Size Calculation

Rec. file size for each channel is:

Recording time (s) x Stream (Kbps) / 8 / 1024 = File Size (MB)

e.g. The file size of the Image 1 with D1 resolution within 1 hour:

3600 x 2048 Kbps / 8 / 1024 = 900 MB

3) Image Quality & Resolution

	Image Quality	1	2	3	4	5	6	7	8
Resolution	D1	900	675	540	450	395	351	316	281
	HD1	562	422	337	281	246	219	198	176
	CIF	351	264	211	176	153	137	123	110

4.2. FREQUENTLY ASKED QUESTIONS

1) The system can't start?

Usually this problem results from the incorrect power connection. Please follow below steps to check the power connection:

1. Check the input power, whether the power wire is connected correctly, whether the ground wire is connected back to the battery, and whether the fuse on the power wire is in good condition.
2. Check whether the ACC signal wire input to the power is with voltage higher than 7 V.
3. Check whether the device key is closed.

2) The MDVR restarts uninterruptedly?

Please follow below steps to check it:

1. Check whether the voltage of MDVR is insufficient. If the voltage is less than the start-up voltage of the device, the device would always restart.
2. The problem in SD card may cause the failure to start. Take off the storage part and check whether it is broken down.

3) The device can't record?

Usually this problem results from the storage disk or camera. Please follow below steps to check it:

1. Check whether the storage disk is installed, whether it is in good contact, and whether the disk can be read normally in computer.
2. Check whether the storage disk is formatted. The storage disk should be formatted before normally storing record files.
3. Check whether there is video signal input into the device from camera, and whether there is video/image on the screen.

4) There is no voice in record file?

Please follow below steps to check it:

1. Check whether there is an external pickup, or whether the camera features with the function of audio collection.
2. Access to Video Channel Settings, check if Audio is set on.
3. There must be video input into the channel for recording and it must record normally.

5) The GPS works abnormally?

Please follow below steps to check it:

1. Check whether the GPS antenna is installed correctly. There is a silk print logo on the GPS antenna holder behind the host device.
2. Check whether the antenna receiver is sheltered. It should not be covered by any stuff, which may cause it not to receive signals.
3. Environmental influence such as tree shades, being inside tunnel, driving near tall building or elevated roads, thunderstorms or other weather influence, etc. can also cause signal loss or receiving wrong signals.

6) The device can’t shutdown in ignition switch mode?

Please follow below steps to check it:

1. Check if the ACC line connection mode is correct; and check whether there is voltage on ACC yellow line when the key is turned off.
2. If the device has been set with schedule recording, it can’t shutdown if it is still during recording time of the task table.