*Operation manual for MPEG4 series
DVR1204/DVR1604/DVR1204RW/DVR1604RW Digital Video Recorder*
*This manual takes DVR1604RW as an example

Operation precautions

All the safety and operating instructions should be read before the appliance is operated. The improper operation may cause irreparable damage to the appliance.

1. Installation condition

1.1 Put away from extreme hot places and humid places

1.2 Avoid direct sunlight

1.3 Be horizontally installed

1.4 Avoid violent vibrating ,lifts and place gently

1.5 Do not place other devices upon

1.6 Put in well ventilation places, not block the radiator fan in the back of the recorder

2. Installation and operation precautions

2.1 Please check the main power switch and voltage of power supply to avoid voltage mismatch. Attach the power cable to the unit and connect it to your local mains supply, then open the power

2.2 At the first use, assure the installation of hard disk, and the master-slave jumper wire should be set. MAXTOR hard disk is strongly recommend

2.3 Do not unplug the power connector before turn the power off correctly and switch the Power On & Off within short period

2.4 Unauthorized repair or parts substitutions may result in fire, electric shock or other hazards.

2.5 Do not attempt to service this equipment by yourself. Refer all servicing to qualified service personnel.

3. Open Cabinet And Check Inventory

Check the items supplied against the list below after open the case:

3.1 One power cord

3.2 One Ethernet cable (positive cable), one serial port cable

3.3 One package of installation kit

3.4 One user's manual

3.5 One CD for installation

3.6 Certification of the product

3.7 Product warranty card

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Chapter 1　　Product Features And Specifications

1. Technical Specifications

Parameter	16 Channel		12 Channel	
Model	DH-DVR1604RW	DH-DVR1604	DH-DVR1204RW	DH-DVR1204
Operation system	Real-time operation system　RTOS			
Processor	AMD ELANSC520/133 embedded microprocessor			
Video input	16 Channel （NTSC/PAL）BNC　1.0V$_{P-P}$　75		12 Channel （NTSC/PAL）BNC　1.0V$_{P-P}$　75	
Video output	1 Channel PAL/NTSC　BNC　1.0V$_{P-P}$　75　　video signal			
Audio input	16 Channel 200-3000mv10K (RCA)	4 Channel 200-3000mv10K (RCA)	12 Channel 200-3000mv10K (RCA)	4 Channel 200-3000mv10K (RCA)
Audio output	1 Channel　　2000mv　1K　(RCA)			
Video display	1,4,16 window display	1,4,16 window display	1,4,16 window display	1,4,16 window display
Video standard	NTSC　525 line, 60f/s　　PAL　625 line, 50f/s			
System resource	16 channels real-time recording, one channel playback and network operation simultaneous		12 channels real-time recording, one channel playback and network operation simultaneous	
Image resolution	Real-time monitor 704× 576, playback 352× 288, VGA output 720× 576			
Motion detection	Area setting: 396 detection areas on the screen; detection sense setting: 3 levels detection sense for each area			
Video compression	MPEG-4 CBR (Constant bit rate); MPEG-4 VBR (Variable bit rate)			
Audio compression	Audio　ADPCM			
Image compression rate	352× 288　CIF format　　704× 576　4CIF format			
Video recording speed	MPEG　mode:　PAL　1frame/10second-25f/s　for　each　channel　adjustable;　NTSC　1frame/10second-30f/s for each channel adjustable			
Image quality	6 levels selectable			
Hard disk	4 IDE ports able to install 8 build-in HDDs, expand with external HDD case for another 12 HDDs			
HDD space used	Audio　ADPCM 28.8Mbyte/hour　　Video　40-460Mbyte/hour			
Alarm input	16 channel voltage alarm input (　5　　15V D. C. Needed for the alarm input)			
Alarm output	6 channels output,　output in open/close contact			
Alarm relay	24VDC 1A,220VAC 0.15A　relay output			
MODEM connection	RS232			
Network connection	RJ45 10M/100M Ethernet connection			
Pan-tilt control	RS485			
Backup	CD-R　USB　HDD	PC HDD	CD-R　USB　HDD	PC HDD
Power	110VAC/220VAC			
Power consumption	60W		70W	
Working temperature	-10　　+55			
Working humidity	10　　90			
Barometric pressure	86kpa　106kpa			
Size	2U standard industrial case　441 (W)x430 (L)x89mm (H)			
Weight	Approx 11KG(Without HDD weight)			
Installation method	Shelf installation; Desk installation			

2. Product Features

Real-time Monitor
· Video output port and VGA port, able to realize monitoring on the monitor or PC Type monitor
· Single window/4 windows/16 windows monitor
· Multi window /single window patrol sequentially on pre-determined intervals
· Display real time data stream and HDD occupying space per hour

Compression Method
· Multiple video compression modes: MPEG4 Constant bit rate   MPEG4 variable bit rate
· 16-channel audio/video real-time compression, independent hardware compression for each channel, stable synchronization of sound and image

Storage
· 4 IDE port support up to 8 large capacity built-in HDD
· Alternate HDD working method, Hard disks can be put into idle mode if not accessed for a period of time. Greatly reduces the power consuming and heat emission, hard disks can be used for much longer time.
· Choose overwrite or stop modes with HDD full-covered situation

Back-up
· Support CD-RW drive to back up records onto CD through IDE port
· USB port support Multi-backup Device include removable HD, Flash disk
· Download the files on DVR to local PC through network

Play and record
· Support multiplex operation: Real time display/ record in all channels, one channel play-back, search for downloading, remote operations simultaneously while recordings are in progress
· Multiple recording mode: manual schedule alarm motion detection, among which alarm recording and motion recording are with pre-recording function
· Playback: PIP or multi-channel function realize real-time monitoring during playback
  Display the records on DVR through network

- Fast search and playback for schedule recording and alarm recording
- Multiple play-back modes: X2　X4　X12ast play, stop, 15F/S, 5F/S slow play and frame by frame playback
- Display the original event time when playback

Alarm relay
- 16 channels external alarm input, video lost alarm and motion detection alarm
- Multi channel alarm output relay switch realize quick alarm relay and on-spot light control
- Protection circuit for Alarm input and output assure the intactness of the main device

Pan-tilt Control
- Support the pan-tilt decoder using RS485 communication
- Able to integrate multiple decoding protocol so as to control various pan-tilt and speed dome

Communication connection port
- 10-pin special port to realize alarm input and pan-tilt-zoom control
- RS232 port support multiplex function: Connecting a Modem for the dial-up to the net; with keyboard for central control; connect to the computer serial port for system upgrading and debugging; or link to different matrix
- Standard Ethernet port for remote control via TCP/IP or HTTP

Network function
- Remote real-time monitor and operate
- Pan-tilt-zoom control
- Recording search and real-time playback (The image quality depends on the network condition), downloading through network
- System setting modification and system software upgrading
- Remote alarm process and system log review
- Embedded TCP/IP protocol and operation system supports Web server direct visit to realize all the functions above
- Administration mode: Support 3 levels user password protection, to prevent any unauthorized use of the product
- With 16 windows surveillance simultaneously at the customer end

Chapter 2   Installation

1.Hard disk installation

Since there is no built-in hard disc in the machine, please install HDD first refer to the below installation instructions. Up to eight 10G-infinite capacity hard discs can be installed internally. The installed HDD number can be decided according to the required image quality, recording time and HDD capacity.

Installation steps

Dismantle the top cover,
open the cabinet

Dismantle the   HD bracket

Separate the up and down
part of the bracket

Install HD

Combine the two parts
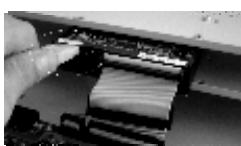of the bracket

Set the master-slave jumper wire
(refer to the clue on the back of the HD)

Fix the HD bracket

Connect HD data line to IDE port

Plug in HD power line

Close the cover and fix it

Note: It is not necessary to dismantle the HD bracket when less than 4 HDs are installed
Recommend to use Maxtor HDD

CD-RW Installation

Dismantle the HD bracket

Remove the baffle of CD driver

Installed 4 HDDs

Fix the 5th HDD on the
upside of the bracket

Fix two pieces of planks
on each side of the CD-RW

Fix the CD-RW with bolts
on the bracket

Note: Only can hold 5 HDDs if with a CD-RW installed

Support CD-RWs of current brands in the market.

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2．Front panel introduction

1. Power switch and indication light 2. Numeric Keypad
5.CD-RW
9. ESC key (Cancel)
13.Direction (right arrow)
17. Multi-window splitting
21. Jog Shuttle
25. Play last section
29. Play next section

6. Address
10.Enter
14.Information
18. Function assistant 1
22. Windows shift key
26. Slow play
30.Enter

3.Recording indicator light
7. Direction (left arrow)
11.Direction (down arrow)
15.Single window display
19.Assistant indication light
23.Record
27. Play/pause

4.Plastic veil
8. Remote receiver window
12.Direction(up arrow)
16. Function assistant 2
20. Standby indication light
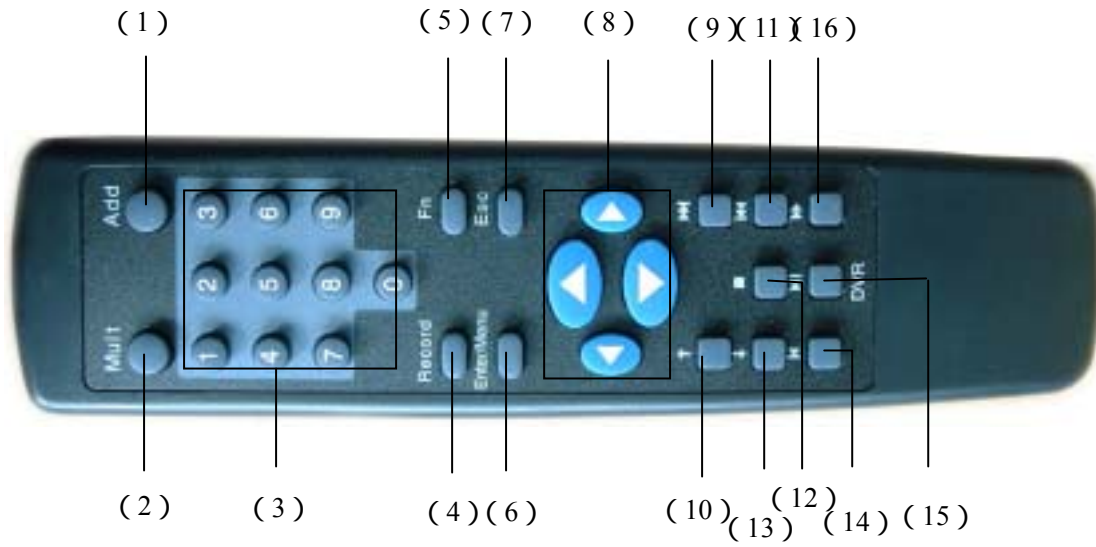24.Cancel
28.Forward

Note: Outside Ring of the jog shuttle turning clockwise is equal to right direction arrow, turning counterclockwise is equal to left
direction arrow; inner circle turning clockwise equal to down direction, otherwise equal to up direction.

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Keys functions

Order	Key name	Logo	Function		Remark
1	Power switch and indication light	POWER	Power switch Power off by pressing the key 4 seconds		
			Indication light		
2	Numeric Keypad	1, 2, 3 etc.	Password input, window shift or number input	10 equals to 0 in number input	
3	Recording light	Green on numbers	If the light is on green, it means under recording		
4	Plastic veil	Black plastic	Dust-proof		
5	CD-RW	CD RW	Back-up records		
6	Address	ADD	Set address for remote control of the DVR		
7 13	Left / right arrow	◀▶	Left / Right on screen Cursor control; shifting level 1 and level 2 menus; PTZ control.		
11 12	Up down	▲▼	Up and Down on screen Cursor control; change setup; change number; PTZ control.		
8	Remote receiver		Used to receive the remote signal		
9 24	Cancel	**ESC**	Escape or cancel		
			Go back to real time monitor from playback		
10	Enter	ENTER	Enter Cursor Selection		
			Enter main menu		
14	Information	INFO	Press to show the system information		
15	Single window display		Shift the display to single window		
16	Function assistant 1	Fn1	To display the PTZ and the camera control menu under full screen mode		
			To enable Cursor field selection with the arrow keys when set the MD area		
			To display the playback state bar during playback		
17	Multi-window splitting		During monitor shift to multi-window display		

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18	Function assistant 2	Fn2	During playback realize PIP for the playback and real-time monitor with number key	
19	Function indicator light		Indicator light for the Function assistant	
20	Standby indication light		Light on when DVR stands by	
21	Jog Shuttle		Direction: Outer: left/right; Inner: up/down; Outer circle control fast forward/reverse when playback, Inner circle for frame by frame forward when playback	
22	Multi-window shifting	**MULT**	Multi-window shifting during real-time monitor; during playback, shift between playback and monitor window	
23	Record	**REC**	Start/stop recording, work with arrow keys or Num keys	
25	Play last section	◄◄	Play the recording file before the current file	
26	Slow play	**I►**	3 levels of slow play speed(15f/S　5f/S　frame by frame)	
27	Play/pause	►/ II	Play/pause	
			When in real time mode, press to enter record search menu	
28	Forward	►►	3 levels of forward speed　X2　X4　X8	
29	Play next section	►►I	Play the record next to the current file	
30	Enter	ENTER	Enter Cursor Selection	
			Enter the main menu	

3. Remote controller

(1)	Address	(9)	Jump forwards
(2)	Multi-window shifting	(10)	Play last sections
(3)	Number	(11)	Jump backwards
(4)	Record	(12)	Pause
(5)	Function Assistant	(13)	Play next sections
(6)	Enter/Menu	(14)	Slow play
(7)	Cancel	(15)	Play/Pause
(8)	Direction	(16)	Fast play

✧ **The operation of the remote controller is the same as the front panel.**

4   Back panel introduction
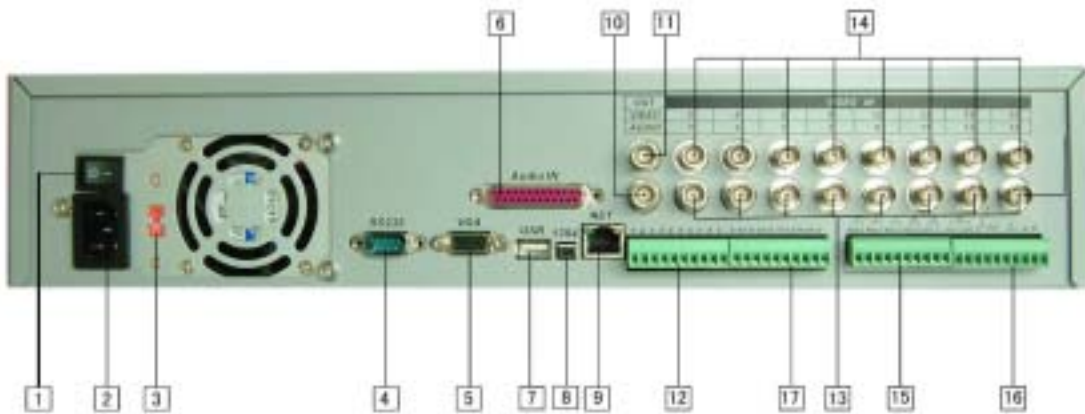
1   power switch   2   power plug   3   220V/110V shift switch   4   RS232 connection

5   VGA connection   6   Audio input   7   USB port   8   1394 connection

9   NET network connection   RJ45   10   Audio output   11   Vedio output

12   Alarm-RS485 connection   13   Vedio input   14   Vedio input

15   Alarm output   16   Alarm output & control connection   17   Alarm input

Network connection note: When connect to the network card of the computer, please use reverse line; when connect to the exchanger or Modem, please use positive line.

4.1 Serial port RS232 connection and extension
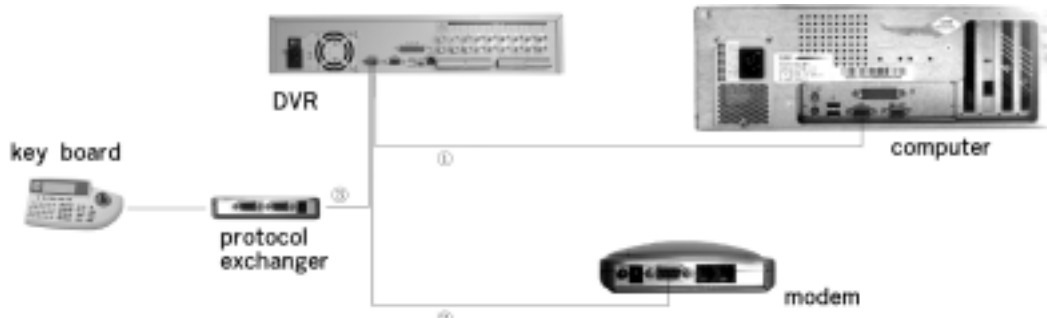
Note: The connection for program upgrading or debugging through serial port

The connection for dial-up login through MODEM

The connection for DVR control through keyboard

4.2 10-pin port connection

If you want to control pan-tilt, lens and process the relay of the alarming signals by the DVR, the 10-pin port can realize. The four 10-pin port can control various pan-tilt decoders, and the specific type of the decoder can be selected from the Control of the System setting in the menu. On plug the foot's serial number is marked.

A: Alarm input: ALARM1~ALARM8

B: Alarm input: ALARM9~ALARM16

C: Alarm OUTput: ALARM1~ALARM5

D:ALARM6 output and 12V controllable pressure AB line port

· Instruction of the controllable +12V

    Able to be the alarm output;

    also able to be used to restore

    the power of the smoke alarm sensor.

internal circuit

CTRL12V
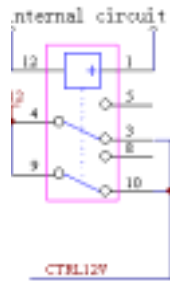
· Instruction of A B line:
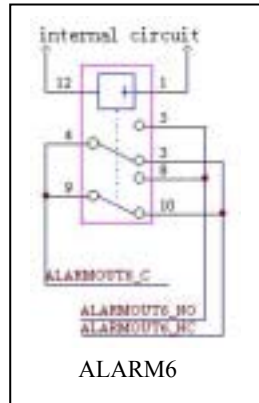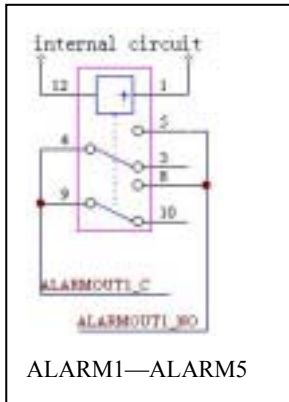
    Used to connect the A and B line of the pan-tilt decoder

· Module sketch of the alarm input end

TLP280-4
2K
ALARMIN1
内部电路 <<
GND
GND

· Module sketch of the alarm output end

internal circuit

ALARMOUT1_C

ALARMOUT1_NO

ALARM1—ALARM5

internal circuit

ALARMOUT6_C

ALARMOUT6_NO
ALARMOUT6_NC

ALARM6

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4.3 Alarm operation instructions:

1   Alarm input:

· 16 channel alarm inputs, voltage input (Both Normal on / Normal close type)

· Please short connect between the alarm input end(COM) and the power (The power of the alarm sensor should be provided by outside power, the DVR afford +12V power, but if it provide power for more than two alarm sensors, it may affect the normal working of the DVR.).

· Please parallel connect the Ground of the DVR and alarm sensor

· Please connect the NC port of the alarm sensor to the DVR alarm input(ALARM)

· If you need to restore the touched-off alarm remotely, you have to supply the controllable 12 V power of the DVR to the alarm sensor, such as the smoke sensor.
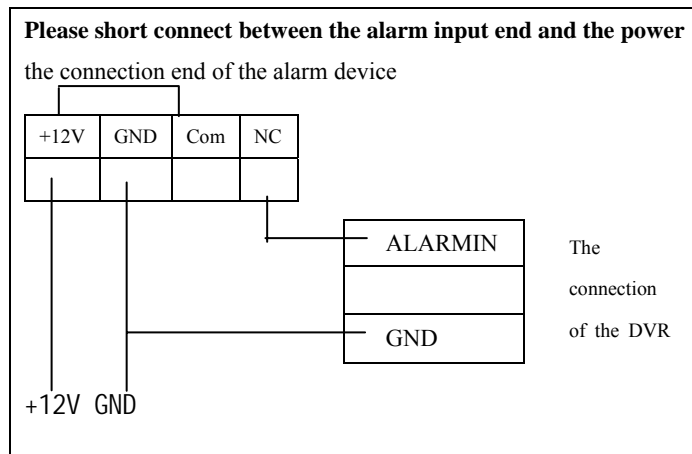
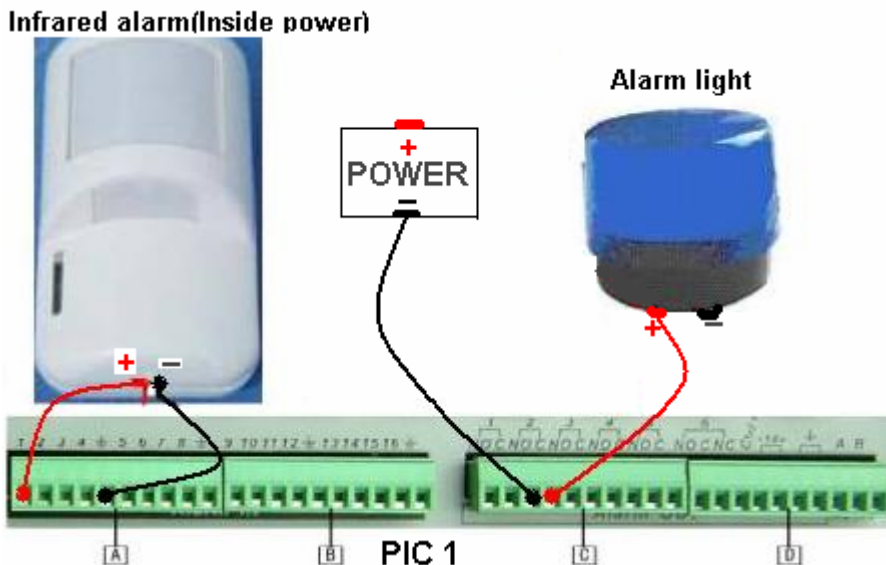

2   Alarm output:

· 6 channel alarm outputs   5 channel normally open , 1 channel NO/NC optional touch   .

· In order to avoid the overwork of the DVR, please refer to the related parameter of the relay, and see the attached form for the related relays' parameter.

· 1 channel controllable 12 V power output: Restore the touched-off alarm remotely such as the smoke sensor.

3   Example:

Exam1: Infrared alarm sensor (Inside power and NC) and Alarm light output (please see PIC 1)

1   Connect the sensor(NC) to the DVR alarm input(e.g.: connect to port 1)
2   Connect the '+'of the alarm light to the '+'of the outside power, and '**-**' to the alarm output of the DVR(e.g.: connect to OUT2); Connect the cathode of the power to another port of OUT2
3   Menu Setting

ALARM	CH 0 TYPE NORMAL CLOSE No. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 OUT REC SLOT1 08 00 24 00 ON SLOT2 00 00 24 00 OFF PRE-RECORDE ON DELAY 30SEC TIP OFF DEFAULT SAVE CANCEL	Alarm input from CH1 (Total 16 channel alarm input for choose) Normal close port Alarm output from CH2 (Be able to double choose according to the needs, it means 1 alarm input trigger several alarm output) Startup alarm recording (Be able to double choose according to the needs, two period a day for choose) Pre-record: Choose **On** means to save the monitoring image about 5SEC before alarming Delay: Lengthen the recording time after receiving alarm signals Tip: Choose **ON** means to pop up alarm notification in the screen Choose **SAVE** to save all the settings

4   Purpose

   During (8 00   24 00), when alarm input from Channel **1**, the alarm output Channel2 was triggered and the alarm light on; The screen display: Alarm input from CH1;The cameras CH1 and CH3 start recording simultaneity and save the monitoring image about 5SEC before alarm in;30 seconds after the alarm input be over ,the system stop alarm output and all the relative operation.

   When alarm input out of (8   00   24   00),the alarm output is not triggered and do nothing

Exam2: Ele-lock (Without power inside and NO) and Buzzer output (please see PIC 2)

PIC 2

1   Need afford '+12V' power outside;
   Connect the '+'of the lock to the cathode of the power and '**-**' to the alarm input of the DVR (e.g.: connect to port 1);
   Connect the Ground port of the power and the DVR.
2   Connect the '+'of the Buzzer to the '+'of the outside power, and '**-**' to the alarm output of the DVR(e.g.: connect to OUT1);
   Connect the cathode of the power to another port of OUT1
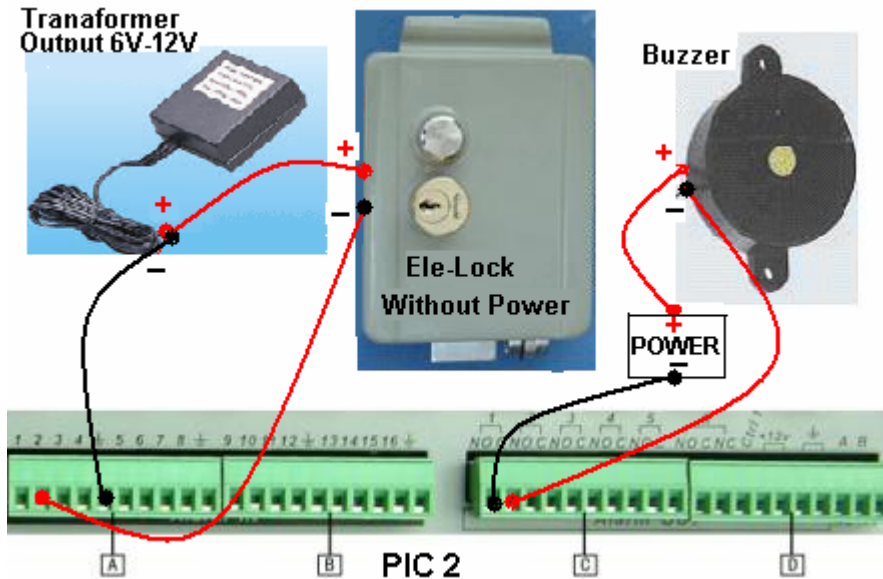
3   Menu Setting

ALARM ALARM	CH 02 TYPE NORMAL OPEN No. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 OUT REC SLOT1 00 00 24 00 ON SLOT2 00 00 24 00 OFF PRE-RECORDE OFF DELAY 30SEC TIP OFF DEFAULT SAVE CANCEL	Alarm input from CH2 (Total 16 channel alarm input for choose) Normal open port Alarm output from CH1 (Be able to double choose according to the needs, it means 1 alarm input trigger several alarm output) Startup alarm recording (Be able to double choose according to the needs, two period a day for choose) Pre-record: Choose **OFF** means not to save the monitoring image before alarming Delay: Lengthen the recording time after receiving alarm signals Tip: Choose **OFF** means no alarm notification in the screen Choose **SAVE** to save all the settings

4   Purpose

When alarm input from Channel **2** anytime, the alarm output Channel **1** was triggered and the Buzzer sound; The cameras CH**3** start recording simultaneity; 30 seconds after the alarm input is over, the system stop alarm output and all the relative operation.

· Relays' parameter of the alarm output end

Model: G6H		
Material of the touch	Sliver	
Rating resistance load	Rated switch capacity	30VDC 1A, 125VAC 0.5A
	Maximum switch power	62.5VA 33W
	Maximum switch voltage	125VAC, 110VDC
	Maximum switch electric currency	1A
Insulation	between touches with same polarity	750VAC 1minute 50/60Hz
	between touches with different polarity	1000VAC 1minute 50/60Hz
	between touch and loop	1000VAC 1minute 50/60Hz
Surge voltage	between touches with same polarity	1500V (10× 160us)
Length of open time	3ms max	
Length of close time	3ms max	
Longevity	Mechanical	100× 106 times (10Hz)
	Electric	200× 103 times (0.5Hz)
Temperature	-40~+70	

Chapter 3 Operating Instructions

1. Turn on / off the recorder

1.1 Turn on the recorder

Plug in the power cable; switch on the power button at the back of the recorder; power indicator light on; DVR on; default single window for the video output display; press Enter the Log-in screen appears on Monitor; If the starting time is within the programmed recording time, the system will start recording function automatically. Channel indicator lights on and system work in a normal manner.

Note: if the system stops during HDD Boot detection, the HDD may not be installed right and please check the HDD connections (Ribbon and Power Connections).

1.2 Enter the setting menu

Before entering the menu, the user must input the password. There are two levels of password—User password and Administrator password.

User password   **666666**

Administrator password   **888888**

With user password, you are also not allowed to enter system setting and admin setting.

Note: For the consideration of security, please change the setting in admin setting refer to **Chapter 4——Menu operation.**

1.3 Turn off the recorder   *****Please unplug the 220VAC power supply during HDD installation***

Press the POWER key on the front panel for 4 seconds to stop the current operations. Then switch off the power button at the back panel of the DVR to turn off the power.

1.4 Power off recovery

When the power is cut off abnormally, the recorder will recall its last state and continue where it left off. The state indicator light is the same as it was before the power off.

1.5 Change the battery of the DVR

Change the battery of the DVR, recommend to the same type of Lithium fastener batteries

Note: Please check the system time in time and generally change the battery each year to ensure the veracity time.

1.6 System menu structure


```
                                                  ┌─────────────────┐
                                                  │ General Search  │
                                     ┌──────────┐ ├─────────────────┤
                                     │ SEARCH   │─│ List Search     │
                                     └──────────┘ ├─────────────────┤
                                                  │ Alarm Search    │      ┌──────────────────┐
                                     ┌────────────┐                        │ File information │
                                     │ IFORMATION │────────────────────────├──────────────────┤
                                     └────────────┘ ┌─────────────────┐    │ HDD information  │
                                                    │ General setting │    ├──────────────────┤
                                                    ├─────────────────┤    │ Version          │
                                                    │ Schedule setting│    ├──────────────────┤
              ┌─────┐              ┌──────────┐     ├─────────────────┤    │ Version          │
              │  M  │              │ SETTING  │─────│ Image setting   │    └──────────────────┘
              │  E  │──────────────└──────────┘     ├─────────────────┤
              │  N  │                               │ Alarm setting   │
              │  U  │                               ├─────────────────┤
              └─────┘                               │ PTZ setting     │
                                                    ├─────────────────┤
                                                    │ Motion detection│
                                                    ├─────────────────┤
                                                    │ RS 232          │
                                                    └─────────────────┘
                                                                         ┌──────────────────┐
                                                                         │ Password setting │
                                     ┌──────────┐                        ├──────────────────┤
                                     │ ADMIN    │────────────────────────│ File management  │
                                     └──────────┘                        ├──────────────────┤
                                                                         │ Output mode      │
                                     ┌─────────────────┐                 ├──────────────────┤
                                     │ Backup Record   │                 │ Alarm in         │
                                  ┌──┤─────────────────┤                 ├──────────────────┤
                       ┌──────────┐  │ Backup clearing │                 │ Default          │
                       │ BACKUP   │──└─────────────────┘                 ├──────────────────┤
                       └──────────┘                                      │ Default          │
                       ┌──────────┐                                      └──────────────────┘
                       │ LOGOUT   │
                       └──────────┘
```

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2. Recording operation

The default recording mode after the startup of DVR is 24 continuous recording for each channel. Users can program customized recording modes due to the necessity. Instructions for the different recording modes are as follows:

a) Schedule recording

·Enter the menu, and set the timing period for the recording. See details at Menu>System setting>Schedule

b) Manual recording

·Press "Rec" button on the remote controller or "●" on the front panel (Need input the administrator password)

·Check the status of each channel in the recording menu; "●" channels are in recording, while "○" means the channel is not in recording

·Select the channel to be recorded, please press the related number key(or use "▲ ▼" key / Jog shuttle choosing) make the channel "●" on the screen then press **Enter** to start the recording.

·Repeat above steps and make the channel "○" to stop the camera from recording.

·Press ESC to return and press ENTER to save the recording setting

c) Alarm recording

·Connect the alarm input according to the device connection and the instructions

·Made the related setting in the menu to start Alarm recording. See details at Menu>Setting>Alarm setting

d) Motion detection recording

· Record the channel only in need of motion detection. First confirm whether this channel is in schedule recording; if it is, please turn off schedule recording.

·Made the related setting in the menu to start Motion detection recording　See details at Menu>Setting>Motion detection

3.Alarm connection operation

·Connect the alarm input according to the device connection and the instructions

·Connect the related alarm output of DVR to associated alarm device (Example: light   beeper, etc.)

·Made the related setting in the menu   See details at Menu>Setting>Alarm setting

4.Pan-tilt-zoom control operation

·Confirm the proper connection of PTZ and Communication Protocol. Set the Camera address

·Confirm the proper connection between the PTA and the A   B lines of DVR's RS485 port.

·Set the related items in the menu   See details at Menu>System setting>Control

·Select full screen call-up of associated PTZ Camera

·Press "Assistant" on the remote controller or "Fn1" on the front panel to shift the items on the screen

·Use direction key to move and control the selections on the screen

5.Network connection operation

·Confirm the correct network connection between DVR and computer

·Set the IP address, subnet mask and gateway of the computer and DVR separately   If there is no router in the network only the IP address is needed, if there is routers in the network, please set the related gateway and subnet mask

·Open IE browser and input the IP address of the DVR you want to log in

·Network operation see details at **Chapter 5**

Chapter 4   Front panel and remote controller operation

1.   Operation menu introduction   ***Flashing item is the current selectable one***

1.1   Menu items' shifting and setting

Operation step	Button-pressing order	Instruction	Screen display
Enter main menu and level 1 submenu	1 Confirm **Enter**	During real-time monitor, press to open the password prompt, input the correct password (default six 6 or six 8), then enter the menu.	Menu SEARCH INFORMATION SYSTEM SETTING ADMIN SETTING BACKUP LOGOUT
	2 Direction(Jog shuttle)▲▼►◄	Use arrows to select the main menu Icon Choice.	
	3 Confirm **Enter**	Enter the selected level 1 submenu	
Enter level 2 submenu	4 Direction(Jog shuttle)▲▼►◄	Use arrows again to select level 2 submenu choice	RECORDd SEARCH RECORD LIST ALARM
	5 Confirm **Enter**	Press **Enter** to select level 2 submenu	
Set menu contents	1 Direction(Jog shuttle) ►	Select the option to be revised, flashing means being chosen	CONTROL SETTING CH 1 PROTOCOL DH-CC440 BAUDRATE 9600 ADDR 000 CANCEL SAVE
	2 Direction ▲▼	Press to revise the settings	
	3 Confirm **Enter**	Save is flashing, choose to confirm whether you want to keep the revised setting.	
Exit the current menu	Direction(Jog shuttle) ◄	Return to the last option of the current menu	RECORD SEARCH RECORD LIST ALARM
	Cancel **ESC**	Exit to the last level menu	

✧   You can set the multiple channels and save the settings together before exiting the current menu

1. 2 Menu Overview

Main menu	Menu level 1	Menu level 2	Remarks
SEARCH	RECORD	CH 01 DATE 24-10-2002 TIME 02 20:20 PM PLAY START	Prepare for accurate playback according to the channel and time. See details at 2.6.1
	LIST	CH 01 TYPE ALARM DATE 24-10-2002 TIME 02 20:20 PM LIST START	List the results for choosing the wanted file to playback(R-General, A-Alarm, M-Motion detection).See details at 2.6.1
	ALARM	CH 01 DATE 24-10-2002 TIME 02 20 SEARCH START	Not able to search motion detection records. See details at 2.6.1
INFOR-MATION	FILE INFO	START TIME 24-10-2002 09 20 END TIME 24-10-2002 20 20 FREE SPACE 00028318M	Display the the record starting/ending time and total free space of DVR's HDD. See details at 2.6.2
	HDD INFO	HDD NUM 0 1 HDD CAPACITY 0 1 6 0 0 8 6M FREE SPACE 00028318M INDEX MASTER - - - - - - - SLAVE - - - - - - - CDR STATE NO USB STATE NO	Displayed the IDE ports' state, the total and free space for each HDD. " " means the current working HDD See details at 2.6.2
	VERSION	BIOS VERSION 2.46 FILE VERSION 4.01 WEB VERSION 1.69 ISSUE DATE 08-16-2004	Display the information about operation system version, issue date and so on See details at 2.6.2
	BPS	CH.1 CH.2 CH.3 CH.4 0538Kb 0302 Kb 0267 Kb 0112 Kb 256M/H 132M/H 117 M/H 49M/H CH.5 CH.6 CH.7 CH.8 0663 Kb 0227 Kb 0050 Kb 0283 Kb 291M/H 99M/H 21M/H 124M/H CH9 CH.10 CH.11 CH12 0663 Kb 0227 Kb 0050 Kb 0283 Kb 291M/H 99M/H 21M/H 124M/H CH13 CH.14 CH.15 CH16 0663 Kb 0227 Kb 0050 Kb 0283 Kb 291M/H 99M/H 21M/H 124M/H	Display the current BPS and the estimate for HDD space occupy per hour See details at 2.6.2

Main menu	Menu level 1	Menu level 2	Remarks
SYSTEM SETTING	GENERAL	DATE 2003-07-13 FORMAT DD-MM-YY TIME 08:30:30 FORMAT AM/PM SAVE TIME HDD FULL OVERWRITE REC-LENGTH 60 MIN REMOTE ADDRESS 008 VIDEO MODE PAL SHUT PASSWORD OFF DEFAULT SAVE CANCEL	Set system time, recording parameter, the machine No., video format and so on See details at 2.6.3
	SCHEDULE	CH 01 WEEK TIME1 TIME2 SUN 00:00 24:00 ON00:00 24:00 OFF MON 00:00 24:00 ON 00:00 24:00 OFF TUE 00:00 24:00 ON 00:00 24:00 OFF WED 00:00 24:00 ON 00:00 24:00 OFF THU 00:00 24:00 ON 00:00 24:00 OFF FRI 00:00 24:00 ON 00:00 24:00 OFF SAT 00:00 24:00 ON 00:00 24:00 OFF ALL 00:00 00:00 ON 00:00 00:00 OFF DEFAULT SAVE CANCEL	Set schedule for **Schedule recording**, be able to set 2 different period everyday in a week separately. See details at 2.6.3
	IMAGE	CH 0 NAME CHANNEL 01 QUALITY 0 FRAMERATE 25F/S BITRATE VBR VIDEO LOSS ALARM SHUT ALARM ALARM TIP NO TIP COVER SET OFF DEFAULT SAVE CANCEL	Set image quality, frame rate, coding format and so on See details at 2.6.3
	ALARM	CH 0 TYPE NORMAL OPEN SERIAL 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 OUTPUT RECORD TIME1 00 00 24 00 ON TIME2 00 00 24 00 OFF PRE-RECORD OFF DELAY 30S TIP OFF DEFAULT SAVE CANCEL	Set Alarm output and the relay parameters See details at 2.6.3

Main menu	Menu level 1	Menu level 2	Remarks
SYSTEM SETTING	PTZ CONTROL CONTROL	CH PROTOCOL NONE ADDRRESS 8 BAUDRATE DATABIT 8 BIT STOPBIT 1 BIT VERIFY NONE DEFAULT SAVE CANCEL	Set PTZ protocol and the relative parameter See details at 2.6.3

	NETWORK
	
	NETWORK
		HOSTNAME DVR1600
		               192.168.000.111
		SUBNETMASK 255.255.255.000
		GATEWAY 192.168.000.001
		WEB PORT 00080
		TCPPORT 37777
		MONITOR TCP
		   DEFAULT SAVE CANCEL
			Set the network parameter
			See details at 2.6.3

	MOTION DETECTION MOTION DETECTION	CH 0 No 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 ALMOUT RECORD DELAY 30 SEC TIP OFF PRECORD ON LEVEL HIGH AREA SET TIME1 10:00AM—02:00PM OFF TIME2 10:00AM—02:00PM OFF DEFAULT SAVE CANCEL	See details at 2.6.3
	RS 232 RS 232	COMFUNC HYPETERM BAUDRATE 115200 DATA BIT 8 BIT STOP BIT 1 BIT VERYIFY NULL DEFAULT SAVE CANCEL	

ADMIN ADMIN SETTING	**PASSWORD** PASSWORD	GUEST * * * * * * CONFIRM * * * * * * MANAGE * * * * * * CONFIRM * * * * * * SAVE CANCEL		If use manage password to log in, able to change password. See details at 2.6.4
	FILE MANAGE FILE MANAGEMENT	FILE DEL	DELETE ALL FILES ? OK CANCEL	Need Admin password
		HDD SET	HDD 01 SETTING WORK-HDD No. 1 2 3 4 STATE w - - - OK CANCEL	
		MAINTENACE	SUN OFF MON OFF …… ALL OFF SAVE CANCEL	

	OUT MODE
	
	OUTPUT MODE
		FONT COLOR WHITE TIME-OSD ON
		TITLE WHITE CHAN-OSD ON
		POINT-CX 003 POINT-CY 003
		MONHEIGHT 530 PLAYHEIGHT 530
		VGA-MODE 1024*768*60
		LOGO OFF
		ROTATE OFF INTERVAL 005S
		INDEX 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
		OUTPUT1
		OUTPUT2
		   DEFAULT SAVE CANCEL
				May select the font color on the menu as you like.
				    May set the original point on the real time monitor window and the size of the real-time monitor and playback window.
				    May select font color , and set channel rotating state

	ALARM IN ALARM IN	ALARM IN 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 SAVE CANCEL		Enabled the alarm input manually
	ALARM OUT ALARM OUT	ALARM OUT 1 2 3 4 5 6 7 SAVE CANCEL		Give alarm output signal manually
	DEFAULT DEFAULT	NETUSER	RESUME NETUSER? OK CANCEL	Restore the original set Need Admin password.
		DEFAULT	SURE TO LOAD? OK CANCEL	

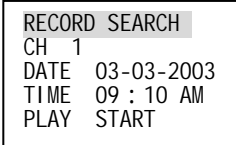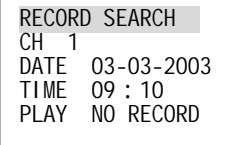|			
BACKUP	BACKUP RECORDS	DEVICE　　　　HDD CH　　　　　　1 SPEED　　　　FAST START TIME　　2003-3-18　18　18　16 END　TIME　　2003-3-18　19　18　16 SEARCH　　　START BACKUP　　　START	Choose the backup device and select the wanted file to backup records 　See details at 2.6.5
	DEL BACKUP	DEVICE　　　HDD 　　　SURE TO DELETE ? 　　　OK　　CANCEL	
LOGOUT	SURE TO LOGOUT? OK　CANCEL		Exit the menu and need input the password on next logging in

2. Menu Operation

2.1 Recording Operation

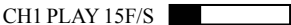| Model	Button-pressing order	Instruction	Diplay
DH-DVR1604	1　Record　**REC**	Press to enter screen display. 　　recording state 　　non-recording state	Record**:**1 2 3 4 5 6 7 8 　9 10 11 12 13 14 15 16
	2　Direction　▲▼　or the related number key	Press to shift the recording state on/off. 　means On.	Record**:**1 2 3 4 5 6 7 8 　9 10 11 12 13 14 15 16
	3　Direction　　◄►	Press to shift recording channels. The shadowed means On.	
	4　Record **REC** 　　or **Enter**	Press to save the setting.	

2.2 Playback operation

Button-pressing order	Instruction	Display
1 Play/Pause	Press the button to enter screen display. (If the current state is logout, please enter password)	RECORD SEARCH CH 1 DATE 03-03-2003 TIME 09 10 AM PLAY START
2 Play/Pause	Press twice to begin the playback (on the screen shows channel, date, time). If it shows no record found, the operation will not take effect. After the completion of the playback, it shows "The End".	RECORD SEARCH CH 1 DATE 03-03-2003 TIME 09 10 PLAY NO RECORD

Record information display: during playback, press **Fn** to display or hide the playback state bar.

2.3 Playback fast forward

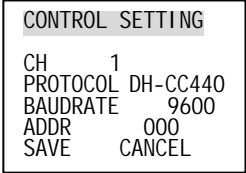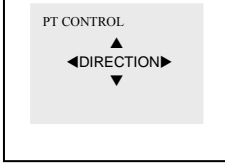| Button-pressing order	Instruction	Display
1 Fast forward ▶▶	During playback press this key to shift between 2 times speed, 4 times speed, 8 times speed.	CH1 PLAY X2 ▬▬
2 Play/Pause	During fast play press this key to shift between play and pause.	
3 Play next section, play last section	During playback state it takes effect. Press◀◀ ▶▶to view the next or last record of the same channel.	

2.4 Playback slow play

Button-pressing order	Instruction	Display
1 Slow forward I▶	During playback press to shift among X1/2 X1/4 X1/25 speed.	CH1 PLAY 15F/S ▬▬
2 Play/Pause	During slow play of the playback record press to shift between play and pause.	
3 Play next section, play last section	During playback state it takes effect. Press◀◀ ▶▶to view the next or last record of the same channel.	

✧   1f/s speed slow forward is playing frame by frame.

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2.5 Control of Pan-tilt and Lens

The current image must be shifted to the input image of the controlling camera

Button-pressing order	Instruction	Press **Fn** to display
1 Refer to menu operation at 2.6.4	In Control setting select the related Channel and Protocol, see the right picture. Set the conformed Baud rate and Address with the decoder. DATABIT with selection 4 to 8, STOPBIT with selection 1 1.5 2 Press **SAVE** to save.	CONTROL SETTING CH 1 PROTOCOL DH-CC440 BAUDRATE 9600 ADDR 000 SAVE CANCEL
2 Assistant function **Fn1**	Under the state of single window monitor, press to enter the screen display. Press continuously to shift among PT CONTROL DIRECTION LENS CONTROL ZOOM FOCUS IRIS LIGHT CONTROL(OFF ON).	PT CONTROL ▲ ◄DIRECTION► ▼
3 Direction ▲▼◄►	Control the related pan-tilt, lens and light.	LIGHT CONTROL ◄ OFF ON►

2.6 Menu operation

Please refer to″ Menu option schedule″ ; Button operation refers to the above form.

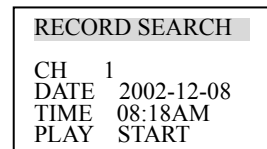***All the below settings of the menu must be saved before taking effect.***

2.6.1 Record search

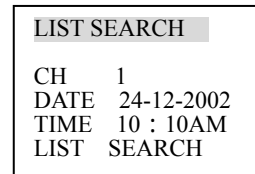The menu for record search is as the right picture

RECORD SEARCH

RECORD   LIST

ALARM

Record

First set the channel date and time you want to search, then select START, the playback begins.

RECORD SEARCH

CH 1
DATE 2002-12-08
TIME 08:18AM
PLAY START

List   First set the channel date and time you want to search, then select SEARCH, the screen shows the 8 recording files following the searching time. Use ▲▼ to select the file to be played. Press **ENTER** to begin the playback.

Note   the letters before the record are equal to following

R—Record   M—Motion detection   A—Alarm

```
┌─────────────────────────┐
│ LIST SEARCH             │
│                         │
│ CH      1               │
│ DATE   24-12-2002       │
│ TIME   10   10AM        │
│ LIST   SEARCH           │
└─────────────────────────┘
```

Alarm   First set the searching date, then select START, all the alarm records will be displayed. Press ▲▼ to select the record. Press **ENTER** to play the alarm record. Note   motion detection alarm can not be searched in this category, but can be searched in RECORD and LIST.
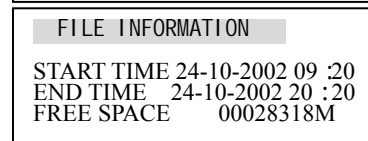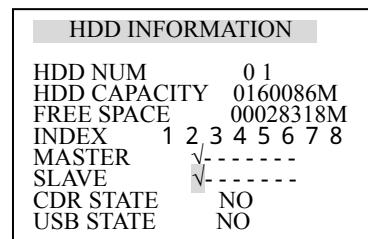
```
┌─────────────────────────┐
│ ALARM SEARCH            │
│                         │
│ CH      01              │
│ DATE   24-10-2002       │
│ TIME   02:20:20 PM      │
│ PLAY    START           │
└─────────────────────────┘
```

2.6.2 Information

Menu of Information see the right picture

```
┌─────────────────────────┐
│      INFORMATION        │
│                         │
│   🖴    👁    📲   📊    │
│ FILE INFO HDD STATE VERSION MP3 │
└─────────────────────────┘
```
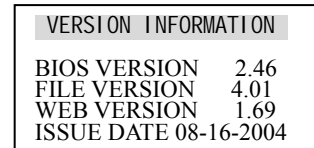
File Info   Recording start time(the earliest recording time among all the HDDs) and recording end time. All the information is not changeable.

```
┌─────────────────────────┐
│ FILE INFORMATION        │
│                         │
│ START TIME 24-10-2002 09  20 │
│ END TIME   24-10-2002 20  20 │
│ FREE SPACE    00028318M │
└─────────────────────────┘
```

HDD Info   Display HDD number, HDD capacity, remaining space, HDD index and the conditions of master drive and slave drive. If the HDD is in working, it will show as "W"

```
┌─────────────────────────┐
│ HDD INFORMATION         │
│                         │
│ HDD NUM          0 1    │
│ HDD CAPACITY   0160086M │
│ FREE SPACE     00028318M│
│ INDEX                   │
│ MASTER       √- - - - - - - │
│ SLAVE        √- - - - - - - │
│ CDR STATE      NO       │
│ USB STATE      NO       │
└─────────────────────────┘
```

Version   Bios version, File version, Web version and Issue date are showed. The information is not modifiable.

```
┌─────────────────────────┐
│ VERSION INFORMATION     │
│                         │
│ BIOS VERSION     2.46   │
│ FILE VERSION     4.01   │
│ WEB VERSION      1.69   │
│ ISSUE DATE 08-16-2004   │
└─────────────────────────┘
```

BPS   Real time display bit rate of current channel (Kb/s) and space occupied. (MB/H)

CH.1	CH.2	CH.3	CH.4
0538Kb	0302Kb	0267Kb	0112Kb
256M/H	132M/H	117 M/H	49M/H
CH.5	CH.6	CH.7	CH.8
0663Kb	0227Kb	0050Kb	0283Kb
291M/H	99M/H	21M/H	124M/H
CH9	CH.10	CH.11	CH12
0663Kb	0227Kb	0050Kb	0283Kb
291M/H	99M/H	21M/H	124M/H
CH13	CH.14	CH.15	CH16
0663Kb	0227Kb	0050Kb	0283Kb
291M/H	99M/H	21M/H	124M/H

2.6.3 System setting

Menu of the system setting as the right picture:

SYSTEM SETTING

GENERL   SCHEDULE   IMAGE   ALARM

CONTROL   NETWORK   MOTION DETECTION   RS 232

General   DATE/TIME are used to modify the current system date and time; after the modification reserve the change by selecting SAVETIME; in HDDFULL if selecting OVERWRITE system covers the previous recording files; REC- LENGTH can set the length of each recording file(15 mins 30 mins 60 mins or 120mins), VIDEO MODE :PAL and NTSC; SHUT PASSWORD :protect the system ,when ON,an advanced password is needed to shut off the system,when OFF,just press the power key for 4s to shut off   the system.

Note   System time cannot be changed freely; otherwise it would cause the malfunction of recording search.

```
GENERAL  SETTING

DATE          2003-07-13
FORMAT        DD-MM-YY
TIME          08:30:30
FORMAT     AM/PM    SAVE TIME
HDDFULL    OVERWRITE
REC-LENGTH   60 MIN
REMOTE ADDRESS   008
VIDEO MODE        PAL
SHUT PASSWORD     OFF
 DEFAULT   SAVE   CANCEL
```

Schedule   Select the corresponding channel in CH.   WEEK you can choose each day or setting the same with the 7days of one week by the key ALL. TIME1 and TIME2 express the timed recording period of the current channel. TIME2 should be after the ending time of TIME1. The setting range is 00 00 00 00 STATE   ON means the time setting is on   OFF means the time setting is OFF.

```
 SCHEDULE
CH        0
WEEK     TIME1          TIME2
SUN 00:00-24:00 ON 00:00-24:00 OFF
MON00:00-24:00 ON 00:00-24:00 OFF
TUE 00:00-24:00 ON 00:00-24:00 OFF
WED 00:00-24:00 ON 00:00-24:00 OFF
THU 00:00-24:00 ON 00:00-24:00 OFF
FRI 00:00-24:00 ON 00:00-24:00 OFF
SAT 00:00-24:00 ON 00:00-24:00 OFF
ALL 00:00-24:00 ON   00:00-24:00 OFF
 DEFAULT   SAVE   CANCEL
```

Note   If you need record all day long, set TIME1 as 00 00-00 00   state is on; set TIME2 as off.

Image   In CH option select the related channel. QUALITY you can shift 6levels circularly, in which the 6th level is the best quality. Framerate 1f/s-25f/s are selectable. BITRATE there are CBR(audio/video) and VBR(audio/video). VIDEOLOST :select port 1-6for alarm output, prompting to select OFF means non-alarm output when video lost, meanwhile the prompt ON/OFF for the outside equip(port1-6) of alarm relay port means if pop-up alarm information or not. Select SAVE when finish the setting ,ESC for exit current setting. If you want to resume to the default, move the cursor to select DEFAULT and then select SAVE.

```
 IMAGE SETTING

CH            0
NAME          CHANNEL  01
QUALITY       0
FRAMERATE    25F/S
BITRATE       VBR
VIDEO LOSS ALARM SHUT ALARM
ALARM        TIP NO TIP
COVER SET    OFF
DEFAULT    SAVE    CANCEL
```

Alarm   Select the relevant channel in CH(this recorder has 16-Ch alarm input). TYPE has normal on/normal close   electric output method   . No. If the number in RECORD is selected, recording would be started automatically when there is alarm input. If the alarm output port is chosen, it will trigger corresponding equipment when there is alarm input.CH7 is 12Vcontrollable output. DELAY means to lengthen the recording time after receiving alarm signals 1/6 1/2 1 3……30min . When the outside alarm is canceled, the system will lengthen the recording time automatically before closing alarm and relay output. When Time 1   Time 2 are open, within the time of the setting the recording will be triggered by alarm signals. The beginning time should be earlier than the ending time; the setting in Time 2 should be later than the setting in Time 1. PRE-RECORD: Save the monitoring image for sometime before alarming. TIP: ON/OFF alarm prompt.

```
 ALARM SETTING

CH        0
TYPE      NORAML OPEN
No      1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
OUTPUT
RECORD
TIME1  00  00  24  00  ON
TIME2  00  00  24  00  OFF
PRE-RECORD     OFF
DELAY    30S
TIP       OFF
 DEFAULT    SAVE      CANCEL
```

PTZ   control Select the corresponding channel in CH , and choose the protocol of the brand name of corresponding pan-tilt decoder in PROTOCOL. ADDRESS is the address of the corresponding platform decoder DATABIT: selection4-8; STOP BIT: selection 1, 1.5, 2; VERIFY: odd, even and null

```
 PTZ CONTROL

CH              1
PROTOCOL       NONE
ADDRESS        008
BAUDRATE    4800
DATA BIT       8 BIT
STOP BIT       1 BIT
VERIFY         NULL
DEFAULT   SAVE   CANCEL
```

Network HOST NAME display the name of the recorder .IP is set by using
▲▼ or input the exact numbers to change the IP address   IP address setting
can only be realized in this term   ,and then set the correspond
SUBNETMASK and GATEWAY   WEB PORT   TCP PORT   in
accordance with the user's network condition, the default port is 00080 and
37777. MONITOR can be selected by using ▲▼   TCP/IP   UDP .Reserve
the setting in SAVE, and restart the recorder.

```
NETWORK

HOSTNAME       DVR1604
               192.168.000.111
SUBNETMASK     255.255.255.000
GATEWAY        192.168.000.001
WEB PORT       00080
TCP  PORT      37777
MONITOR        TCP
  DEFAULT    SAVE    CANCEL
```

Note: UDP   The users with manage can monitor each channel freely, and other users can only view after them. Max
5 users can log in.

TCP Protocol   All users are able to monitor any channel. User shall select according to necessity. If the
transmission is under Internet, TCP should be chosen. 2 users at maximum

Motion Detection Select the relevant channel in CH . OUTPUT "●" means
startup alarm relay when detect the motion image; "○" means
non alarm relay. Open or close the function in DELAY
Choose how long you want to continue the recording   1/6
1/2   1   3……30min   after motion detection is finished.
PRERECORD save the   motion detection. SENS has three
levels: LOW, NORMAL, HIGH . TIMING1   TIMING2
the way of setting the period of time is the same as the setting of ALARMSETTING.
AREA can be accessed by pressing **ENTER**. The setting area can be divided in 192 sections. Red
section means the current cursor position, and green section is the motion detection area. The no
color area is no motion detection area. Press Fn to locate the current section, then move the cursor to
cover the MD needed area; press Fn again to choose the MD area.

```
    MOTION DETECTION
CH     0
No    1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
ALMOUT
RECORD
DELAY    30 SEC    TIPS OFF
PRECORD  ON
LEVEL       HIGH
AREA      SET
TIME1    10:00AM—02:00PM    OFF
TIME2    10:00AM—02:00PM    OFF
   DEFAULT   SAVE    CANCEL
```

RS232   COMFUNC select super terminal or Keyboard.
BAUDRATE select correspond baud rate. DATA BIT   selection 1-8.
STOP BIT three selection 1   1.5 and 2.
VERIFY odd and even

```
RS232

COMFUNC
HYPETERM
BAUDRATE      115200
DATA BIT      8 BIT
STOP BIT      1 BIT
VERYIFY       NULL

DEFAULT SAVE CANCEL
```

**2.6.4 Admin**

Menu of Admin setting is as the right picture:
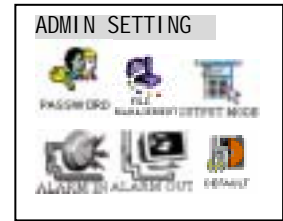
Password Select GUEST and MANAGE. Press ▲▼ or the number key to change the password, then confirm the change by inputting the password again. Press **ESC** to go back to the sub menu. Only MANAGE level user can change the password.
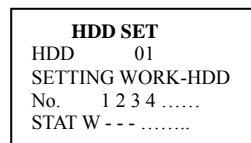
```
PASSWORD

GUEST    ******
CONFIRM  ******
MANAGE   ******
CONFIRM  ******

SAVE CANCEL
```
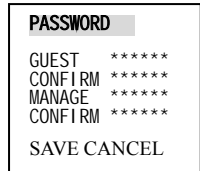
Manage

FILE DEL Input advanced password, and enter **FILE DELETE.** If you are sure to clear the files on the HDD, click OK.

```
FILE   DELETE

DELETE ALL FILES?
 OK    CANCEL
```
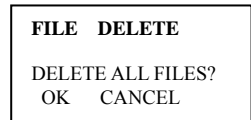
HDD SET Set working state of HDD. W means working HDD

```
HDD SET
HDD      01
SETTING WORK-HDD
No.     1 2 3 4 ……
STAT W - - - ……..
```

Out mode FONT COLOR: default color, green, orange, blue and red, press▲▼to select. POINT **X** POINT **Y** :adjust the origination of the real-time monitoring window. The numerical range of POINT X and POINT Y : 0—352 and 0—288. MONITOR HEIGHT PLAYBACK HEIGHT: Set the numerical range by using the direction key to zoom the window of real-time monitoring video and playback video. The range is 288-576. OUTPUT1, it can rotate in a SPLIT 1/4/9/16 mode. Those channels marked with can be showed circularly after a certain interval. OUTPUT2 ,it can rotate in a single window by window mode. Those channels marked with can be showed circularly after a certain interval. Input the advanced password and press **ENTER** to confirm to select the default setting.

```
OUT MODE
FONT  COLOR  WHITE     TIME-OSD
ON
TITLE WHITE       CHAN-OSD ON
POINT-CX   003      POINT-CY 003
MONHEIGHT 530    PLAYHEIGHT 530
VGA-MODE       1024*768*60
LOGO           OFF
CYCLE  OFF      INTERVAL  005S
No.1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
OUTPUT1
OUTPUT2

DEFAULT    SAVE      CANCEL
```
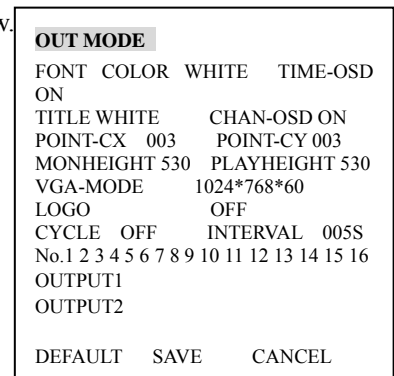
Alarm in   Set Alarm input connection

```
        ALARM IN
1  2  3  4  5  6  7  8

9 10 11 12 13 14 15 16

     SAVE   CANCEL
```

Alarm out   Set Alarm output connection

```
      ALARM OUT
1  2  3  4  5  6  7

   SAVE    CANCEL
```

Default

    Net user

    Default

```
RESUME NETUSER?
 OK   CANCEL
```

```
SURE TO LOAD

  OK   CANCEL
```

2.6.5 Backup

Menu of Backup is as the right picture:

Backup records   Move the cursor to select the backup device, channel number, backup speed, starting data and time, ending date and time, and then select to start the backup, and system will display the backup processing. If the user does not connect the backup device right, system will give the hint: **No backup disk**; if the device is full, it will hint: **Disk is full**   During the backup, it will display the left time. For the backup device you can choose among HDD/USB/CDR. If the HDD is chosen as the device, the backup speed can be selected between **Fast** and **Normal**. If the backup speed is **Fast**, system will stop the current recording. When finishing backup, the system will get back to record automatically.

```
BACKUP RECORDS
DEVICE      HDD
CH          1
SPEED       FAST
START TIME 2003-3-18  18:18:16
END TIME   2003-3-18  19:18:16
SEARCH          START
BACKUP          START
```

Delete backup Select the backup device (HDD/USB/CDR) you want to delete the records from first, and then confirm the deletion by selecting **OK**.

```
  DELETE    BACKUP
  DEVICE      HDD
 SURE TO DELETE ?
   OK    CANCEL
```

2.6.6 Logout

Press OK to confirm logout.

```
SURE TO LOGOUT?

  OK    CANCEL
```

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Chapter 5　　　Operation over Network

1. Setting on the client end

　　No software needs to be pre-installed. Please check the connection of the network, for example, ping the IP address of the DVR. If you can not ping through, please check the connection.

2. Login and logout

　　Please input the IP address of the DVR in the address column of the browser. Take DVR's IP address: 192.168.0.168 as an example: Input http://192.168.0.168. At the first time of visiting this DVR the system will pop up the dialogue box to ask whether you accept ActiveX or not, and please choose Yes, then the system will install the software automatically.
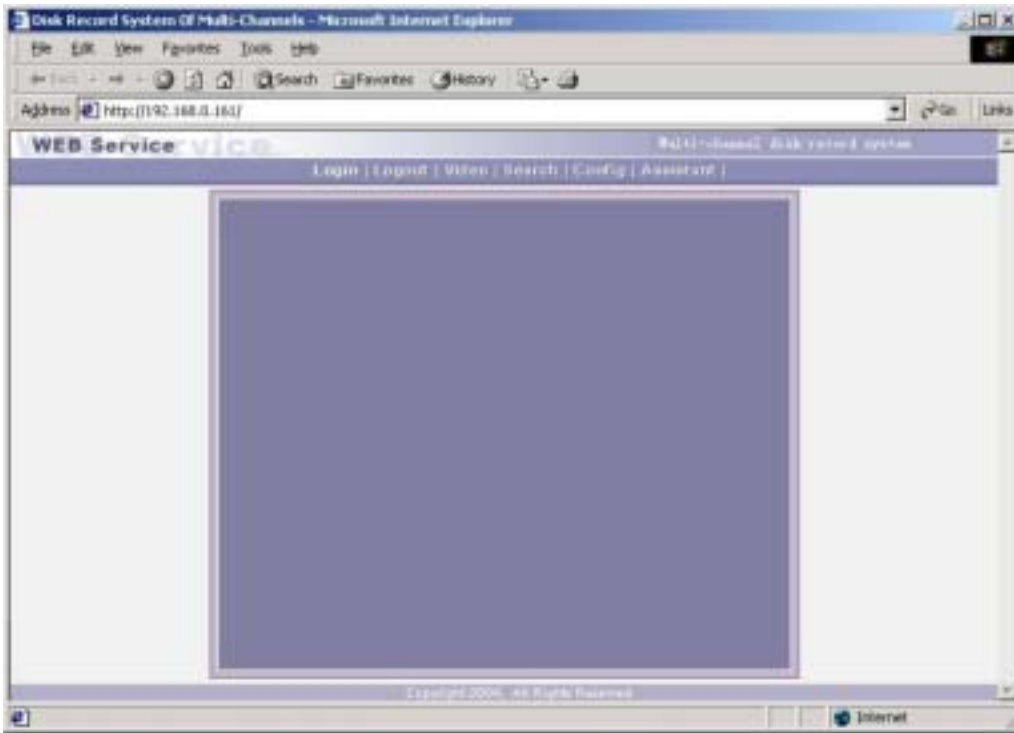
5-1

In this interface there are monitor video window, login   logout   Video   search   config(system setting) Assistant(assistant setting) and so on.

Login   Please click login, and the following dialogue box will pop up.

5-2

  Input username and password. There are three types of users: Administrator, User, and Guest. For the detailed introduction please refer to User manage in Assistant setting. The default username is admin password is admin. Please change the administrator password on time.

     If after the input of the username and password, the following box pops up (5-3). The system is warning that some other user has used this name and logged in. Please use another name to log in.

5-3

     If after the input of the username and password, the following box pops up (5-4). The system warns that the username just be inputted is unauthorized user or the password is wrong, and please tries again.

40

5-4

Log out: if the logged in user need to log out, please click logout button. After the popup of the following dialogue box, please choose Yes. See (5-5)
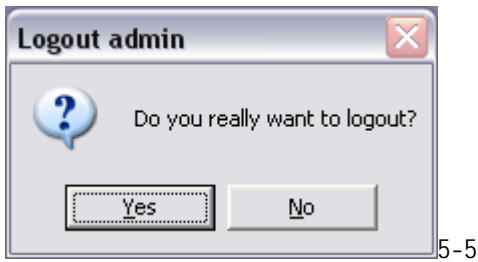
5-5

3.Operation of the right key menu (Video)

After you log in as Administrator, the buttons like login logout search video config Assistant and so on are activated. Click the right key or click Video and the following interface will show
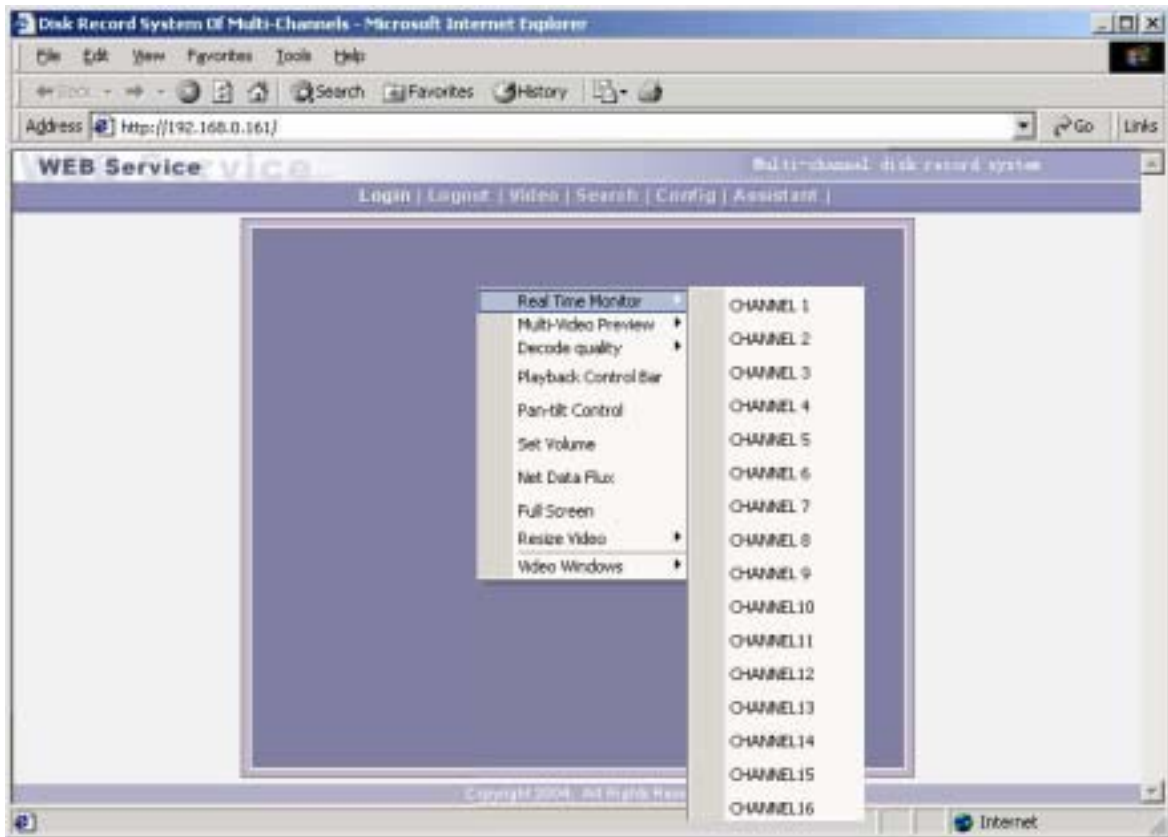
If the DVR is 16 Channel, the real-time monitor will show 16 channel options; if 12 channel, it will show 12 channel options.

The right key/Viedo menu includes: Real time monitor, Decode quality, Video windows, Playback control bar, Pan-tilt control, Set volume, Net data flux, Full screen, Resize video and Video windows.

Real time monitor   Among the displayed channels, (5-7) you may select the channel you want to see, or press the numeric key to select the channels.

```
Channel1
Channel2
Channel3
Channel4
Channel5
Channel6
Channel7
Channel8
Channel9
Channel10
Channel11
Channel12
Channel13
Channel14
Channel15
```
5-7
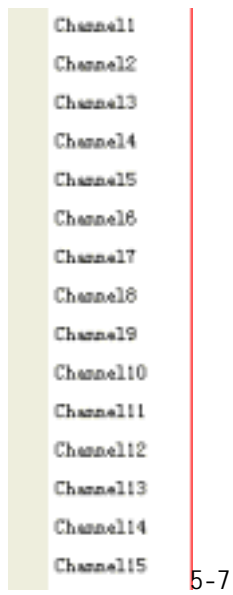
Decode Quality User can choose the decode quality according the needs, there are 4 levels quality for choose. (5-8)

```
    General
✔  Good
    Better
    Best
```
5-8
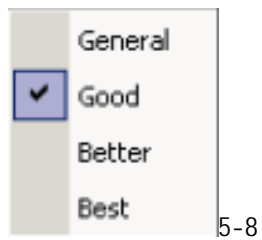
Playback control bar   Please refer to Records playback.

Pan-tilt control   Control the direction moving of the pan-tilt and the zooming, aperture, focus of the lens. See 6   8. Press the related buttons to control. Note   Before the realization of the pan-tilt control you must set right the protocol of the pan-tilt on the DVR.

5-9
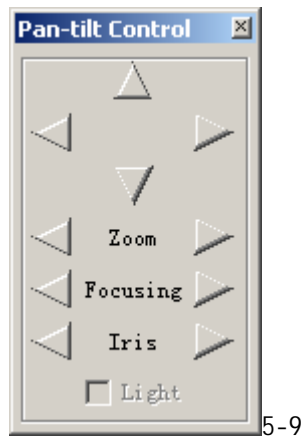
Set volume   It is for user to control the audio's volume. User can drag the bar to adjust or tick Mute to cancel the sound.

5-10

Net data flux   Display the statistics of the network transmission data flux. When no network data transmit the statistics shows zero.

5-11
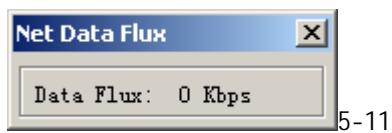
Full screen   There are two way to realize full screen monitor: one is to double click the window directly; the other is to select Full screen among the right key menu. During multi-window state, choose one of the windows and make it full screen in the same ways.

Resize Video User can select different ratio to show different size of the video picture.

```
100%
80%
60%
40%     5-12
```
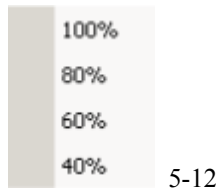
Video windows User can choose the display windows mode according the needs

```
One windows
Two windows
Four windows

New Video Window
Close Video Window
Arrange in full-screen   5-13
```
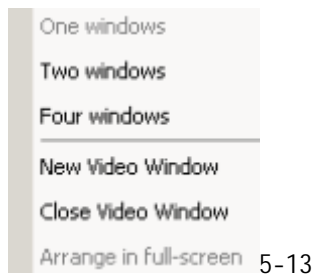
4.Records Search and playback

Click on search, then pop up the dialogue box of records search
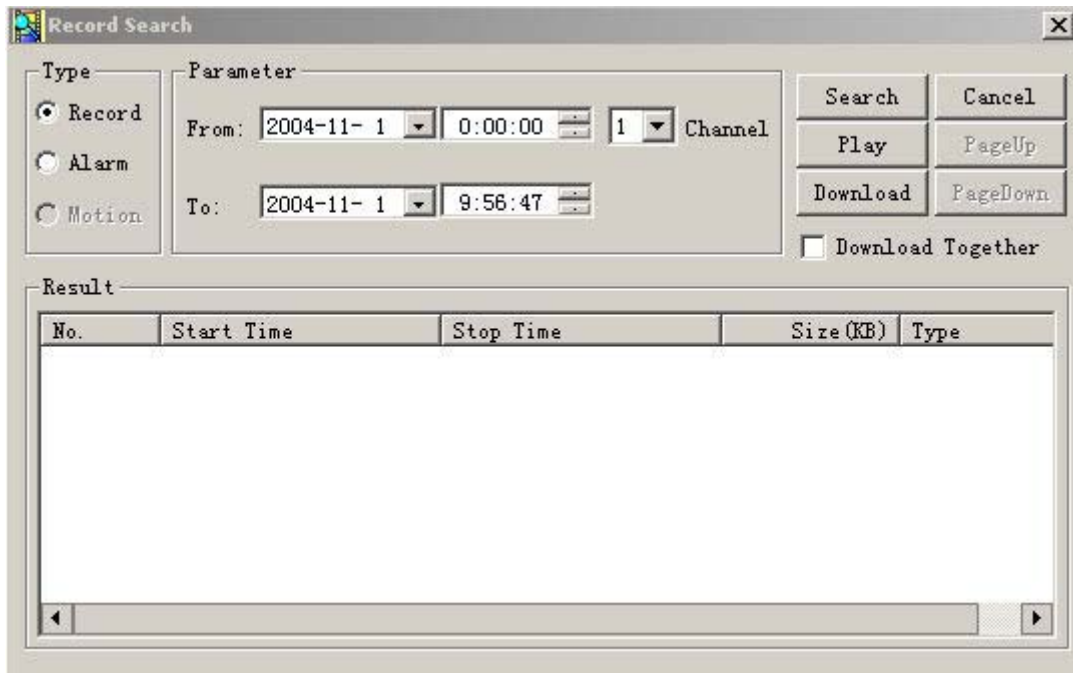
5-14

Input From and To recording time, channel number and searching type　Record or Alarm　, and the records during the searching time will show in the dialogue box (If only input the From time it show the records in 24 hours after the searching time). Click **Pageup** and **Pagedown** to display the next records. Double click the wanted record, and system will play the selected record, which can be played at full screen. At the same time you can also perform records download, and the record will be automatically saved in your PC's "C:\Download" folder.

Save record　　stop save　　capture picture　　　full screen
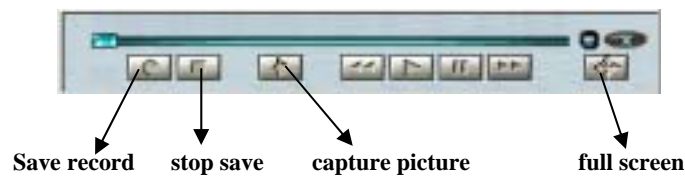
During the playback, you can operate by the buttons in the playback bar like save record, stop save, capture picture, fast play, pause, and full screen. During the playback on the video screen it shows the channel number, time and data flux of the record.

Download   See (5-15), select the wanted record and click **Download**.
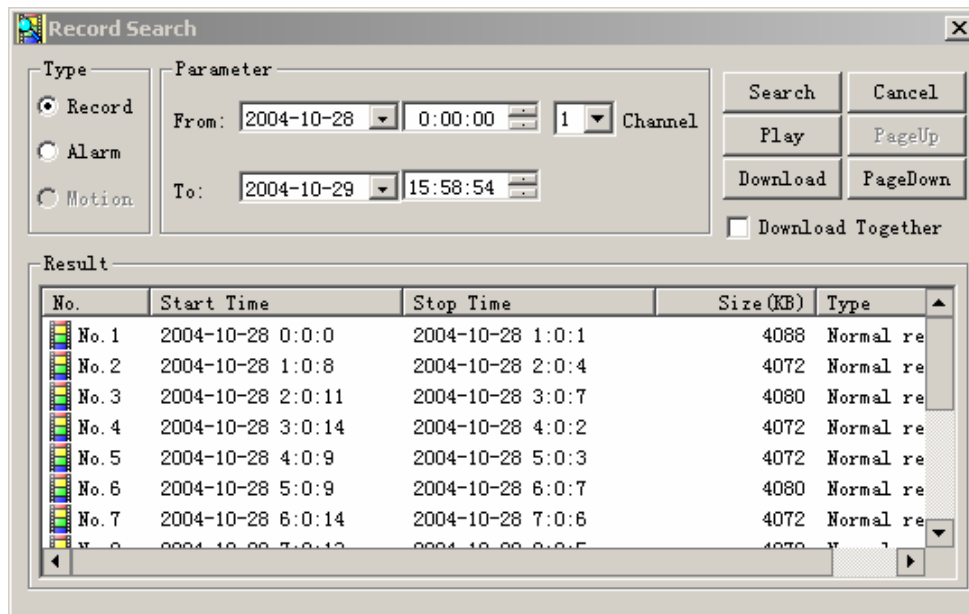
5-15

It supports the downloading of several records simultaneously. The default format of the downloaded records' names is as   file name +Channel N +date +time   extension name is .mp4(Example: a-0120021205071028.mp4, 01 means channel 1, 20021205 means December 5th of 2002, 071028 means 7 o'clock 10 minutes 28 seconds).
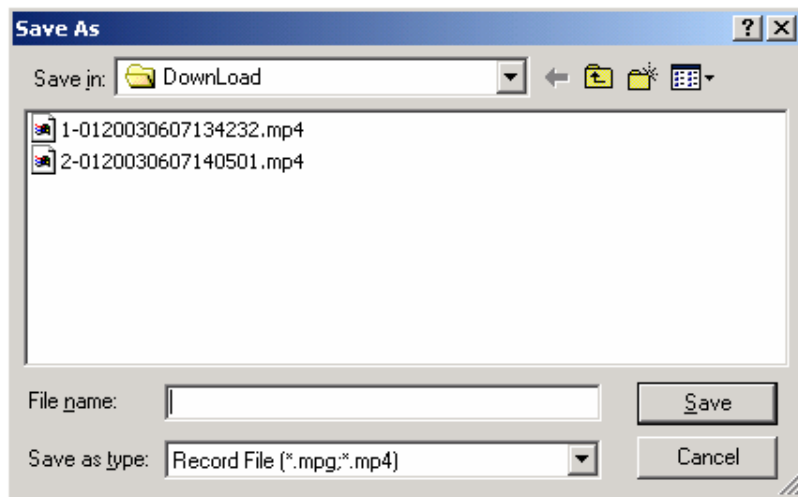
5-16

Saved under Download file clip. Input the file name and choose **Save**. The screen shows the processing of the downloading until the completion. (User can use the Ctrl key to double choose several records and down load as a whole file as well)
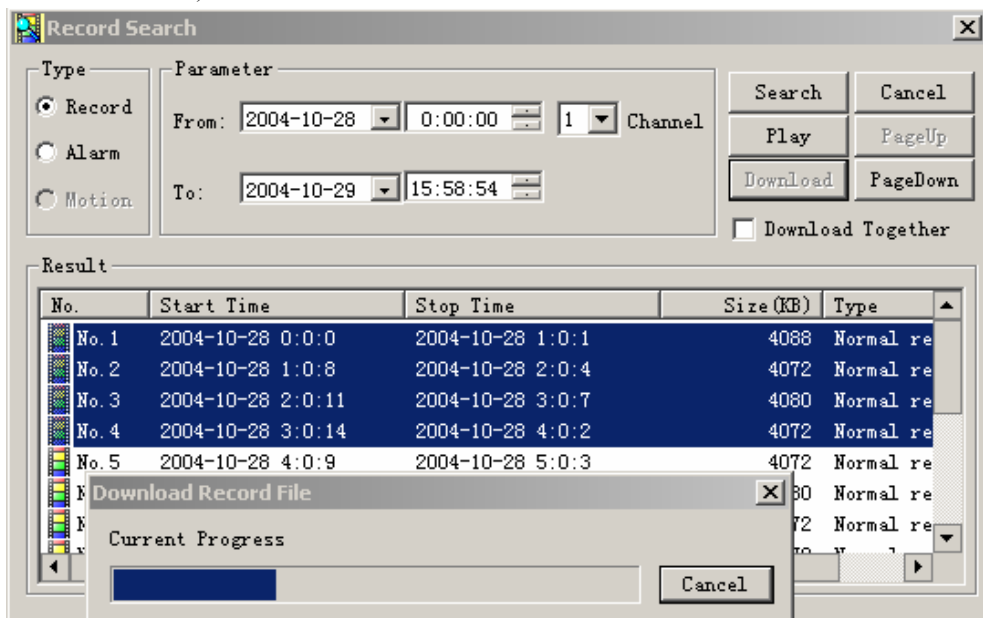

5-17

5. Config(System setting)

Click **Config** button　and pop up the dialogue box. There are **General**　**Schedule**　**Alarm**　**Motion detection**　**Video parameter**　six setting menus.

Note　The gray part of the menus you have to set on the local DVR.

General　Include the recording length setting. In Control Column select the channel number and its pan-tilt decoder's protocol, as well as the related address so as to realize the control of the lens and pan-tilt.
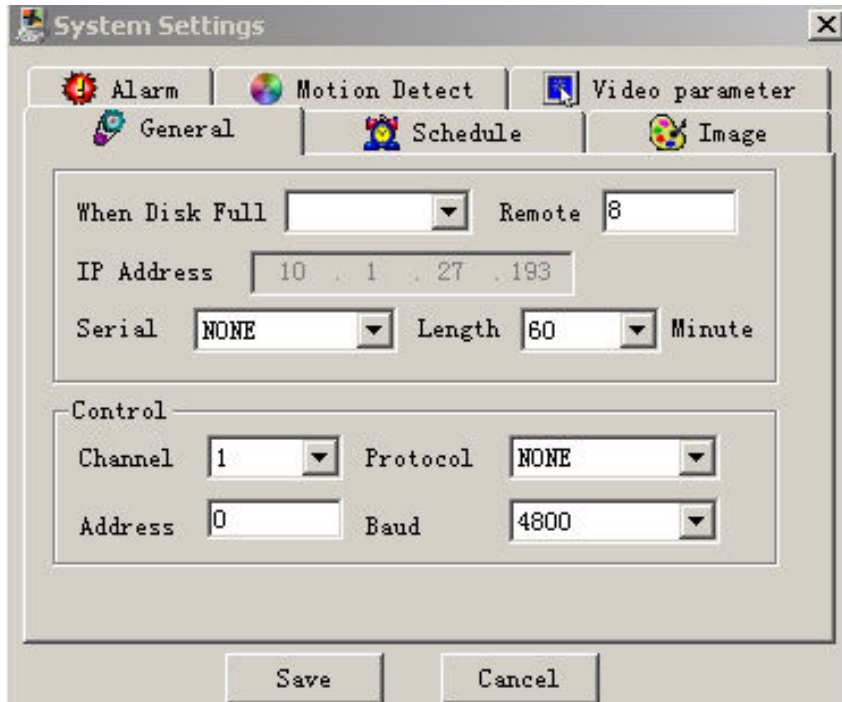

5-18

Schedule   5-19   Able to select the different channel and date to perform the recording at the different period of time. There are two time periods for setting. The set time in **Time 1** and **Time 2** is independent with the set time in Motion detection. There is no week setting for Motion detection.

Motion detection time: User can set two time periods of the motion detection time and the state of the motion detection so as to activate the recording during the time period. Only when Motion detection is On, the set time period is taking effect. If the state of the two time period is both Off   the system view it as 24 hours motion detection Off.
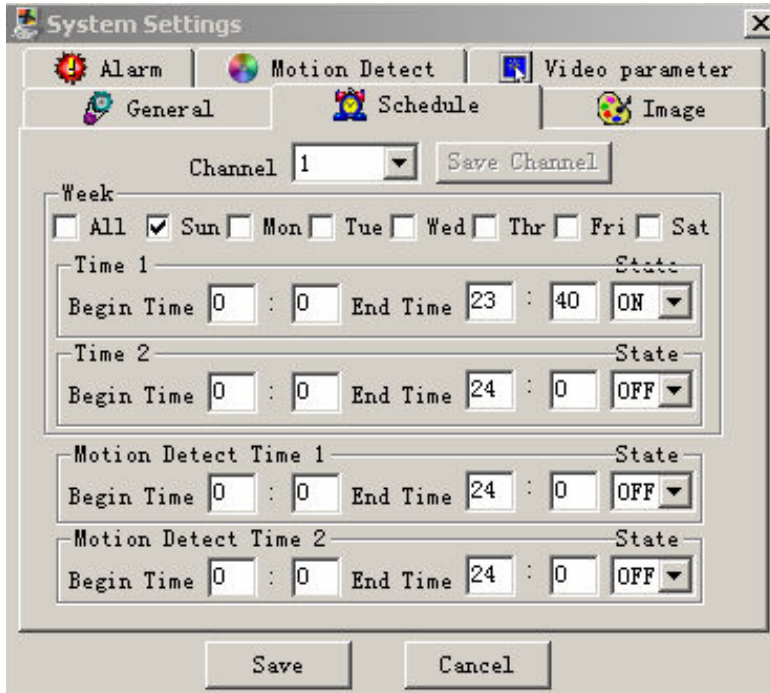
5-19

Image   This menu can select the image quality and network transport protocols for each channel. Press SAVE aside the channel after finishing setting the property of the image. The user can continue setting the image property and press SAVE at the bottom of the dialog box to save all the settings.
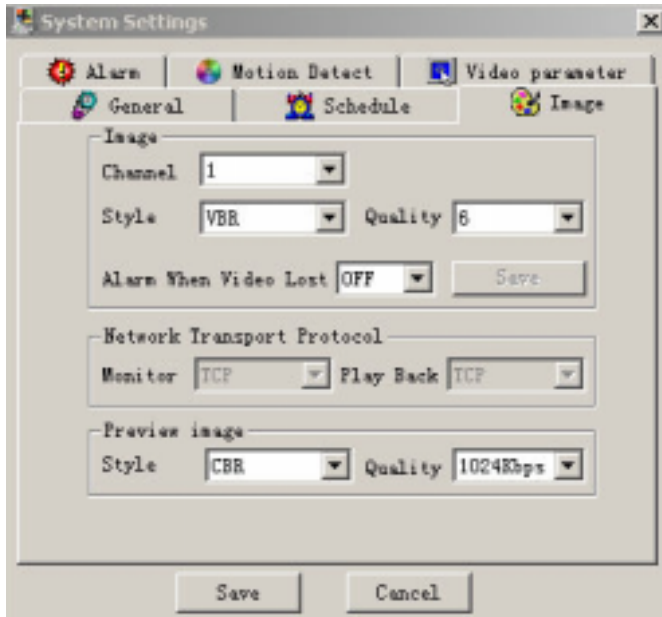
5-20

Style: Among the options of the coding styles there are   VBR(variable baud rate)   CBR(consistent baud rate)   f/10s f/5s   f/2s   1f/s   2f/s   3f/s   4f/s   5f/s   6f/s   8f/s   10f/s   12f/s   15f/s   20f/s. Select one of the styles and save. For VBR and selectable frames there are 1   2   3   4   5   6 level of image quality. Please choose due to the actual need.


5-21

Level 1   data flux 128Kb/S   Level 2: 256Kb/S   Level 3: 384Kb/S   Level 4   512Kb/S   Level 5   768 Kb/S   Level 6 1Mb/S. The different data flux demands on the related bandwidth and the transmission image quality is also different. Among them Level 6 demands on the widest band and has the best image quality.

Video lost alarm: when OFF, non-alarm for video lost; when ON, alarm. Frame rate selection: 1—25f/s.

Net transmission Protocol   there are TCP and Multicast two types. Multicast protocol: the user with control power can view the image at will and other users can only follow this user to view the image. 5 users are allowed to view at the same time. Be able to transmit 4 channels' image at the same time. TCP protocol: each user can view the image at will. According to the need, user can choose the different protocol. If it is through outer Ethernet you must choose TCP. 2 users are allowed to view at the same time.

Alarm   When there are alarm input signals, user can select the recording channel and the output port due the actual need.

ALATM PORT: select ch1-16 or select all channels to set record channels. Tick off in channel boxes to select alarm channels and then select output port for alarm prompt. Click SAVE PORT to save current setting and click SAVE to save all settings.
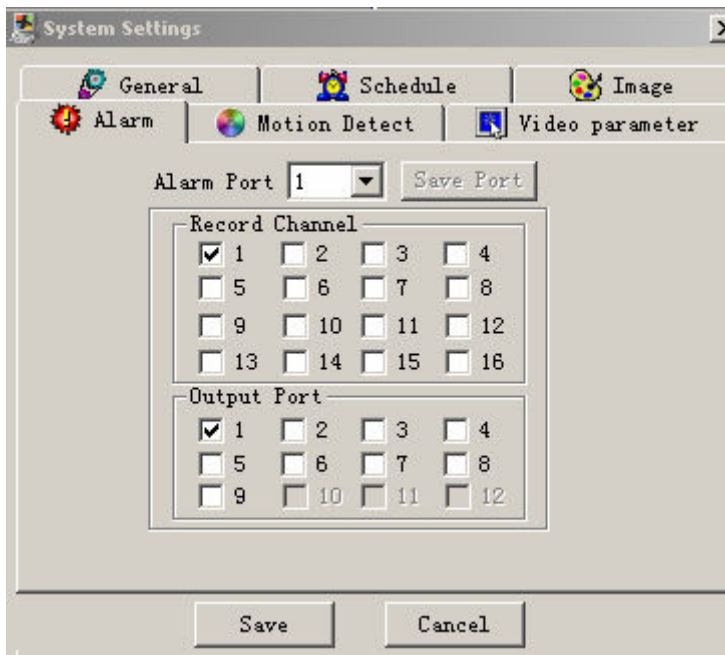

5-22

Motion detection　　When user set the time period outside the time setting in Schedule, motion detection will take effect. The blue area is the selectable motion detection area. User can move the dialogue box to choose the area and can also set the sensitivity of the area due to the need. Click **Full screen** or press right key on the area to display the motion detection area at full screen. After setting the area user can **Save channel** or **Clear** the area. If you want to set this channel fully as motion detection recording, you have to turn off the timing recording of this channel.
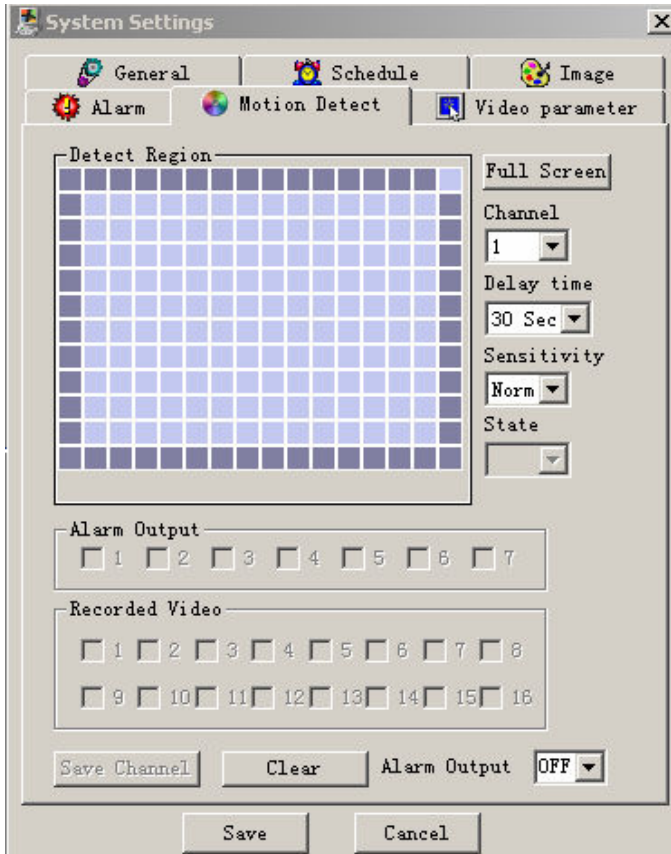
 5-23

Video parameter Set the video parameter of the recording picture: image tinge, contrast, brightness and saturation. Press reset to get back default.
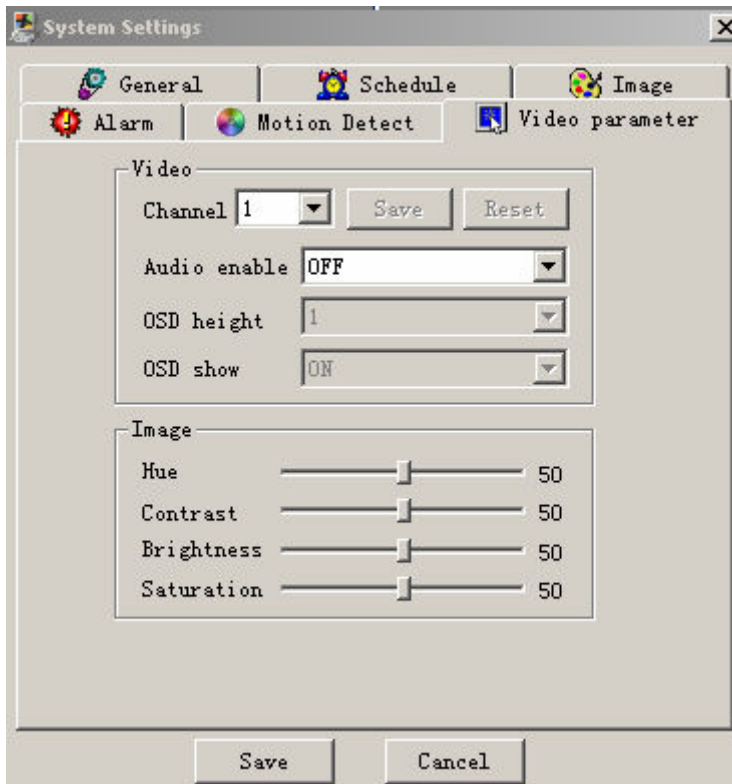
5-24

6. Assistant

Assistant　　Click on Assistant setting, as following, there are User manage　Record control　Apply for control right Log information　System information　Alarm Prompt　Channel name　Upgrade BIOS and so on.
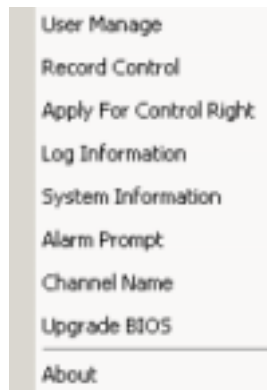
5-25

User manage   display the user information of the DVR. The right buttons can let user save, add, modify, delete and
    cancel the information

    Three levels users   Administrator   fully set the system and modify the user information;

                    User   can not set system parameter and modify other users' information;

                    Guest   can not set system parameter and records search, can only modify personal information.
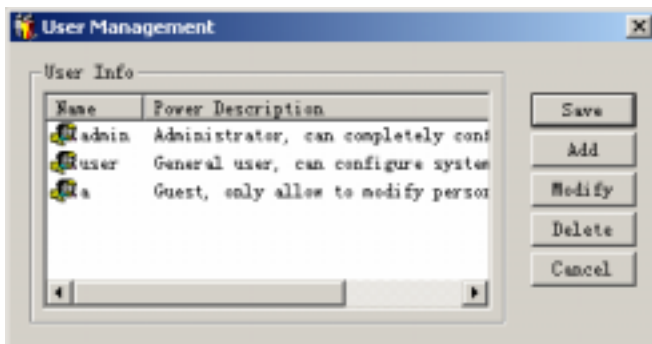
5-26

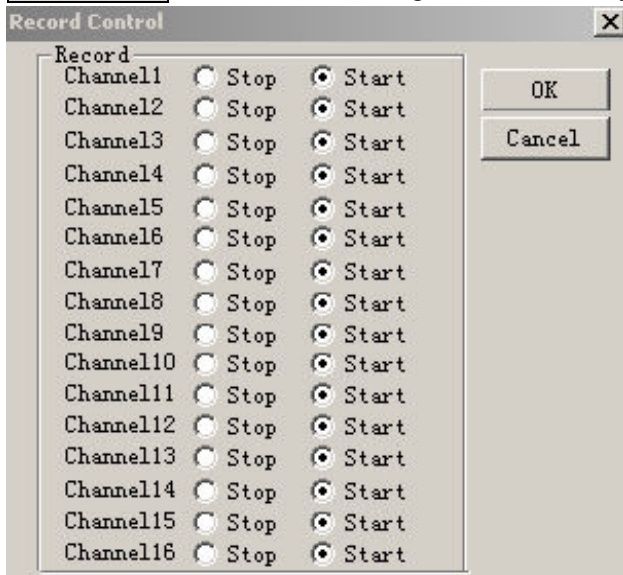Add   Click Add to show the following dialogue box:

 5-27

User can add user information in this dialogue box, select your power. There is only one administrator allowed.

Modify   Select this button to show the following. User modify the filled-in information.

 5-28

Record control   Control the recording of each channel by hand

 5-29

Apply for control power   Web client software can supply the login of multiple users. If you want to have the control power, you can click this option and confirm to have the control power (5-30). If user wants to have the control power, user has to apply and gain the authorization of the user with control power. If the logged-in users are all normal user, the first logged-in user gains the control power automatically. If Administrator logs in later, he or she can gain the control power by force. If only one user logs in or the logged-in user is the user with control power, the box is gray.
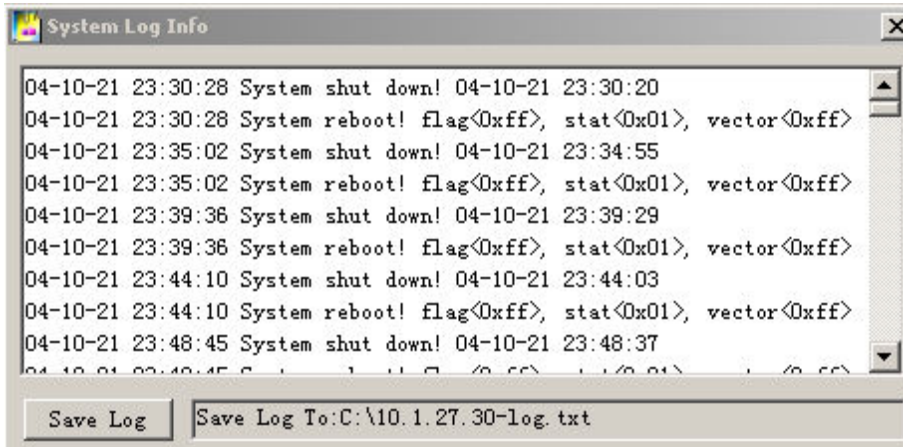

5-30

The following picture is other user is sending request to the user with control power.
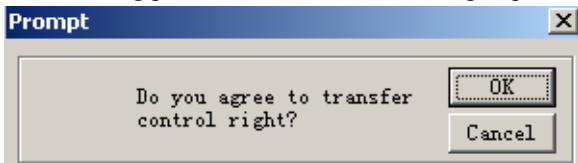
5-31

Log information   The operations on the system are all recorded in log information (5-32). If choose **Save Log**, the Log will be saved automatically in the root directory of your PC's" C:\ as a text file (e.g.: C:\ 10.1.27.193-log.txt)

5-32

57

System information   Be able to check the basic information of the system. When sound is not needed, you can turn off the audio. Due to the bandwidth user can select the different Video transport mode, and after choose non real-time transmission, the mode is Extract I frame. Video type PAL or NTSC has to be selected right. If Auto recycles monitoring is on, system will shift among all the channels automatically and the time interval can be set.

Net data flux   During real-time monitor it shows the statistics of the network data flux.
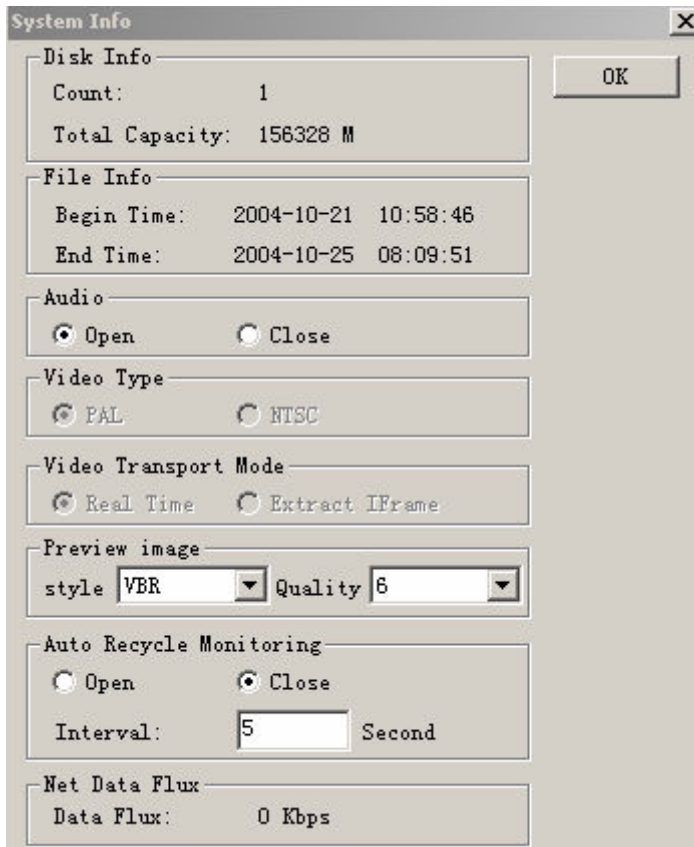
5-33

Alarm Prompt When alarm occurs, user can select sound prompt .The sound file is System32>AlarmSound.wav. Click
ALARM SELECT, user can select different prompt sound.
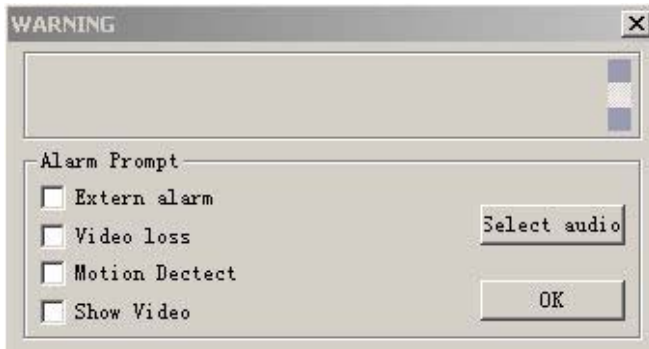
 5-34

Channel name   Able to name each channel and the letters are no more than 12. The revised channel names will be
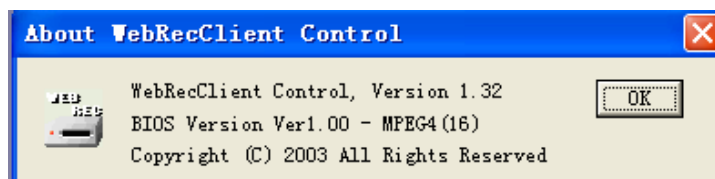displayed on the screen. The default setting of the channel name is Channel No.1 to Channel No.16

 5-35

Upgrade BIOS   Able to upgrade the BIOS,WEB and BOOT program remotely. Open the related BIOS or Web file (example: DVR1604.BIN or Multi-webfile.bin   , and click on Send BIOS. After the upgrading, it will show the clue about the upgrading.

 5-36

About   Version information

 5-37

Chapter 6　　Serial port operation

1　　Super Terminal's software upgrading

The system's operation can also be done through RS232 port. The specific operation is as following　First, copy "Terminal" and "system upgrade program" to the computer. Connect the computer with the DVR through RS232 port. Run "Terminal" program and create the connection between the computer and the DVR.

The setting information for the connection is:　　　　Baud rate— 115200bps

　　　　　　　　　　　　　　　　　　　Data bit— 8 digits

　　　　　　　　　　　　　　　　　　　Stop bit— 1 digit

　　　　　　　　　　　　　　　　　　　Check — no need

　　　　　　　　　　　　　　　　　　　Control on data flow— no

You can log in by username **admin** (default user with administrator power) for the serial port login.

Login steps

　　Press any key to enter the login interface　which showing as following

　　　Username　admin

　　Input the name; press the "enter" key. Then, input the password as following

　　　Password　admin

　　.

　　If the username and password are correct, system enter serial port management menu interface. The detailed functions are the same as the menu setting.

2   Serial port upgrading operation

After the setting of above operation, please follow the below operation

Press any key to enter login interface as following

Username   admin

Enter username and press Enter. System hint to enter password as following
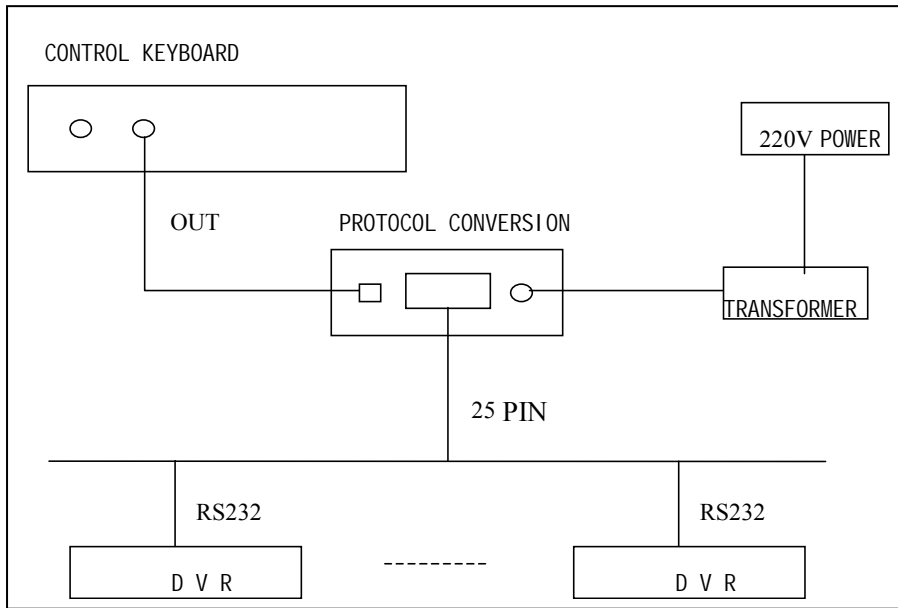
Password   admin

System gets into the **DEBUG>** state, and input BIOS and press Enter.

Click Communication in the menu——Send file, and open upgrading program file(DVR1604_PAL.BIN—16 Channel DVR BIOS program, please complete this operation within 20 seconds, otherwise overtime). System begins to upgrade automatically and after the upgrading system will restart automatically.

3.   Control keyboard

The keyboard can be applicable to link multiple DVRs for uniform control and set the menu for single or multiple DVR,and also can realize pan-tilt control.The operation as following:First,select KEYBOARD CONTROL in MENU>SYSTEM SETTING>SERIALPORT CONTROL-SERIALPORT FUNC,and   set the property (e.g.control protocol),and then connect the 25-pin RS232port conversion to the RS232 port on the DVR and at last set different remote IP addresses for the DVRs.When using the control keyboard,first input the remote IP of the DVR which the user wants to control,then the user can set the menu or operate the pan-tilt by ▲ ▼ ◄   ► and other buttons.

```
┌─────────────────────────────────────────────────────────┐
│  CONTROL  KEYBOARD                                        │
│  ┌──────────────────────┐          ┌──────────────┐       │
│  │  ○    ○              │          │  220V POWER  │       │
│  └──────────────────────┘          └──────────────┘       │
│         OUT      PROTOCOL CONVERSION                       │
│                 ┌──────────────┐    ┌──────────────┐      │
│                 │ ▭  ▭    ○   │────│ TRANSFORMER  │      │
│                 └──────────────┘    └──────────────┘      │
│                        25 PIN                             │
│        RS232                        RS232                 │
│  ┌──────────────┐  ─────────  ┌──────────────┐           │
│  │    D V R     │             │    D V R     │           │
│  └──────────────┘             └──────────────┘           │
└─────────────────────────────────────────────────────────┘
```

4 Matrix connection

Before connecting the matrix to the DVR by RS232 port,the user should confirm with the provider that if the DVR has a matrix control protocol. After the connection, please set the matrix protocol to the DVR's serialport control,then the user can do operations such as control and switch through the panel or remote control.

Chapter 7   Frequent Asked Questions

1. **What the sound of buzzer mean when normally start the machine**
   When the machine is started successfully, it would burst out a short ring.
   When the HD could not be identified, it would burst out a long ring.
   When communication with the controller panel is abnormal, it would burst out a voice of one long ring and two short in serial.

2. **Uncontrollable of the recording time?**
   The recording time unit is one day. Besides schedule recording, there are other recording manners as dynamic detection recording, manure recording, external event triggering recording. Confirm each setting of them is correct.

3. **The indicator light is flashing while recording**
   Check the external video inputting signal first. Such phenomena would happen when the inputting signal is not standard. If it is not the problem of the inputting signal, it must be caused by that the reading speed of HD is too slow. In this situation, the current HD should be changed.

4. **How to dispose with the broken sectors of the hardware?**
   If the broken sector of HD is not too large, the machine would ignore and jump over it. Otherwise, system would eliminate this HD and output corresponding information.

5. **What kind of external equipment could match the recorder?**
   It could work together with various matrix and decoders.

6. **What is the standard for setting different picture quality in the recorder**
   It is not differed by resolution but by image quality.