Quick Start up guide for

MDVR-M Series
4 CHANNEL 1080P
HDD-SDD RECORDING

Mobile Digital Video Recording

****CRITICAL****

Attention：The MDVR will provide power and image to TFT screen by Av OUT port, so don'ｔ connect any external power for the TFT screen, or else, it will destroy the MDVR.

1.1. Installation Environment
 1. To extend equipment life, please install the equipment in locations with little vibration.
 2. To ensure normal heat dissipation, do not install the device in a poorly-ventilated area (such as trunk), and also keep about 15 cm away from other objects on the same level
 3.The device shall be horizontally installed and protected against water, humidity and lightning; in addition, keep the vehicle still during installation to prevent damage to the device due to falling off.
 4. To ensure safe operation, keep the device, camera, cables and other accessories out of reach of passengers and driver.

1.2. Avoid electric shock and fire
 1. The machine uses 9V-36V DC power supply, notice the polarity when wiring to avoid short circuits.
 2. Please power off the device when connecting accessories with device.
 3. Do not touch the power and the device with wet hands.
 4. Do not spray liquid on the device to prevent internal short circuit or fire.
 5. Do not put any other equipment on top of camera.
 6. Do not disassemble the housing without authorization to avoid damage or electric shock.

1.3. Transport and operation
 1. Please use the original package in transport to avoid damage in transport.
 2. Please keep power off in moving the device or replacing components.

2. Product introduction

Main Features:
- Supports 1-4 Channel upto 1080P cameras
- Industry leading CPU with powerful processing ability
- Supports HDD/SSD/SD CARD for recording. Max. 2TB HDD.
- "Plug and Recording" Hard disk: innovative hard disk mounting design, no need to mount screws
- Robust design: Cast aluminum enclosure. Patented design
- Selected industrial power chip-sets, support 9-36V wide range power input, adapt to harsh environment
- Support UPS
- Support low/high temperature environment
- Support external Fireproof box, to backup data in extreme scenarios
- Support backup recording
- Dual streams for local recording and network transmission
- Support Wi-Fi, GPS modules.
- Built-in G-sensor for harsh acceleration/deceleration detection
- Data self-protection, save data when shut down abnormally

3. Product Specification

Power input	DC: +9V ~ +36V	9V～36V, Check the supply voltage of the vehicle battery before use; If it is supplied with more than 36V for a prolonged period, the device may be damaged.
Power output	+12V@1A，+5V@1.5A	
ACC detection	≤4V	Power off
	≥5V	Power on
Video input impedance	75Ω	Each video input impedance: 75Ω
Video output voltage	2Vp-p	2VP-P CVBS output analog signal which should be adapted by 75Ω of input impedance from the display unit.
I/O interface	<1V	Low level alarm
	>5V	High level alarm
Operating temperature	-20℃～70℃	In a well-ventilated place

4. Connect WIFI/GPS antennas

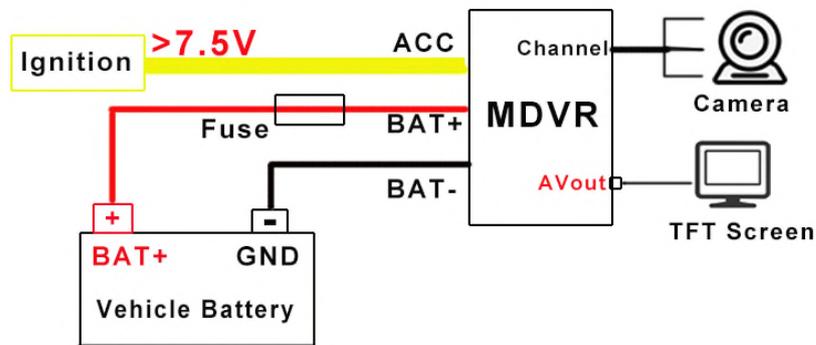Connect WIFI/GPS antennas according to labels on antennas and connectors.

5.Connect power with MDVR

Bench test first-- Use DC12V, 3A (at least) or higher(5A is better) power adapter in office test.

If bench test ensure connect Battery and Ignition to 12volt supply Ground to Ground

 For the vehicle, must install like this.

6. Connection to MONITOR

Connect a monitor with AVOUT port on the rear panel of MDVR.

****CRITICAL****

Attention：The MDVR will provide power and image to TFT screen by Av OUT port, so don't connect any external power for the

7. System operations
7.1 User login
For all devices, the default password for DEVICE **admin** is **111111**;   Use this for initial log in

You can set up USER Password for user is **666666**   **User does not have same ability to change setting as admin log on**

With remote:
Press 【**LOGIN**】button to login MDVR.
Press【**Enter**】button to call the keyboard page to input password.
Once password has been inputed please please
If any error while inputting ,press【Delete】Backspace button to delete.
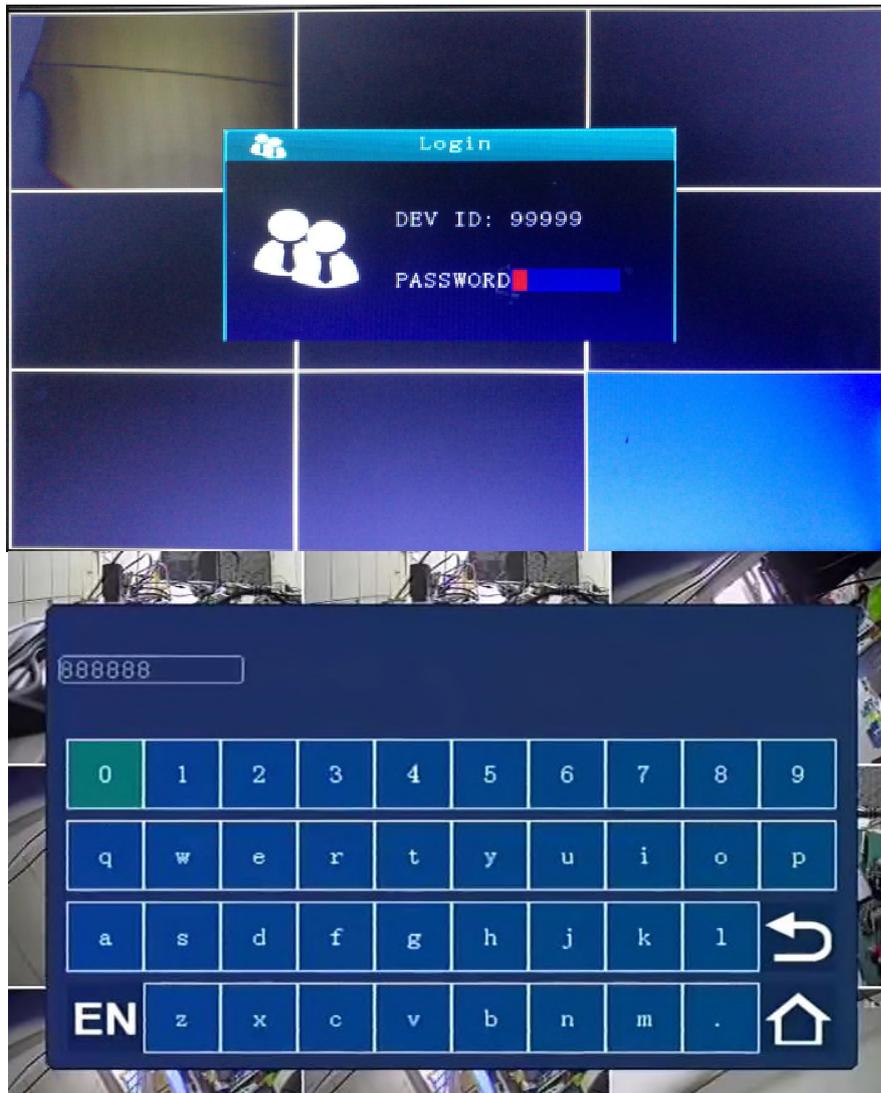
OPTIONAL **With USB mouse**:
Please connect a USB mouse with MDVR to setup the menu.
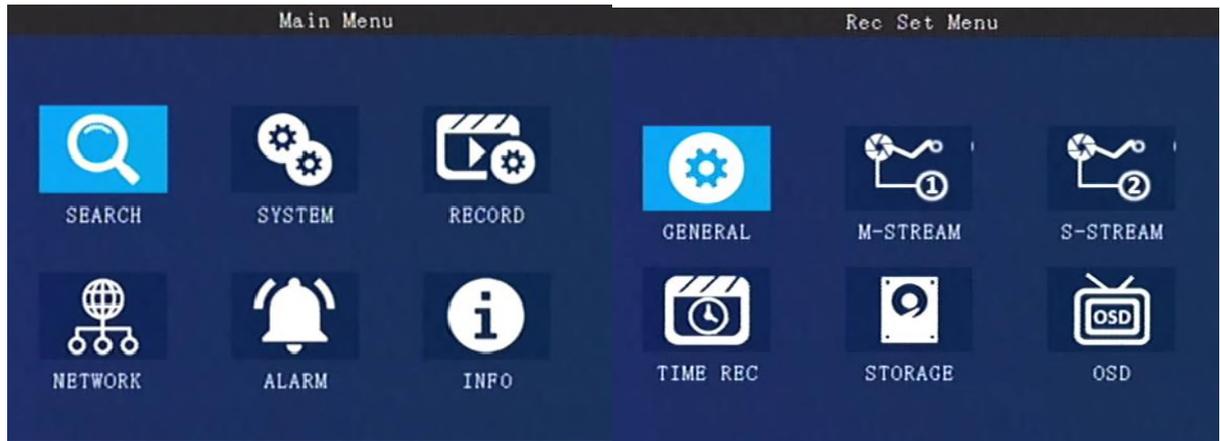Right click on the live video interface and you can see the login page.
PRESs (EN) – ENETER BUTTON
Click on the password column to call the keyboard page to input password. 111111
Once password is enterd please right click to proceed

7.2 Recording and Camera type set up

In Main Menu choose RECORD. In Recording setup including：**General, M-stream, Time recording, Storage, OSD set.**
S-stream is only used for other 3G-4G Models not used for this model

7.2.1   General
Is used to set up for what type of camera you have. **Default is 1080 type**. **You can choose your set up here. If you do not use 1080P camera then you must change these setting to suit your cameras**.
If you have mixture of 1080 (egMC10) and D1 (eg MC6) you must group the 1080P camera as Ch1 and Ch2 and use the DS1 cameras for CH3 and CH4
  4-channel

The General info contains the basic setting for camera. When you install the MDVR, please double-check these sub-menus .

  TV System: Press【Enter】to select: <u>PAL / NTSC, default is PAL</u>. If it's wrong ,the image will become black-white colour only. Select **PAL/NTSC** according to the camera's video type. Device will automatically restart after changing it.

  Camera Type: Press【Enter】 to select:
   4-channel :4 *1080P (default) or Choose OPTION 2 x 18080P + 2 x D1 etc
   Resolution : **D1**:720*576, **720P**: 1280*720 etc based on your the camera type.

Attention: the above setting must be matched with cameras specs, or else, it will not display video.
For example: You have 2*1080P and 2*D1 cameras, choose item,
You must put the 1080P in channel 1/2, put D1 in channel 3/4.

Record Mode: Press【Enter】 to select: Auto / time recording / alarm recording, **default is Auto**.
Auto: it will record all the time.
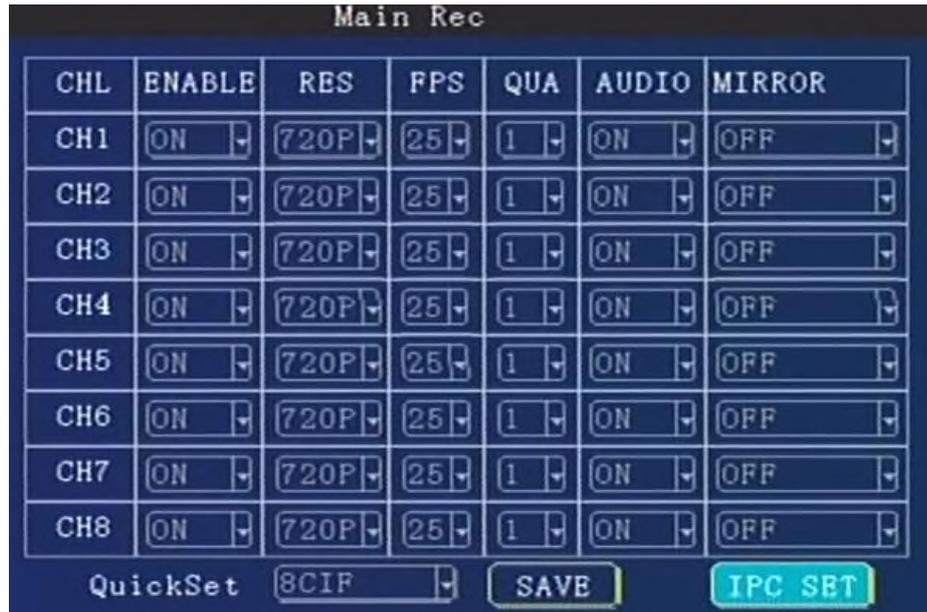**Time recording**: Need set the time in **Record setiings**
Alarm: Only record when alarm is triggering, should set in the Alarm menu first.

Display Resolution: This is to set the TFT screen display resolution. Press【Enter】to select: 720 × 576/1024 × 768/1280 × 720/1920*1080.

View mode: Press【Enter】to select: for different screen camera arrangement on monitor
View Chn: Select the channels you need, to view on monitor.

7.2.2   Main stream

Enable: Press【Enter】to select: On / Off.

Res: Resolution ,press【Enter】to select: D1 / HD1 / CIF / 720P.
   CIF:352*288,**HD1**:352*576, **D1**:704*576, **720P**:1280*720 .

FPS: Frames per second , More frames, every picture will be more clear. press【Enter】to select: 1-25 .
   NTSC : 30FPS , PAL: 25FPS.

QUA: Quality of the video, press【Enter】to select: 1-8. **1** is best , but it will cost more storage space.

AUDIO: Press【Enter】to select: On / Off. **ON** means the audio will be saved with video together.

Mirror/Flip: Set the image to mirror or flip .Press【Enter】to select the types.

QuickSet: Setup all channels resolution simultaneously, press【Enter】to select: 720P/D1 / HD1 /

CIF / 720P.

IPC set:

   MD431 supports 4 IPC by a PON switch. Optional extra

Storage Calculation

MDVR support dual streams.

Main stream is mainly used for local recording; Sub-stream is mainly used for network transmit or mirror recording.

Main stream:

Resolution	Image Quality Level	1	2	3	4	5	6	7	8
Bitrate [MB/hour]	1080P	3600	3150	2700	2250	1800	1350	900	675
	720P	1800	1575	1350	1125	900	675	450	351
	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

Now take the Main-stream table for example. <u>DEFAULT IS 1080 LEVEL 5</u>

It is an <u>**approximate**</u> data for **one camera in one hour**, eg. **1080P**, if the **Quality is 1** best), from the table, the camera uses 3600mb per hour per camera, 2TB is 2,000,000 MB

<u>On the highest **1080P** Image **lever 1** quality at 3600MB per hour per camera</u>
If you use 1 Camera
2TB HDD = 2,000,000MB / 3,600MB = **555 recording hours**
If you use 4 cameras
(4 x 3,600) 14,400MB per hour = **139 hours Driving hours**

<u>If you change to **1080P** image **level 5** quality at 1800mb per hour per camera</u>
If you use 1 Camera
2TB HDD = 2,000,000MB / 1,800MB = **1111 recording hours**
If you use 4 cameras
(4 x 1,800) 7,200MB per hour = **278 hours Driving hours**

<u>If you change to **D1 CAMERA** and **image level 4 quality** at 450mb per hour per camera</u>
If you use 1 Camera
2TB HDD = 2,000,000MB / 450MB = **4444 recording hours**
If you use 4 cameras
(4 x 450) 1,800MB per hour = **1111 Driving hours**
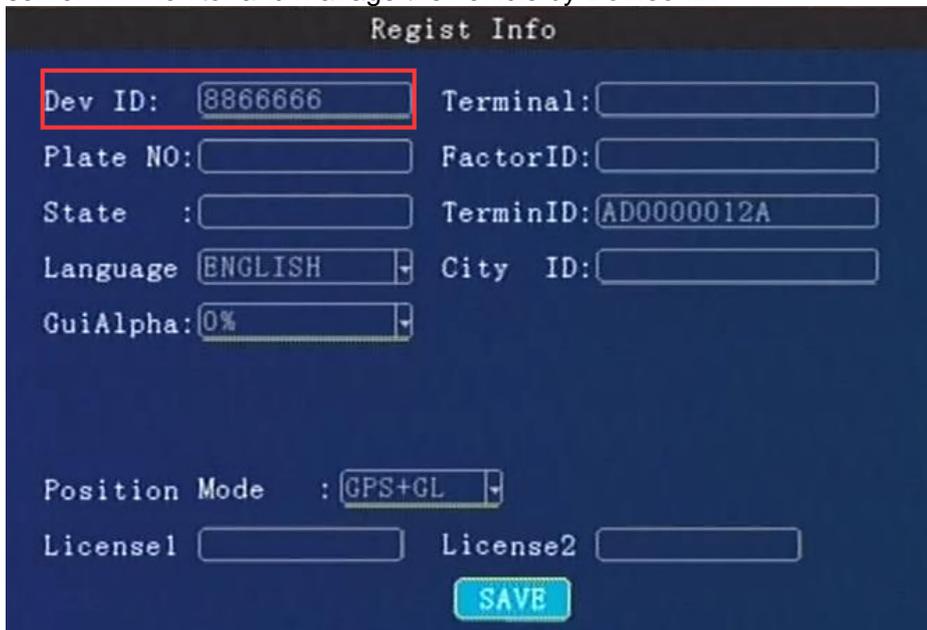
7.3 SYSTEM menu

7.3.1   System setting

System setup menu includes: **Register info**, **User**, **Time**, **Startup**, **Config** and **Format**.

7.4 Register info

The CMS server will monitor and manage the vehicle by **Device ID**.

Device ID、**Plate No.**, **Province ID**, **Terminal Model**, **Factor ID**, **Terminal ID**, **City ID**：Press number keys to input.
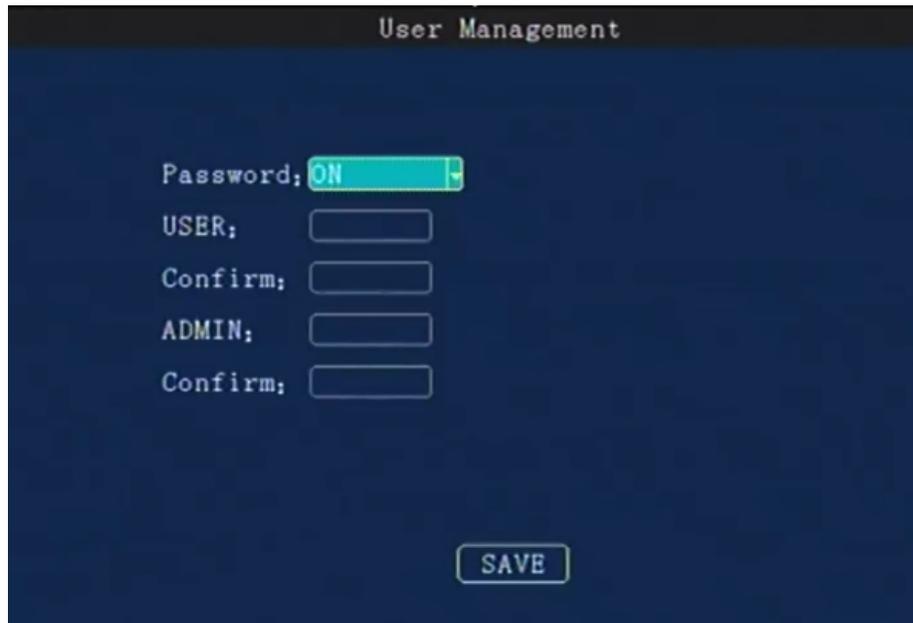**Device ID**
Set a number(12 digital at most) ,but must be unique, It's very important , since we will add this device to the server by these numbers.

Language： press【Enter】to select and system will reboot automatically.
Position Mode:GPS, GLONASS, BeiDou, and so on.
License1 &2: Custom function of RFID function for driver, should input the license number. It's support for the third party platform with H-protocol.
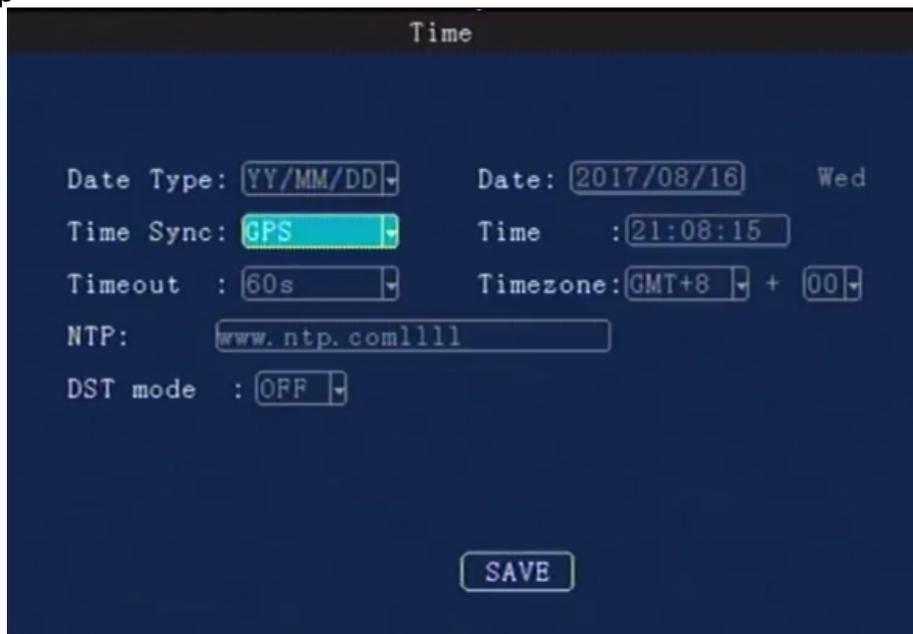
7.5 User

Password：press【Enter】:On/Off

ON: Login with Admin password can setting the User &Admin password; login by user password can only set a user password, password must be the same with **[confirm]** below .

The administrator *can set or change the parameters*, so if you need to set some parameters, login with this account.

The user can search and view the files only.

OFF: Without password. When entering the menu, get into the main menu directly .

7.6 Time setup

Date Type: Use for selecting the data type, year - month - day, day - month - year ,month - day - years. Press【Enter】to select.

Time Sync: Press【Enter】to select: Off / GPS / NTP, default is GPS.

Time out: Setup Menu Waiting Time, once overtime, it will automatically log off the current user,back to

the monitoring mode. Press【Enter】 to select: 1 minute / 2 minutes / 5 minutes / 10 minutes,

Date: To modify current system date, press number keys to enter.

Time: To modify current system time, press number keys to enter.

Timezone: Press【Enter】to select a time zone,.

DST mode: Daylight Saving Time , set it according to your local area requirement.

Select the start and end time, by week and the specific hour , then set the offset time (according to your local regulate on, normally it's 60 minutes).

8.1 MDVR PLAYER

THE MD431 MDVR has software for PC to allow user to view Camera videos as well as GPS and other data.
The player can be downloaded in the Product page for the MDVR in the MANUALS section on our website Mongoose.com.au and Mongoose.co.nz You can also download more detailed manual for the MDVR player and MDVR from the website
There HDD/SDD will need to be connected via the USB cable to your PC. Often you will need to connect Both USB to your PC to be able to power the HDD and allows transfer of files.