Mobile DVR User Manual

SD Video Recorder

Thank you for using our Mobile DVR. This manual is applicable for DV376. Please read this User's Manual carefully to ensure that you can use the device correctly and safely.

The contents of this manual are subject to be changed without notice.

V1.51 001

Only apply to Model DVR376 V1.51

Content

1 Introduction

This DVR is specially designed for mobile video recording application. It adopts embedded processor and embedded operating system, combines the latest technologies in the IT field including audio and video compression/decompression technology. It supports multi SD Cards and USB Disk to record video to MSV/AVI/FLV media file. It meets most customers' needs, and can be widely used in all kinds of vehicles.

1.1 Main Functions of Product

Video and Audio

- H.264 Profile video compression, real time recording(PAL: 25 fps / NTSC: 30 fps) for each channel.
- Frame rate adjustable for each channel.
- ADPCM for audio.
- D1 resolution for each channel, which means each channel supports 720x576(PAL)/720x480(NTSC).
- Support 4 channels video and 4 channels audio recording.

Record

- 4-CH Video & Audio Record
- There are several recording modes: power-on recording, manual recording, timing recording, motion detection recording and alarm recording.
- Support 4 SD cards & USB Disk storage. The recorded file in the SD card or USB disk can be set up to be overwriteable or not.

Preview and Play Back

- Support single channel, 4 channels of audio and video output.
- Support partial blind of video input.
- Support searching recorded files by channel number, recording type, starting time and ending time.
- Support fast forward, slow forward, fast backward and so on when playback.
- Support displaying local recording status, alarm status and motion detection.

Backup

- Support USB disk backup function

Speed and Vehicle Status Recording

- Record the vehicle speed, license plate number and the bus number.

SD Card & USB Disk

- Support SD, SDHC and SDXC cards (above 64GB).
- The SD cards and USB disk can be disconnected freely as long as they are not running.
- The total capacity, remaining capacity and last recording time of each disk will be displayed when SD card and USD disk is equipped.

Alarm

- 8 alarm inputs and 2 alarm outputs
- Over-speed alarm & G-Sensor alarm
- Motion detection alarm
- Abnormity alarm

Charge

- 5V, 1.5A output to mobile devices, such as mobile phone.

Security

- User password protection function. User must input correct password to login.
- Support log management.

1.2 Technical Parameter

Item	Parameter	Description
System	Model	DV-376
	OS	Embedded Linux operating system
	Language	Simplified Chinese/English
	UI	Graphical menu operation interface
	Security	Administrator and user password protected
Video	Video Input	4ch aerial port, 1.0Vpp，75Ω
	Video Output	1ch aerial port,1ch RCA port, 1.0Vpp，75Ω
	Display	Single-picture view, four-picture view
	Video Standard	PAL(25fps),NTSC(30fps)
Audio	Audio Input	4ch aerial port
	Audio Output	1ch aerial port
	Audio Compression	ADPCM
	Audio Bitrate	16KB/S
	Recording Mode	Audio and video synchronize
Storage	Video Compression	H.264,VBR/CBR
	Resolution	D1(PAL:720x576 NTSC:720x480) or CIF (PAL:352x288 NTSC:352x240)
	Video Bitrate	48Kbps~2Mbps
	File Format	MSV,AVI,FLV
	Storage	4 SDXC(64G above),USB Disk（2T）
Alarm	Alarm Input	8ch alarm input
	Alarm Output	2ch alarm output,1 buzzer
Sensor	Ignition Signal	1
	Speed Signal	1
	G-sensor	1
GPS	Internal/External GPS(Options)	
Power Input	+9 ～ +36VDC	
Power Output	12V，Max 2A 5V, Max 2A	
Temperature	Operation	-20℃ ～ 70℃
Power Consumption	Less than 5W, less than 2mA in standby mode	
Size	17.8CM (Width) × 5.0CM (Height) × 17.1CM (Depth)	
Weight		

1.3 Multiple Player Supported

You can use the following PC player to play back the AVI/FLV file:

VLC media player (Version 2.0 above)

Storm player (Version 5.09.0118.2111above)

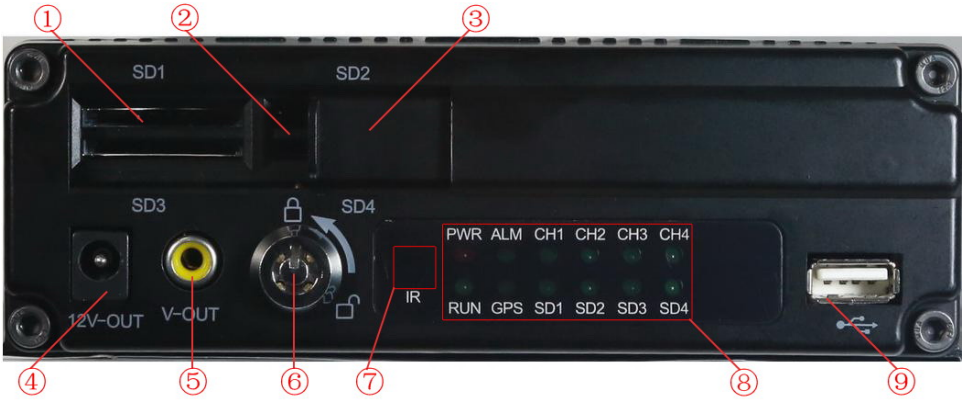
KMPlayer (Version 3.2.0.19 above)

Note: MSV file can only be played by our particular player client.

2 Connection

Front Panel

① SD1 & SD3
② SD2 & SD4
③ Door of 4-SD Card
④ +12V Output
⑤ Video Output (RCA)
⑥ Lock of door
⑦ IR Receiver
⑧ LED Indicators
⑨ USB Host



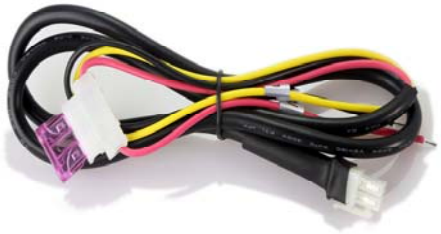
Rear Panel

① CH1~CH4
② Inner GPS Antenna
③ Power In (9~36VDC)
④ Alarm, Speed, Temperature
⑤ RS232 & RS485
⑥ Debug port
⑦ Ethernet (RJ45)
⑧ Extern IR Receiver
⑨ Video/Audio Output

2.1 Power Input

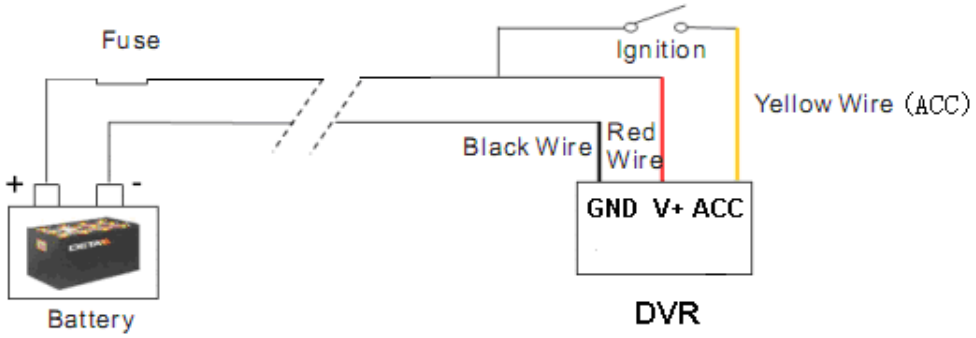
Signals:

3. V+ (9~36V)	4. ACC
1. GND	2. GND



Connection Method:

Connect the ignition to ACC, the yellow wire of the power cable. Connect the "+" and "-" pole of battery to V+ (the red wire) and GND (the black wire) of the DVR.



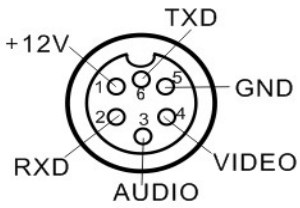
2.2 Camera

Camera Ports on rear panel are aerial ports, their signals:

Camera Connection

Four cameras can be directly, or via extension cable connected to the aerial ports on the DVR rear panel.

2.3 LCD Connection



- **Aerial Port**

LCD Port on rear panel is aerial port, its signals:

LCD connects to Cable 165-14#, then connects to Cable 519-4#, and to the DVR finally.

① LCD

② Cable 165-14#

③ Cable 519-4#

④ LCD Connects to Cable 165-14#

⑤ connect Cable 165-14# to Cable 420#

⑥ Connect Cable 519-4# to the DVR

- **LCD RCA Port & +12V Output**

The LCD connects to RCA video output and +12V Output port of the DVR front panel with 542-2# line.

Cable 542-2#

2.4 RS232 (For Extern GPS) & RS485

Signals:

1. 3V3_Out	3. NC	5. GND	7. RS232_Tx	9. RS232_Rx
2. RS485_B	4. RS485_A	6. GND	8. NC	10. NC

RS232 Port can be used for extern GPS, it can automatically adapt the baud rate of 4800bps or 9600 bps.

2.5 Alarm

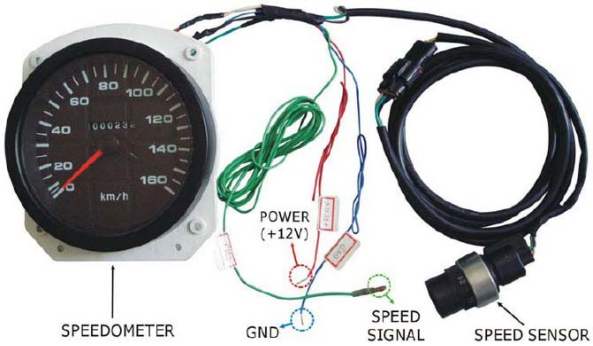
Signals:

1.Alarm1	3.Alarm2	5.Alarm3	7.Alarm4	9. Reverse
2.Temp_Det	4.ADCD	6.PC6	8.PC7	10.PC8
11. Brake	13. Left	15. Right	17. Speed	19. GND
12.Alarm Out1	14.Alarm Out2	16. GND	18.12V_Out	20.3V3_Out

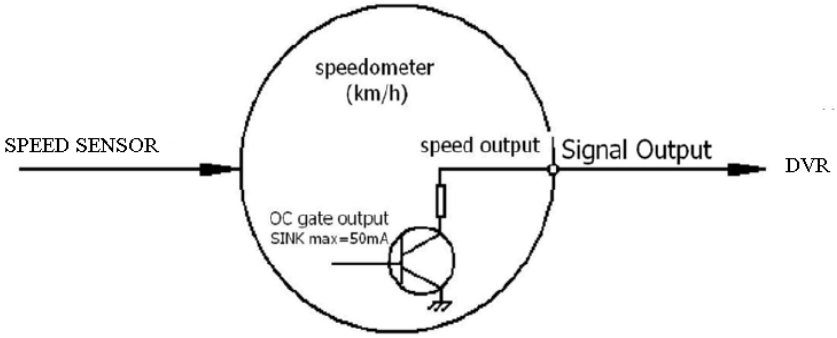
- **Connect Speed Sensor Harness to Speedometer of the Vehicle**

When the DVR speed sources set as the speed sensor, the speed sensor harness must be connected to DVR "Speed input" signal (position #17).

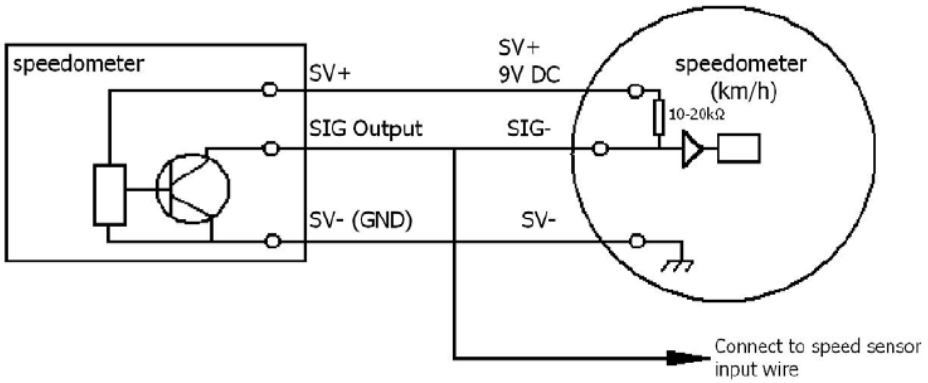
Setting:【Main Menu】->【Peripheral】->【Speed】



If the speedometer already has a signal output wire (showed as SIG output in the right diagram), you can connect DVR "Speed input" signal to the SIG output wire directly.



If the speedometer does NOT have a signal output, please connect DVR "Speed input" signal to the speed sensor. The output of the speed sensor is also the speed input of the speedometer.



2.6 SD Card

- **Install SD Card**

Step1： Use the key to open the door. The Disk Management interface will be showed on the LCD screen.

Step2：Insert SD card(s). The status of the SD card(s) will be displayed on screen.

Step3: Close the door and lock it.The previous video record of the DVR will continue.

2.7 GPS Antenna

2.8 LED

PWR: Red LED, lights on when power on, off when sleep.

RUN: Flashes when normal.

If the light is always on, it means ARM is unable to communicate with the MCU.

ALM: Lights on for 5 sec when trigger Alarm-in or G-sensor.

GPS: Lights on when GPS runs.

CH1~4: Lights on when corresponding camera runs.

SD1~4: Lights on when corresponding SD card is available, and flashes when records.

2.9 Remote Control Instructions

Battery specification: 2pcs*AAA (not included)

Instruction of some buttons:

POWER: Double-click, and press for 5 seconds at the second time, power on.
Press for 5 seconds, power off.

FN: Select file in file list.

MENU: Open main menu.

1~4: Switch 1~4 CH to preview.

0 & MULTI: Return to 4-CH to preview.

ESC: Exit

ENTER: Confirm

Up/Down/Left/Right: Direction keys

CLEAR: Clear input text

REC: Manual Record

MUTE：Mute/Non-mute

SHIFT: Show/Hide controller bar when playback

0~9: The numbers and letters

DEV: Reserved

VOIP: Reserved

▶: Play at normal speed

⏸: Pause

⏵|: Slow, 1/2x

▶▶: Speed up, -16x～16x. The minus means rewind playback

◀◀: Speed down 16x~-16x

|◀◀: Skip back 5 seconds or 5%

▶▶|: Skip forward 5 seconds or 5%

3 Operation Instruction

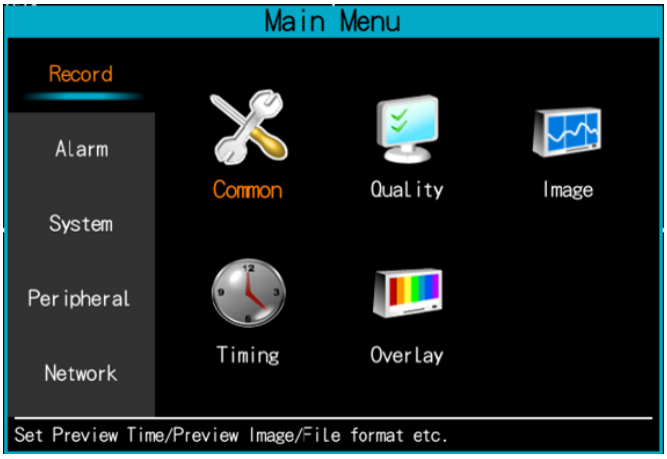
The default setting can meet most of the requirements of opertations. (Please refer to "3.16 software" as default setting).

Menu Brief

Before login, it will display login menu when press the [MENU] key of the remote control.

After login, it will show the shortcut menu. Then press the [MENU] key of the remote control, it will enter into the Main Menu.

Shortcut Menu



Main menu

3.1 Startup/Shutdown

Please make sure the power cable and ignition signal cable of DVR are connected with your vehicle. There are many ways to start up or shut down the DVR:

a).ACC mode (default)：The DVR will start once receiving the ignition signal (high-level) when turning on the engine of vehicle. Conversely, turn off engine to shutdown the DVR.

b).Double-click "Power" key on the remote control, and press it for 5 seconds at the second time, the DVR will start up. On the contrary, press [Power] key for 5 seconds when the DVR is running, it will shut down.

c).Set the startup/shutdown timer (【Main Menu】-> 【System】-> 【Basic】).

- **ACC Delay:**

Used to Delay Power off

If ACC Delay is set to 60 seconds, the DVR will shutd own with 60 seconds delay after the ignition is off. The DVR will keep recording if the original is recording.

Setting:【Main Menu】-> 【System】-> 【Basic】 -> ACC Delay

3.2 Video Format

Video format is used to set the image format: PAL (default) or NTSC system.

Please set the video format according to LCD and cameras. The LCD and all cameras should be the same format.

Setting:【Main Menu】-> 【System】-> 【Basic】 -> Video format

3.3 Language & Time

- **Language & Time**

This system supports English and Simplified Chinese.

Setting:【Main Menu】-> 【System】-> 【Basic】

- **Time Check**

If set to "GPS Check", the DVR time can be corrected by GPS time.

Note: The time isn't allowed to be modified while recording.

3.4 Channel Preview

- **Single-channel Preview**

Press number "1~4" on the remote control, you can particularly preview the corresponding channel.

- **Four-channel Preview:**

Press the number 0 or【Multi】 key on the remote control , it can return to four-picture preview status.

For example, set "Preview, Switch, Voice" respectively as "Quad, 5 sec, CH1", the DVR will sequentially switch preview interface as Quad, CH1~4 every 5-second，and play CH1's audio.

Setting:【Main Menu】->【Record】->【Common】

Record and Preview Settings

3.5 Video Record

- **Record Mode**

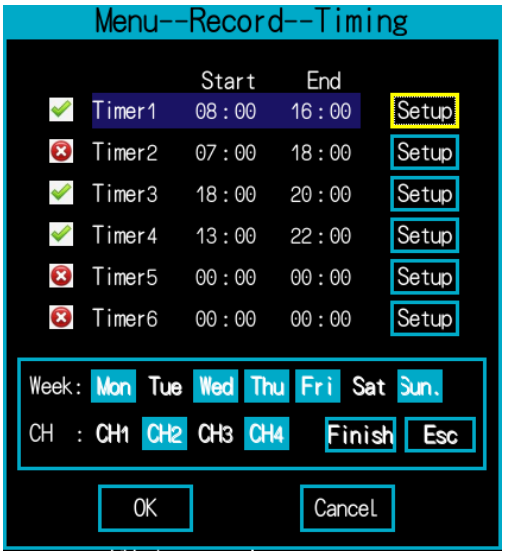
Manual Record

【Shortcut Menu】->【Manual Rec.】-> Start / Stop video channels record

Power-on Record

E.g. record video of CH1 & CH3 once the DVR boot.

Setting:【Main Menu】->【Record】->【Common】-> Power-on Rec. -> Record's channels as "CH1 & CH3"



Timing Record

Setting:【Main Menu】->【Record】->【Timing】

DVR supports six timers for record. Time among timers allowed overlap on each other.

Press "Setup" of Timer N (N=1~6), then setup this Timer's Days of Week and Video Channels.

Click the check-box to enable the timer.

Alarm Record and MTD Record

Refer to the relevant sections.

- **Record File**

DVR supports three types of file format, such as MSV, AVI and FLV. The record files not only contain video & audio data, but also contain GPS, G-sensor, speed, temperature info.

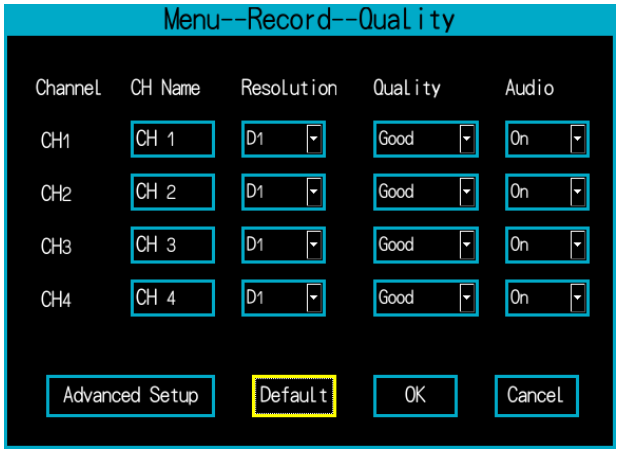
MSV is a patent file format can contain 1~4 channel(s) video data in one MSV file. It only can be played by our player client on PC, which can show GPS routes and G-sensor data.

AVI/FLV is common file format which can be played by most of players. But the GPS routes and G-sensor data in file can't be showed by those players.

- **File Length**

It's recommended to package one record file every 15 min in order not to generate too large record file and make files convenient to backup.

Setting:【Main Menu】->【Record】->【Common】



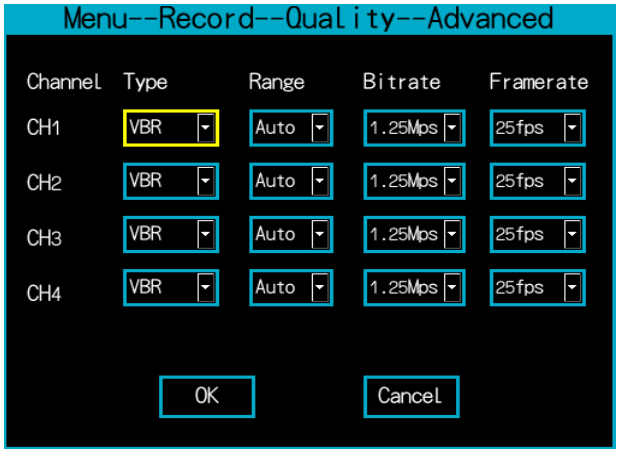
- **Record Quality**

The record resolution and quality mainly affect the size of record file.

Setting:【Main Menu】->【Record】->【Quality】

E.g. four channels are all set to "D1". The Quality is "Good", synchronize record 4 CHs' sound.

Audio data just occupies a small part of record file. It's recommended to turn on audio record. If the camera doesn't support audio input, it should be turn off to save disk space.



- **Advanced Setup**

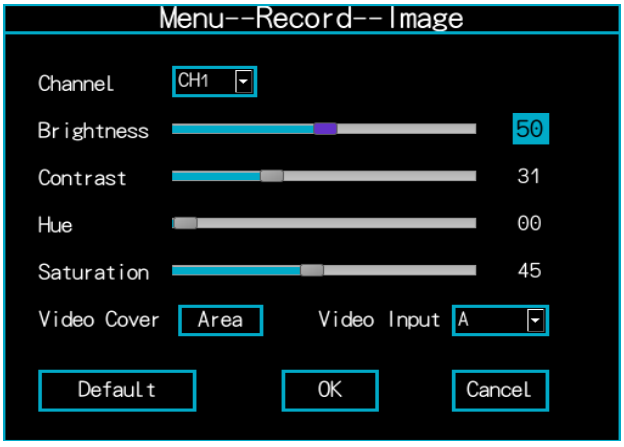
It's for advanced user to setup.

Recommended to set as "VBR", variable bit rate, can save disk space as much as possible.

The Bit rate could be changed from 48K to 2M (bps). It's important to set the bit rate according to the condition of the field with the camera and the image quality requirements. Otherwise it will waste disk space or cause bad image quality.

Frame Rate affects the coherence of the video. It can be up to 25fps in PAL system, and 30 fps with NTSC system.

Level	Resolution	Fps	Video Bitrate(bps)	Audio Bitrate(bps)
Excellent	D1	25/30	1792K	4K
	CIF	25/30	768K	4K
Good	D1	25	1280K	4K
	CIF	25	512K	4K
Average	D1	20	1024K	4K
	CIF	20	384K	4K
Fair	D1	15	768K	4K
	CIF	15	256K	4K
Poor	D1	10	512K	4K
	CIF	10	192K	4K
Very Poor	D1	5	384K	4K
	CIF	5	128K	4K
Poorest	D1	2	192K	4K
	CIF	2	48K	4K



- **Image Quality**

It is used to control brightness, contrast, hue, saturation of each video input from camera.

Each camera channel has two independent video inputs, group A and group B.

Setting:【Main Menu】->【Record】->【Image】

- **Video Cover**

It is used to set video cover. The select area will have no video. The system only support 1~4 rectangle blocks to cover.

Press "Area" button to enter "Area" interface.

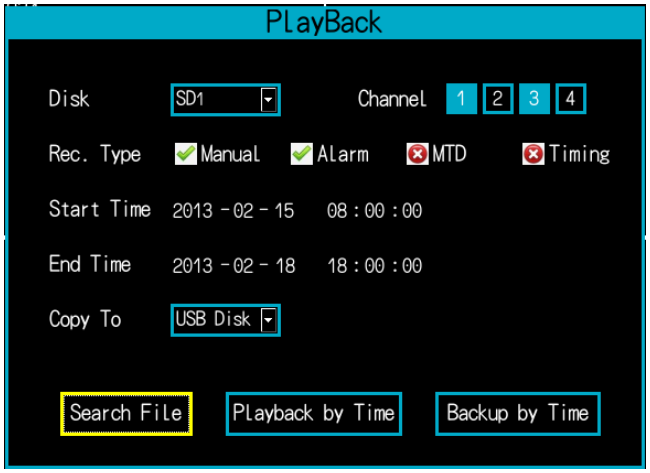
Press "Enter" key to select or "ESC" key to exit on the remote. Last, press "OK" to save configuration.

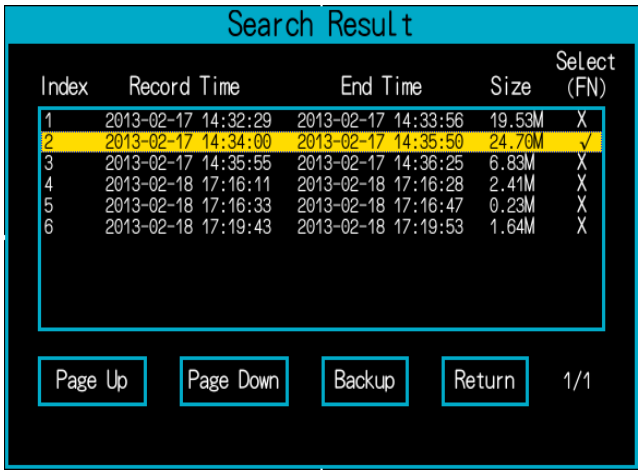
3.6 Playback & Backup

Operate:【Shortcut Menu】->【Playback】

- **Search File**

Select SD1, Ch1&CH3, Manual & Alarm Recording Type, Start Time as 2013-02-15 8:00:00 and End Time as 2013-02-18 18:00:00, then click "Search File" button, all the recording files which meet the conditions will be displayed in the list box. Use <UP/DOWN/LEFT/RIGHT> key to select the recording file you want to playback, and press <OK> key to play this file. Press 1 to 4 key of remote control can switch from CH1 to CH4 to playback.





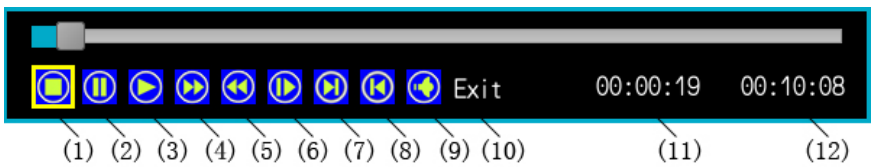
- **Playback by time**

After select the Disk, Channel, Recording Type, Start and End Time, click "Playback by Time", it will playback the recording file of any type of the selected channel within this time period.

- **Playback operation instruction**

When playing, the below control bar will be showed. Of course, it can be hidden / showed by using the <shift> key of remote control. The playback status, real play time and the total time of the recorded file are showed on the bar.

(1) Stop & Exit
(2) Pause
(3) Play
(4) Speed UP, -16x～16x. The minus means rewind playback
(5) Speed down, 16x～-16x
(6) Slow, 1/2x
(7) Forward, 5% or 5s
(8) Backward, 5% or 5s
(9) Mute/Non-mute
(10) Button's message
(11) Real play time
(12) The total time of the recorded file



- **Backup**

Backup by File

In the "Search Result" interface, use <UP/DOWN> and <FN> key to select the recording file you want to backup, the selected files will mark "√". Click "Backup" button, the files will be copied to the first partition of USB Disk. When the backup is completed, there will be a succeeded prompting.

Backup by Time

After select the Disk, Channel, Recording Type, Start and End Time, click "Backup by Time", backup all the files within a specific time period to the USB disk. If the USB disk is full or the backup operation is finished, it will stop.

Note: If the USB disk has many partitions, the backup files will be copied to first partition.

3.7 Disk Management

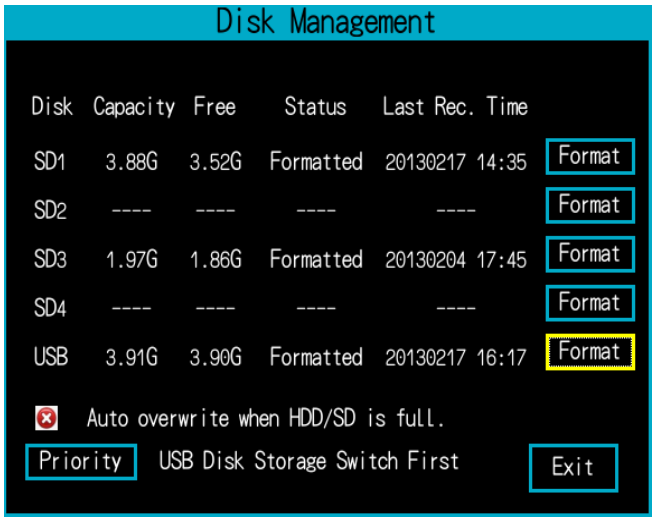
SD cards and USB disk installations:

SD-cards: Unlock the locker, plug in 1~4 SD-card(s), then close the door and lock.

USB Disk: Use a USB cable to connect the USB disk to the DVR USB socket without opening the lock.

The Disk Management interface will be showed by follow ways:

1. 【Shortcut Menu】-> 【Disk】
2. Power on without available storage medium in the DVR.
3. Start record without available storage medium.
4. Unlock. **Note:** When recording, record will stop when unlocked, and restart after it is locked.



- **Format**

SD-Card(s) and USB disk can only be used for recording after formatted by DVR.

If the capacity of a USB disk is bigger than 500GB, it will be divided into four partitions and record one by one.

- **Auto Overwrite**

Recommend to set "Auto overwrite" on. If so, when all disks are full, DVR will delete the earliest manual/timing record file one by one, and keep recording.

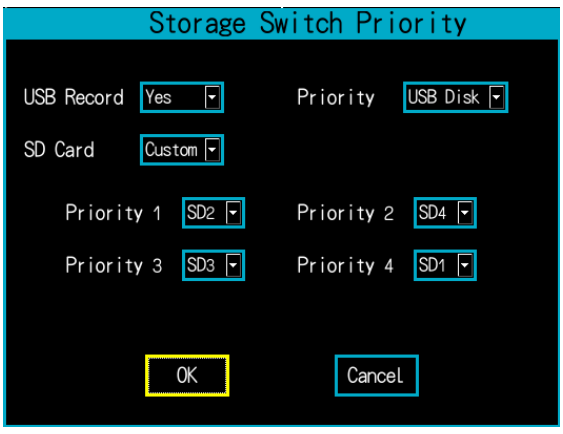
- **Priority**

Used to set SD-cards and USB disk records first, and set 4 SD cards record order.

Recommend to set "SD Card" priority as "Intelligent", so it can auto select SD card to record according to disk usage when recording disk is full. Unused disk will have priority, disk contained oldest record files will be followed.

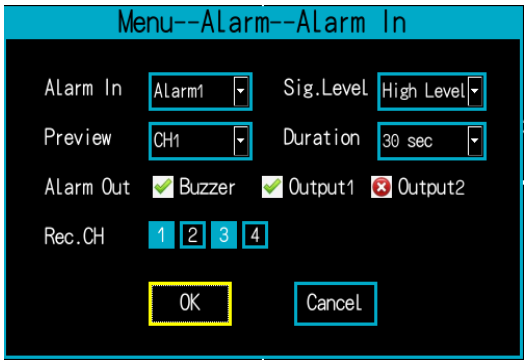
E.g. USB disk is priority recording, and 4 SD cards recording sequence are: SD2->SD4->SD3->SD1.

Note: Only when the recording disk is full can it switch to another disk according to the selected priority.



3.8 Alarm

The DVR can support 8 sensor (alarm) inputs. The "Alarm1~Alarm4" inputs can trigger alarm recording, but "Reverse", "Brake", "Left", "Right" cannot record, trigger to toggle video display, and trigger to show information on screen.

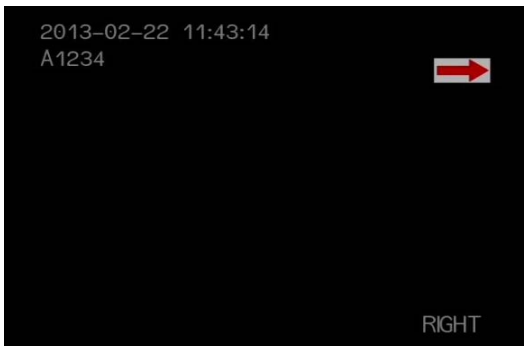


For example, assume the Alarm1 input is connected to the control signal of vehicle front door. When the door is opened, Alarm1 will input high-level (active), the DVR starts CH1 and CH3s' Alarm Record for 30 seconds, the screen will toggle to CH1 with full screen automatically, and trigger to show information on screen, and turn the buzzer on, the "Alarm Out1" outputs high-level (+12V, 200mA).

Setting:【Menu】->【Alarm】->【Alarm In】

Note: If the buzzer rings, it will ring for 5 seconds.

Another example, assume setting "RIGHT" preview is CH2, and the Right input is connected to the turn right signal of vehicle. When the right direction lights lit, Right will input high-level (active), preview screen will be switched to RIGHT (CH2) camera. If the Alarm icon item is set, the right direction icon will be displayed on the screen. CH2 has named as "RIGHT", its camera is installed on the right.



- **Pre-Record**

Recommend to set "Pre-record". If it's set, when Alarm/MTD/G-sensor record is triggered, it will save the past 2 seconds video to record file first.

3.9 Speed

The DVR has two sources of speed: GPS and Sensor. When selecting GPS, it is no need to adjust the speed. When selecting the speed sensor, the sensor must been connected to the DVR.

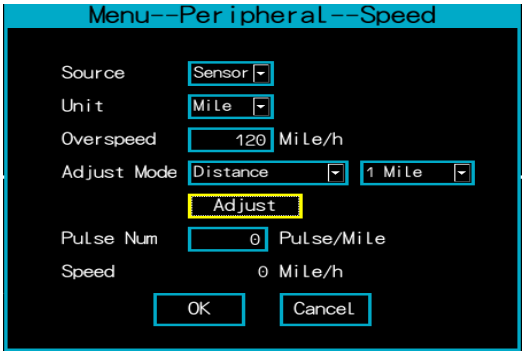
- **Adjust**

The arm of Speed Adjust is to get the pulse number of the speed sensor generates for one kilometer or mile. The "Speed Adjust" has two ways: "Distance" and "Constant speed"

Setting:【Main Menu】->【Peripheral】->【Speed】

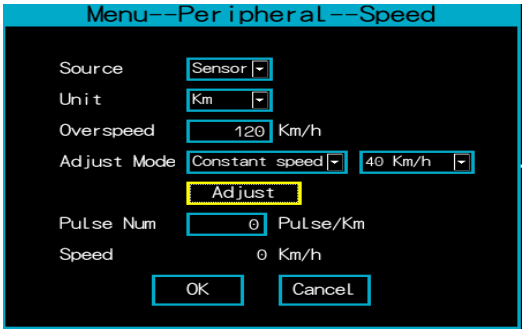
For example, set adjust as "1 Mile" for "Distance".

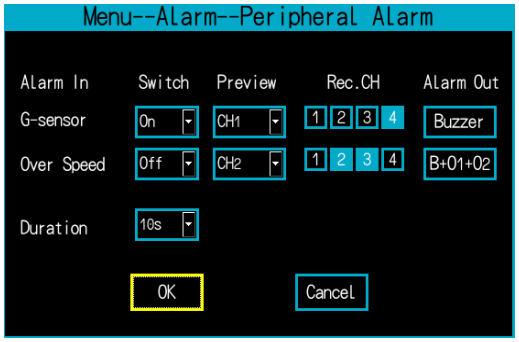
Press the Adjust button, and then drive the vehicle for one mile, select "Yes" to finish.



Another example, selects "40Km/h" for "Constant speed". Keeping up your vehicle speed as 40Km/hr and then press "Adjust" button, the speed adjust will be done after 5 seconds.

It's important to press "OK" to save those parameters.





G-sensor & Over Speed Alarm

- **Over Speed Record**

Setting:【Main Menu】->【Peripheral】->【Speed】-> Over speed

Setting:【Main Menu】-> 【Alarm】-> 【Peripheral Alarm】 -> Over Speed

- **Pre-Record**

Recommend to set "Pre-record". If set, when Alarm/MTD/G-sensor record is triggered, it will save the past 2 seconds video to record file first.

3.10 GPS

Select inner-GPS or extern-GPS according to real.

Setting:【Main Menu】-> 【Peripheral】-> 【GPS】

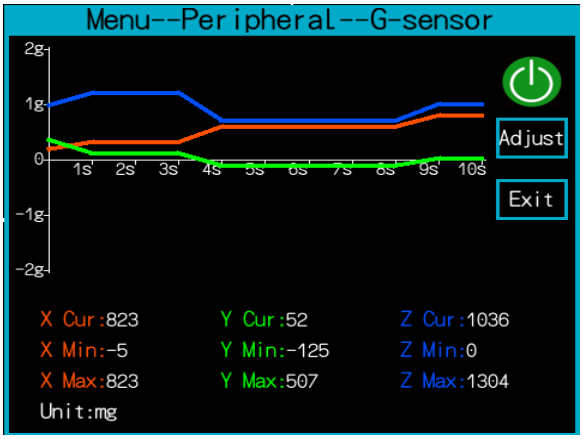
This interface gives many GPS information, such as latitude and longitude, number of satellites, intensity of each satellite, and so on.

When GPS is on, latitude, longitude and speed will be recorded into video files.

3.11 G-sensor

Turn on the G-sensor.

Setting:【Main Menu】-> 【Peripheral】-> 【G-sensor】



- **Adjust**

The purpose of "Adjust" is to reduce the impact due to a slight tilt of the DVR installation.

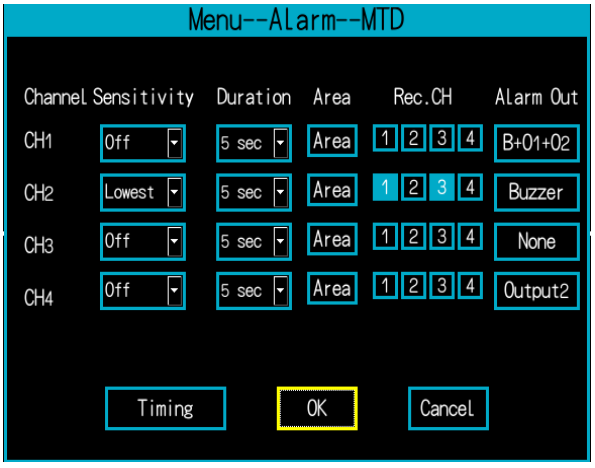
Figure: the following figures are the readings after the correction of the x-axis, y-axis and z-axis.

- **G-sensor Alarm Record**

When switch on G-sensor alarm, the G-sensor trip setup interface will be displayed. It's recommended to set the sensitivity of the G-sensor to 2g or above.

Setting:【Main Menu】-> 【Alarm】-> 【Peripheral Alarm】 -> G-sensor

3.12 Motion Detection



The sensitivity and area configuration are very important for MTD (Motion Detect). The sensitivity means the changing degree in the area of camera. The area means the area of motion detected.

Setting:【Main Menu】-> 【Alarm】-> 【MTD】

An example of the right figure configure: Only CH2 has been set the lowest sensitivity MTD , while CH1, CH3 and CH4 are off. Once triggering, the DVR will record CH1 and CH3 for 5seconds and turns on the buzzer for 5 seconds.

Note: "B1-O1-O2" means Buzzer, Output1, and Output2.

- **Pre-Record**

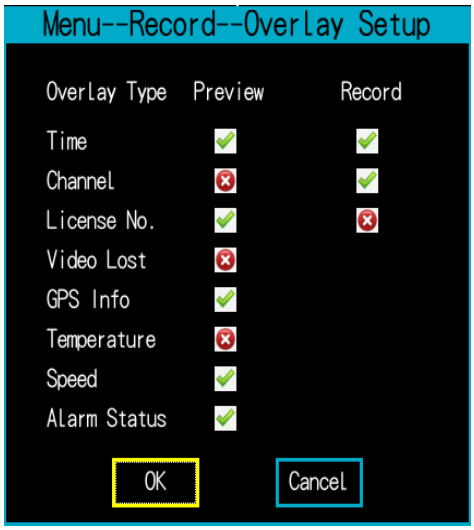
Recommend to set "Pre-record". If set, when Alarm/MTD/G-sensor record is triggered, it will save the past 2 seconds video to record file first.

3.13 User Information

- **Vehicle**

It is used to set Line number and License number of Vehicle. The line number is used for bus. The License number should be set as vehicle's license plate number.

Setting:【Main Menu】->【System】->【Device】



- **Channel Name**

For example, CH1 can be named as "Main", CH2 can be named as "Left", etc.

Setting:【Main Menu】->【Record】->【Quality】

- **Overlay**

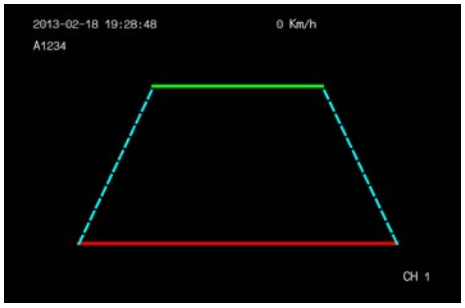
Preview Overlay: Select information and status to display in the preview screen.

Video Overlay: Select information and status displayed to record, which can be seen in playback.

Setting:【Main Menu】->【Record】->【Overlay Setup】

E.g. display time, license No., GPS info, Speed, Alarm Status in preview, and record Time and Channels to video files.

- **Reversing Icon Adjust**



Press "Enter" key on the remote controller, the reversing icon will be displayed in preview, whose sharp and position can be modified and adjusted. Press "Left/Right" key of remote to modify position, and press "Up/Down" key to change the sharp of icon.

3.14 User Manager

User can set password/nickname, and the nickname can be showed from user item of 【login】 interface.

Setting:【Main Menu】->【System】->【User】

3.15 UI

User can set UI's transparency and hidden time.

Setting:【Main Menu】->【System】->【Basic】

3.16 Software

- **Configuration Import/Export**

Export/ Import configuration to/from USB Disk.

Importing confirguration or restoring Factory defaults needs to reboot the system to take effect.

Setting:【Main Menu】->【System】->【Configuration】

- **Software Update**

You can update application or MCU by USB Disk/SD Card contained "**DV376-update.tar**" package, and the update will finish in a minute, and then DVR will reboot.

Update:【Main Menu】->【System】->【Update】

- **Restore**

When turn on the DVR, it will finish the update in a minute automatically by the USB Disk/SD Card contained "**DV376-restoreSystem.tar"** package, but it can't update MCU.

Note: Please make sure there is an available update file in your USB Disk or SD card and the file name must be "**DV376-update.tar**" for Manual update, "**DV376-restoreSystem.tar**"for restore for system collapse.

4 Client Software

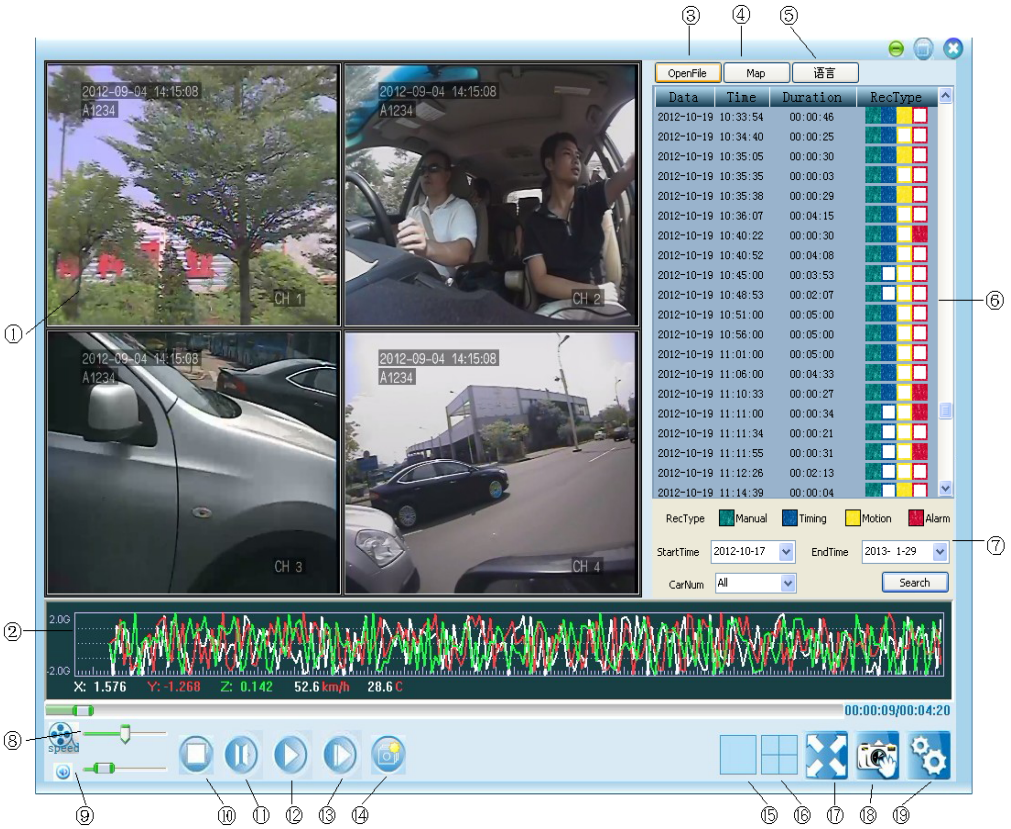
The player can simultaneously play 4-channel DVR video with G-sensor and GPS routes on Google map, which supports snapshot channel picture. User can drag and drop any channel view conveniently.

The player supports Win7 & Windows XP.

4.1 Player Interface

Run "MSShow.exe", it will display this interface:

① Video display area
② G-sensor display
③ Open file
④ Google map
⑤ Language switch
⑥ File list
⑦ File Search area
⑧ Speed: 1/16x ~ 16x.
⑨ Volume
⑩ Stop
⑪ Pause
⑫ Play
⑬ Single frame play
⑭ Seconds play
⑮ Single screen
⑯ Four split screens
⑰ Full screen
⑱ Snapshot
⑲ Setting



4.2 Vedio Play

- **Open File**

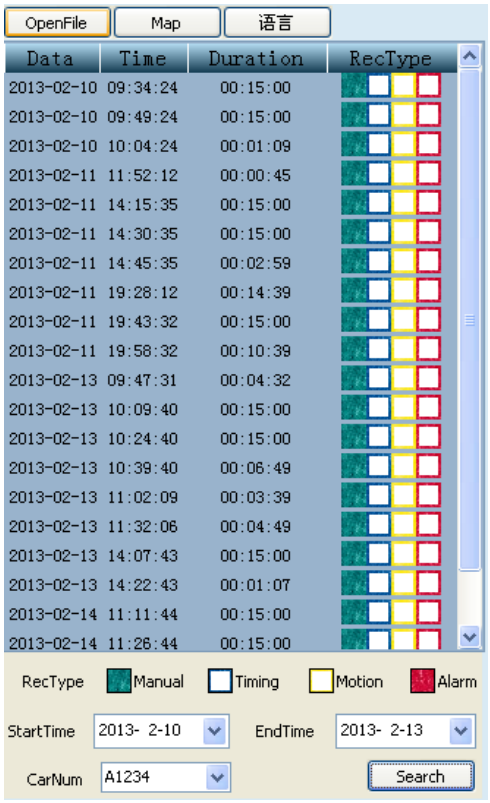
Click the "OpenFile" button on the top right corner, and select a directory.It will show all record files of the directory in the file list window.

Note: Don't change the video file's name.

- **File Search**

To select files within the special range, you can use file search function.

E.g. in the search area, if choose manual and alarm recording type, start time as 2013-2-10 and end time as 2013-2-13, license number as A1234, click the "search" button, all the recording files which meet the conditions will be displayed in the file list window.



- **Play**

Double click a video file, it will play.

- **Snapshot**

While playing, press the Snapshot button to capture a selected channel images and save.

- **Snapshot Path Setting**

Click the "Setting" button, it can do it.

- **Single Screen & Four Split Screens**

While playing, double click a channel, it will enter single screen with only the channel playing. Double click again, it will revert to four split screens.

- **Drag and Drop**

Press and hold the left mouse button, drag a channel to the position of any other three channels, and the two channels can be interchanged.

- **Channel's Voice**

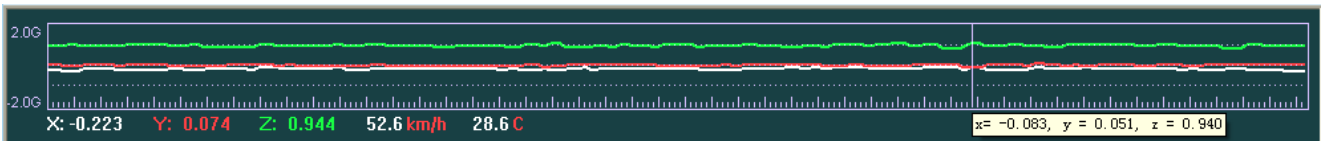
In the video display area, click the right mouse button, select "Audio 1" on the pop-up context menu, then the audio of Channel 1 will be played.

4.3 G-sensor

Display the x, y, and z axis acceleration. White line is x-axis, red line is y-axis and green is z-axis, which displays the current point to the x, y and z values.

It can also display the cursor's x, y and z values.

Click G-sensor area, it will be enlarged, and easy to observe.



4.4 GPS Map

While playing a video with GPS data, click map button, GPS routes on the Google map will show. Satellite mode map is recommended.

If click the icon "  ", the size of map will enlarge, and if click the icon "  ", the map will be maximized.

5 Trouble Shooting

1. Q: After connecting the DVR power, no video output and red power led indicator lights on.

A: The DVR missed the ignition signal, please check whether the ACC, yellow wire in the power cable, has been connected to the ignition or not.

2. Q: Why don't SD cards and USB disk record?

A: Please make sure the SD card and USB disk has been formatted by the DVR.In addition, if the SD card or USB disk are full and the DVR is not be set to "Auto overwrite",the record will not work too.

3. Q: How to achieve the power on automatic recording?

A: First, setting:【Main Menu】->【Record】->【Common】-> Power-on Rec.

Second, the DVR have available SD card(s) or USB disk when "USB Record" is enabled.

4. Q: How to take out the SD card from the DVR safely?

A: It's similar to use a SD card or USB disk on the computer, stop the file operation before the extraction, so as to ensure that the internal files of SD card or USB disk will not be destroyed or lost. This DVR provides a simple and safe way to eject the SD card: when you unlock the SD cards' door, the DVR will stop recording, if no SD LED light flash, you can eject your SD card safely.

5. Q: How to take out the USB disk from the DVR safely?

A: After power off, you can eject your USB disk safely.

In addition, after stop recording by using the remote control or unlock the SD cards' door, if no SD LED light flash, you can eject your USB disk safely.

6. Q: Why it would be damaged video or even no image at the bottom section of the screen?

A: Make sure the DVR video system and cameras and LCD system are the same, for example, it will occur when the DVR settings is PAL system, while the camera is NTSC system. Conversely, if the DVR is set with NTSC system, scrolled fault images also occur when connecting a camera with PAL system.

7. Q: what is "ACC Delay"?

A: It means record continuously for the specified period of time after turn the engine off. This time is called "ACC Delay" time, such as 60 seconds.

Setting:【Main Menu】->【System】->【Basic】 -> ACC Delay

The time of "ACC Delay" cannot be set too long, because after the engine shutdown, mobile DVR entirely depend on the power of the vehicle battery to work, the vehicle can't start correctly next time if the mobile DVR drained the energy of the vehicle battery.

8. Q: Why does DVR keep alarm when I set the motion detection, even if the image moving is not obvious?

A: First, please make sure that if the sensitivity settings of the motion detection are correct, sensitivity is divided into 5 levels.

Second, make sure that if your camera system (PAL system or NTSC system) match the stroboscopic lighting devices such as fluorescent lights. PAL system is 50Hz system, NTSC

system is 60Hz system. If a PAL camera of 50Hz work under the fluorescent lights driven by the power grid of 60Hz, images will appear frequency difference flashing of 10Hz, this will lead system to mistake for changing scenery brightness continuously, and trigger motion detection alarm. Conversely, a false alarm will also occur when a camera of 60Hz works under the fluorescent lights driven by the power grid of 50Hz.

9. Q: How to use the remote control to modify the edit box information?

A: Press the remote's 0-9 keys to switch the input numbers and corresponding letters of the alphabet, and use【CLEAR】 key to clear the selected characters before the cursor.

10. Q: How to play the recording files in the SD card on the PC? Why do some players not work?

A: The DVR supports three types of file format, such as MSV, AVI, FLV, compression standard for H.264.

MSV files can only be played by our player clients on PC, which can show GPS routes and G-sensor data. The player has continuous playback, fast playback, single-screen, multi-screen display functions.

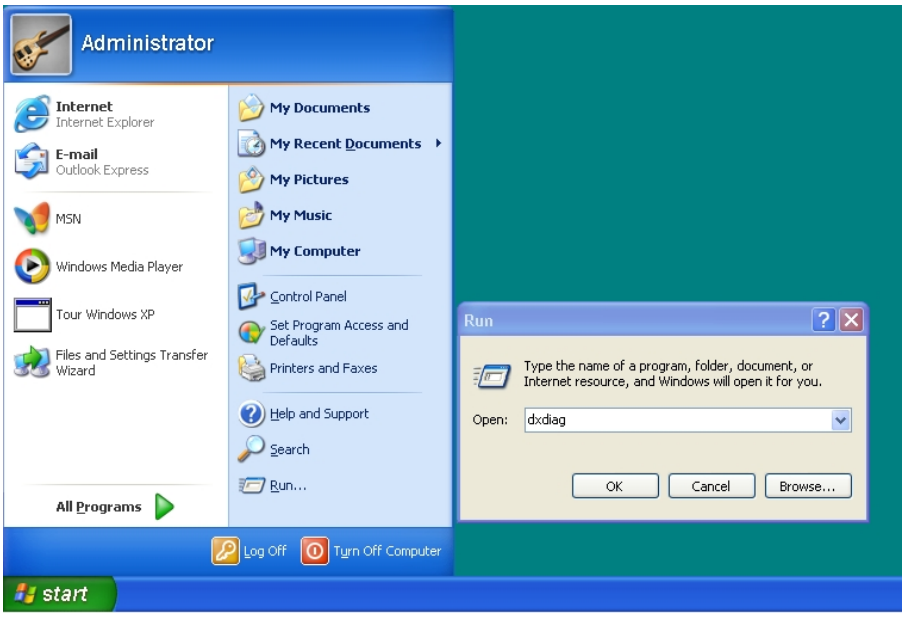
AVI/FLV is common file format that can be played by most player. Such as VLC (V2.0 or above), the STORM(V5.09.0118.2111 or above),which can be downloaded from the internet. But the GPS routes and G-sensor data in file can't be showed by those player(s).

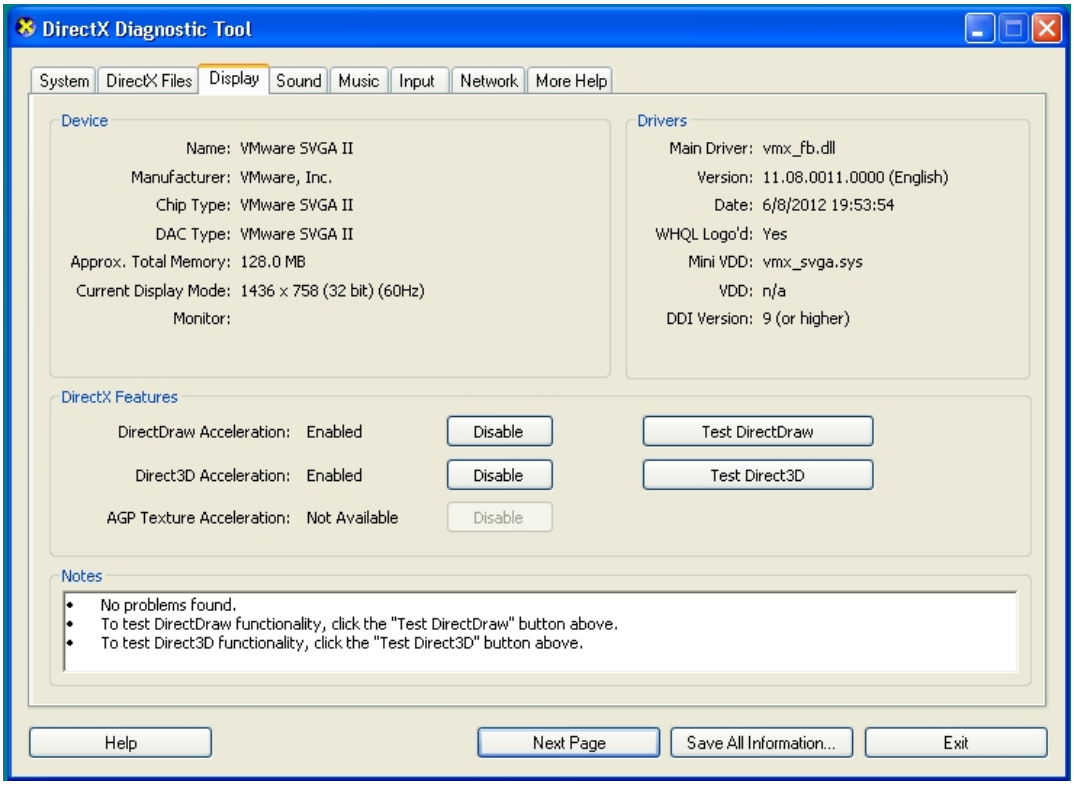
11. Q: Why does client software audio-only without video while playing recording files?

A: Make sure graphics driver installed correctly. If the name of the graphics card is standard VGA graphics adapter in the dxdiag dialog, it means that the graphics driver is not installed correctly, and need to install the correct graphics driver.

DirectDraw acceleration does not start.

Open the Start menu,use click Run to execute "dxdiag" program, the DirectX Diagnostic Tool, select "Display" tab and enable DirectDraw Acceleration in DirectX Features.





12. Q: Why doesn't GPS output the longitude and latitude data?

A: First, check whether you have connected GPS. The connection method of inner GPS and external GPS is different, and inner GPS need to connect its antenna.

Second, choose correctly an inner or external GPS based on the use of GPS.

Setting:【Main Menu】->【Peripheral】->【GPS】

In this interface, you can see the mode and the number of used satellites. In general, the GPS can be positioned if the number of used satellites is 3, and be accurately positioned if is 6 or more.

6 List of Standard Accessories

Item	Description	Quantity
1	SD Video Recorder	1pcs
2	Lock key	2pcs
3	Alarm cable	1pcs
4	Power cable	1pcs
5	Remote Controller(No Batteries Included)	1pcs
6	Fuse 5A	1pcs
7	CD-Rom Disk	1pcs
8	User Manual	1pcs
9	Cable 519-4#	1pcs

Options:

Item	Description	Quantity
1	External GPS Receiver	1pcs
2	External GPS cable	1pcs
3	GPS Antenna for inner GPS	1pcs
4		
5		
6		