DS-8000HMFI Series Mobile DVR
User Manual
Version 1.0

This manual,which may contain technical incorrectnesses due to printing,will be kept updating aperiodically without notice,and softwares refered as well.

Catalog

1 Production Description

1.1 Overview

Embedded digital net recorder DS-8000HMFI,which is excellent and of the highest resolution 4CIF, is designed for vehicle surveillance.it combines the latest technology from fields IT, mechanism and electronics,such as,video and audio compression&decompression, recording of high capacity hard disk,TCP/IP,driving track monitoring,GPS,wireless,media playing,CAN bus interface and so on…….in addition, built-in application code in FLASH definitely makes it more stable.

DS-8000HMFI adopts patented army technology of high shock tolerance for harddisk.

DS-8000HMFI is an integration of DVR and DVS,can either work alone or in groups basing on internet.

1.2 Key features

Compression technology

- Four ports PAL/NTSC Vin ,25bps DSP-based real-time compression.
  H.264 based.
  Choice of changeable date and frame rate,configurable video quality and date rate.
- Four ports Ain,16kps OggVorbis standard real-time compession for each.
- Choice of resolutions 4CIF,DCIF,2CIF, and QCIF.
- Choice of synchronously mixed video&audio and single video.
- Multi-zone motion detection
- OSD,self-adjusted date&time, gray scale adjustment.
- LOGO。
- WATER-MARK

Feature of local process

Video recording

- SATA HD,integrated high-speed eSATA backup interface
- Pre-allocation and low-seeking technology ensure recorded data be effectively scanned.
- Management locking ensures the security of key information.(HD format FAT32)
- SMART
- Patented army technology of high shock tolerance for HD.
- Choice of recording modes cycle and non-cycle
- Recordings backup to USB,USB HD and eSATA HD.
- GPS.OSD and recording of longitude,latitude and speed.
- Configurable turning off time(5 sec-6 hours) after engine down
- Automatic backup

Preview and playback

- Monitor output and VGA output
- Multi preview modes,such as 1/4
- Portion video mask
- Portion video mask alarm
- Choice of playback modes fast forward,fast rewind and single frame.
  Search by channel,recording type and time.
- OSD and channel name overlapping.
- Indication of recording and alarm
- Choice playback modes by file order,break and GPS orientation or random.
- Two ports power amplifier
- Records for parking,reversing,right reversing,left reversing ,alarm and so on……

Control

- PZT and camera.
- Presetted point,cruise and track

Alarm

- Four ports input alarm,2 ports output alarm
- Choice of alarm types motion detected,mask,video loss and switch input.
- Alarm plan,various of feedbacks,alarm triggered presetted point,cruise or track.
- A series of alarm types,such as HD error and video format conflict

Security

- Customizing authority for operators by the unique administrator.
- Channel based authority.

Network

- TCP/IP based
- Wireless comfortable compression technology.
- Adaptive regulation of frame and data rate according to bandwidth.
- Software for alarms e.g. switch triggered,abnormity and GPS.
- Screen capture at client software.
- Track tracing and video playback at client side.
- Monitored vehicle orienting/mapping by client software
- PPPoE enabled
- PPP enabled
- Log system

Client developing

- SDK provided
- DEMOs with source code provided

2 Installation help

Notice：operate with power off.

2.1 Check device and accessories.

Please check carefully according to the list inside once you get it.

2.2 Install HD

Tool

Cross tip screwdriver.

Steps

1.Open DVR cabinent
2.Fix HD by screwdriver.
3.Insert data cable
4.Insert power cable
5.Paint disk with sol to be against high shock.
6.Cover and screw DVR.
Caution:The power supply includes DC 12V and DC 24V, make sure the connection is correct.

Notice：

1.No HDs attached for standard configuration.
2.Tips for HD purchase:please choose recommended high-quality HD from creditable provider,that should be comfortable for longtime and frequent read&write.
3. HD should be formatted after the installation,or there may accur HD error with alarm.
4.With the default configuration,the corresponding recording time for different Volume are:

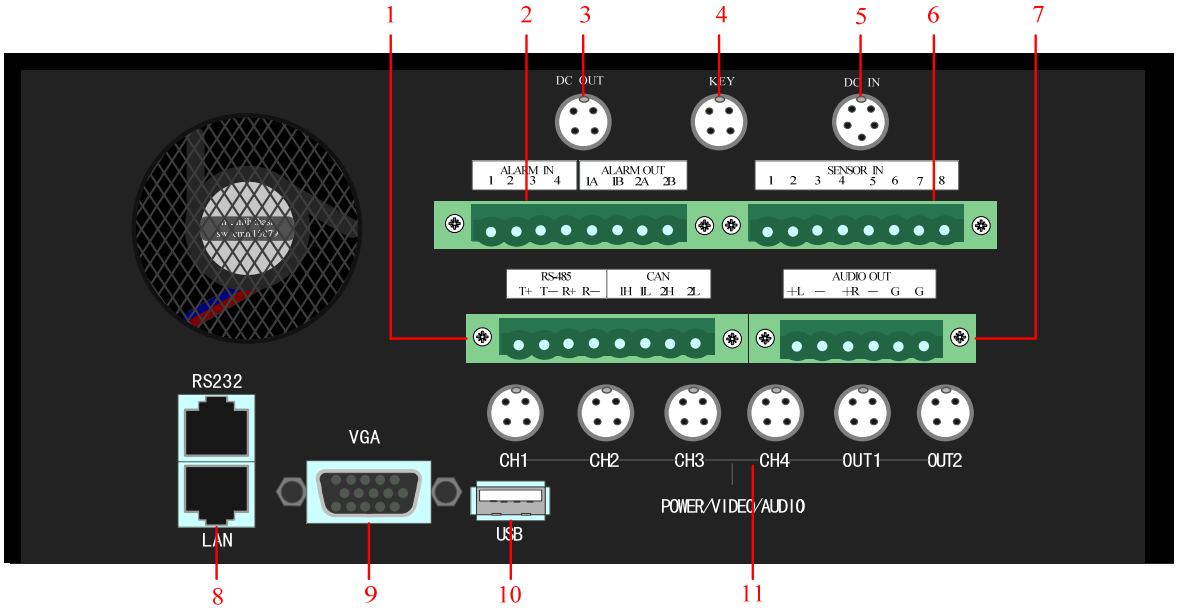
HD volume（unit：GB）	Recording time（unit：Hour）
160	720
250	1130
320	1140
500	2260
750	3390

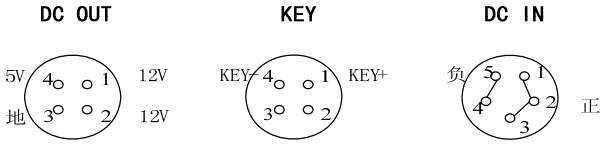
Declaration:recording time may be not so precise,it is just for reference and we will not take the responsibility for this.

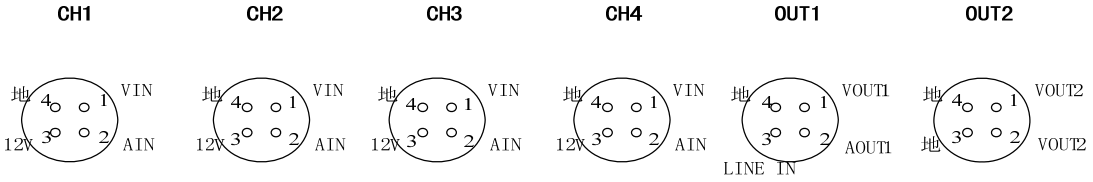
2.3 Rear Panel Interface Description

Note: Please refer to DVR product for actual rear panel interface.

2.3.1 Rear Panel Description







Num	Physical interface	Interface description	Connection description
1	RS-485 (T+ T- R+ R-) CAN (1H 1L 2H 2L)	8-pin bayonet catch with flange	485 interface for PTZ decoder, etc CAN bus interface
2	ALARM IN (1 2 3 4) ALARM OUT (1A 1B 2A 2B)	8-pin bayonet catch with flange	Alarm input interface Alarm output interface
3	DC OUT	4-pin avigation interface	Output +12V DC or +5V DC
4	KEY	4-pin avigation	Connect to vehicle ignition switch

		interface	
5	DC IN	5-pin avigation interface	Power in, connect to vehicle batteries output (24V/12V)
6	SENSOR IN (1 2 3 4 5 6 7 8)	8-pin bayonet catch with flange	Vehicle driving record interface
7	AUDIO OUT (+L - +R – G G)	6-pin bayonet catch with flange	2 channel audio amplifier output
8	RS-232 LAN	RJ45 RJ45	DTE serial interface Network interface，connect to network switch, etc
9	VGA	DB15 female connector	VGA output interface
10	USB	USB interface	Connect to USB device
11	CH1~CH4 OUT1 OUT2	4-pin avigation interface	Video channel 1～4, audio in/ 12V output Video output1/audio output1/LINE IN Media video output

2.3.2 Batteries and ignition switch connection

Special Notice: The KEY wire of ignition switch must be connected, otherwise the device cannot boot successfully.

Power line from batteries should be directly connected to “DC IN + + - -” interface, and the “KEY + -” boot control signal should be connected to vehicle ignition switch.

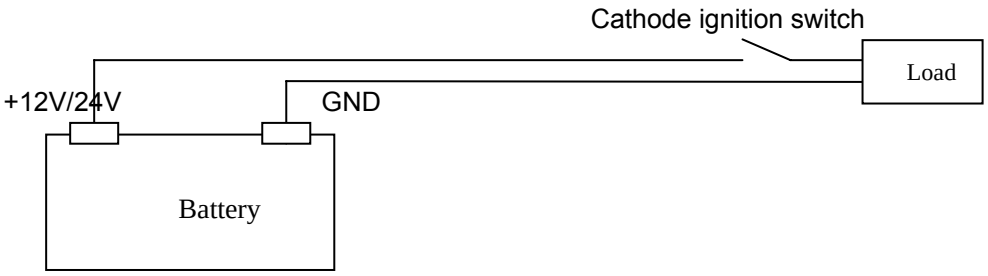
“DC OUT +12V G” should be connected via bayonet catch to camera or other device which requires +12V DC power supply.

“DC OUT +5V G” should be connected via bayonet catch to other devices which require +5V DC power supply.

Note: Please pay attention to +/- connection of power wire.

Please kindly take notice that the ignition switch must be connected correctly. There are 2 types of ignition switch, the cathode ignition switch and anode ignition switch

(1) Cathode ignition switch
Cathode ignition switch is connected to vehicle battery DC+12V/24V.



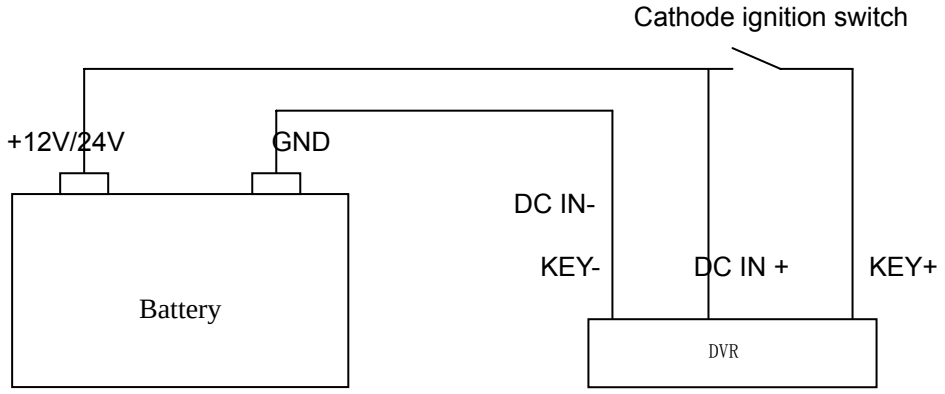
(2) anode ignition switch
Anode ignition switch is connected to vehicle battery GND.

Please kindly follow the above steps on connecting ignition switch to init the device correctly.

Note: Please contact your vehicle battery manufacturer for the battery polarity questions.

(1) Connection for Cathode ignition switch

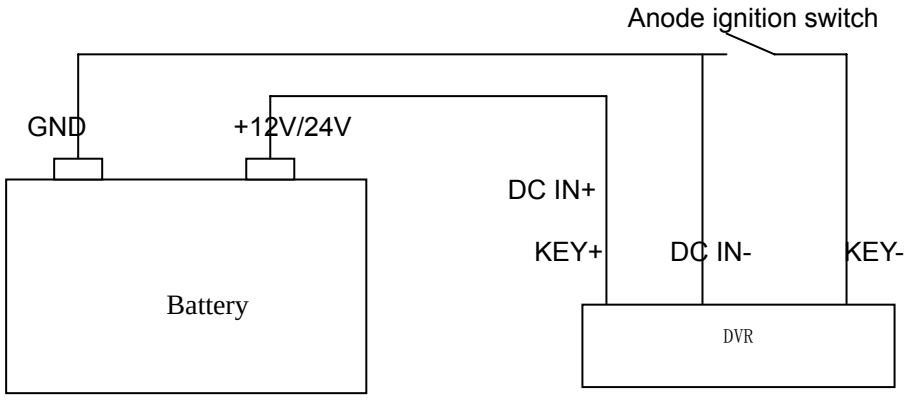
Connect DVR “DC IN +” with vehicle battery DC+12V/24V.
Connect ignition switch with DVR “KEY+”.
Connect DVR “KEY-” and “GND” with vehicle battery GND pin as the figure below.



(2) Connection for anode ignition switch
Connect DVR“DC IN +” and ”KEY+” with vehicle battery DC+12V/24V.

Connect ignition switch with DVR"KEY-".

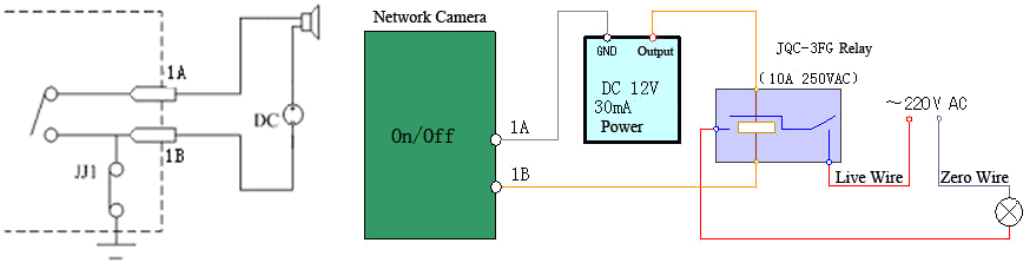
Connect DVR "DC IN –" and vehicle battery GND as the figure below.



After the ignition switch is on (vehicle starts), then the mobile DVR should also init. When the ignition switch is off, then the mobile DVR will automatically shut down after preset time period. Please refer to Chapter 5.8 for delay period setting.

2.3.3 Alarm Output Connection Guide

Alarm Output Connection Example



Please kindly pay attention to different connection for JJ1. While connecting to DC load, the 2 connection mode for JJ1 are both okay,yet it is suggested to use it under 12V,1A. While connecting to AC load,then JJ1 must be open(unplug the short-circuit port on main board). For safety consideration, it is recommended to use external relays while connecting to AC load(As the right side figure shows).There are 4 short-circuit port on main board that refers to each alarm output channelas JJ1, JJ2, JJ3, JJ4, which are all in short-circuit mode by default, and must be unplugged while connecting to AC load.

Wanings! Short-circuit port must be unplugged on connect to AC load, and users should also use external relays to avoid device damage and shork hazard!

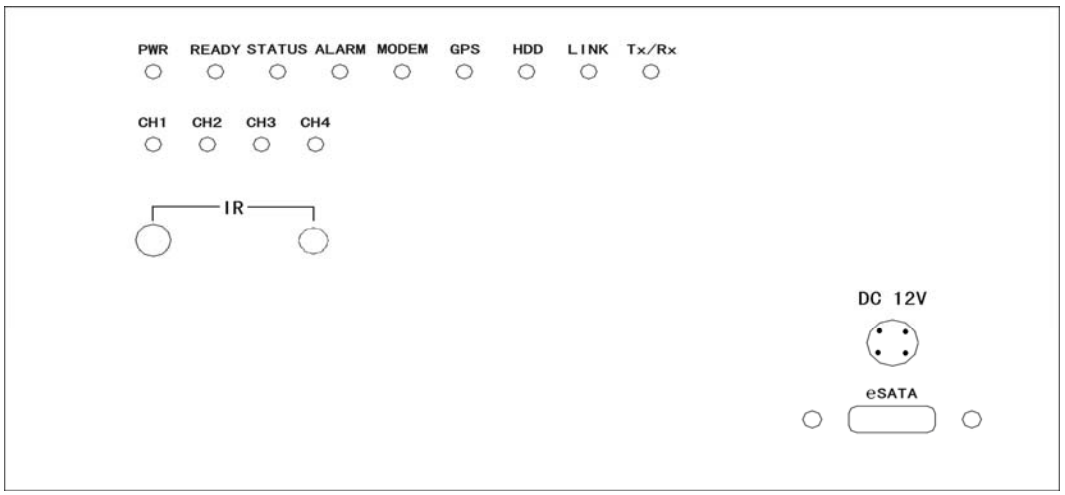
Connection Guide

1. Unplug the green plugs on device;
2. Use screw driver to loosen the screws, and put the signal wire into the bottom of reeds,then fasten the screws again;
3. Connnect the green plugs into the device again.

3 Operation Guide

3.1 Front Panel Description

Note: Please refer to the product for actual interfaces.



CH1	Status of channel 1	PWR	Power
CH2	Status of channel 2	READY	Self-detect mode
CH3	Status of channel 3	STATUS	Other Status
CH4	Status of channel 4	ALARM	ALARM lamp
		MODEM	MODEM lamp
		GPS	GPS status indicator lamp
		HDD	HDD indicator lamp
		LINK	Nwtwork connection indicator lamp
		Tx/Rx	Network status indocator lamp

Red light means network transmitting, and green light means on recording; while orange means network transmitting with network recording.

IR on the left is the IR controller line-in interface, while IR on the left is IR controller signal receiver.

PWR,READY lamp will be on during a proper device booting, if not, please check power connection. If power connection is correct then,please contact you dealer.

“DC 12V”is used for DC12V power output and video output for DS-1002HMI (Mobile DVR Backup Device).

“eSATA” is for eSATA connection of DS-1002HMI.

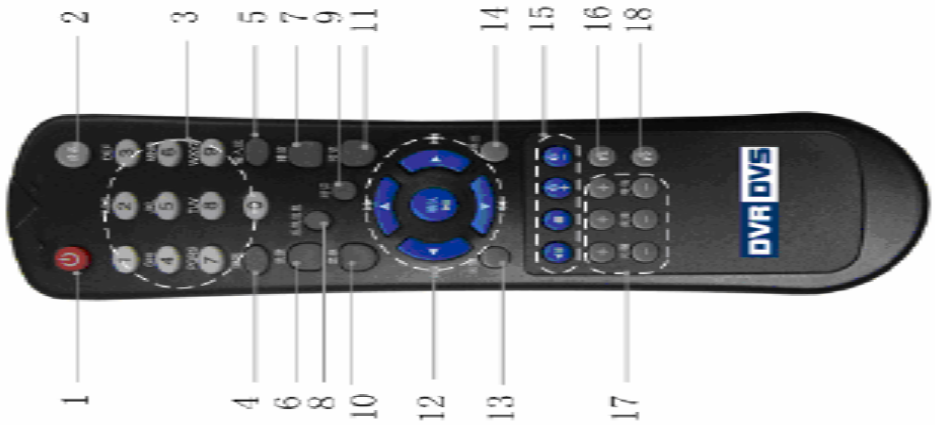
Note：No device Number is needed for mobile DVR while taking an IR control, users can directly press the relative function keys for device control.

3.2 IR Controller

Note：Please input default ID/password as “admin”,“12345”.

Please fill battarries into the IR controller, and point the IR sending part to the DVR’s IR

receiving part.



Index	Name	Description
1	POWER	Turnoff device.
2	DEV	Enable/Disable IR remote control
3	Numeric Keys	Same as numeric keys of front panel.
4	EDIT	Same as EDIT key of front panel.
5	A	Same as A key of front panel.
6	REC	Same as REC key of front panel.
7	PLAY	Same as PLAY key of front panel.
8	INFO	Same as INFO key of front panel.
9	VOIP	Same as VOIP key of frint panel. For XA-16HSI, same as MON key.
10	MENU	Same as MENU key of front panel.
11	PREV	Same as PREV key of front panel.
12	Direction Keys ENTER	Same as direction keys and enter key of front panel.
13	PTZ	Same PTZ key of front panel.
14	ESC	Same as ESC key of front panel.
15	Reserved	
16	F1	Same as【F1】key of front panel.
17	Lens control	IRIS, FOCUS ZOOM for lens control.
18	F2	Same as【F2】key of front panel.

If IR controller cannot work properly, please kindly check:

- Battary volume and polarity;

- Wether blocked during transmission
- Any Fluorescent nearby

Note: Please contact your dealer if the IR controller cannot work properly after all the above issues have been excluded.

3.3 Menu Description

3.3.1 Menu Items

Menu Name	Function	Menu Name	Function
Display	Video standard Brightness Menu transparency Unit name Device ID Require password Screen saver time VGA resolution Date and Time	**Image**	Camera name and position setup Adjust Brightness, Contrast, Hue and Saturation OSD Display mode, position and OSD format setup Mask area setup View tampering area and response setup Video signal loss Motion detection sensitivity, area and response setup
Recording	Overwrite/Stop recording Resolution and recording parameters setup Record schedule PreRecord time PostRecord time	**Network**	DVR IP address DNS IP Multicast IP address Remote host IP and port NAS IP and directory PPPoE username and password
Alarms	Alarm input type (Normal open/ Normal close) Alarm response and PTZ linkage Alarm output and schedule	**Exceptions**	Exceptions type Exceptions response
PTZ	PTZ parameters Preset setup Sequence setup Cruise setup	**RS232**	RS232 parameters RS232 work mode
Preview	Preview mode Switch time Enable/Disable audio preview Preview layout	**User Password**	Add or delete user Password setup or modification User rights setup

Media player	Line Movie	**Utilities**	Restore parameters Upgrade firmware HDD management Clear alarm output Reboot Power off View log System information

3.3.2 Menu Operation

How to enter into menu mode

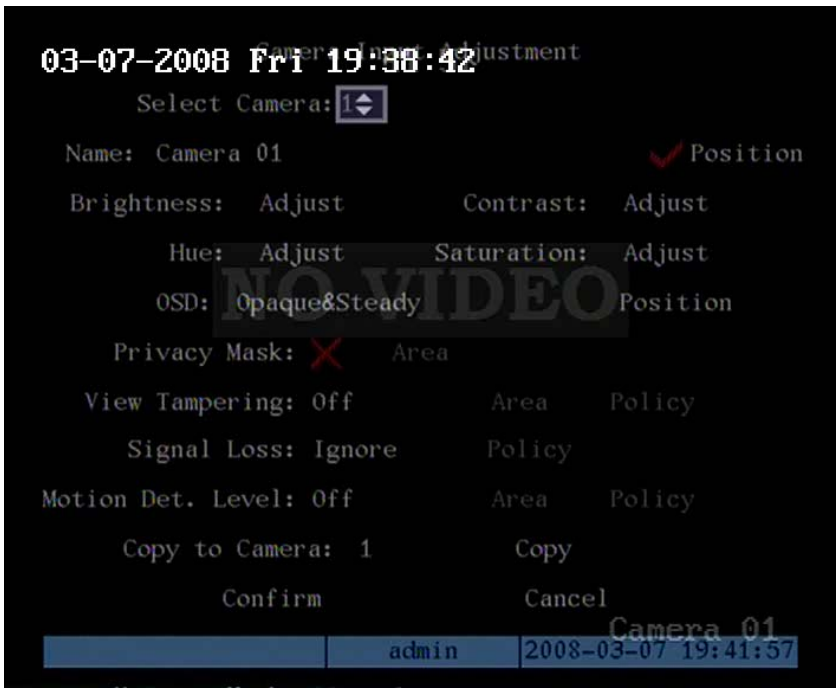
- Press[MENU]key to enter into DVR main menu.
- Press[PLAY]short key to enter into playback menu.
- Perss[REC]short key to enter into manual record menu.
- Perss[PTZ]short key to enter into PTZ control interface.

Notes: You must input user name and password. The default user name is “admin” and password is “12345”.

Main Menu Description

The main menu interface is following:

There is one small rectanglar frame named “Active Frame”. It can be moved from one icon to another by using [→]or[←]key. When the “Active Frame” is located on one icon, you can press[ENTER]key to enter into the secondary menu. For example, move the “Active Frame” to “Image” icon, press [ENTER]to enter into the secondary menu as following:



Each menu contains different kinds of items. There is a small rectangular frame named "Active Frame" which is pointing to the selected item. This "Active Frame" can be moved by [→]or[←]keys. There are such kinds of menu items:

a) Check Box: Provide 2 options, "✓" means enable and "×" means disable. You can use [ENTER]or[EDIT]key to switch over.

b) List Box: Provide more than 2 options. However, only one of them can be selected. You can use[↑]and[↓]to select one option. For example, on the right side of "Select Camera", there is a list box for you to select one camera.

c) Edit Box: This is for you to input characters. Press[EDIT]key to enter into edit status, you can input characters as following:

   i. Press[A]key to select number, upper case, lower case or symbols;
   ii. Use[→]and[←]keys to move cursor;
   iii. Use[EDIT]key to delete the charcter in front of cursor;
   iv. Press[ENTER]or[ESC]to exit edit.

d) Button: Excute a special function or enter into next sub-menu. For example, press "Policy" button to enter into sub-menu. Press[Confirm]to save parameters and return to parent menu. Press[Cancel]button to cancel and return to parent menu. The button in grey means it can be operated only after it is enabled.

How to exit menu

Press[PREV]key to exit menu and return to preview mode.

3.4 Character Input

In the menu interface, if you enter into edit status (for example, in the “camera name” edit box), at the bottom of screen, the input status is appeared:

Here it means you can press numeric keys to input digital number.

Press[A]key to change input methods. You can select “number”, “Uppercase”, “Lowercase” or “Symbol”.

Uppercase

Lowercase

Symbol

There are 24 symbols in all. They are divided into 4 pages, and you can use[0]key to turn over page.

Chapter4 Basic Operation Guide

Notice: in this part, the user must have the operate rights, otherwise he can not do any operation. In this case, a dialoge will popup as bellow.

4.1 Power on

Note: Please make sure the power supply matches DVR and AC cable connected correctly. Before switch DVR on, please connect one monitor with VOUT or VGA interface. Otherwise, you can not see graphic user interface and can not do operation.

If[POWER]lamp is off, please do as following:
Step1: Connect AC cable correctly;
Step2: Switch on the power button on the real panel.

If[POWER]lamp is in red, just press[POWER]button to start DVR.

When DVR is started,[POWER]lamp is in green. On the monitor or VGA display, DSP and HDD initialization process will be shown.

The first line represents DSP initialization. If the DSP icon is “×”, it means that the DSP is initialized error, please contact administrator at once.

The second line represents HDD initialization. Icons of IDE1 master and slaver HDDs, IDE2 master and slaver HDDs, etc are displayed. If the HDD icon is “×”, it means the corresponding HDD is not installed or not detected. If HDD is not detected, please contact administrator.

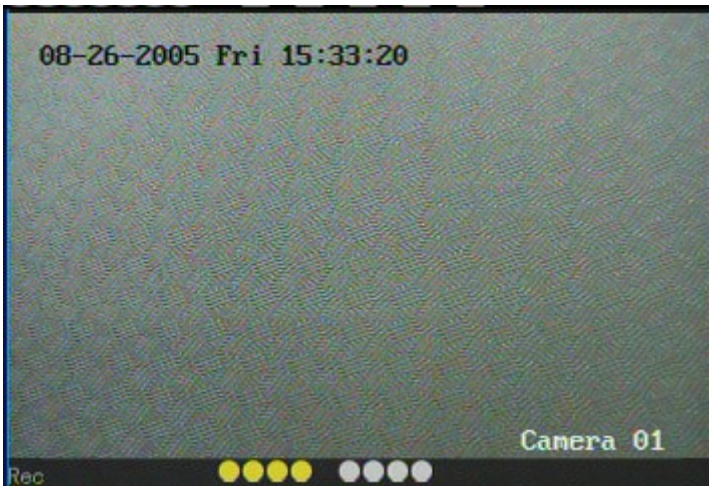
Note: If HDD is not installed or not detected, DVR will beep for alarm. You can disable the audio warning option of HardDiskError in the “Exceptions” menu.

4.2 Preview

DVR will enter into preview mode after it is started.
On preview screen, you can see date, time, camera name and camera status icon.

In the screen, it will display record and alarm status of each camera. These two kinds of status will switch over automatically.

Press [A] key to display or hide the camera status bar.



Camera record status is following:

Icon	Icon Color	Status Description
	White	No video signal
	Yellow	Vdieo input
	Pink	Manual recording
	Green	Real time recording
	Blue	Motion detect recording
	Red	External alarm recording

Camera alarm status is following:

Icon	Icon Color	Status Description
	White	Video signal lost
	Yellow	View tampering alarm
	Pink	Motion&External alarm
	Green	No alarm
	Blue	Motion alarm
	Red	External alarm

Press numeric keys to switch over individual camera preview.

Press[EDIT]key of the IR controller to manual cycle preview. You can set the auto preview mode in “Preview” menu, referring to 5.2.6.

Press[PREV]key in the IR controller to display multi-screen perview.

Nitices: if the DVR have the GPS(optional) function, please put the GPS antenna on the top of the bus. When the GPS satellite pass, the posite of the bus and the speed will be show in the channel 1 left down side.

4.3 User name and password

Note: When DVR is delivered from factory, there is only one default administrator named "admin", and password is "12345". The administrator's name can not be modified, while the password can be modified. The administrator can create 15 users and define their user rights.

Login

Login dialog is following:

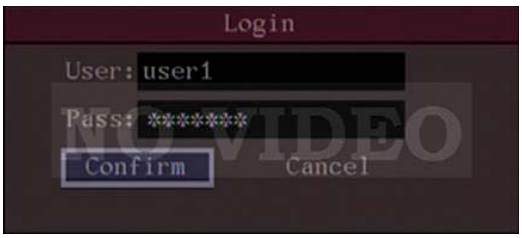
Use[↑]/[↓]keys to select one user, perss[→]key to enter into "Password" edit box, input corresponding password, press[ENTER]key to exit edit box. The "Active Frame" will be moved to "Confirm" button. Press[ENTER]key to enter into main menu. If there is beeper alarm, it means the user name and password are not matched. After three error times, DVR will enter into preview mdoe.

Modify password

For those users created by admin, they can modify their password as following:

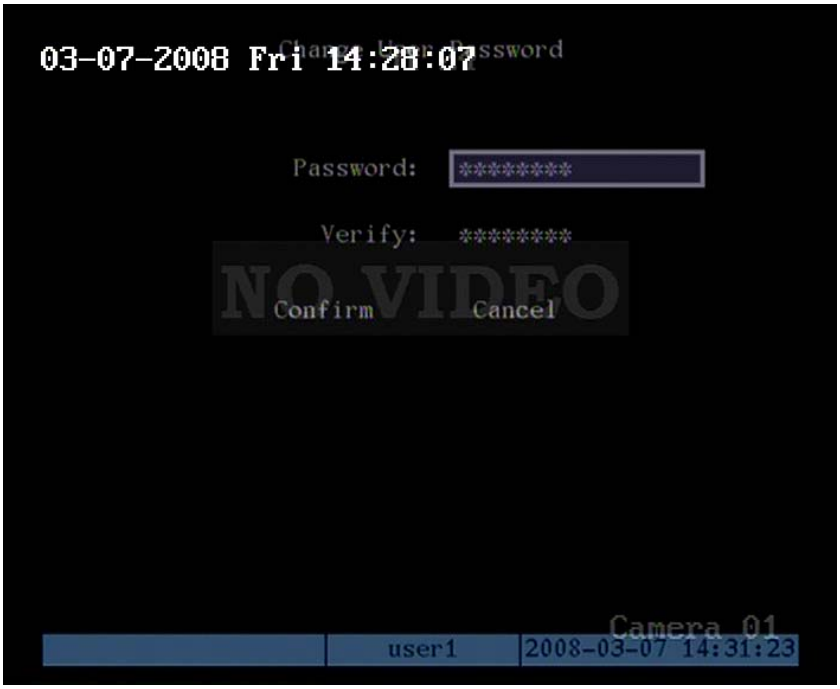
Step1: Enter into main menu

Press[MENU]key, in the login dialog, select your user name, input the correct password, you can enter into the main menu.



Setp 2: Enter into password modification menu

Move the “Active Frame” to “Password” icon by using[→]/[←]keys. Press[ENTER]key to enter into following password menu:



Step 3: Input new password

Press[EDIT]key to enter into edit box. You can use numeric keys to input new password. The password can be null. It also can be 16 numerals. Press[ENTER]to exit edit box, and move to “Verify” item to input the verify password.

Note: In edit box, use [→]/[←]to move cursor and[EDIT]key to delete the numeral in front of the cursor.

Step 4: Modify password successfully

Move the "Active Frame" to "Confirm" button, press[ENTER]key. If the password is modified successfully, you will get the main menu. Or an error dialog will be pop up. You can repeat step 3 to modify again.

4.4 PTZ Control

Notice: The user must have the "PTZ control" right.

Under the menu mode, press the "PTZ" to enter into the PTZ control interface.
IR controller button introduction:

Direction control keys: [▲], [▼], [◀], [▶]
ZOOM control keys: [ZOOM+],[ZOOM-];
FOCUS control keys: [FOCUS+],[FOCUS-];
IRIS control keys: [IRIS+],[IRIS-];
Adjust preset keys: [REC/SHOT]+three [numeric key]; example: "001" means call preset 1.
Auto control key: [PLAY/AUTO];

Exit the PTZ control operation menu

If you want to do the other operation, such as playback, manual record and so on, you need to exit the "PTZ" operation menu. Press the "ESC" button to exit and go back to the preview mode.

4.5 Manual Record

Note: The user must have the corresponding right, DVR has HDD and HDD is formatted already.

In preview mode, press [REC] key, in the pop-up login dialog, select the user name and input the correct password, you can enter into the "Manual Record" interface.

In menu mode, press [REC] key to enter into "Manual Record" interface directly.

Description

Manual record interface has following parts: channel number, channel status, start/stop record, start all and stop all buttons.

Channel: List the channel number that DVR has.

Status: Channel work status has 4 cases: ⊗ means idle. Green means the channel is recording (including real time recording, alarm recording, motion detection recording). Red means network tramsmission. Orange means both recording and network transmission.

Start/Stop: "✓" means you can start corresponding channl recording. "×" menas you can stop recording.

Start All: Press this button to start all channels recording.

Stop All: Press this button to stop all channel recording.

Exit manual record

Press[ESC]key to enter into preview mode. Press[MENU]key to enter into main menu. Press[PLAY]key to enter into playback menu. Press[PTZ]key to enter into PTZ control mode.

Notice: the manual record will be disabled after the DVR reboot.

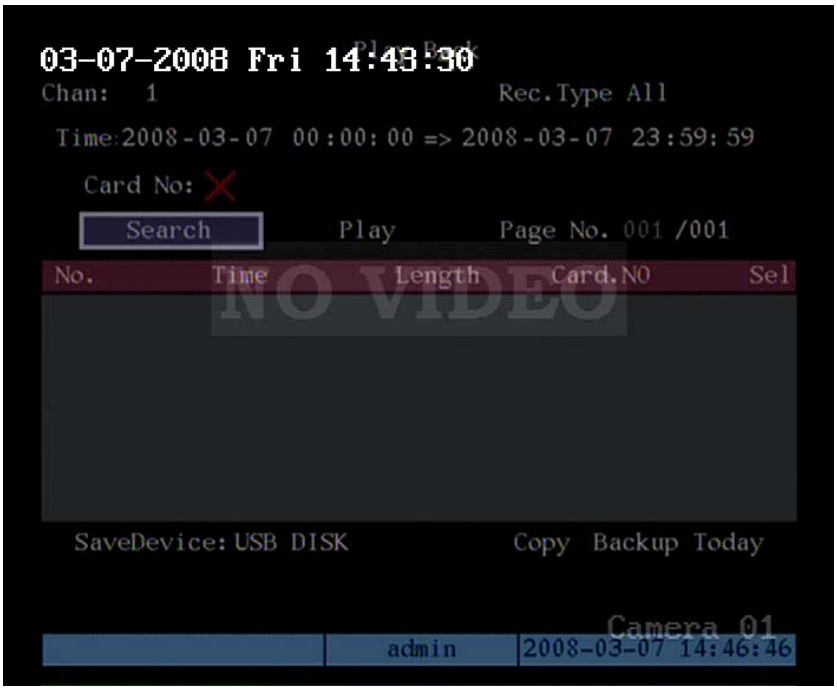
4.6 Playback

Notice: The user must have "Playback" right.

Playback interface

In preview mode, press [PLAY] key, in the pop-up dialogin dialog, select username and input correct password, you can enter into "Playback" interface.

In menu mode, press [PLAY] key, you can enter into “Playback” interface directly.



One Channel Playback

Description

Channel: Use [↑] or [↓] key to select one channel.

Rec Type: Use [↑] or [↓] to select recorded files type. The file type options have “All”, “All Time”, “Motion Detect”, “Alarm” and “Manual”.

Time Section: You can define the search time section. Move “Active Frame” to the time edit box, use numeric keys to input the detail time.

Card Number: DVR can get text number through RS-232 or network port. You can use the text to search the recorded files and playback them. Use the numeric keys to input the text number.

Search: Search the matched reorded files and display them in the list box. If there is not matched file, a corresponding dialog box will be pop-up.

Play by Time: Playback the recorded stream directly based on the time section.

Select Page: In the file list box, each page will only display 8 files. If the matched files are more than 8, you can select page to list other files. 500 pages (4000 files) can be searched in one time. You can use numeric keys or [↑] [↓] keys to select page.

File List Box: List the matched files. File started time, file size are displayed in the list box.You can use [↑] [↓] keys to move the scroll bar to select file.

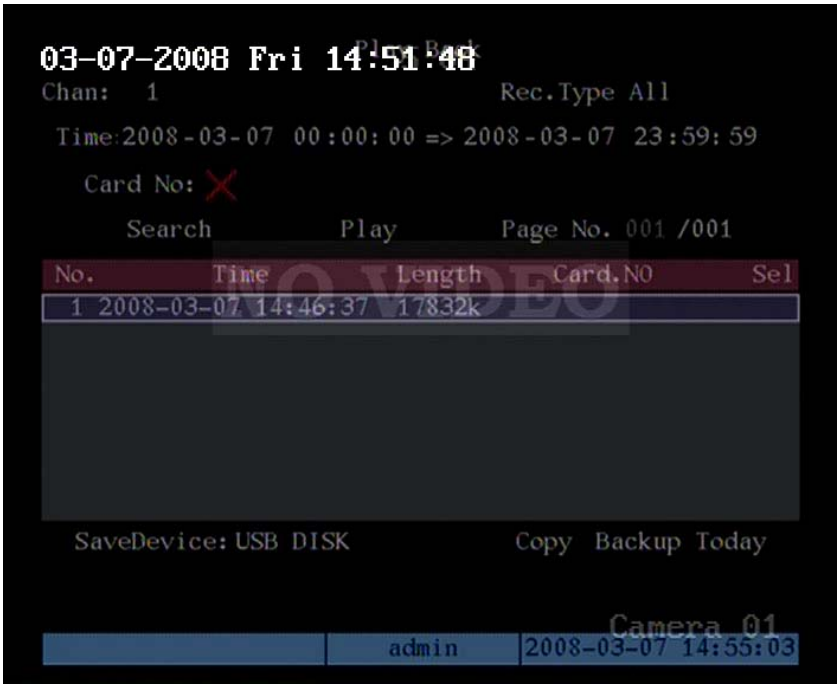
Backup Devices: You can select USB flash, USB HDD, USB CD-R/W or SATA device to backup the files or clips.

Copy: Start to backup.

Backup Today: Backup all recorded files of today.

Three kinds of playback mode

1. Search and playbck file: In the playback interface, you can select main channel, second channel (2-ch palyback), record type, time section. Move “Active Frame” to “Search” button and press [ENTER] key, DVR will search and list the matched files.



If the matched files are more than 8, you can use “Page No.” to select page (use numeric keys or [↑] [↓] keys to select page). In the file list box, use [↑] [↓] keys to move the scroll bar to the file, press [ENTER] key to playback the file.

If DVR can not find the matched files, a failure dialog will pop-up.

2. Playback by Time: In the playback interface, select main channel, second channel (2-ch playback), record type and time section, move “Active Frame” to “Play” button, press [ENTER] key, DVR will start to playback based on time section.

3. Search by Card No and Playback file: In the playback interface, select main channel,

second channel (2-ch playback), record type, enable card No. search option ("✓") and input the card number, move "Active Frame" to "Search" button, press [ENTER] key, DVR will search and list the matched files. If the matched files are more than 8, you can use numeric keys or [↑] [↓] keys to select page. Use [↑] [↓] keys to move scroll bar to the file, press [ENTER] key to playback the selected file. If DVR can not find the matched files, a message dialog will pop-up.

Operation when playback

Playback picture:

One Channel Playback

At the bottom of image, there is an information bar and the following information is included: Volume, Play Progress, Play Speed, Played Time and File Total Time.

- Display/Hide information bar: [MENU]
- Open/Close sound: [PLAY]
- Adjust play progress: [←](Backward),[→](Forward). The unit is "%".
- Adjust play speed: Normal speed is "1x". Use [↑]to increase play speed (2X, 4X, 8X and MAX). Use[↓]to decrease play speed (1/2X, 1/4X, 1/8X and Frame by Frame)
- Pause/Continue: Press [ENTER] to pause/continue playback. If played frame by frame, Press [ENTER] to paly one frame.
- Copy segment:[EDIT]
- Exit: [ESC]
- Playback switch: When in 2-ch playback, press [PREV] to switch between main channel and second channel.

Exit playback

In playback interface, press [ESC] key to enter into preview mode.

In playback interface, press [MENU] key to enter into main menu, press [REC] key to enter into manual record, and press [PTZ] key to enter into PTZ control mode.

4.7 Backup Recorded Files

Note: The user must have "Playback" right. Please connect with backup devices first. Such as USB flash, USB HDD and SATA device.

Steps of backup via the Esata port:

1. connect the SATA HDD to the eSATA PORT.
2. Enter into the main menu---recording and set the "SATA1 HDD" for backup.
3. Reboot the DVR and enter into the playback menu, after you select the SATA HDD in the SaveDevice option, you can find the autoback option. Enter into this menu to format the SATA HDD.

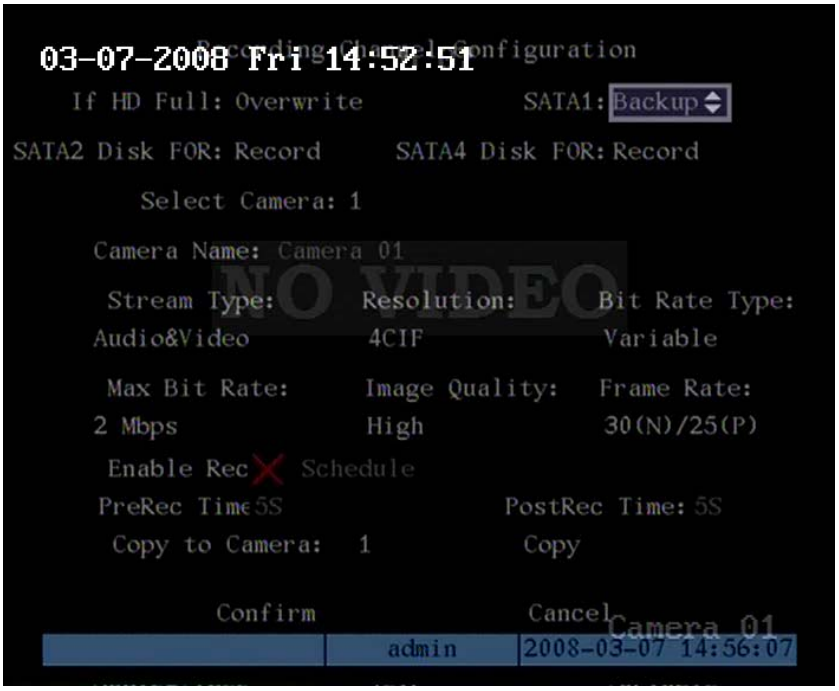
Notice:

1. **SATA HDD must connect with the sata1 port (external eSATA port).**
2. **you must format the external SATA HDD in the playback---autoback menu. If you format it in the Utilities---HardDisk menu, there will have only a small space can be used for backup. Because the backup HDD and record HDD have the different partition.**

This system provide auto backup and self-define backup. The auto backup function used for backup the file of intraday or the period you setting. It can finish t he backup by itself. Self-define backup function need to set the detail period that you want to backup.

4.7.1 Auto backup

Connect the SATA HDD in the eSATA port, and press the MENU key in the IR controller to enter into the "Recording" menu, select the option SATA1 to backup. Click "confirm" to reboot the DVR.



In the playback interface, you can backup the recorded files.

In the preview mode, press [PLAY] key, in the login dialog, select username and input the correct password, you can enter into the playback interface.

In the menu mode, just press [PLAY] key, you can enter into playback interface directly.

Backup intraday recorded files

In the playback interface, move “Active Frame” to “Backup Today” button, press [ENTER] key, all intraday recorded files of all channels will be backup to the save device. A pop-up dialog will display the backup status.

If bakup device is not connected correctly or DVR do not detect the backup device. Please ask administrator for more information.

Backup the files that matched your requirement

Step 1: Search the matched files

In the playback interface, select one channel and record type, input the time section, move “Active Frame” to “Search” button, press[ENTER]key, DVR will start to find and list the matched files.

Step 2: Select the files that you want to backup

In the file list box, use[↑]or[↓]keys to move the scroll bar. When the scroll bar stays at the file you wan to backup, press[EDIT]key to select it. The symbol "✓" is the selection tag. You can use the same method to select other files you want to backup. After finish, you can do next step.

Step 3: Select backup device

Please confirm the backup device: USB flash memory, USB HDD, USB CD-R/W or IDE CD-R/W, and select the corresponding backup device.

Step 4: Start and finish backup

Move "Active Frame" to "Save" button and press[ENTER]key to start backup.

When backup is started, corresponding message box will pop-up to indicate the result.

Backup video segment

You also can backup the image segments when the image is being playback. The steps are:

1) Enter into the interface of playback the files or playback by time;
2) Press[EDIT]key to start selecting the current playback image, and press[EDIT]again to stop selecting. This segment is slected;
3) You can repeat step 2 to select many segments. 30 segments can be selected in all;
4) After you select all segments, press[ESC]key, a message window will pop-up. If you press "Confirm" button, DVR will start to backup the selected segments. If you press "Cancel" button, DVR will abort backup.

Playback the video segment

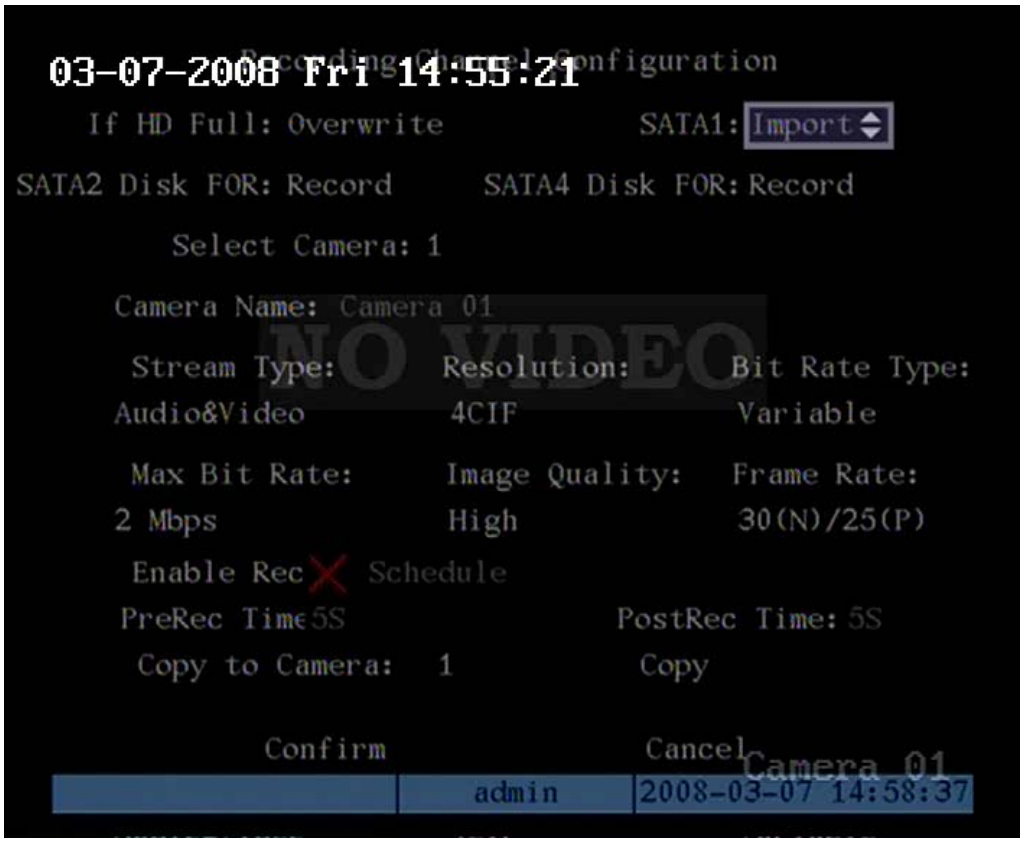
You can use our file player software to playback the video segment in PC. You can find the player software in attached CD.

4.8 Media file import and play

This devide support media play function, before you use the media play function, you need to import the media file which is prepared already into the DVR, the segment below will instroduce how to import and how to play the media file.

4.8.1 Make import HDD

Connect the import HDD(SATA HDD) to the eSATA port, then enter into the “recording” interface (refer to the picture below)



Please make sure the import HDD format is no problem and the space is enough, you need to put the import HDD into the PC and use the programe editor to make the programe(detail information please refer to the user manual of the program editor).

4.8.2 Format the media player HDD

The media player HDD must connect to the forth SATA port. Set the SATA4 to “record&media play”. After the connection is finished, format the SATA4 in the “Hard Disk” interface. Show as below.
After the format is finished, the last media player HDD partition is used for saving the media file and recording the play information, you can not modify the file in the partition. The other partition can be recorded normally.

4.8.3 Import media file

After you finish the 4.8.1 and 4.8.2. please confirm that the “recording” interace SATA1 is used for “media import”, SATA4 is used for “record&media play”. After you connect the import HDD to the eSATA, a dialog will popup and you can select the file to import: line or movie.

Line option:
Enter into the option “line”, popup the “line select” interface, show as the picture below.
Select the line you want to import, press the [EDIT] button to select the line, then press the [ENTER] button to import the file under this line, includes : prompt when get up the bus, business advertisement and region advertisement.

Notice: you can import one line at one time, if you import some of the media player HDD, it will use the latest one for playing.

If the line is not selected, and you press the [ENTER] button to enter into the sub menu-----

4.8.4 movie management

Delect the movie:
Nitice: the movie that is playing can not be deleted!
All the media file in the media HDD can be deleted. Please make sure the media HDD is set to “record&media play” mode.

4.8.5 play the media file

After the media file is import successfully, you can play the media file. The play mode include sequence play,random play and continue play after restart play the file. If the system have the audio output, you can adjust the audio volume freely.
Nitice: when playing, video&audio will be output from the AUX output. The audio output module is optional, please notice when you purchase.

1. Sequence play

After the system power on, press the [→] button in the preview interface, it will start with the get up prompt, play the movie in sequence, if there have advertisement file, the business advertisement will be played according to the interval (the interval can be set in the software “programe Editor”), after the business advertisement is over, the movie will be continue; if there have the region advertisement in the line, and the system have the GPS system, after the vehicle arrived the related area, the system will stop playing the movie and start to play the business advertisement, then continue the movie. You can press the [ENTER] button to pause or start the movie while you are playing the movie. But if you are playing the business advertisement, you can not press the [ENTER] button to pause or start the advertisement.

2. Manual play

When playing, you can press the [↓] to stop the play of movie, and start the next movie. Press the [↑] button to stop the current one and start the next movie. When you are playing the movie, you can press the [ENTER] button to pause and start the movie.

Nitice: if the system has the audio output, you can adjust the audio volume freely.

3. Random play

In the preview interface, press the [ENTER] button, play the get up prompt first, then the movie will be played random, but each movie will be played only one time in one circle. Press the [ENTER] button to pause or start the movie.

4. Break and continue play

The system has the break and continue function. In the preview interface, press [←] button, the system will jump over the get up prompt and start from the point that last time stopped. Press the [ENTER] button to pause and start the movie.

Nitice: after the import is formatted successful, you need to put this import HDD into the PC, then use the grogram Editor to make the program for the import HDD(please refer to the user manual of the program editor), then you can connect the import HDD to the eSATA port to import the media file.

Chapter5 Parameters Setup Guide

Only the users that have “Parameters Setup” right need read this chapter. When the following parameters are modified and saved, you must reboot the DVR to make the new parameters take into effective. Other parameters do not need to reboot.

- Any network parameters
- Stream type, resolution and record schedule
- External alarm sensor type
- View tampering alarm schedule
- Video lost alarm schedule
- Motion detection alarm schedule
- External alarm schedule
- Alarm output schedule
- Transaction
- RS232 work mode
- Change video output standard

5.1Basic setting

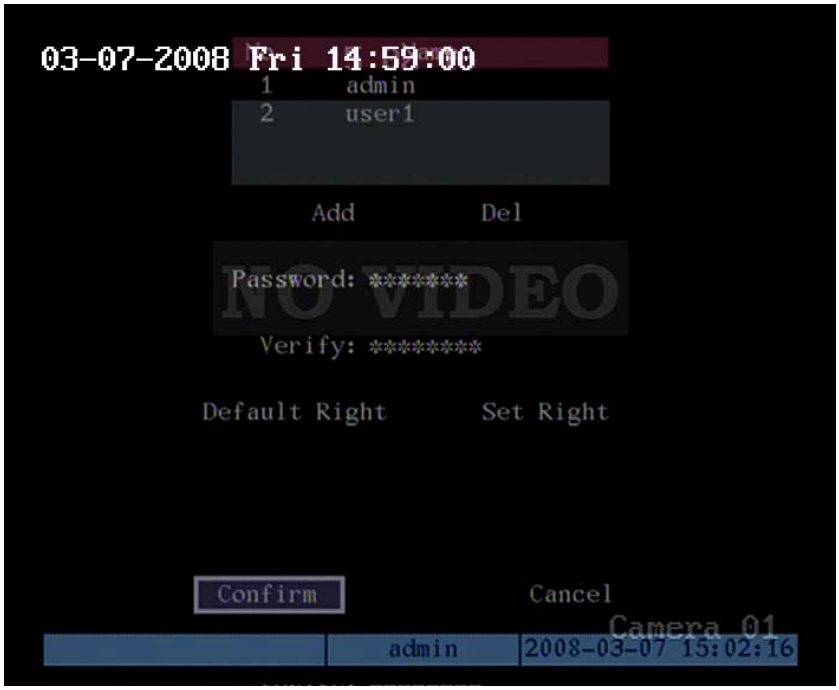
5.1.1 Administrator and Password

When DVR is left from factory, there is one default administrator. The name is “admin” and password is “12345”. The name can not be changed, while the password can be.

Password modification

Press[MENU]key, in the login dialog, select the username as “admin”, use[→]key, move cursor to password edit box, input “12345”, press “Confirm” to enter into administrator menu.

Move “Active Frame” to “User” icon, press [ENTER] key to enter into “User Management” menu.



In the user name list box, only “admin” is existed. You can use[→]key, move “Active Frame” to password edit box, and press[EDIT]key to enter into edit status. Press numeric keys to input the new password. The password is only combined by 16 numerals at most. After you finish inputting password, press[ENTER]key to exit. Move “Active Frame” to “Verify password”

edit box, input the verify password. Move “Active Frame” to “Confirm” button, and press [ENTER], if password and verify password are the same, the password will be saved and taken into effective.

If password and verify password are not same, a warning message box will be appeared.

In this case, press [ENTER] to return password edit box, and input new password again.

5.1.2 Add and Delete User

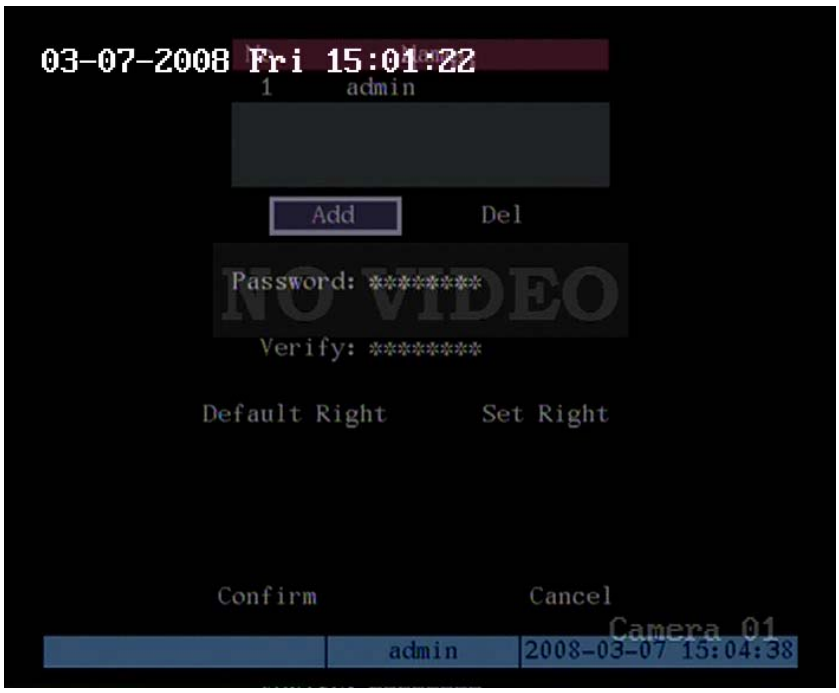
Enter into “User Management” interface.

Add user

The steps are following:

Step 1: Enter into “User Management” menu

Please refer to chapter 5.1



Step 2: Add new user name

In the “User Management” menu, move “Active Frame” to “Add” button and press [ENTER], in the pop-up dialog, input the new user name (refer to chapter 3.4), press [ENTER]and return “User Management” menu. 15 users can be added in all.

Step 3: Setup the password for new user

After you add one new user, the password is null. You can skip this step if you do not want to change the password.

In the users list box of “User Management” menu, use[↑][↓]keys to select the new user name, then use[→]key to the password edit box. Press[EDIT]key to enter into edit box, use numeric keys to input the new password.

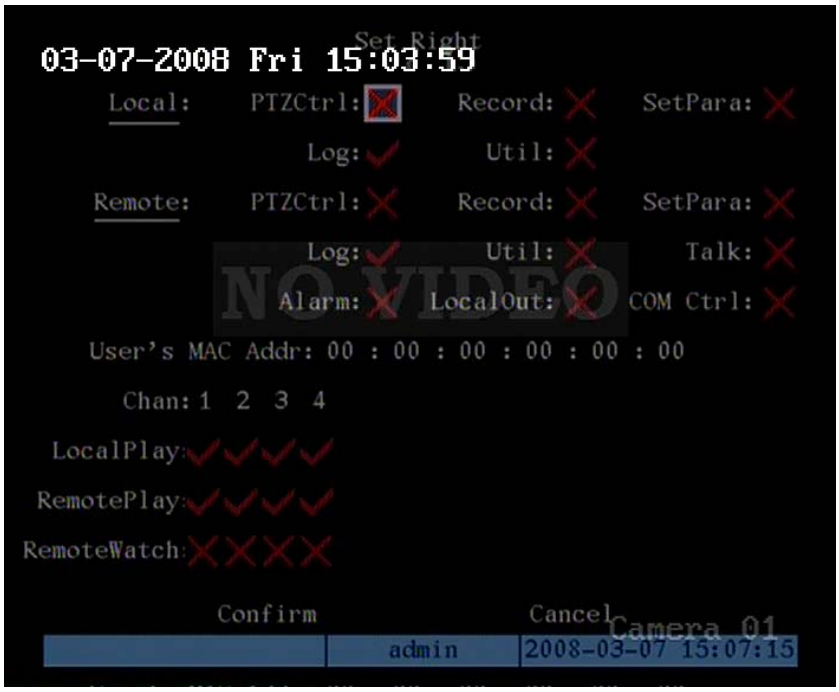
Step 3: Setup the rights for new user

The new added user has not any operational rights. You must setup rights for him.

In the users list box of “User Management” menu, use[↑][↓]keys to select the new user name, then use[→]key to “Default Rights” button, press[ENTER], the user will have the default

rights. The default rights include local playback, remote playback and view log.

If you want to define the detail rights, move “Active Frame” to “Setup Rights” button and press[ENTER]to enter into rights setup menu as following:



Operational rights are divided into “Local Rights” and “Remote Rights”. You can assign the necessary rights to the user. Use[→][←]key to move “Active Frame” to the corresponding right items, press[ENTER]or[EDIT]key to enable or disable the item. “✓” means assigning the right to that user.

After you finish, press “Enter” button, the user’s rights will be saved and return “User Management” menu. If you press “Cancel” button, the user’s rights will be aborted.

Step 4: Save the new user’s password and rights

In the “User Management” menu, press “Confirm” button, the user’s password and rights will be saved and return main menu. If you press “Cancel” button, the user’s password and rights will be aborted.

User rights description

“Local Rights”:

Local rights are for local operation, such as the operation using front panel, IR controller and RS-485 keyboard.

PTZ control: Locally control PTZ;

Record: Manual start/stop recording;

Playback: Local playback and backup the recorded files;

Parameters Setup: Locally setup the DVR parameters;

Log: Locally view the log on DVR;
Utilities: Locally upgrade firmware, format HDD, reboot DVR and shut down DVR, etc.

"Remote Rights":
PTZ Control: Remote control PTZ;
Record: Remote manual start/stop recording;
Playback: Remote playback, download the recorded files on DVR;
Parameters Setup: Remote setup the DVR parameters;
Log: Remote view the log on DVR;
Utilities: Remote upgrade firmware, format HDD, reboot DVR and shut down DVR, etc.
Voice: Client talks with DVR;
Preview: Network live preview;
Alarm: Remote control DVR alarm output;
Local Video Out: Remote control DVR video output;
Com Control: DVR RS-232 transparent channel function.

MAC address

This MAC address is not the address of DVR but the PC that will access DVR. If you setup this MAC address, only the PC with this MAC address can access this DVR.

At PC end, in DOS prompt, you can use "ipconfig" command to get the PC MAC address (6 bytes).

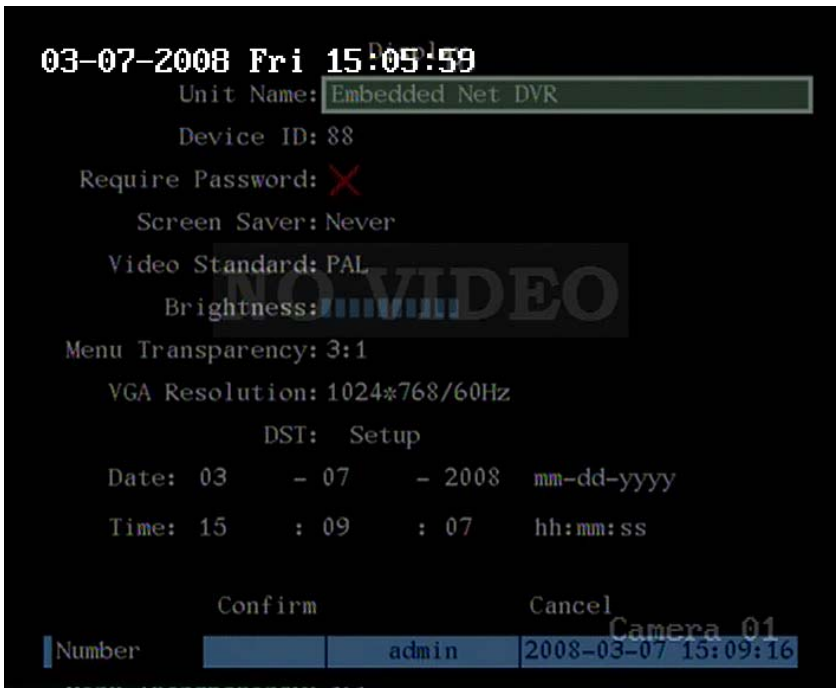
Delete user

In "User Management" interface, you can use[↑][↓]keys to select one user, then use[→], move "Active Frame" to "Del" button, press[ENTER], in the pop-up confirmation dialog, press "Confirm" button to delete the selected user and return. Press "Cancel" or[ESC]to abort deleting.

5.1.3 Unit Name and Device ID

Unit name

In the "Display" menu:



There is an item named “Unit Name”. The default unit name is “Embedded Net DVR”. Move “Active Frame” to unit name edit box, press[EDIT]key to enter into edit status, you can modify the unit name. About how to input characters, please refer to chapter 3.4. Press[ENTER]key to finish modification. Select “Confirm” button and press[ENTER], you can save the new unit name and make it into effect. Press “Cancel” button or[ESC]key to abort modification.

Device ID:

When you use IR controller to operate DVR, you must use device ID to select DVR. The default device ID of DVR is “88”. If there are more than one DVR in one place, please define different device ID for each DVR. Otherwise, the IR controller will control all DVR with the same device ID at the same time.

In “Display” menu, move “Active Frame” to the device ID edit box, in the edit status, you can use numeric keys to input new device ID. The device ID value is ranged among 01-255.

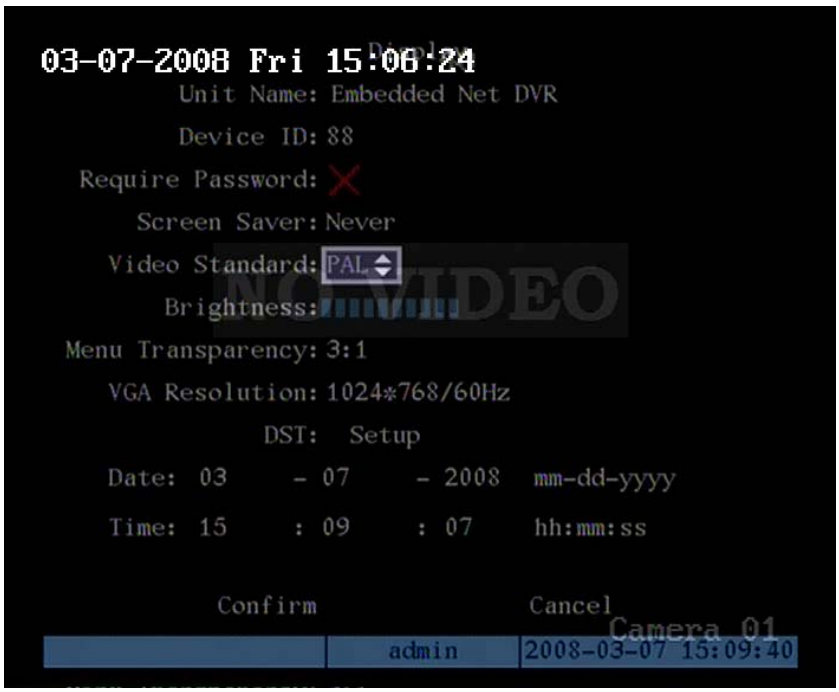
After you finish the modification, press “Confirm” button to save and take effect or press “Cancel” to abort modification.

5.2 Local preview Setup

5.2.1 Video output standard

There is one VOUT BNC connector at the rear panel of DVR. It is used to connect with analog monitor and can support PAL or NTSC video output. You can modify video output standard to match video input.

In “Display” menu:



There is a list box named “Video Output Standard”, you can use[↑][↓]key to select PAL or NTSC video output.

Notice: the video output standard will become effective after reboot.

5.2.2VGA setup

There is one VGA interface at the real panel of DVR. You can use it to connect with VGA display. You can define VGA resolution, refresh frequency in “Display” menu.

There are following options: 1024*768/60Hz, 800*600/60Hz and 800*600/75Hz. You can use [↑][↓]key to select. The screen saver option have: 1 min, 2min, 5min, 10min, 20min, 30min, if you do not want the screen saver, you can select “never”.

Press “Confirm” button to save or “Cancel” to chancel.

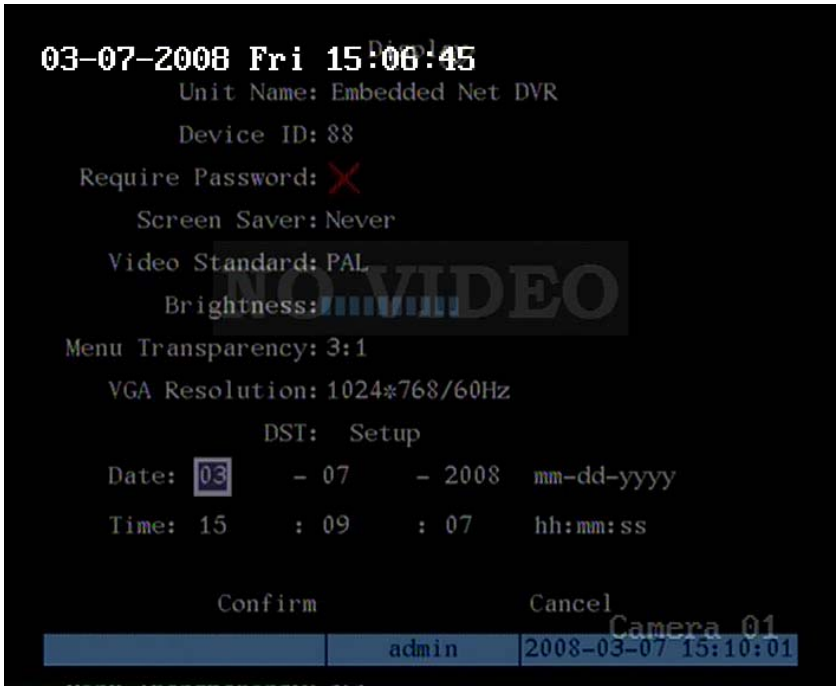
5.2.3 OSD Setup

OSD is abbreviation of “On Screen Display”. For our embedded DVRDVS, it includes displaying system time and camera name.

OSD settings include: System time, time format, time display position, camera name, camera name display position, etc.

System Time

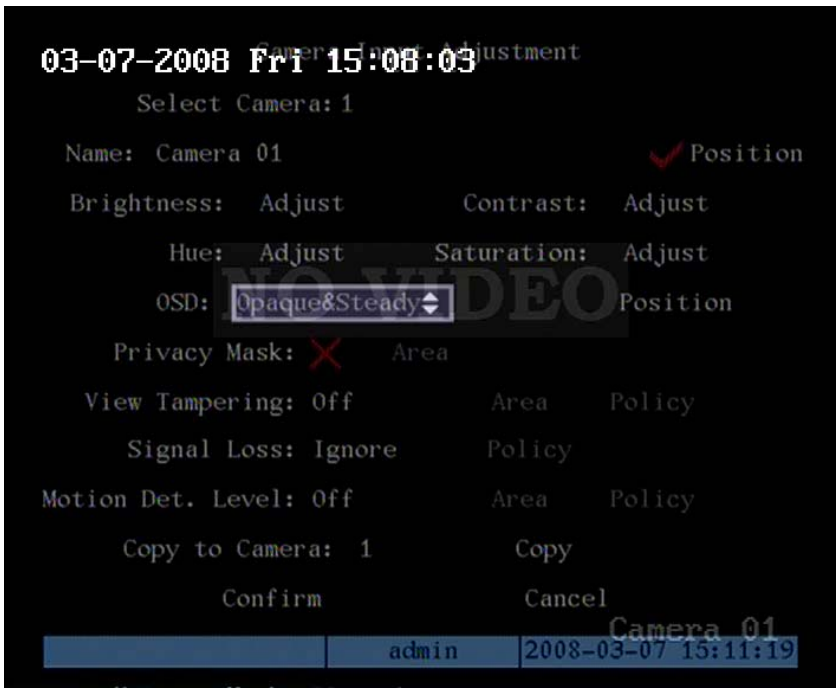
In “Display” menu, you can setup DVR system date and time.



Display System Time

You can setup display properties for each camera, including display status, position and format. Of course, you can copy the properties of one camera to all cameras.

In “Image Setup” menu as following, select one camera:



Display mode: There are several display modes: Opaque&Steady, Transparent&Steady, Transparent&Flashing, Opaque&Flashing,

Move “Active Frame” to “OSD” item, you can select one mode.

Display position and format: Move “Active Frame” to “Position” button on the right side of “OSD”, press [ENTER]to enter into setup image, you can find there are 22*18 (for NTSC, 22*15) small panes, and OSD position is in red. You can use[↓][↑][→][←]keys to move the OSD position.

Press[EDIT]key to select OSD format. There are following OSD formats:

MM DD YYYY W hh:mm:ss (default)

MM DD YYYY hh:mm: ss

YYYY MM DD W hh:mm:ss

YYYY MM DD hh:mm:ss

Here YYYY means year, MM means month, DD means day, W means weekday, hh menas hour, mm means minute and ss means second.

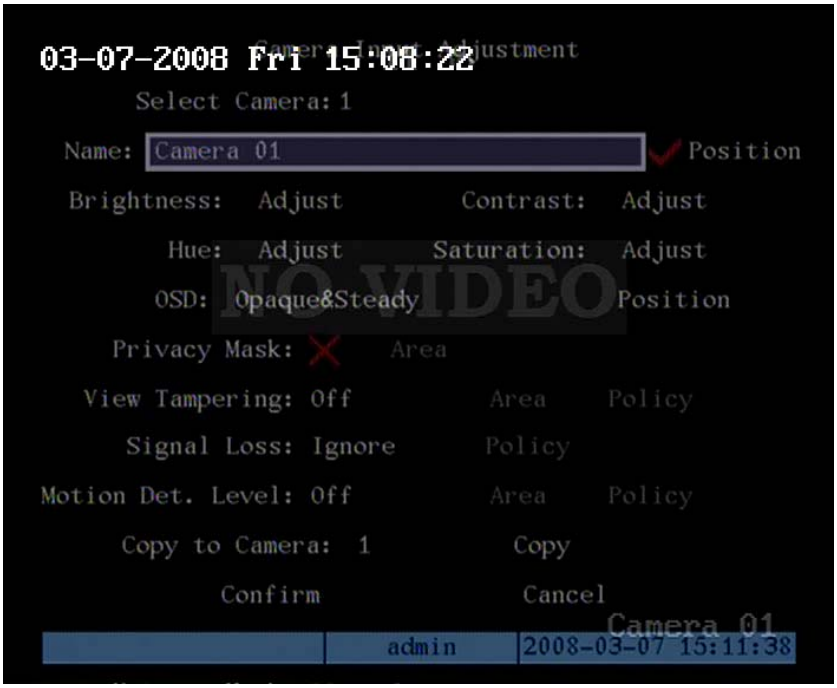
Press[ENTER] to save and return “Image” menu or perss to[ESC]abort modification.

Copy parameters: After you setup the properties of one camera, you can copy it’s parameter to any other camera or all cameras.

After you save the modification, you can find the modification will be taken into effective. You can perss “Cancel” button or[ESC]key to abort.

Camera Name

In “Image Setup” menu, you can define name for each camera. Please note that camera’s name can not be copied.



The steps of camera name setup:

Step 1: Select one camera.

Step 2: Move “Active Frame” to camera name edit box, press[EDIT]key to enter into edit status, you can input digital number, uppercase and lowercase characters (refer to Chapter 3.4). The camera name can support 32 characters.

Step 3: Press[ENTER]key to exit edit status.

Move “Active Frame” to “Confirm” button, press[ENTER]to save the modification and you can see the new camera name. Press “Cancel” button or[ESC]key to abort.

Setup Camera Name Position

If you do not want to display camera name, just disable the check box beside camer name edit box. The disable flag is “×”. If you enable the check box, you can setup the camera name position. You can copy the position to any other camera. The setup stpes are:

Step 1: Enter into “Image Setup” menu.

Step 2: Select one camera.

Step 3: Enable the check box on the right side of camer name, then you move “Active Frame” to “Position” button, press[ENTER]to enter into camera name position setup interface, in that interface, you can use[↓][↑][→][←]keys to move camera name position. When the position is fixed, press[ENTER]and return “Image Setup” menu, and press “Confirm” button to

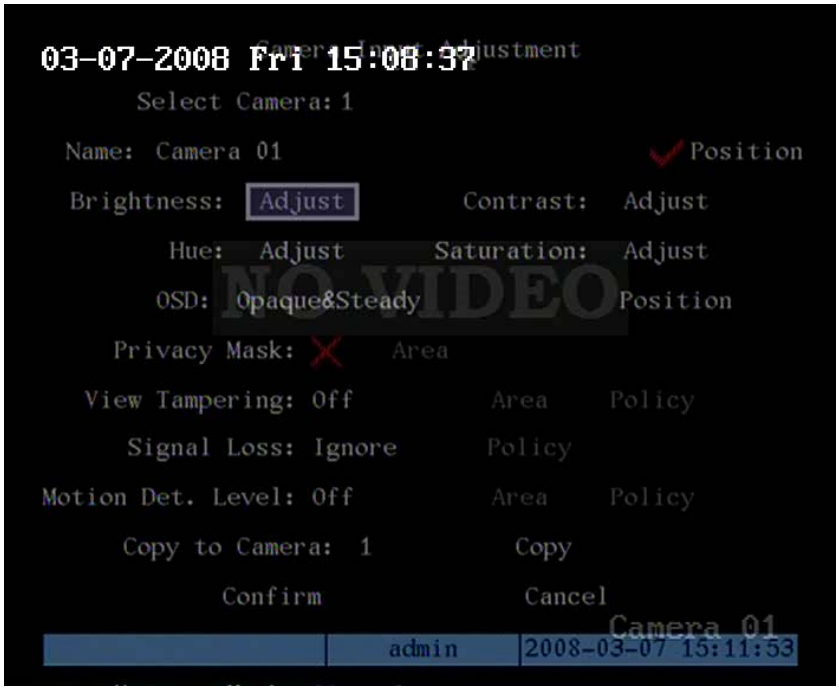
save it. In the “Image Setup” menu, perss “Cancel” button or[ESC]key, you can abort the modification.

5.2.4 Video Parameters Setup

For different camera and different background, in order to get the best video image, you need to adjust video parameters such as brightenss, saturation, contrast and hue, etc.

You can setup the camera individually, and also you can copy the video parameters of one camera to any other cameras. Here are the setup steps:

Step 1: Enter into “Image Setup” menu:



Step 2: Select camera: Please use[↑][↓]keys to select one camera.

Step 3: Adjust brightness, contrast, saturation and hue: Move “Active Frame” to the “Adjust” button on the right side of Brightness, Contrast, Saturation and Hue, press [ENTER]key, you will enter into the corresponding adjust interface. In the adjust interface, there is one scroll bar at the bottom, you can use[↑][↓]keys to adjust and can find the video image will be changed at the same time. When you are satisfied with the real time video image, press[ENTER]to return “Image Setup” menu.

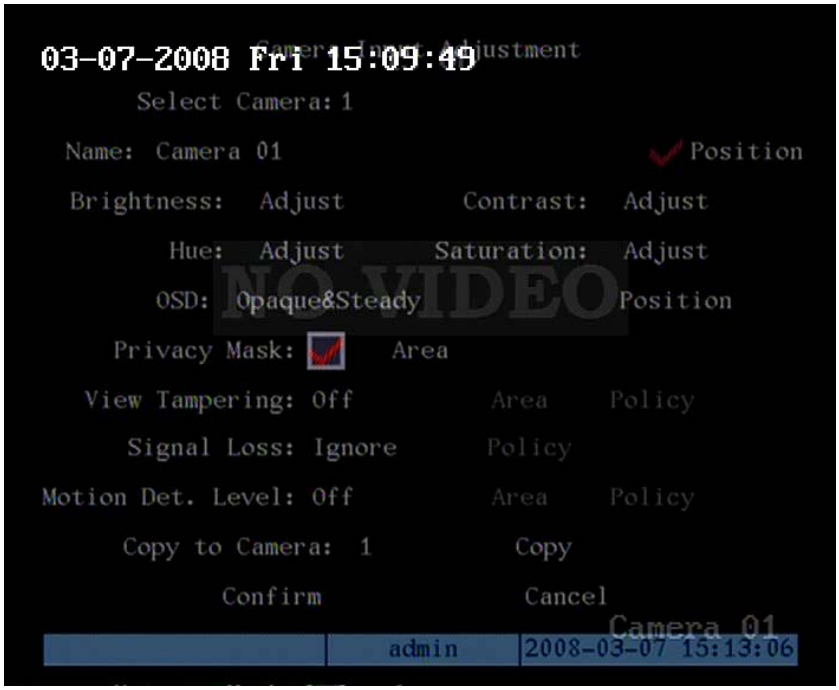
Step 4: You can copy the video parameters of current camera to any other cameras. Or you can repeat setp2 and step3 to adjust for any other camera.

After adjust, in “Image Setup” menu, press “Confirm” button to save parameters and make them into effective. Otherwise, perss “Cancel” button or[ESC]key to abort modification.

5.2.5 Mask Area Setup

In some cases, maybe you want mask the sensitive area. This area will not be preview and recorded. The mask area setup steps are following:

Step 1: Enter into "Image Setup" menu:



Step 2: Select one camera: You can use[↑][↓]keys to select one camera.

Step 3: Enter into mask area setup interface: Enable the check box beside "Privacy Mask" item, you can press[EDIT]key to change the flag into "✓", and active "Area" button. Move "Active Frame" to "Area" button on the right side of mask check box, press[ENTER]key to enter into mask area setup interface.

Step 4: Setup mask area: In the mask area setup interface, there is one small yellow pane on the upper left side. For PAL camera, the whole screen is divided into 22*18 panes (22*15 for NTSC), you can use[↑][↓][→][←]keys to move the yellow pane to your hope position and press[EDIT]key, the yellow pane will be turned into red, then you can use[↑][↓][→][←]keys to extend the red pane. This red area is the mask area.

After you make sure the red mask area, press[EDIT]key to save the mask area. Press[ESC]key to cancel the mask area. The maximum mask area size is 8*8 panes and the minimum size is only one pane. You can setup 4 mask areas at most.

After you finish setup, press[ENTER]key to return “Image Setup” menu. You can press[A]key to clear all mask areas.

Step 5: Save mask area: You can repeat step2, step3 and step4 to setup mask area for other cameras. In “Image Setup” menu, press “Confirm” button to save the mask area, press “Cancel” bbutton to abort.

If you disable the mask check box, you can cancel the mask area.

5.2.6 Preview Properties

In “Preview” menu, you can setup preview mode, screen switch time, enable or disable audio preview and preview layout.

Step 1: Enter into “Preview” menu: In the main menu, move “Active Frame” to “Preview” icon and press[ENTER], you can enter into “preview” menu.

Step 2: Preview properties:

Select Out: set the output image for each outpout port.

Preview mode: For preview mode item, you can use[↑][↓]key to select one mode. If DVR has only 1 channel, you can select only "1 Screen" option. If DVR has 4 channels, there are "1 Screen" and "4 Screen" options. If DVR has more than 4 but less than 9 channels, there are "1 Screen", "4 Screen" and "9 Screen" options. If DVR has 16 channels, there are "1 Screen", "4 Screen", "9 Screen", "12 Screen" and "16 Screen" options.

Switch time: That is image preview switch time. You can use[↑][↓]keys to select switch time. There are many options, including "5 Seconds", "10 Seconds", "20 Seconds", "30 Seconds", "1 Minutes", "2 Minutes", "5 Minutes" and "Nerver". If you select "Nerver", the preview image will not be switched automatically. For example, for 16 chanenls DVR, if you select "4 Screen" preview mode and "20 Seconds" switch time, DVR will cycle display 4 channels image every 20 seconds.

Audio preview: If you enable audio preview ("✓"), when you preview single camera, DVR will play the audio of that channel.

Preview layout setup: There is a square frame divided into many windows. If you select "4 Screen"preview mode, this frame is divided into 4 windows. Each window represents one camera. You can move "Active Frame" among the windows. There is one bar under the square to display the preview order of all cameras.

First select the biggest screen preview mode, for example, for 16-channel DVR, select "16 Screen" preview mode so that all windows are display in the square.

Secondly, move "Active Frame" to one of these windows, press numeric keys to input camera index. The small window will display that camera number. In this way you can change the display order. If you press 0 or 00, then the corresponding window will not display live video.

After you define the camera perview order, you can select preview mode to meet your demand.

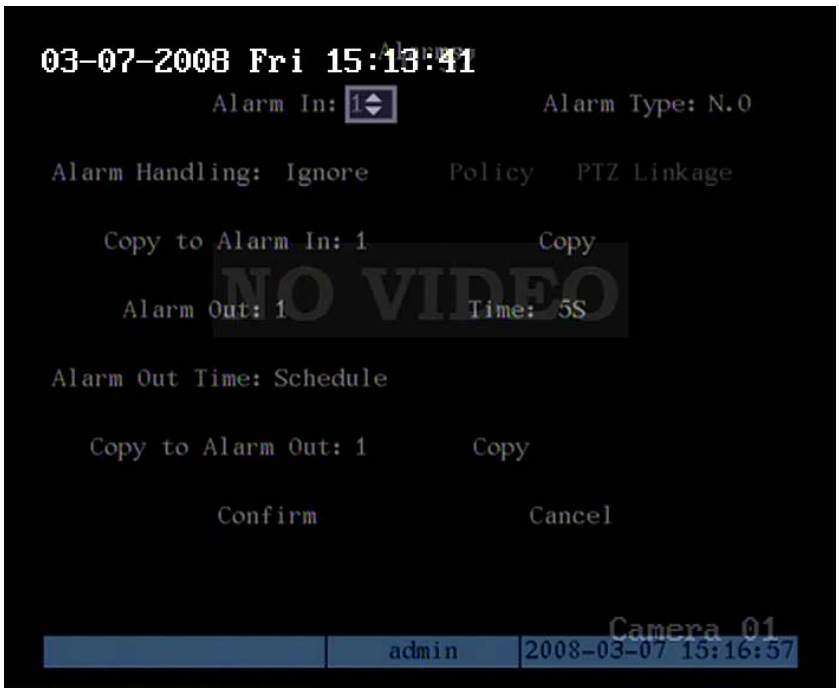
Save setup: Press “Confirm” button to save preview properties. Press “Cancel” or [ESC]key to abort.

5.3 Alarm setup

5.3.1 External Alarm Input and Relay Output

You can setup for each external alarm input.

In main menu, move “Active Frame” to “Alarms” icon and press[ENTER]key to enter into alarms menu:



External alarm input setup:

Step 1: Select one alarm input Use[↑][↓]keys to select one alarm input.

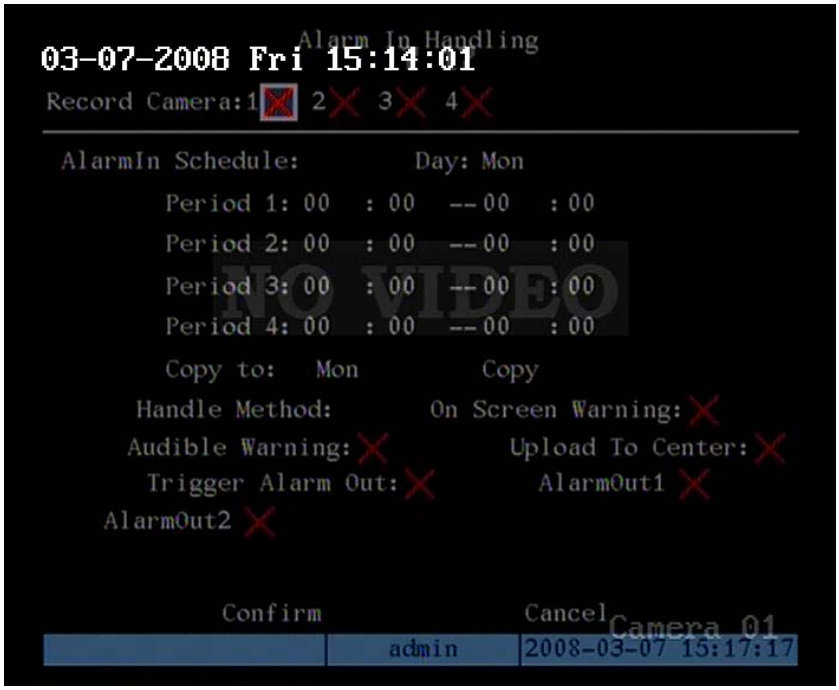
Step 2: Alarm type

This is sensor type. You can select “Normal Open” or “Normal Close” according to the sensor type.

Step 3: Enter into “Alarm in Handling” sub menu

In the “Alarms” menu, there are two options for “Alarm Handling” item. One is “Ignore”, and the other is “Handle”. If you select “Handle” option, you can active “Policy” and “PTZ Linkage” buttons on right side. Move “Active Frame” to “Policy” button and press[ENTER]key,

you will enter into “Alarm in Handling” sub menu:



Step 4: Alarm trigger record channel setup

You can select channels to record for each alarm input. In the sub menu, you can use[ENTER]or[EDIT]key to enable record channel. “×” means disable and “✓ means enable.

Note: In order to trigger the channel to record, in “Recording” menu, you must enable recording and select record type as “Alarm” or other related type. Please refer to chapter 5.12.

Step 5: Schedule for alarm handle method

When there is external alarm happened in the schedule, DVR will response according to the handle methods.

Step 6: Alarm handle method

You can select one or more handle method: “On Screen Warning”, “Audible Warning”, “Upload to Center” and “Trigger Alarm Output”.

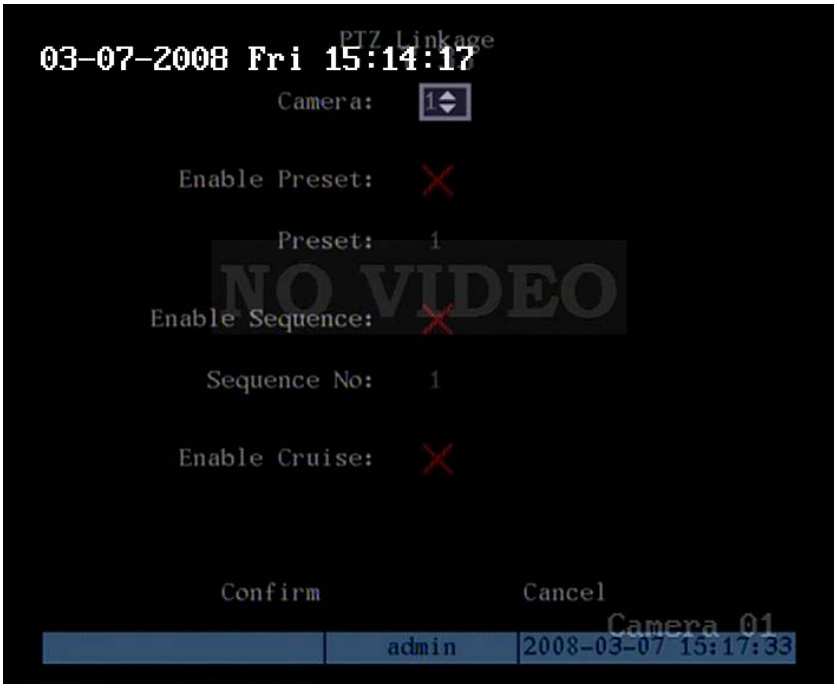
Description: If “On Screen Warning” is enabled, when there is external alarm happened and DVR is in preview mode, DVR will pop-up the related camera. If you trigger more than one camera, DVR will pop-up them one by one every 10 seconds. When the external alarm is disappeared, DVR will restore preview mode.

Step 7: Save setup

In “Alarm in Handling” sub menu, press “Confirm” button and return “Alarms” menu. In “Alarms” menu, press “Confirm” button to save the parameters.

Step 8: PTZ Linkage

Move “Active Frame” to “PTZ Linkage” button, press[ENTER]key to enter into “PTZ Linkage” setup menu:



First select one camera, then select one of following PTZ linkage:

- Preset: Set the flag as “✓” to enable preset, in the preset number edit box and input one preset number that has been setup already. Please refer to chapter 5.15 for preset setup.
- Sequence: Set the flag as “✓” to enable sequence and input one sequence number that has been setup already. Please refer to chapter 5.15 for sequence setup.
- Cruise: Set the flag as “✓” to enable cruise. Please refer to chapter 5.15 for cruise setup.

Press “Confirm” button to save and return “Alarms” menu. Press “Cancel” button or[ESC]key to abort and return “Alamrs” menu.

Note: Please make sure that the PTZ you are using can support preset, sequence and cruise functions. One external alarm input can trigger many cameras PTZ linkage.

Step 9: Copy the parameters to other external alarm input You can copy the parameters of current alarm input to other external input.

Step 10: Save setup In “Alarms” menu, press “Confirm” button to save the parameters. Press “Cancel” button or[ESC]key to abort.

Alarm relay output setup

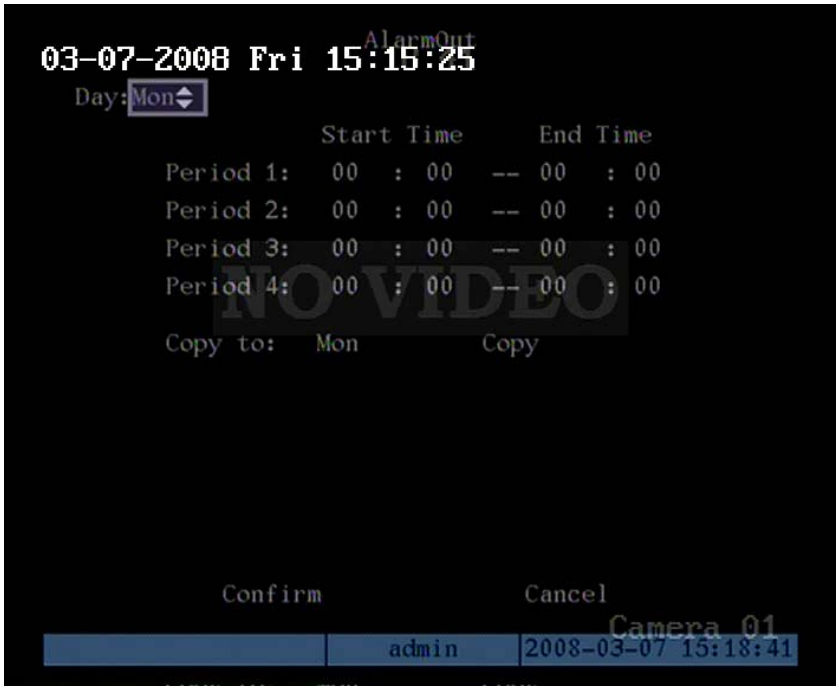
Step 1: In “Alarms” menu, use[↑][↓]keys to select one alarm output.

Step 2: Select delay time

The delay time is when the alarm is disappeared, the alarm output will continue output time. The delay time options are: 5 Seconds, 10 Seconds, 30 Seconds, 1 Minute, 2 Minutes, 5 Minutes, 10 Minutes and Manual Stop. If you select “Manual’ option, the alarm output will not stop until you press “Clear Alarm” button in “Utilities” menu. So the actual alarm output time is made up of alarm input time and this delay time.

Step 3: Enter into alarm out schedule

You can set the schedule to make alarm output into effective. Move “Active Frame” to “Schedule” button on right side of “Alarm Out Time” item, press[ENTER]key to enter into the corresponding schedule menu:



Step 4: Setup alarm out schedule

Like other schedule setup, you can set 4 time periods for one day and 7 days for one week. When you finish setup, press “Confirm” button to return “Alarms” menu.

Step 5: Copy one alarm output parameters to other alarm output

In “Alarms” menu, you can copy parameters of current alarm output to other alarm output.

Step 6: Save setup

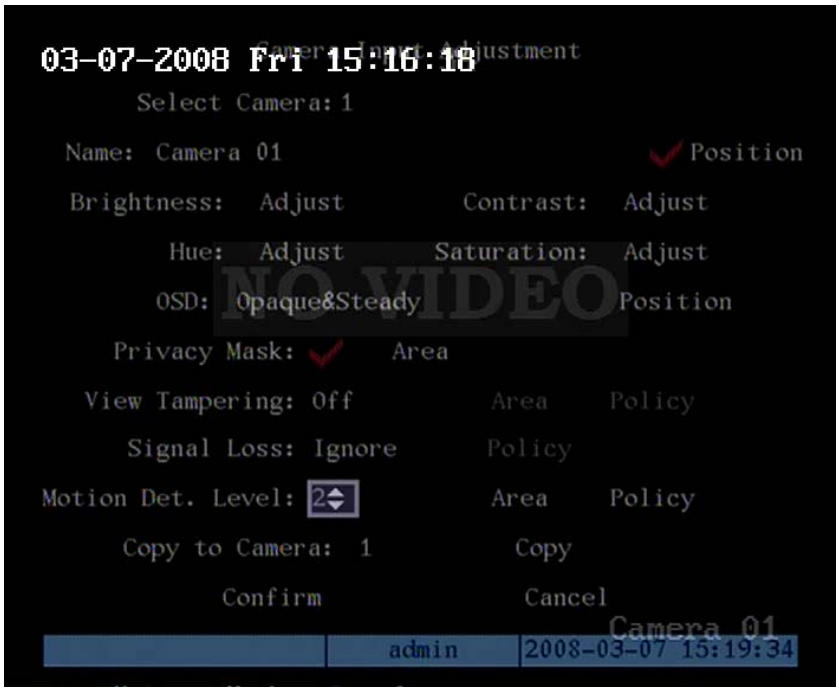
When you finish setup, in “Alarms” menu, press “Confirm” button to save all parameters.

Note: If any schedule is modified, you must reboot DVR to make it into effective.

5.3.2 Motion Detection Alarm

If you enable this function, when there is motion detected, DVR will make alarm.

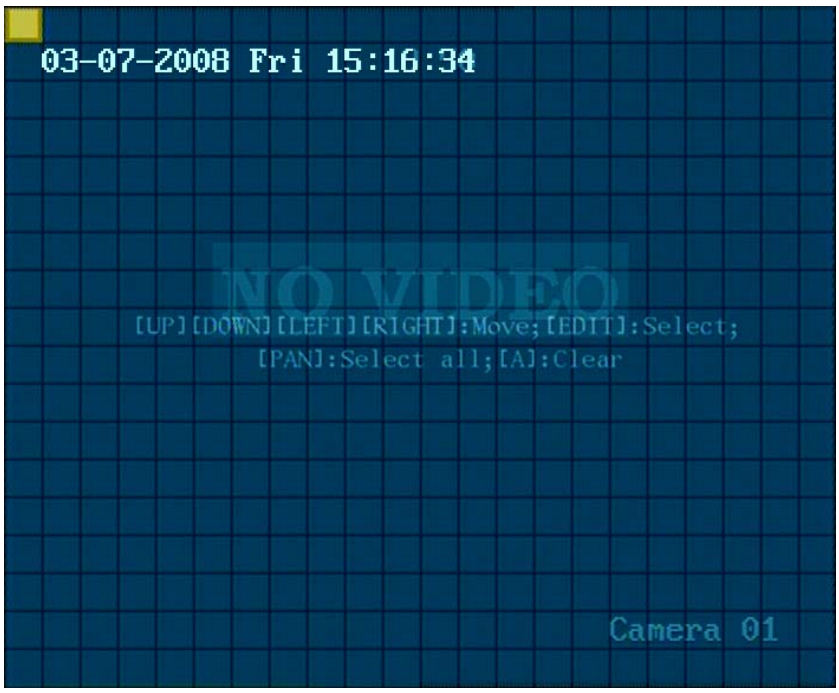
Step 1: Enter into "Image Setup" menu:



Step 2: Select camera: Use[↑][↓]key to select one camera.

Step 3: Select motion detection sensitivity: On the right side of "Motion Det. Level" item, there is a list box. That is motion detection sensitivity. There are 7 options, from 0 (the lowest) to 5 (the highest) and "Off". You can use[↑][↓]keys to select one. If you select "Off" option, DVR will not response even if there is motion detection. If you select other options, it will active "Motion Area Setup" button and "Policy Setup" button. If you select low sensitivity such as 0, only when there are great motion detection, DVR can response. On the other side, for high sensitivity such as 5, DVR will response with small motion detection.

Step 4: Motion area setup: You must define motion areas so that DVR will response when there is motion in those areas. Move "Active Frame" to "Area" buton on the right side of sensitivity list box, press[ENTER]key, you can enter into "Motion Area Setup" interface.



The whole screen is divided into 22*18 panes (NTSC: 22*15). There is one yellow panel on the upper left side. The motion area setup steps are the same as that of mask area setup (refer to chapter 5.7). The only differences are that you can use[PTZ]key to set the whole screen as motion area, and mutil motion areas can be defined. Press[A]key to clear all motion areas.

Setup multi areas: After you setup one motion area, press[EDIT]key, the yellow pane will appear again, then you can setup another motion area.

Clear motion area:

Clear part of motion area: Move the yellow pane to the start clear position of motion area, press[EDIT], you will find the yellow pane is turned into black pane. You can use[↓][→]key to enlarge or shrink the black area. Press[EDIT]key to clear this part motion area.

Press[Enter]key to save and return “Image” menu. Press[ESC]to cancel.

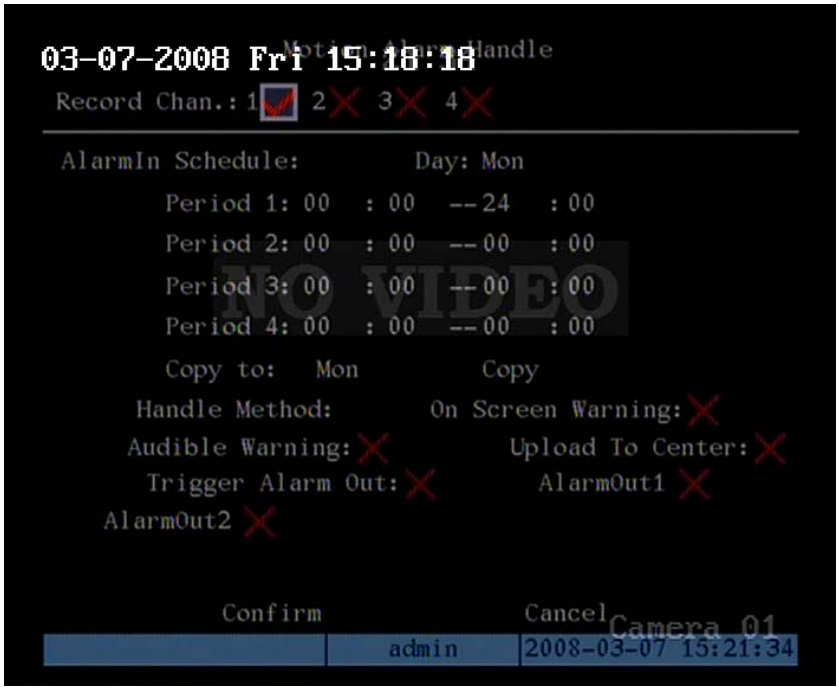
Clear all motion areas: Press[A]key to clear all motion areas of this channel.

The kyes used to setup motion areas are following:

- [↑][↓][←][→]: Move yellow panel to any position;
- [EDIT]:Yellow panel and red panel switch key:;
- [→]: Right enlarge red pane;
- [←]: Left shrink red pane;
- [↓]: Down enlarge red pane;
- [↑]: Up shrink red pane;
- [PTZ]: Set whole screen as motion area;
- [A]: Clear all motion areas;
- [ENTER]: Save and return “Image Setup” menu;
- [ESC]: Cancel setup and return “Image Setup” menu;

The motion detection area is displayed as following:

Step 5: Motion alarm policy: Move “Active Frame” to the corresponding “Policy” button of motion detection alarm, press[ENTER]key to enter into “Motiomn Alarm Handle” menu:



Step 6: Motion alarm record channel setup: When there is motion alarm happened, you can trigger related camera to start recording. In “Motion Alarm Handle” menu, you can select one or more record channels. Please use[ENTER]or[EDIT]key to enable the flag into “✓”.

Note: In order to make the cameras start recording, in “Recording” menu, you must enable recording schedule and set “Rec Type” as “Motion Detection” or “Motion | Alarm”. Please refer to chapter 5.12 for recording setup.

Step 7: Motion alarm schedule: When the motion alarm is happened in schedule, DVR will response such as “On Screen Warning”, “Audible Warning”, “Upload to Center” and “Trigger Alarm Output”. You can setup 4 time periods for one day and 7 days for one week.

Note: Time periods in one day can not be repeat.

Step 8: Motion alarm handle method setup: You can select one or more handle methods such as “On Screen Warning”, “Audible Warning”, “Upload to Center” and “Trigger Alarm Output”.

Description: If “On Screen Warning” is enabled, when there is motion alarm happened and DVR is in preview mode, DVR will pop-up the related camera. If you trigger more than one camera, DVR will pop-up them one by one every 10 seconds. When the motion alarm is disappeared, DVR will restore preview mode.

Step 9: Save motion alarm setup: Press “Confirm” button to return “Image Setup” menu. In the “Image Setup” menu, press “Confirm” button to save the current camera parameters.

Step 10: Save all cameras: You can repeat from step2 to step8 to setup motion detection parameters for other cameras. Also you can copy the parameters of one camera to any other cameras.

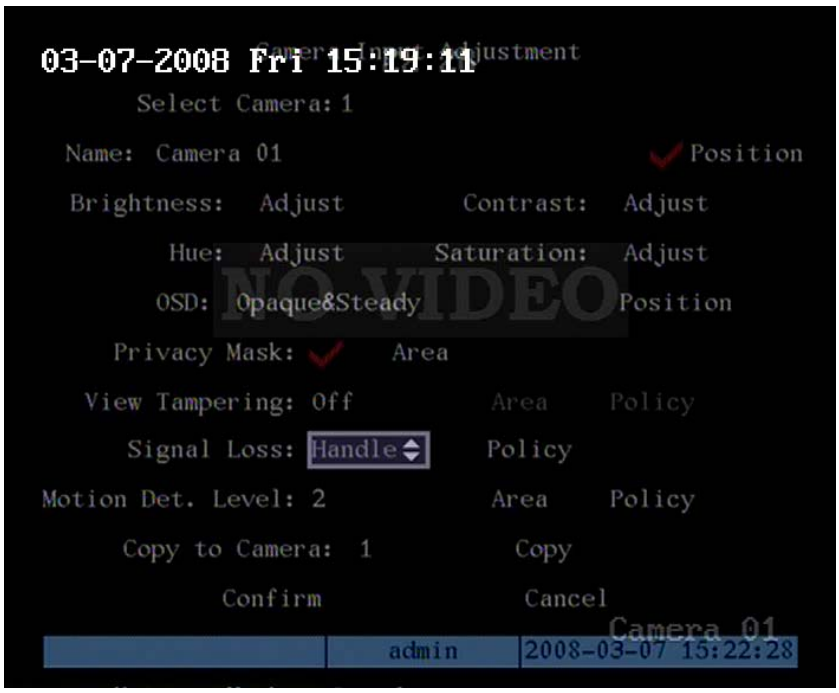
Note: Motion alarm area can not be copied.

If you want to disable motion alarm area and motion alarm policy, you just need to select the motion alarm sensitivity as “Off”.

5.3.3 Video Loss Alarm

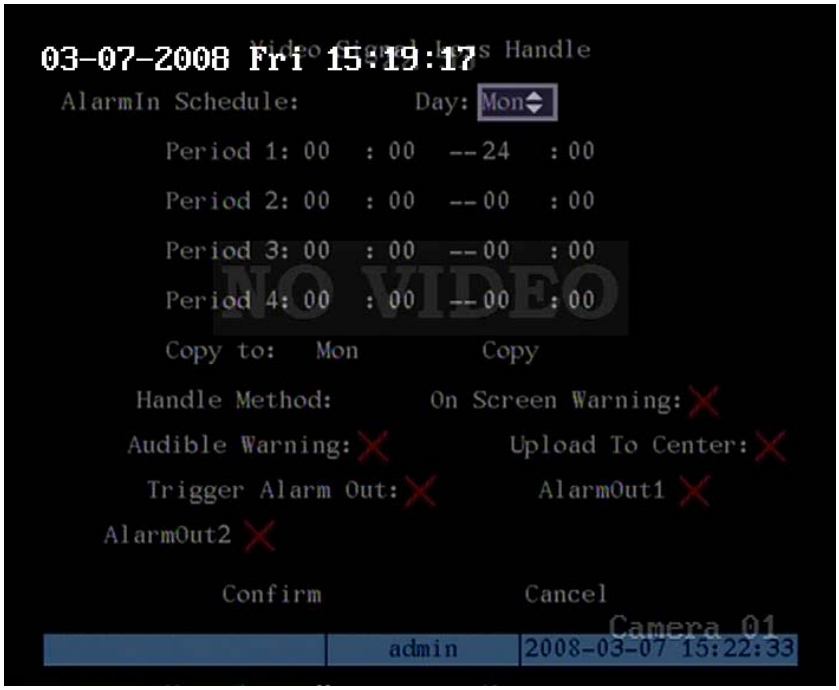
When the video cable or camera has something wrong, the video image is lost. If you enable video loss alarm, in such case, DVR will make alarm.

Step 1: Enter into “Image Setup” menu:



Step 2: Select camera: Use[↑][↓]keys to select one camera.

Step 3: Enter into "Video Signal Loss Handle" interface: Move "Active Frame" to the list box on the right side of "Video Loss" item, use[↑]key to select "Handle" option and move "Active Frame" to the "Policy" button on right side. Press[ENTER]to enter into "Video Signal Loss Handle" interface:



Step 4: Setup alarm schedule: You can setup working schedule. Only when the video

loss is happened in the schedule, DVR will response.

Note: The 4 time periods can not be repeated. Please reboot DVR to make parameters into effective.

Step 5: Setup alarm policy: You can select one or more response solutions, including “On Screen Warning”, “Audible Warning”, “Upload to Center” and “Trigger Alarm Output”. You can use [↑][↓]and [EDIT]key to enable or disable them. “×” is disable and “✓” is enable.

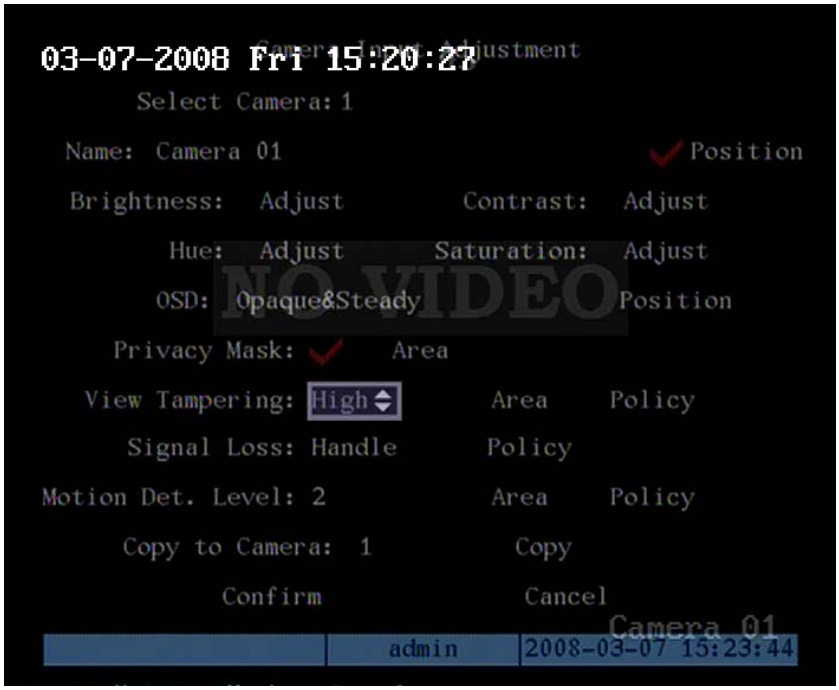
Step 6: Save alarm setup: After your setup, press “Confirm” button and return “Image Setup” interface. In “Image Setup” menu, press “Confirm” button to save current camera parameters and return main menu.

Step 7: Save all cameras: If you want to setup other cameras, please repeat from step2 to step 6. In “Image Setup” menu, press “Confirm” key to save all cameras parameters. Press “Cancel” button or[ESC]key to abort.

5.3.4 View Tampering Alarm

If you enable this function, when someone blocks the camera spitefully, DVR will make warning alarm.

Step 1: Enter into “Image Setup” memu:



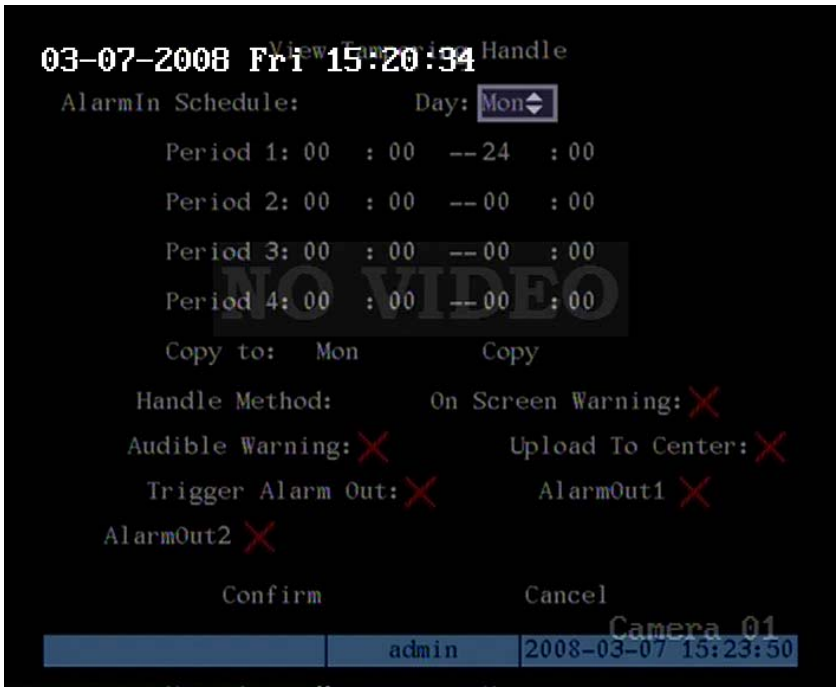
Step 2: Select camera: Please use[↑][↓]keys to select one camera.

Step 3: Select sensitivity: You can use[↑][↓]keys to select the sensitivity for “View Tampering” item. The sensitivity options are: Low, Normal and High. Select one of them will active “Area Setup” and “Policy Setup” function.

Step 4: View tampering area setup Move “Active Frame” to “Area” button, press [ENTER]key to enter into area setup interface. The setup methods are same as that of mask area setup. After setup the area, press[ENTER]key to return “Image Setup” menu. You can press[ESC]key to abort.

Only one view tampering area can be setup.

Step 5: View tampering alarm setup In “Image Setup” menu, move “Active Frame” to “Policy” button, press[ENTER]key to enter into “View Tampering Handle” menu:



Step 6: Alarm schedule setup: When there is view tampering alarm happened, DVR will handle the alarm based on the schedule. You can set 4 periods for each day one week. Also you can copy the schedule of one day to other days.

Notes: Time periods can not be repeated. Please reboot DVR to make the parameters into effective.

Step 7: Setup alarm policy: If there is view tampering alarm happended in schedule, DVR will response based on the policy. You can select one or more solution including “On Screen Warning”, “Audible Warning”, “Upload to Center” and “Trigger Alarm Output”. You can use [↑][↓]and [EDIT]key to enable or disable them. “×” is disable and “✓” is enable.

Step 8: Save alarm setup: After your setup, press “Confirm” button and return “Image Setup” interface. In “Image Setup” menu, press “Confirm” button to save current camera parameters and return main menu.

Step 9: Save all cameras: If you want to setup other cameras, please repeat from step2

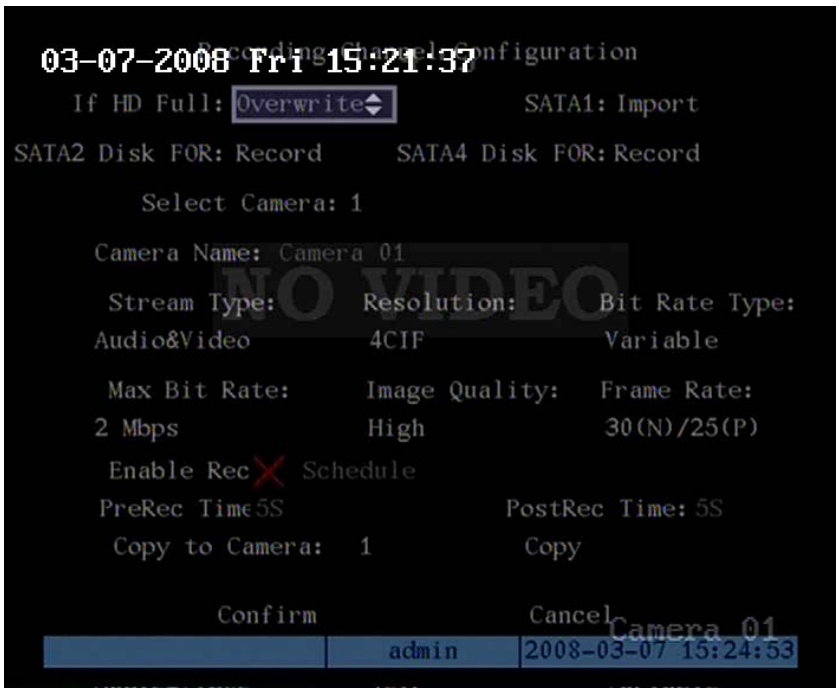
to step 8. In “Image Setup” menu, press “Confirm” key to save all cameras parameters. Press “Cancel” button or[ESC]key to abort.

Select “Off” option for “View Tampering”, you can delete the view tampering area.

Note: Only one view tampering area can be setup for each camera. The view tampering area can not be copied. If the schedule is modified, you must reboot the device to make the parameters into effective.

5.4 Recording Setup

In main menu, there is an icon named “Recording”. You can enter into recording menu as following:



5.4.1Recording parameters description:

If HD Full: There are two options: “Overwrite” and “Stop recording”. If you select “Overwrite” option, when all HDDs in DVR are full, DVR will overwrite the earliest recorded files and continue recording. If you select “Stop recording” option, when all HDDs are all full, DVR will handle it as “Hard Disk Full” exception, please refer to chapter 5.17 for exception menu.

Select Camera: Here all channels are listed. You can use[↑][↓]keys to select one.

Stream Type: There are two options, one is “Audio&Video” stream and the other is “Video” stream only. If you want to record video and audio, please select “Audio&Video” option, otherwise you can select “Video” option to record only video.

Note: If you change this option, please reboot DVR to make parameter into effective.

Resolution: The higher resolution is, the clearer the image is. The resolution options from low to high are: QCIF, CIF, 2CIF, DCIF, 4CIF.

Note: If you change this resolution option, please reboot DVR to make it into effective.

Bit Rate Type: There are two options: “Variable” and “Fixed”.

If you select variable bit rate, DVR will adjust the actual bit rate according to the video movement. When there is not much movement, DVR will use low bit rate, while there is much movement, DVR will use high bit rate. In this case, DVR can save HDD usage and network bandwidth.

If you select fixed bit rate, DVR will use the fixed bit rate to compress iamge. The bit rate size is defined in “Max Bit Rate” option. In this case, we can calculate the recorded file size and network bandwidth that we need.

Max Bit Rate: If you select variable bit rate, when the video input has great movement, we need to limit the max bit rate. The max bit rate has following options (bps): 32K, 48K, 64K, 80K, 96K, 128K, 160K, 192K, 224K, 256K, 320K, 384K, 448K, 512K, 640K, 768K, 896K, 1M, 1.25M, 1.5M, 1.75M, 2M and “User define”.

The max bit rate selection has relations with resolution. If you select high resolution, you must select high bit rate. For CIF resolution, the typical max bit rate is 384K-768Kbps. For DCIF resolution, the typical bit rate is 512K-1Mbps. For 4CIF resolution, the typical bit rate is 1.25Mbps-1.75Mbps. Of course, you will select the proper max bit rate based on the camera, background and image quality requirement.

Bit rate: You can select bit rate size for fixed bit rate type. It is the same as “Max Bit Rate”.

Image Quality: If you select variable bit rate type, you can define image quality. There are 6 options: Highest, Higher, High, Average, Low and Lowest. High image quality needs high bit rate size.

Frame Rate: Frame per second. Options are: Full (PAL is 25 FPS and NTSC is 30FPS), 20, 16, 12, 10, 8, 6, 4, 2, 1, 1/2, 1/4, 1/8, 1/16. For low frame rate, you can select low bit rate size.

PreRecord Time: When you enable motion detection recording or external alarm recording, you can define prerecord time. The options are: No PreRecord, 5 Seconds (default selection), 10 Seconds, 15 Seconds, 20 Seconds, 25 Seconds, 30 Seconds and Max PreRecord.

MaxPreRecord is to save all data in PreRecord buffer. The PreRecord time is related with

bit rate. The lower bit rate, the longer PreRecord time is.

If the bit rate (Max bit rate) is very low, and you select “PreRecord Time” as “5 Seconds”, maybe the actual perrecord time is more than 5 seconds. On the other side, if the bit rate is high, and set “PreRecord Time” as “30 Seconds”, the actual prerecord time maybe is less than 30 seconds.

PostRecord Time: When external alarm or motion alarm is stopped, DVR will continue recording time. The options are: 5 Seconds (default), 10 Seconds, 30 Seconds, 1 Minute, 2 Minutes, 5 Minutes and 10 Minutes.

Enable Rec: Enable or disable selected camera record function. “×” means disable and “✓” means enable.

5.4.2 Record Schedule setup

When you enable recording function, you can setup recording schedule.

Note: When the camera’s recording schedule is modified, you must reboot DVR to make it into effective.

All day recording setup:

Step 1: Enter into recording schedule menu

In recording menu, use[ENTER]or[EDIT]key to enable record function (“✓” flag), press “Schedule” button to enter into recording schedule menu.

Step 2: Select ond day and enable all day recording option

For “Day” item, there are options: Monday, Tuesday, Wednesday, Thursday, Friday, Saturday and Sunday. Use[↑][↓]keys to select one day. Move “Active Frame” to the check box on the right side of “All Day” item, press[ENTER]or[EDIT]key to enable “All Day” option. “×” means disable and “✓” means enable.

Step 3: Record type

For “Rec Type” item, the options are: All Time, Motion Detect, Alarm, Motion|Alarm, and Motion&Alarm.

For all day record mode, only one record type can be selected.

Step 4: Copy to other days

You can repeat step2 and step3 to setup for other days. Also you can copy the current day to other days.

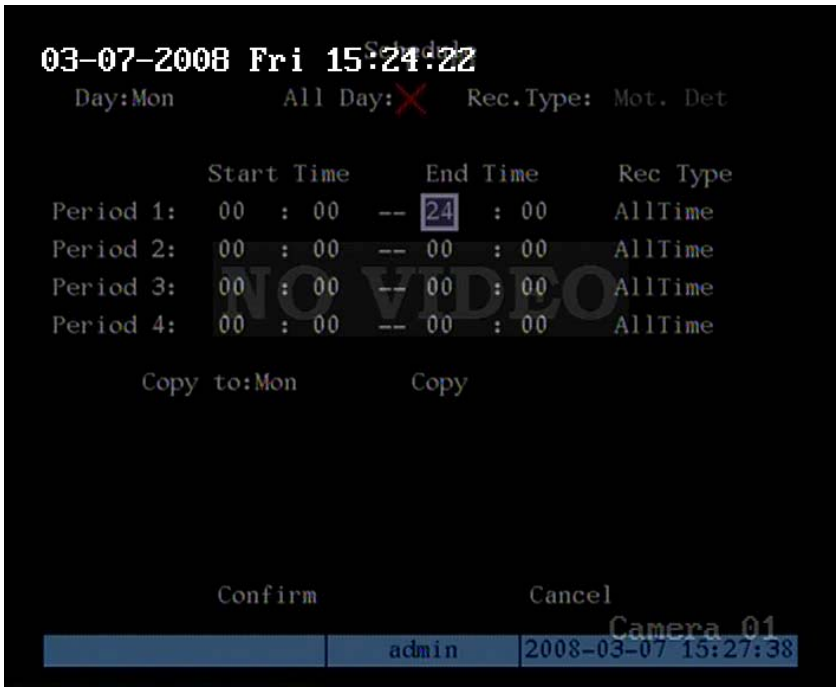
Step 5: Save

Press “Confirm” back to “Recording” menu. Press “Confirm” again to save the parameters and return main menu.

None all day recording setup

Step 1: Enter into recording schedule menu

In recording menu, use[ENTER]or[EDIT]key to enable record function (“✓” flag), press “Schedule” button to enter into recording schedule menu.



Step 2: Select ond day and disable all day recording option

For “Day” item, there are options: Monday, Tuesday, Wednesday, Thursday, Friday, Saturday and Sunday. Use[↑][↓]keys to select one day. Move “Active Frame” to the check box on the right side of “All Day” item, press[ENTER]or[EDIT]key to disable “All Day” option. “×” means disable and “✓” means enable.

Step 3: Setup time period and record type

There are 4 time periods for one day, and each time period can select different record type. Input start time and stop time for each time period, and select record type for each period. The record type options are: All Time, Motion Detect, Alarm, Motion&Alarm and Motion|Alarm.

Note: The time periods in one day can not be repeat.

Step 4: Copy to other days

You can repeat step2 and step3 to setup for other days. Also you can copy the current day to other days.

Step 5: Save

Press “Confirm” back to “Recording” menu. Press “Confirm” again to save the parameters and return main menu.

Note:

1) If record type is “Motion Detect” or other related types, you must setup “Motion Detection” in order to trigger motion recording .
2) If record type is “Alarm” or other related types, you must setup “Alarms” in order to trigger alarm recording.
3) The time period is among 00:00—24:00.

5.4.3 Pre-record and post-record setup

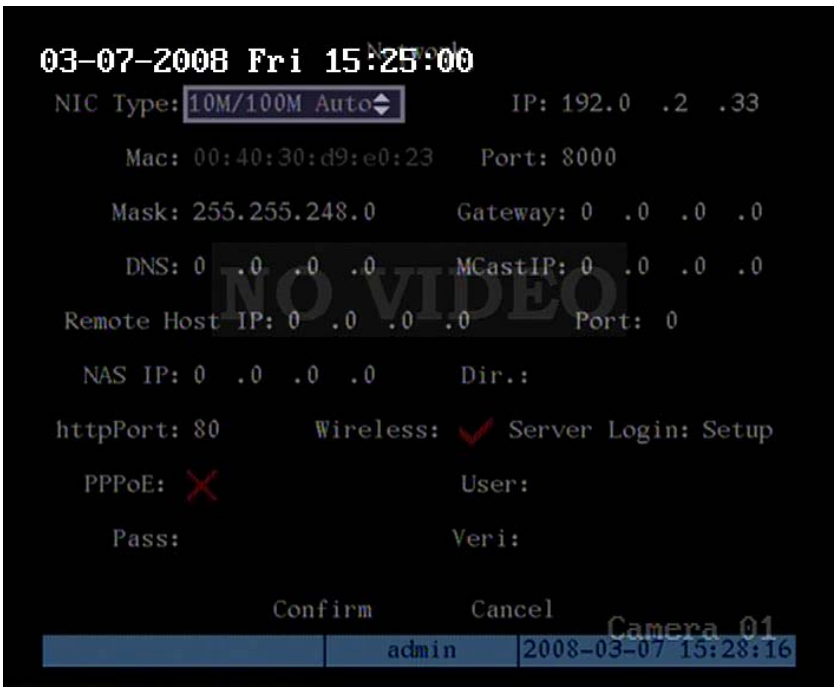
Pre-record: it mainly use for the motion detect record and alarm record, the real time depends on the size of the memory and record bitrate. So the real pre-record time imay be not exact.
Post-record: after the alarm stop, the DVR will continue record for some time.

5.5 Network Parameters

If you want use network to access DVR, you must setup network parameters.

Note: If any network parameter is modified, you must save and reboot DVR to make it into effective.

In main menu, move “Active Frame” to “Network” icon and press[ENTER], you can enter into “Network” menu as following:



"Network" menu description:

***NIC type:** Defautl is "10M/100M Auto", the other options are: 10M Half-Dup, 10M Full-Dup, 100M Half-Dup and 100M Full-Dup.

***IP address:** This IP address must not be conflict with other IP. If there is DHCP server in network, you can set the IP as "0.0.0.0", save and reboot DVR. In reboot process, DVR will search the DHCP server and get one dynamic IP address. This item will display the dynamic IP address. If DVR uses PPPoE function, also DVR can dialup into internet and this item will display the dynamic internet IP address.

***Port:** Network access port number, must be from 2000 to 65535, the default port is 8000..

***Mask:** This is sub net mask.

Gateway: The gateway IP is used to communicate in different network segments

DNS address: If DVR uses PPPoE function, and get one dynamic IP address. If you set DNS IP with one fixed Internet IP, DVR will send some information such as DVR name, DVR serial number, DVR current IP to that fixed IP address. We call that fixed Internet IP as DNS IP. The DNS server with that fixed Internet IP can receive DVR information and used to resolve DVR dynamic IP.

This DNS is special software, not the normal domain name server. You can use the provided SDK to develop this DNS software.

Multicast IP: It is one D-class IP address, among 224.0.0.0 --- 239.255.255.255. If you do not use multicast function, you do not need to set. Some routers will prohibit multicast function in case of network storm.

Remote Host IP and Port: If you set this IP and port, when there is alarm and exception happened, DVR will send information to that host IP. The center with this IP can receive alarm and exception information from DVR. You can use SDK to develop this center software.

NAS: Network access storage. DVR will regard network HDD as local HDD. If you enable this function, DVR will send and save the real time image to that network HDD.

NFS IP: The IP of that network storage server.

Dir: The directory name shared by that network storage server.

This function is not available until now.

Http Port: The port is for IE browser. The default value is 80. It can be modified.

PPPoE: DVR support PPPoE dail-up function.

Wireless environment: select "✓" means use the wireless transmission mode.

Notice: if you use the wireless environment, you only can view 2 channel image at one time in the client software.

Plantform login interface: "server IP" means load equipoise server IP.

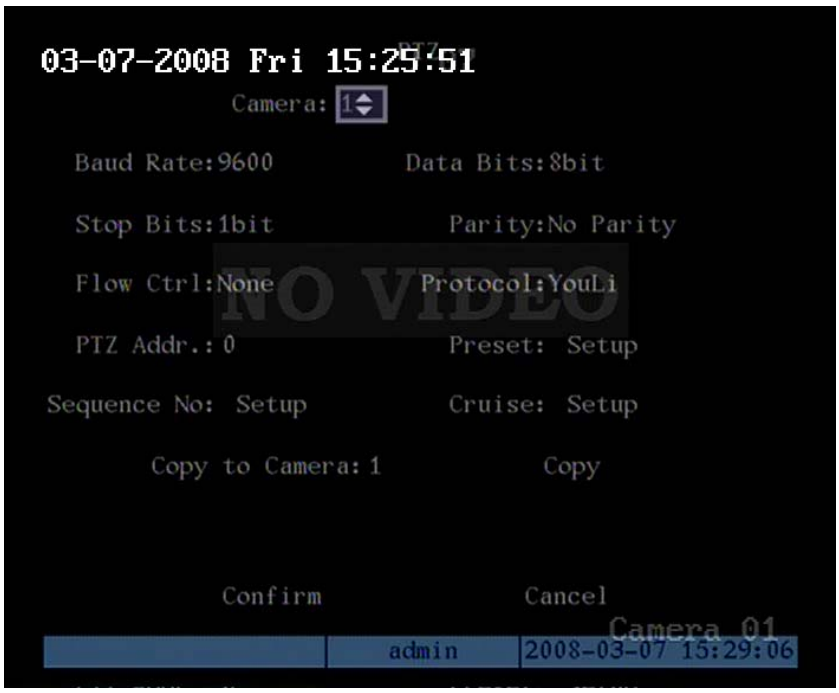
Port: the port that used for communicating with the load equipoise server, default port is 5660.

Device ID: assigned by the load equipoise server for the DVR. (different from the device ID in the local display)

Login password: the password for loginning the load equipoise server.

5.6 PTZ

There is one RS-485 port at DVR rear panel used for PTZ control. You can setup RS-485 parameters to match your PTZ protocol. In main menu, move "Active Frame" to PTZ icon and press[ENTER]key, you can enter into PTZ menu as following:



PTZ menu description

Select channel: Select one PTZ camera.

RS-485 parameters: Including baudrate, data bit, stop bit, parity, flow control, etc. These parameters must be the same as those of PTZ. Protocol.

PTZ address: Each PTZ has one different address.

PTZ type: DVR had the following PTZ protocol: YouLi, LinLin-1016, LinLin-820, Pelco-p, DM DynaColor, HD600, JC-4116, Pelco-d WX, Pelco-D, VCOM VC-2000, NetStreamer, SAE/YAAN, Samsung, Kalatel-312, CELOTEX, TLPelco-p, TLHHX-2000, BBV, RM110, KC3360S, ACES, ALSON, INV3609HD, Howell, Tc Pelco P, Tc Pelco D, AUTO-M, AUTO-H, ANTEN, CHANGLIN, DeltaDome, XYM-12, ADR8060, EVI-D30, DEMO-SPEED, DM-PELCO-D, ST832, LC-D2104, HUNTER, A01, TECHYIN, WEIHAN, LG, D-MAX, Panasonic, KTD-348, infinova, PIH-7625, LCU, DennarDome, etc. Other PTZ protocols will be added with the new firmware.

Note: In DVR “PTZ” menu, if you select Pelco-P protocol, when you setup PTZ address, please plus or minus one compared with Camera ID. For example, if camera ID is 2, the DVR PTZ address is set as ID 3.

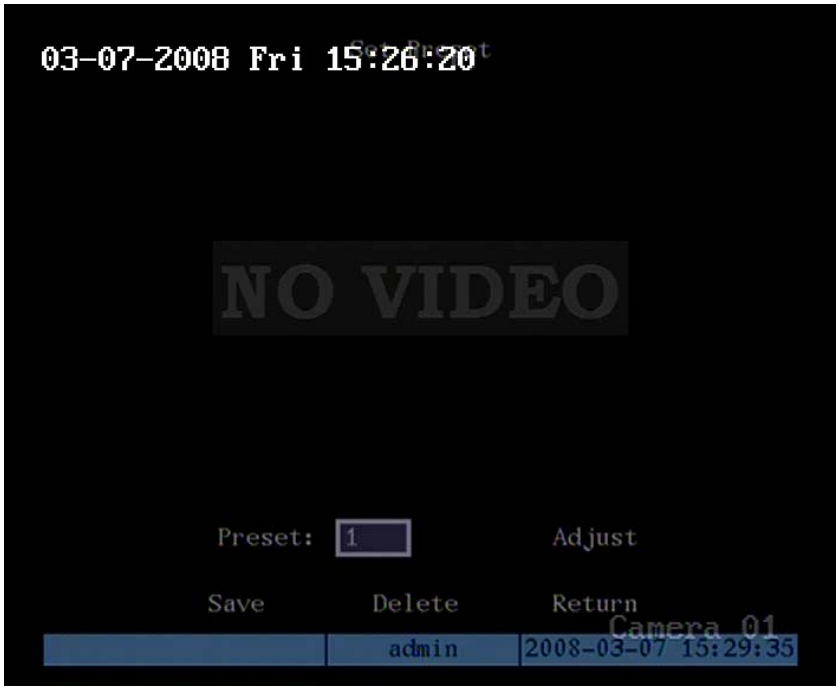
Preset setup: Preset is using one number to represent the camera’s position, zoom, focus and iris. Move “Active Frame” to “Setup” button on the right side of “Preset” item, press[ENTER]key to enter into preset setup menu. You can save 128 preset number. Please make sure the PTZ support preset function before you setup preset.

Sequence setup: Each sequence is made up of several curise points. Each cruise point includes one preset number, dwell time and dwell speed. Please make sure the PTZ you are using can support sequence function before you start to setup. You can save 16 sequnece.

Cruise setup: Cruise is remembering the track of PTZ movement. Please make sure the PTZ you are using can support cruise function.

Preset setup

In “PTZ” menu, move “Active Frame” to “Setup” button on the right side of “Preset” item, press[ENTER], you can enter into “Preset” setup menu:



Add preset number: You can input preset number (among 1-128) in the edit box. Then press “Adjust” button to enter into PTZ control interface. In PTZ control interface, you can use direction keys to adjust PTZ position, and use[IRIS+][IRIS-][FOCUS+][FOCUS-][ZOOM+][ZOOM-]keys to adjust iris, focus and zoom. After you finish adjusting, press[ENTER], then press “Save” button to save the preset number. You can repeat this step to setup other preset numbers.

After you setup all preset numbers, press “Return” button to return “PTZ” menu. In “PTZ” menu, press “Confirm” button to save all parameters.

Delete preset number: In “Preset” setup menu, input one preset number, press “Delete” button, you can delete this preset number.

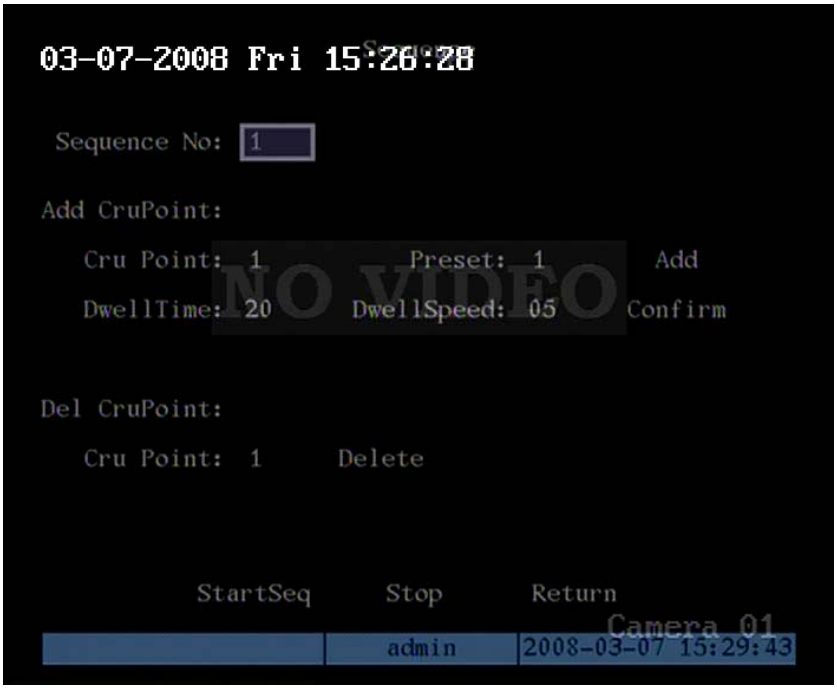
After deleting, press “Return” button to “PTZ” menu. In “PTZ” menu, press “Confirm”

button to save all modification.

Please make sure the PTZ you are using can support preset function.

Sequence setup

In “PTZ” menu, press “Setup” button on the right side of “Sequence No” item, you can enter into “Sequence” setup menu:



In “Sequence” setup menu, first input the sequence number. The sequence is among 1 --- 16. Each sequence is made up of cruise points, and each cruise point includes preset number, dwell time and dwell speed. Dwell time is the time staying at that preset number. Dwell speed is the speed that PTZ is moved to that preset number.

Press “Add” button to add one cruise point.

Press “Confirm” button to save the cruise point into the sequence.

After you finish setup the sequence number, press “StartSeq” to check the current sequence. Perss “StopSeq” button to stop checking.

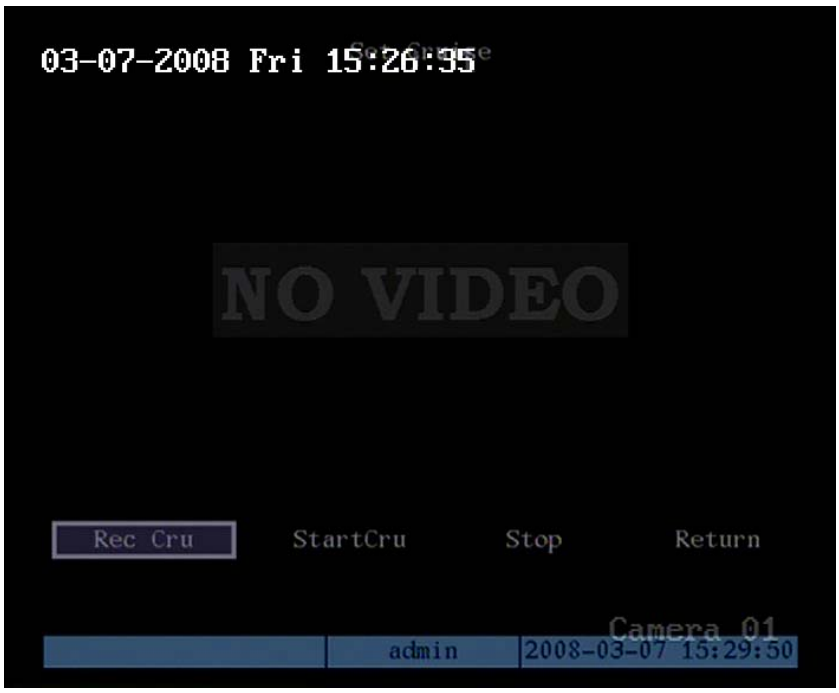
You can delete cruise points in one sequence.

After you finish sequence setup, press “Return” button back to “PTZ” menu. In “PTZ” menu, perss “Confirm” button to save the modification.

Please make sure the PTZ you are using can support sequence function.

Cruise setup

In “PTZ” menu, press “Setup” button on the right side of “Cruise” item, you can enter into “Cruise” setup menu:



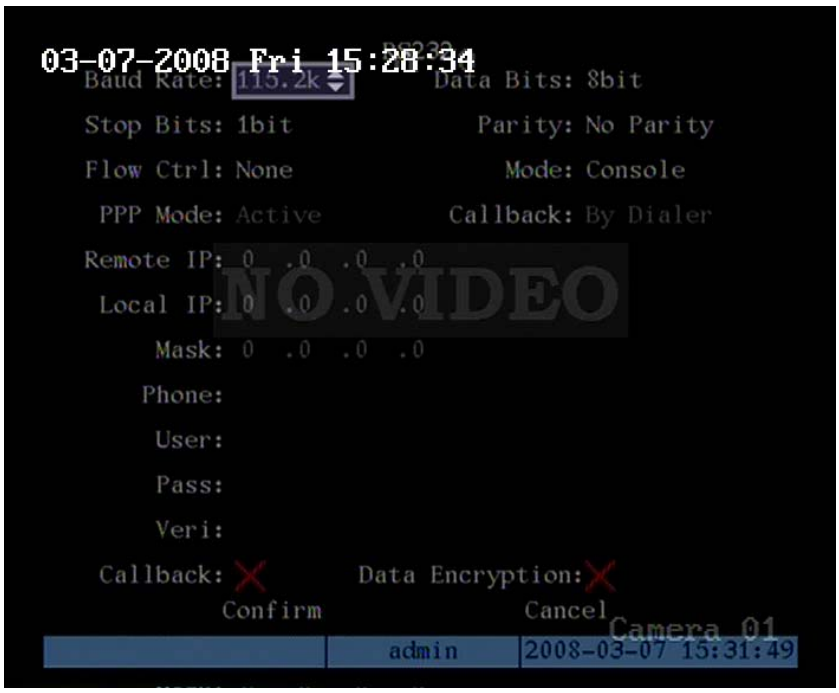
Press “RecCru” button, you will enter into “PTZ control” interface. You can start controlling PTZ with direction keys, press[ENTER]to save the operation track and return “Cruise” setup menu. Press “StartCru” button to repeat the PTZ track until you press “Stop” button.

Press “Return” button back to “PTZ” menu. In “PTZ” menu, press “Confirm” button to save this cruise.

RS232 setup

Notice: if you use the GPS module, please use the default parameters.

There is one RS-232 port at DVR rear panel. In main menu, move “Active Frame” to “RS232” icon and perss[ENTER]key, you enter into “RS232” setup menu:



RS232 menu description

RS-232 parameters: Including baud rate, data bit, stop bit, parity, flow control, etc.

Work mode: The RS-232 can be used as “Console”, “PPP” or “Transparent Channel”.

Console: Connect with PC serial port. You can use HyperTerminal or NetTerm to control it.

PPP: Connect Modem, using PSTN to transfer video image.

Transparent channel: Connect serial devices. Remote PC can control these serial devices through network.

PPP Mode: Only used when work mode is “PPP”. There are two options: “Active” and ”Passive”. “Active” means DVR will diaup through PSTN. “Active” function is not available. “Passive” means DVR will wait for dialup.

Callback mode: Only used when work mode is “PPP”. There are two options: “By Dialer” and “Preset Tel’. This function is not available.

Remote IP: Only used when work mode is “PPP”. This IP is defined for remote PC that will connect DVR through PSTN.

Local IP: Only used when work mode is “PPP”. This IP is defined for DVR.

Mask: Only used when work mode is “PPP”. Remote IP and Local IP are in the same sub net.

Username, password and Verify password: Only used when work mode is “PPP”. Used for login when remote PC dialup through PSTN.

Phone: Only used when work mode is “PPP” and PPP mode is “Active”. It is the phone number of remote PC.

Callback and Data Encryption: Only used when work mode is “PPP”. They are not available.

Confirm: Save parameters and return main menu.

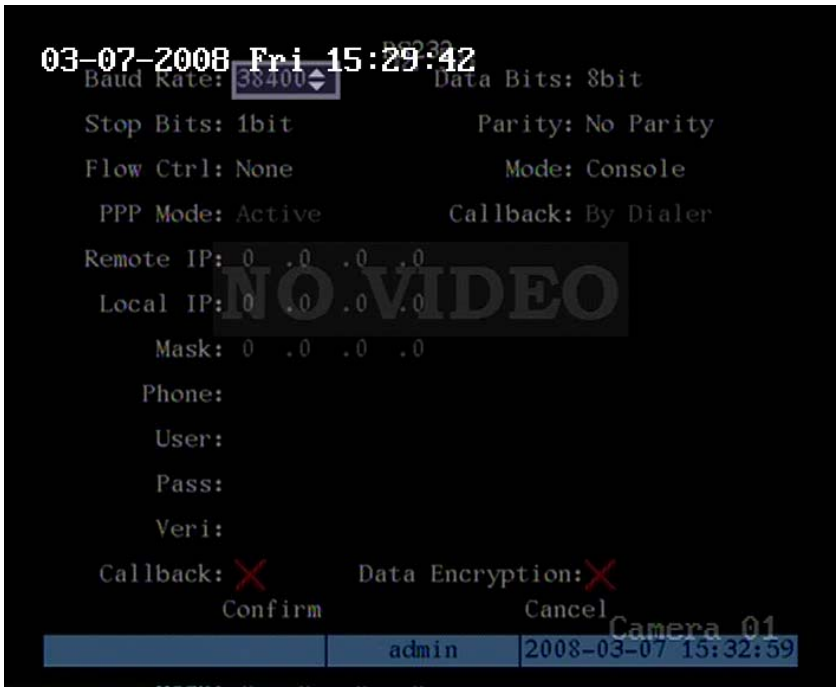
Cancel: Abort modification and return main menu.

Example: PPP (Modem) passive dialup through PSTN

There are two Modems. One is connected DVR RS-232 port with DCE cable. The other is connected with PC COM port.

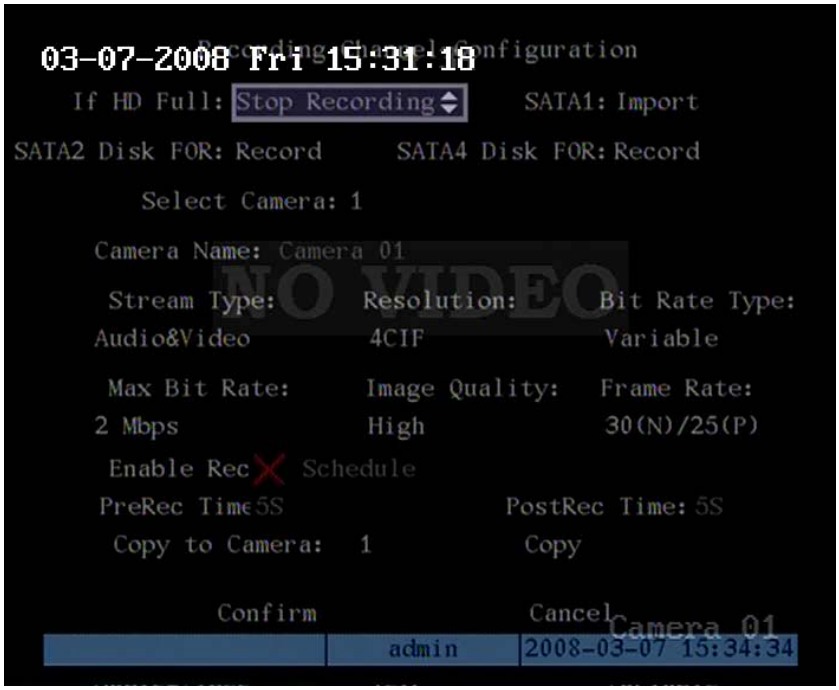
Setup at DVR end

Step 1: RS232 setup Setup baud rate, data bit, stop bit, parity and flow control. They must be the same as those of modem connected with PC.



Step 2: Video setup In “Recording” menu, select the camera you want to transfer through PSTN. If you set CIF resolution, we suggest you set frame rate as 1 FPS. If you set QCIF resolution, the frame rate can be selected under 4FPS. You can adjust bit rate, resolution and

frame rate according to real conditions.



Step 3: Save setup In “Recording” menu, press “Confirm” button to save parameters.

Step 4: Setup Modem used on DVR side Use DCE calbe to connect Modem with PC serial port. You can use HyperTerminal or NetTerm to setup modem:

AT&F ---- Retore default parameters (Generally, Modem is hard flow control)

AT&S0=1---- Set Modem as answer

ATE0 ---- Not display the input characters

ATQ1 ---- Commit instruction and not display

AT&W&W1 ---- Save parameters

Step 5: Use DCE cable to connect Modem with DVR RS232 port.

Setup at PC end

Step 1: Setup Modem used on PC side. Use DCE calbe to connect Modem with PC serial port. You can use HyperTerminal or NetTerm to setup modem:

AT&F ---- Retore default parameters (Generally, Modem is hard flow control)

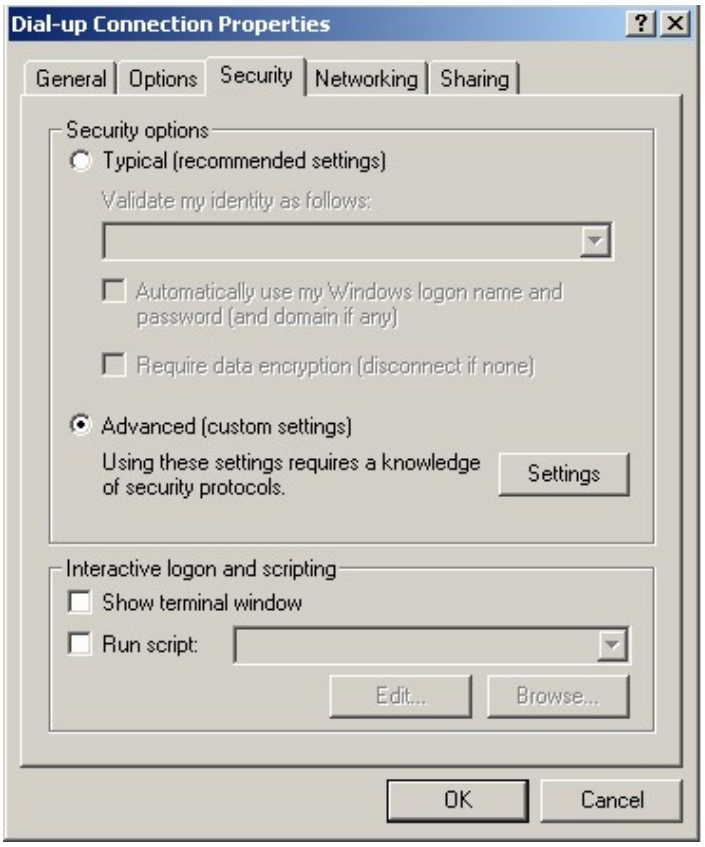
AT&W&W1 ---- Save parameters

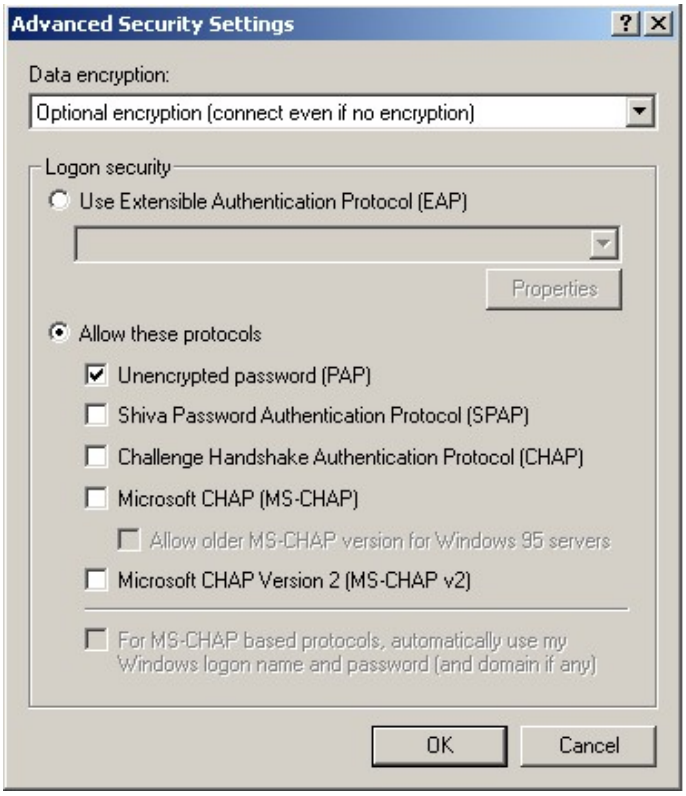
Step 2: Open “Network and Dial-up Connections” in control panel, then press “New Connection…”, select “Dial-up to private network” according to the guide. Select the corresponding MODEM, input the telephone no. to be dialed in the next step, finish it according to the guide. At this time, you will find a new program named “Dial-up Connection” in “Network and Dial-up Connections” folder.

Setup should be specially pay attention to:

Open the properties of the new-established dialup program, select “Advanced”(custom

settings) in security option, press setup, set it in the popup dialogue box that is “Advanced Security Settings” as follows:





Step 3: Establish the dialup connection

Select the Modem connected with PC just like the dialup network connection, input the telephone number connected with DVR's modem. Input the username, password. They must be the same as that DVR PPP setup.

Step 4: During the dialup connection, it will give the message of "verification of username and password", after successfully verification; the message will be given "on process of register in PC". The process is the same as the common dialup connection.

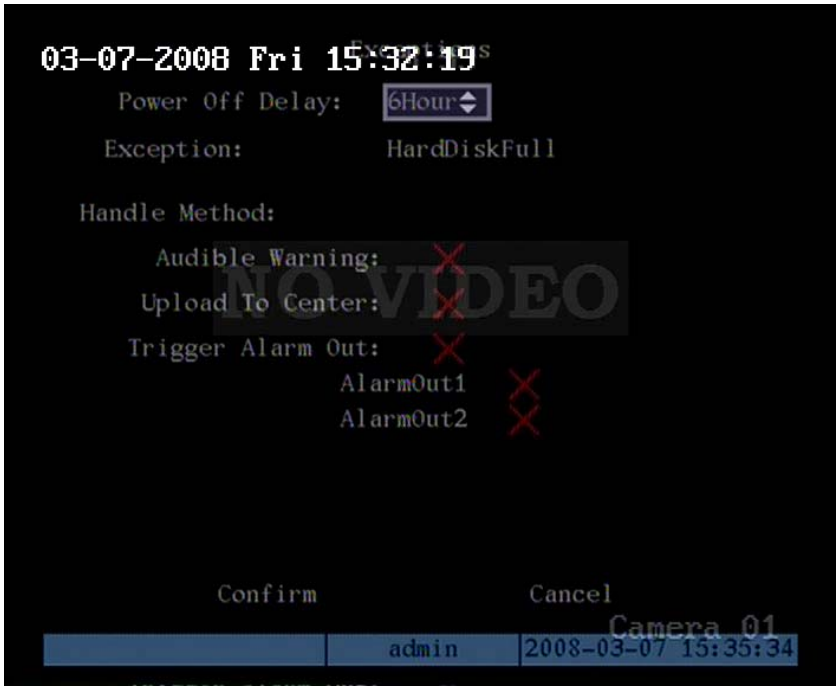
Step 5: After successful dialup, network will designate the "remote IP" address to PC, e.g. the set 192.1.0.1. User can Ping-link the assigned IP address through Ping command, and can Ping-link DVR. Please refer to the following picture.

Step 6: You can preview the image of 192.1.0.2 by using client-end software.

5.8 Exceptions

The exceptions can be handled at present include: hard disk full, hard disk error, illegal access, IP address conflict, network failure, and NTSC/PAL differ.

Enter into “Exceptions” menu:



Including the following handle methods:

Audible Warning: DVR beep warning.

Upload to Center: Send exception information to center host PC.

Trigger Alarm Output: trigger local relay output.

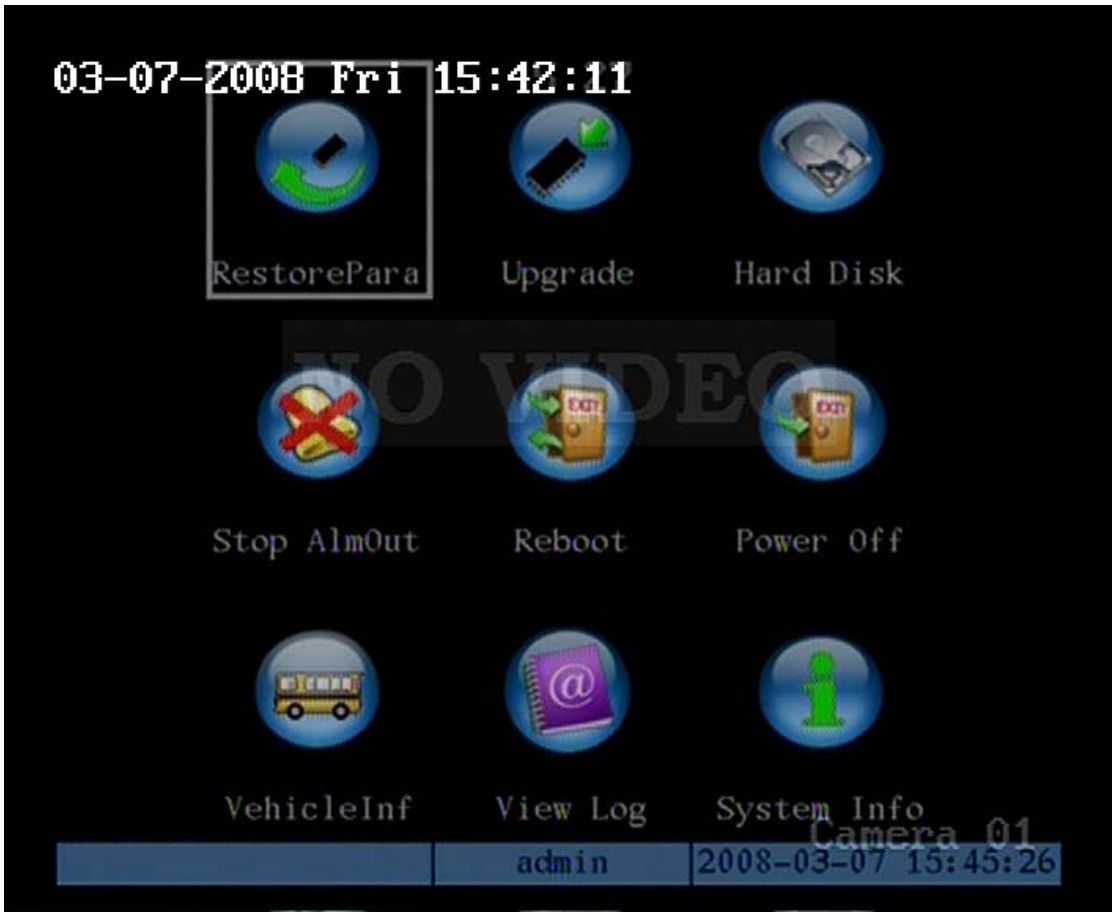
You can select more than one handle methods.

After you finish setup, press “Confirm” button to save parameters. Press “Cancel” button or[ESC]key to abort.

Chapter6 Utilities

There are many tools in “Utilities” menu. Including “SavePara”, “RestorePara”, “Upgrade”, “Hard Disk”, “Stop Alarm Out”, “Reboot”, “Power Off”, “View Log” and “System Info”.

Enter into “Utilities” menu:



6.1 Restore Parameters

Restore factory parameters for DVR. The IP address, gateway and port number will not be restored.

6.2 Upgrade

You can use this function to upgrade the firmware. Please confirm the language is matched.

Press “Upgrade” icon, in the pop-up dialog, you can select either “FTP” or “USB” upgrade mode.

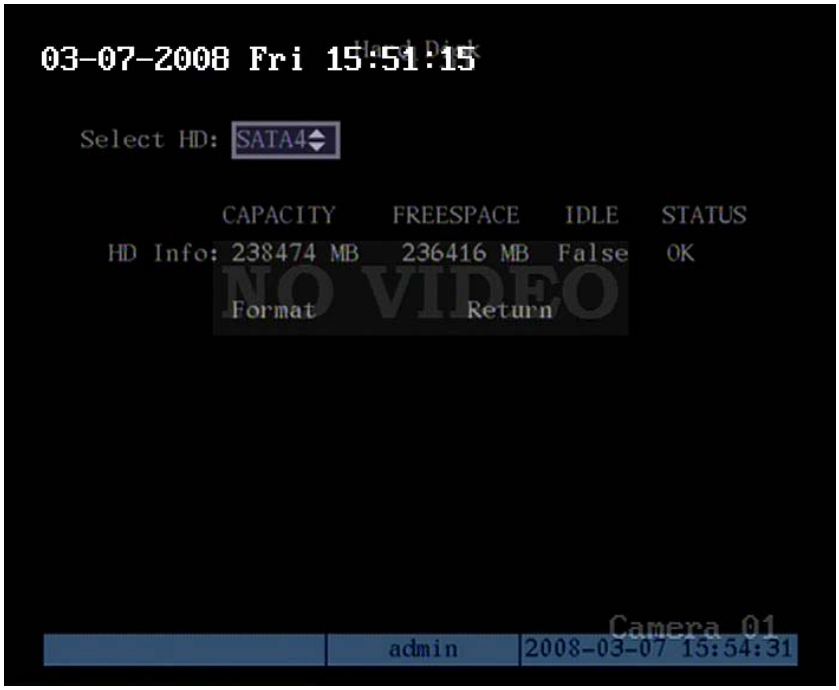
If you select “FTP” mode, you will enter into “FTP Upgrade” menu:

Input the ftp server IP and press[ENTER]key. DVR will connect with FTP server through network and download the firmware file.

If you select “USB” mode, please make sure you connect one USB flash memory with DVR and the firmware file is in it’s root directory.

Reboot after successfully upgrading, the system will use the new firmware.

6.3 Hard Disk Management



Check HDD work status

Capacity, Free space, Stand by or not, Normal status or not.

Format HDD

Before formatting stop all recording. After formatting, you must reboot DVR, otherwise DVR will not work normally.

6.4 Clear Alarm Out

Clear the alarm output manually.

6.5 Reboot

Reboot DVR.

6.6 Power Off

Shut down DVR.

6.7 Vehicle info

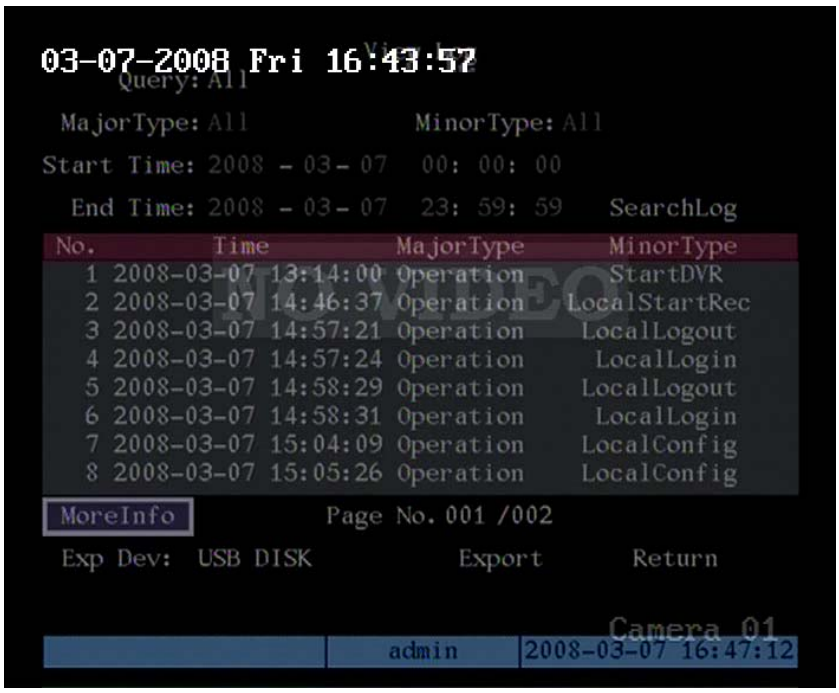
It is used for recording the status of the bus, such as stop, warning, turn left, turn right, reverse, backdoor and so on.

Here, the status are triggered by the high voltage or low voltage, it is according to the bus.
“Speed limit” means after the bus esceed the speed that sat already, it will trigger something., please refer to the section “Exception”.
Speed adjust:
“Traveling Distance” means the test distance that used for adjust speed.
“Pulse Num per second” means the number of pulse of every cycle of wheel. This parameters related to bus.
After set the “traveling distance” and “Pulse Num per second” click “start speed adjust”, when the bus reach the terminal, click “stop the speed adjust”. The speed quotiety will display here.
Notice: if the “Pulse Num per second” is zero or DVR do not get the pulse, the system will popup “speed adjust failed”.

6.8 View Log

After enter into the “LOG” menu, you can check the log and use the USB flash, USB HDD and SATA HDD to export the log file.

To view the log recorded in DVR HDD.
In “Utilities” menu, press “View Log” to enter into “Log” menu:



If you want to view the log based on default option, just press[ENTER]key. DVR will list all matched information. Also you can select options to search (By Type, By Date, By Type&Date).

By Type

To view log information of the assigned type.

Type is divided into “Major type” and “Minor type”. Major type includes operation, alarm, exception and all.

For operation major type, there are many minor types, including Power On, Shut Down, Abnormal Shut, Panel Login, Panel Logout, Panel Config, Panel File Play, Panel Time Play, Local Start Record, Local Stop Record, Panel PTZ, Panel Preview, Panel Set Time, Local Upgrade, Net Login, Net Logout, Net Start Record, Net Stop Record, Net Start Transparent Channel, Net Stop Transparent Channel, Net Get Parameter, Net Config, Net get Status, Net Alert On, Net Alert Off, Net Reboot, BiComStart (Start Voice Talk), BiComStop (Stop Voice Talk), Net Upgrade, Net File Play, Net Time Play, Net PTZ and so on.

For alarm major type, the minor type includes: External Alarm In, External Alarm Out, Motion Detect Start, Motion Detect Stop, View Tamper Start, View Tamper Stop and so on.

For exception major type, the minor type includes: Video Signal Loss, Illegal Access, Hard Disk Error, Hard Disk Full, IP Conflict, DCD Lost and so on.

For example: The steps of viewing alarm log.

Step 1: For “Query” item, select “By Type” to active “Major Type” and “Minor Type” items.

Step 2: For “Major Type” option, select “Alarm” option. For “Minor Type” option, select one

of following options: All, External Alarm In, External Alarm Out, Motion Detect Start, Motion Detect Stop, View Tamper Start, View Tamper Stop .

Step 3: Move “Active Frame” to “Search Log” button, press[ENTER]key to start searching.

Step 4: When searching is finished, DVR will list all matched alarm information. In the list box, the information includes: Index, Occur Time, Major Type, Minor Type, Panel User, Net User, Host Address, Para. Type, Channel No, HDD No, Alarm In and Alarm Out. You can press “More Info” button for more information, also slect page number to view more information.

Step 5: Press “Return” button back to “Utilities” menu.

By Time

View the log between one time period.

Step 1: Select “By Time” for “Query” option to active “Start Time” and “Stop Time” items.

Step 2: Input start time and stop time.

Step 3: Move “Active Frame” to “Search Log” button and press[ENTER]key to start searching.

Step 4: After finish searching, DVR will list the matched log information.

Step 5: Press “Return” button back to “Utilities” menu.

By Type&Date

View one kind of log in the assigned time period.

Step 1: Select “By Type&Time” for “Query” option to active “Major Type”, “Minor Type” “Start Time” and “Stop Time” items.

Step 2: Select “Operation” for major type and select one option for minor type.

Step 3: Input start time and stop time.

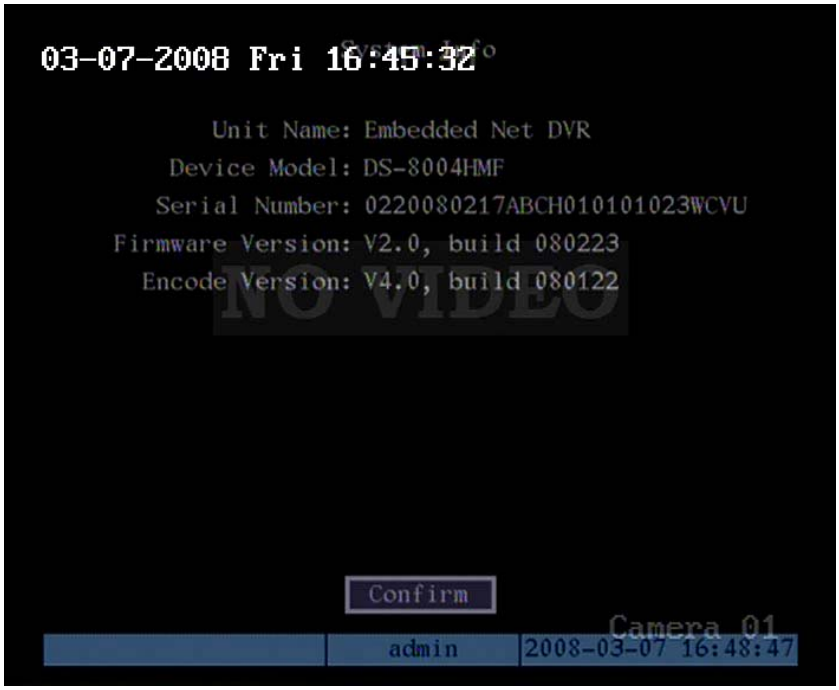
Step 4: Move “Active Frame” to “Search Log” button and press[ENTER]key to start searching.

Step 5: After finish searching, DVR will list the matched log information.

Step 6: Press “Return” button back to “Utilities” menu.

6.9 System Information

Press “System Info” icon in “Utilities” menu, you can get DVR system information:



Chapter7 Firmware Upgrade

The DVR firmware is stored in FLASH ROM. You can use DVR upgrade function to write the firmware file (digicap) into FLASH.

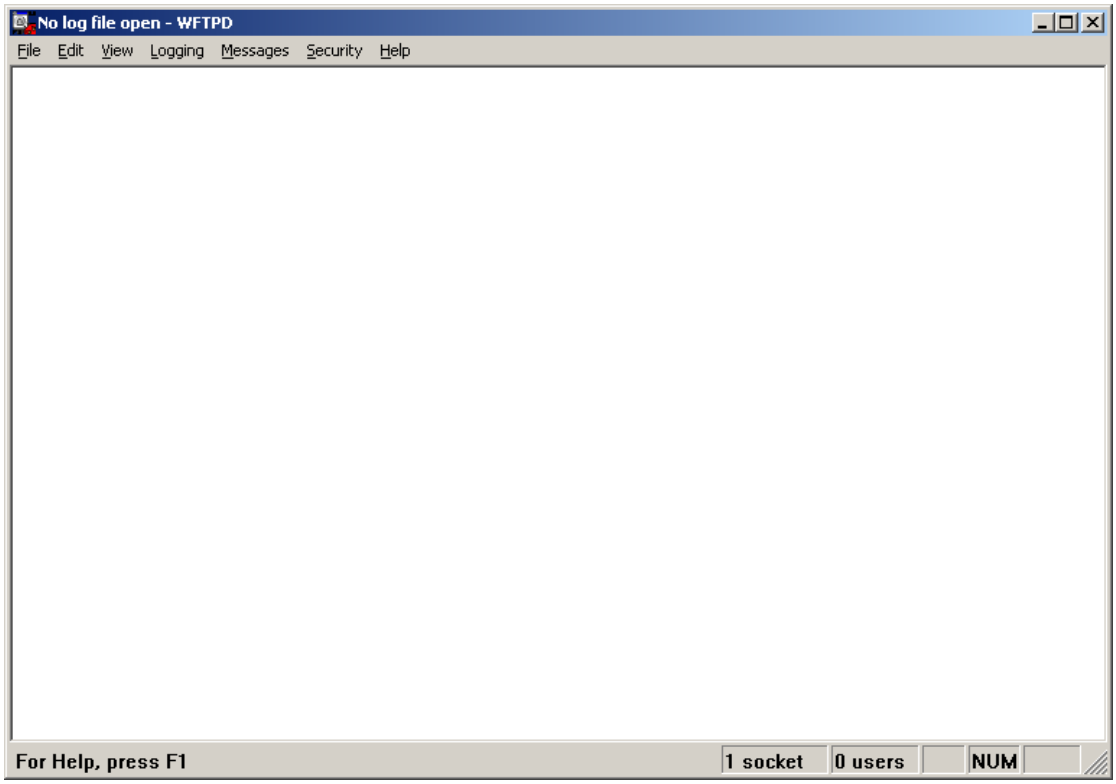
There are two cases that you need to upgrade DVR firmware. One is update old firmware. The other is when the code in DVR FLASH is crashed.

Note: Make sure that the DVR and the firmware are compatible before the upgrade.

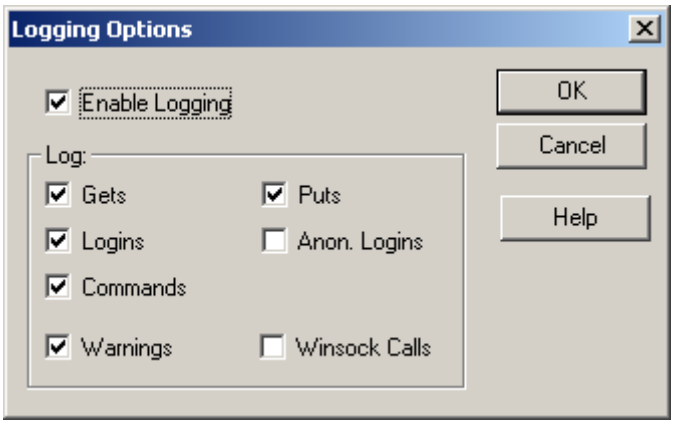
7.1 FTP Server Setup

You can download FTP server software through internet. Here we use wftpd32.exe as the example:

1. Run wftpd32.exe (FTP server software).

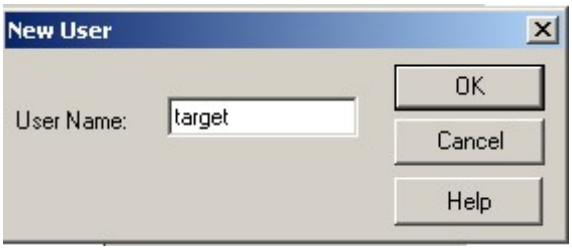


2. Select “Logging” in the menu，choose Log Options in the sub menu, and give the choice as following:

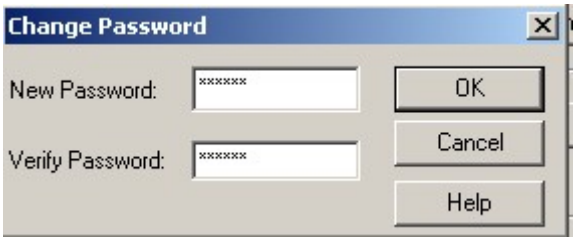


3. Select “Users/rights” under “Security” menu item. The following dialog box will be pop-up.

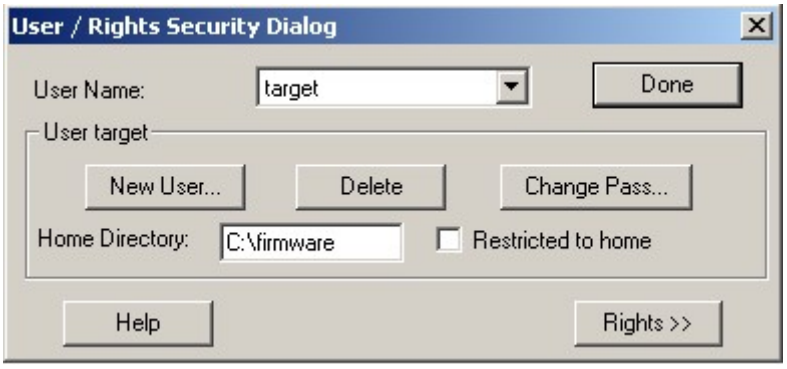
4. Create new user. Click “new user’. New user dialog pops up. Input user name “target”. Click “OK”.



5. In the password dialog, input password “target” in “New Password” and “Verify Password” edit box. Click “OK” to save and exit the dialog box.



6. In the “User/Rights Security” Dialog, select “User Name” as “target”. In “Home Directory” edit box, input the path where the firmware file (digicap) is placed. Then press “Done” to exit.



7. Next time, you need not setup again, just double click and open “wftpd32.exe” to upgrade the DVR/DVS firmware.

7.2 Upgrade Mode

1. Use client software to upgrade the firmware file. You do not need to use ftp server software. Please refer to the client software user manual for detail information.
2. Use “FTP” function of “Upgrade” sub menu in “Utilities” menu. You need one host PC to run FTP server software and place firmware file (digicap), and make sure DVR and PC are in the same sub net.
3. Use “USB” function of “Upgrade” sub menu in “Utilities” menu. Please make sure the firmware file (digicap) is placed under root directory of USB flash memory.
4. After you reboot DVR, if you can only hear the startup sound, but can not see startup picture, you can input shell commands under HyperTerminal. You need one host PC to run FTP server and HyperTerminal software, and make sure DVR and host PC are in the same sub net. Please use DTE cable to connect DVR will host PC.

   Step 1: Setup and run HyperTerminal

   The parameters are: Baud rate: 115200bps, Data bit: 8 bits, Stop bit: 1 bit, Parity: No, Flow ctrl: None.

   Step 2: Press "ctrl" and "u" keys of the PC keyboard. Do not release them.

   Step 3: Switch off and on the power supply of DVRDVS. In the HyperTerminal, the following sentence is appeared: **Please input [u/U] or [ESC] key** Release "ctrl" and "u" keys.

   Step 4: Press “u” key. In the message line of “**IP address of NET DVR**”, input any one ip, just make sure DVR IP and FTP server IP are in the same sub net.

   Step 5: In the message line of “**IP address of the FTP server**”, input the FTP server IP.

   Step 6: In the message line of “**Confirm? (y/n)**”, press “y”. DVR will connect with that FTP server, and download the firmware file (digicap) through network. Please make sure FTP server and firmware file are setup and run correctly. After upgrade finished, press any key to reboot DVR.

Appendix A HDD Capacity Calculation

Calculate total capacity needed by each DVR according to video recording (video recording type and video file storage time).

Step 1: According to Formula (1) to calculate storage capacity q_i that is the capacity of each channel needed for every hour, unit Mbyte.

$$q_i = d_i \div 8 \times 3600 \div 1024 \quad (1)$$

In the formula: d_i means the bit rate, unit Kbit/s

Step 2: After video time requirement is confirmed, according to Formula (2) to calculate the storage capacity m_i, which is storage of each channel needed unit Mbyte.

$$m_i = q_i \times h_i \times D_i \quad (2)$$

In the formula:

h_i means the recording time for each day (hour)

D_i means number of days for which the video shall be kept

Step 3: According to Formula (3) to calculate total capacity (accumulation) q_T that is needed for all channels in the DVR during **scheduled video recording**.

$$q_T = \sum_{i=1}^{c} m_i \quad (3)$$

In the formula: c means total number of channels in one DVR

Step 4: According to Formula (4) to calculate total capacity (accumulation) q_T that is needed for all channels in DVR during **alarm video recording (including motion detection)**.

$$q_T = \sum_{i=1}^{c} m_i \times a\% \quad (4)$$

In the formula：$a\%$ means alarm occurrence rate

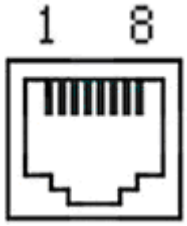
Appendix B DVR Connect Cable Definition

1 RS-485 connect cable made method

Material and tool

One twist cable (8 pins), one standard RJ45 connector and one tool special for RJ45.

RJ45 introduction



Pin definition

To make the connect cable according the follows. As to left point of RJ45 head, 1st and 2nd cables are the anode and cathode line for sending, 3rd and 4th cables are the anode and cathode line for receiving, 7 is the shared grounding line:

Pin definition for Standard RS-485 serial port RJ45 plug-in

2 UTP network connect cable made method

Material and tool

One twist cable (8 pin, the length can be defined as to the actual demand, but must be within 100m), 2 standard RJ45 head, one tool for RJ45.

Suggestion: have a network cable test tool to test each cable made.

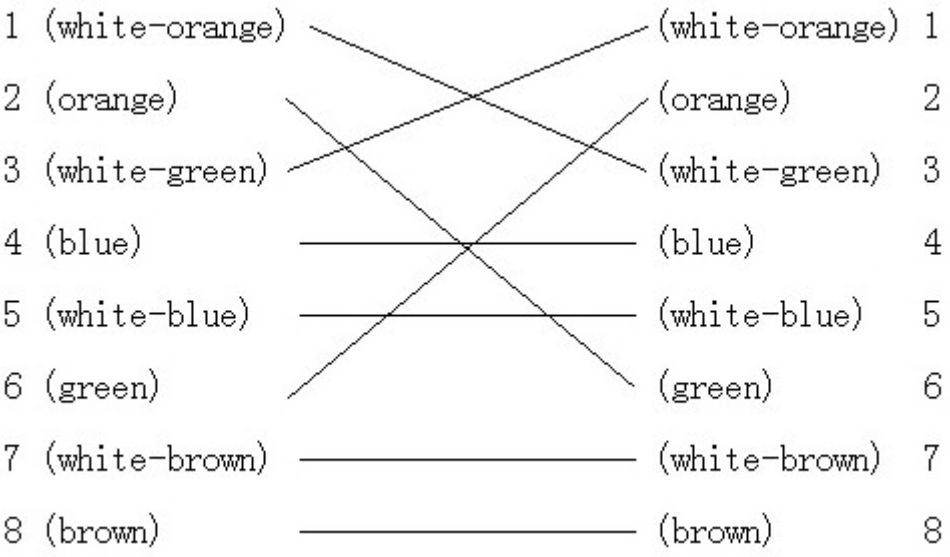
Pin definition

To make the network cable according to the actual situation, there are two options:

(1) Use the following method to make the network cable when DVR is connected with network hub or switch.

The corresponding relationship of the direct cable

(2) Use the following method to make the cross network cable when DVR is directly connected with client-end PC.



The corresponding relationship of cross cable

3 RS-232 connect cable made method

Material and tool

One twisted cable (8 pins), one standard RJ45 head, one or more DB25 or DB9 plug-in, a tool for RJ45, one electric iron, and some soldering tin.

Pin definition

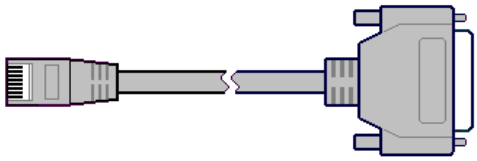
To make the RJ45 according to the following pin definition; I means DVR input, O means

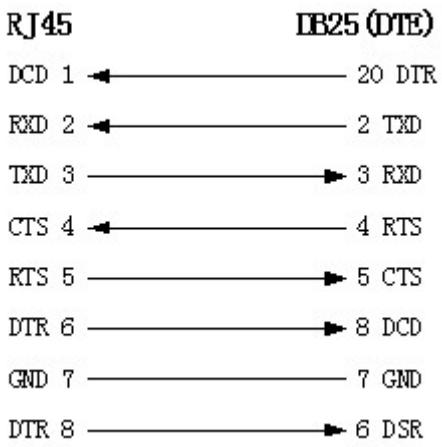
DVR output.

Pin index	Name	I/O	Description
1	DCD	I	Carrier Detect
2	RxD	I	Receive Data
3	TxD	O	Transfer Data
4	CTS	I	Clear Data
5	RTS	O	Request to Send
6	DTR	O	Terminal Device Ready
7	GND		Ground
8	Null	—	—

According to demand, the following three situations are considered to make the serial port plug-in according to the corresponding relationship of the pin definition.

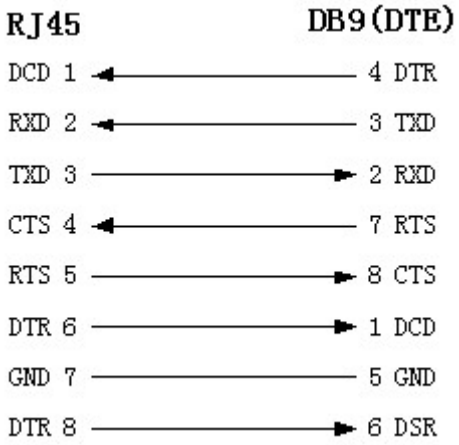
(1) When the serial port of the DVR is connected with the DTE device with DB25 plug-in (terminal like computer, annunciator, door access etc), the corrresponding relationship is as follows:





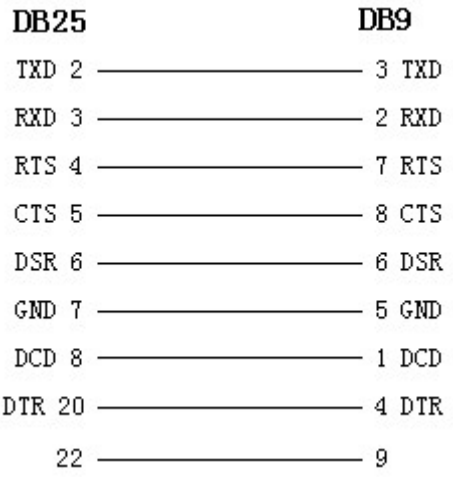
Connection for RJ45 and DB25 (DTE)

(2) When the serial port of the DVR is connected with DTE device with DB9 plug-in, the corresponding relationship is as follows:



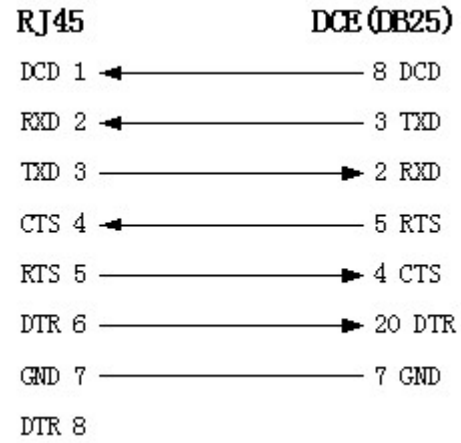
Connection for RJ45 and DB9

25-pin to 9-pin converter internal connection is defined as following:



Connection for DB25 and DB9

(3) When the serial port of DVR is connected with DCE device (like MODEM), one end of the cable is 8-pin RJ45 plug-in, the other end is DB25 pin plug-in, the corresponding relationship is as following:



Connection for RJ45 and DB25 (DCE)

Appendix C Specifications

Video compression	H.264
Preview resolution	PAL: 704*576(4CIF) NTSC: 704*480(4CIF)
Compression resolution	4CIF/DCIF/2CIF/CIF/QCIF
Video input	1/2/3/4 channels TNC (1.0Vp-p, 75Ω)
Composite video output	1 channel TNC (1.0Vp-p, 75Ω))
Frame rate	PAL: 1/16—25 FPS; NTSC: 1/16—30 FPS
Stream type	Video stream or Video&Audio stream
Bit rate	32kbps～2Mbps (Self definition)
Audio input	1/2/3/4 channels TNC (2.0Vp-p, 1KΩ)
Audio output	1 channel TNC (liner output, 600Ω)
Audio compression	OggVorbis, 16kbps
Voice interface	1 TNC (Liner in, 1KΩ)
Network interface	1 RJ45 10M/100M UTP network port, can be connected with external CDMA, EDGE, GPRS and WLAN wireless module
RS-232 interface	1 can be connected with GPS module
HDD interface	1 SATA interface. HDD can max support 2000GB
Backup interface	1 E-SATA interface for high speed backup
USB interface	1 USB1.1
VGA interface (optional)	1
External alarm input	4
Relay output	2
Wireless network port (optional)	Wireless network (CDMA)
Vehicle power input	DC +12V (work range is 8V – 28V) or DC +24V (work range is 10v – 32V)
Power output	One DC +12V/2A output
Power consumption	26W (without HDD)
Working temperature	-20℃--＋65℃
Working humidity	10%--95%
Size	290mm*225mm*90mm
Weight	5Kg (without HDD)
Remote control	Special IR controller/wire controller for mobile DVR
EMC	GB 13837-2003
LCD	Support external 5.5 or 7 inch color TFT LCD monitor
GPS (optional)	GPS position module

PAL: 176*144(QCIF), 352*288(CIF), 704*288(2CIF), 528*384(DCIF), 704*576(4CIF);
NTSC: 176*120(QCIF), 352*240(CIF), 704*240(2CIF), 528*320(DCIF), 704*480(4CIF).

Appendix D Quick Search Function Table

Type	Name	Description	Index
Safety function	User management	Create and delete users. System has one default administrator. The administrator can create 15 users and define their rights.	5.2
	Password Management	Modify password.	4.3&5.1
HDD recording	HDD management	Format HDD, HDD information.	6.4
	Recording mode	Manual record, All time record, Motion detection record, Alarm record, Motion&Alarm record, Motion|Alarm record.	5.12
	Recording para.	Bit rate, Frame rate, Image quality etc	5.12
	Playback	Playback by time, Playback by file. Fast, Slow, Pause, Frame by frame. 2-ch synchronized.	4.6
	Backup	Backup record files and video clips.	4.7
Local monitoring	Preview mode	Monitor and VGA display. 1 screen/4 screen/9 screen/16 screen preview mode. Auto switch or manual switch.	5.11
	PTZ control	Control pan, tilt, zoom, focus and iris. Setup and adjust preset, sequence and cruise.	4.4
	Motion detection	Motion detect area, sensitivity and response policy setup.	5.10
	Alarm input	Alarm input response policy, schedule setup.	5.13
	Relay output	Alarm output parameters setup.	5.13
	Mask	Sensitive mask area setup.	5.7
	View tampering	Camera spiteful block setup.	5.8
	Exceptions	Exception response, such as HDD error, HDD full, illegal access, etc.	5.17
	Camera status	Recording, video loss status display.	4.2
Network	ASDL	Using PPPoE dialup function, support DNS.	5.14
	Preview	TCP, UDP, RTP, Multicast.	*
	Control	Control DVR through network.	*
	Alarm	Send alarm information to host PC through network.	5.14

	PTZ control	Remote control PTZ.	*
	Remote setup	Remote setup DVR parameters.	*
	Remote record	Remote record real time stream.	*
	Remote playback	Remote playback the recorded files in DVR	*
	Download	Download recorded files in DVR.	*
	Remote upgrade	Remote upgrade firmware.	*
	Transparent channel	Remote control serial device connected with serial port of DVR.	5.16
	Web	Using IE to access DVR	*
	PSTN	Access DVR through PSTN.	5.16
Utilities	OSD	OSD setup	5.5
	LOGO	Logo setup	5.5
	View log	View log	6.8
	Voice talk	Two way voice talk or one way voice broadcast	*

[*Note]The network SDK and client demo source code are included in attached CD.

Appendix E Troubleshooting

Failure	Possible reasons
After plugging in power, turning on the power switch, “POWER” light in front Panel does not turn on, and fan does not work.	1) Power cable is broken. 2) Power supply is broken.
After plugging in power, turning on the power switch, “POWER” light in front panel turn to green while fan does not work.	1) Front panel cable is broken. 2) Fan is broken.
After plugging in power, turning on switch, “POWER” light turn to green, the indicator lights in the panel turn on at the same time, but fan does not work.	The ATX plug in main board is not well plugged in.
DVR continuously reboots after start up, and makes a sound like “di” every 10 seconds.	1) Upgrade the wrong firmware 2) Compression board has problems. 3) Main board has problems.
There are no images in the monitor connected with VOUT after DVR is started.	1) The cable connected with the monitor is broken. 2) Real board of DVR has problems. 3) Main board of DVR has problems.
Cannot find the hard disk in reboot process.	1) Hard disk cable is broken. 2) The power cable of hard disk is not connected. 3) Hard disk is broken.
No reponse in HyperTerminal interface.	1) Baud rate is not matched. 2) RS-232 cable is broken. 3) Serial port of PC is broken. 4) RS-232 port of DVR is broken.
DVR can not control PTZ through RS-485 port.	1) RS-485 cable is not connected correctly or broken. 2) PTZ parameters error. 3) RS-485 port of DVR is broken.
Client software can not view DVR live image.	1) Network is error. 2) Connect wrong DVR (wrong

	IP, port number, username or password, ect). 3) Old player SDK (playm4.dll)

Notes:

1) Place the DVR in well ventilated space so that it operates within the allowed range of temperature and humidity as in specification.

2) If the circuit board is wet, dust on circuit board can cause a short circuit. The circuit board, plug and socket, housing fan and housing should be cleaned by brushing regularly.

Appendix F Product Service

Thank you for choosing our products.

All of our products users can enjoy a conditional free repair guarantee service for hardware within 12 months starting from purchase date, and a free exchange service within one month (valid for the damage caused by non personal acts). Permanent upgrading service is provided for the software.

Liability Exclusions:

Any product malfunction, abnormalities in operation or damage caused by following reasons are not within the free service scope of our company. Please select payable service.

(1) Equipment damage caused by improper operation

(2) Improper environment and conditions in/on which the equipment operates, e.g., improper power, environment temperature, humidity and lightening strike etc. that cause equipment damage.

(3) Force damage, e.g., earthquake and fire etc. that cause equipment damage.

(4) Equipment damage caused by the maintenance of personnel unauthorized by our company.

(5) Product sold 12 months ago.

In order to provide various services to you, please fulfill relevant registration procedure provided by us after you purchase the product. Cut off User's Information Card and fax or post it to us after the card is filled in.

Address:

Post Code:

Fax:

Appendix G Customer Information Card

User's Name	**Mr./Mrs.**
Company Name	
Post Address	
Postcode	
Phone Number	
E-mail	
Model Number of Product	
Serial Number of Product	
Purchase Date	
Distributor	

Suggestions: