

**STANDALONE DVR
USER MANUAL**

VER: 020811

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I Introduction

1 Brief Introduction

This H.264 main profile standalone DVR is a professional digital video recorder for CCTV surveillance. Its Pentaplex function allows users to record, playback, live preview, remote preview and backup at the same time. Users can view their premises anywhere over the Internet or mobile devices. The user-friendly interface makes it simple and easy to operate. This DVR is best fit for both home and commercial surveillance purpose.

2 Main Features

Compression

- 4/8/16 channel PAL/NTSC/SECAM video input and H.264 compression standard with each channel being compressed independently in real-time CIF resolution. User can also choose to record at higher resolution such as half-D1 or Full-D1 at different frame rate.
- 4/8/16 channel audio input and G.726/ADPCM-IMA compression standard with each channel being compressed independently in 24Kbps.

Note: Some products do not support audio recording, please refer to the specification.

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- Compressed video & audio are synchronous. You can select either mixed stream or individual video stream.
- Four-level selection of record quality and self-defined bit rate and frame rate supported.
- Adjustable video parameters.
- Multi-area motion detection.
- OSD of channel name and time display.

Recording

- Support manual and/or schedule recording. The schedule record types include: time, motion detection, alarm, motion detection/alarm.
- Support SATA hard disk.
- Backup recorded files through USB flash drive, portable USB HDD, or USB CD/DVD RW.

Preview and Playback

- Simultaneous output of VGA, TV, and S-Video.
- Up to 4 channels playback in fast play mode, slow play mode, rewind and single frame forward supported.
- OSD of channel name and time display.
- Display recording status, alarm and motion detection.

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Control

- Support PTZ control protocol – Pelco P, Pelco P_MJ, Pelco P_LX, Pelco P_Call 98, Pelco D, Pelco D_DT, Pelco D_HD, Pelco D_MJ, Pelco D_CF, Pelco D_LX, Pelco D_CG, Pelco D_HTZ, Pelco D_FH, Pelco D_QG, Pelco D_DSX, Pelco D_JG, Pelco D_JY, Pelco D_PTS, Pelco D_XZ, Pelco D_Jabsco, VTS, YIBOER, YAAN, CLT-618, TD 500, SYYT, TIANDY, VIDO, JY 2000, PHILIPS, PANASONIC, and SAMSUNG.
- Support preset Setting and calling, sequence and tracking.

Alarm

- Support local alarm triggering (included motion detection).
- Alarm linkage: triggered recording, preset alarm output and PTZ link, sound alert, notify alarm center.

Network

- Support TCP/IP
- Support PPPoE
- Support Dynamic access to IP address, Dynamic Host Configuration Protocol (DHCP)
- Support DDNS
- Support Real-time preview, downloading and playback remotely through network
- Support PTZ control, device parameters configuration, device status and system logs acquiring, and remote upgrade

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through network

- Support local recording through network
- Support iPhone and other Microsoft Window base mobile devices

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II Installation

This chapter describes the device interfaces and connections; hard disk installation, front and rear panels interfaces for cables connection.

- 1) Front Panel of 4/8 channels DVR



Fig II-1 DVR Front Panel

Table II-1 Front Panel Description

NO.	Type	Name/Icon	Description
1	LED	Power	Red light indicates power on
		HDD	Green blinking light indicates Hard disk reading/writing
		EVENT	Red light indicates Event alarm is activated
		IR	Green blinking light indicates Remote Controller is operating

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2	Power on/off		On/Off button, press and hold 3 seconds for hard shutdown
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2) Front Panel of 16 channels DVR



Fig II-2 Front Panel of 16 Channels DVR

Table II-2 Front Panel Description

NO.	Type	Name/Icon	Description
1	USB	USB interface	USB2.0 High-Speed(480Mbps), support USB flash disk, portable USB HDD, USB mouse, and USB CD/DVD-RW.
2	Channel LED	Channel LED/Recording Status LED	Red light indicates the channel is recording; Green light indicates the channel is at standby mode, not recording.
	Buttons	Numbers	1) Number input button

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			2) Channel selection in preview mode.(1-16)
3	LED	HDD	Green blinking light indicates Hard disk reading/writing
		EVENT	Red light indicates Event alarm is activated
		IR	Green blinking light indicates Remote Controller is operating
4	Main Functions		1. Play/Pause 2. Playback search.
			Start/Stop recording button
		Arrow Buttons: 【▲】 , 【▼】 【◀】 , 【▶】	1) In menu mode, press 【◀】 or 【▶】 to move to select boxes, press 【▲】 or 【▼】 to select submenu parameters. 2) On screen ActiveX switch
			1) Confirm operations button in Menu mode 2) Select record type button in Setting schedule mode 3) Status change button of the current motion detection block
			1) Switch button from single channel display split to multiple channels

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			<p>2) Enter/Exit button for continuous selection when setting motion detection area and schedule record</p> <p>3) Start/End time button in playback search</p>
			Return to upper menu. Same as 【ESC】 button of remote controller
5	Main Functions		Backup recording button
			PTZ control button
			System setup button
			Alarm button
	LED	Power	Red light indicates power on
Power on/off		On/Off button, press and hold 3 seconds for hard shutdown	

2 Rear Panel Description

- 1) Rear Panel of 4/8 channels DVR

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Fig II-3 4 CH DVR Rear Panel

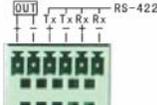


Fig II-4 8 CH DVR Rear Panel

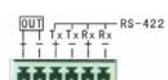
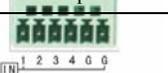
Table II-3 Rear Panel Description

NO.	Description	
	4 CH DVR	8 CH DVR
1	Fan vent	
2	USB interface USB2.0 - Support USB flash drive, portable HDD, USB mouse, USB CD-RW, USB DVD-RW.	USB interface USB2.0 - Support USB flash drive, portable HDD, USB mouse, USB CD-RW, USB DVD-RW.

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3	VIDEO IN: 4 channel video input, BNC (1Vp-p,75Ω)	Video IN: 8 channel video input, BNC (1Vp-p,75Ω)
	AUDIO IN: 4 channel audio input, RCA (2Vp-p,600Ω)	AUDIO IN: 4 channel audio input, RCA (2Vp-p,600Ω)
4	AUDIO OUT: 1 channel audio output, RCA (2Vp-p,600Ω)	AUDIO OUT: 1 channel audio output, RCA (2Vp-p,600Ω)
	VGA: DIN-15 (optional) , 800x600@60Hz, 800x600@75Hz, 1024x768@60Hz, 1024x768@75Hz, 1280x1024@60Hz, 1440x900@60Hz;	
	TV-OUT: 1Vp-p, 75Ω;	
	TV OUT: RCA ,1Vp-p,75Ω	TV OUT: BNC ,1Vp-p,75Ω
	NET: RJ45, 10/100M self-adaptive;	
5		ALARM OUT: 1 channel switch-level alarm output, 30VDC 1A, 125VAC 1A;
		RS422 interface: for duplex operation of data transmitting and receiving
		TX+: transmit data; TX-: transmit data; RX+: receive data; RX-: receive data

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6	Power Input: DC 12V/3A 	ALARM IN: 4 channel switch-level input, N/O. or N/C. G: For ground connection

2) Rear Panel of 16 Channels DVR

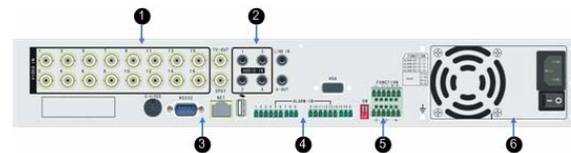


Fig II-5 DVR Rear Panel

Table II-4 Rear Panel Description

NO.	Description
1	VIDEO IN: video input, BNC (1Vp-p,75Ω)

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	TV OUT: BNC (1Vp-p,75Ω)
	SPOT: Matrix output, the DWELL time and channel are optional. BNC, 1Vp-p, 75Ω
2	AUDIO IN: 4 channel audio input, RCA (2Vp-p,600Ω)
	LINE IN: 1 channel audio input, RCA (2Vp-p,600Ω) Support bi-directional talk between Client Web and DVR
	A-OUT: 1 channel audio output, RCA (2Vp-p,600Ω)
3	S-VIDEO: 4-Pin SVideo, 75Ω;
	RS232: Connect RS232 devices such as PC. For DB9 pin interface, please refer to Appendix.
	NET: RJ45, 10/100M self-adaptive;
	USB interface: USB1.1 Suggest for USB mouse connection
4	ALARM IN: 4 channel switch-level input, N/O. or N/C. G: For ground connection
	VGA: DIN-15 (optional) 800×600@75Hz、800×600@60Hz、1024×768@75Hz、1024×768@60Hz、1280×1024@60Hz、1440×900@60Hz ;

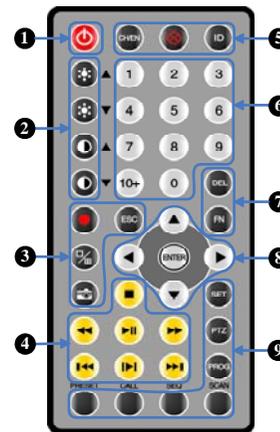
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5		<p>The switch 1 and 2 are terminal resistance switches for RS422 buses. The “ON” position is factory default meaning the terminal resistances are effective.</p> <p>Note: When there are several non-terminal devices connected to the 422/485 bus and this device is not the end of the bus, the resistances should be disconnected.</p>							
		<p>ALARM OUT: 4 channel switch-level alarm output,30VDC 1A, 125VAC 1A;</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><td>ALARM OUT 1</td><td>-1-</td></tr> <tr><td>ALARM OUT 2</td><td>-2-</td></tr> <tr><td>ALARM OUT 3</td><td>-3-</td></tr> <tr><td>ALARM OUT 4</td><td>-4-</td></tr> </table> <p>RS422 interface: for duplex operation of data transmitting and receiving</p> <p>T_X+: transmit data, T_X-: transmit data</p> <p>R_X+: receive data, R_X-: receive data</p> <p>Note: R + / R- support 485 keyboard</p>	ALARM OUT 1	-1-	ALARM OUT 2	-2-	ALARM OUT 3	-3-	ALARM OUT 4
ALARM OUT 1	-1-								
ALARM OUT 2	-2-								
ALARM OUT 3	-3-								
ALARM OUT 4	-4-								
6	Power Input								

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3 Remote Controller

Table II-5 Remote Controller Description



No.	Name	Description
1	Power on/off	On/Off button, same as the button at the front panel
2	Adjust Picture parameters	adjust brightness up/down, adjust contrast up/down
3	Function Buttons	record, same as the button at the front panel switch from single to multiple channel display picture capture return to upper menu, same as the button at the front panel
4	Play control	stop, play in slow mode/fast rewind, play/pause, fast forward, go to previous section, go to next frame, go to next section
5	Function Buttons	【CN/EN】 : Switch/Reverse language 【☎】 : Alarm notification button, same as the button at the front panel.

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		【ID】 : Set ID of remote controller.
6	Numbers	Number button/Channel selection in preview mode
7	Function Buttons	【DEL】 : Delete 【FN】 : Auxiliaries, same as the  button at the front panel
8	Arrow buttons	Move/ Selection
9	Function Buttons	SET: Set parameters, same as the  button at the front panel PTZ: Enable PTZ control, same as the  button at the front panel PROG: set sequence , 【PRESET】 : Set preset, 【CALL】 : Call preset, 【SEQ】 : Call sequence, 【SCAN】 : Scan automatically

Note: The following buttons are disabled currently: **【ID】**、**【CN/EN】**、**【PROG】**、**【PRESET】**、**【CALL】**、**【SEQ】**、**【SCAN】**、



4 Hard Disk Installation

- 1) Installation of 4/8 channels DVR
 - Open the cover of the DVR case.

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- Mount the 4 shock absorption washers into the clamping slots inside the case.
 - Connect the HDD data cable and HDD power cable to HDD.
 - Attach the hard disk to the shock absorption washers, hold and fix them with 4 x M3*12 Head Screws plus plain washers.
 - Connect the HDD data cable and HDD power cable to the main board.
 - Close the cover of the DVR case.
- 2) Installation of 16 Channels DVR
- Remove the top cover of the device and the hard disk bracket.
 - Attach the hard disk to the disk bracket, and fix them with the screws provided
 - Reinstall the bracket with hard disk mounted into the DVR.
 - Connect the data cable from the main board to the hard disk.
 - Connect the power cable to the hard disk.
 - Close the cover of the DVR case.

Note: Please format the HDD after installation. If there is an error message "Hard disk error", please see [4.8 Maintenance](#) for details.

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5 Rear Panel Connection

Power Input - Connect power adapter to Power Input interface of DVR. Confirm that the DVR power supply input switch is positioned correctly for the local voltage before connecting power to the unit. Turn on the unit. The power LED will light if the power cable is connected correctly.

Note: Please use ONLY the power adapter provided in the package. Failure to do so may cause damage to the DVR and void the product warranty.

Video Input - The video input interface is standard BNC socket, 1Vp-p, 75 Ω .

Note: The video signal cable should keep away from the interference of strong electromagnet or any electric field.

Audio Input - The audio input interface is standard RCA socket, 2Vp-p, 600 Ω .

Note1: If the audio input resistance is high; please use active sound collection device or active microphone. Keep the audio signal cable should away from the interference of strong electromagnetism and electric field.

Network Input - The network input interface is RJ45 10/100M self-adaptive.

Note: Confirm that the network band width is enough for transmitting high definition image.

Alarm Input and Output - The alarm input device should be GND connected alarm or voltage input alarm, which can be set as N/O. or N/C. The requirement of signal input level for voltage input alarm type is: low level: 0~2V; high level: 5~15V. The green angle pins of signal cable are supplied for access of PTZ and alarming devices. Please follow these steps to connect:

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- 1、 Pull out the green angle pins that inserted in the alarm input and output interfaces.
- 2、 Losen the screws on the green angle pins, insert the signal cable into interface under spring, and then tighten the screws.
- 3、 Plug in the connected pins into green angle pin socket.

PTZ Input - Connect the PTZ control interface to RS422 TX+ and TX- interfaces at the rear panel. The connection method is same as above.

Note: Please refer to PTZ manual for setting specific parameters. Some PTZ devices contain multiple telecommunication protocols, baud rates and IDs.

VGA/Monitor Input - Video output interface: TV, VGA and S-Video. They can work together simultaneously.

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III Menu Description

There are several ways to control the DVR, including Front Panel Operation, Mouse Operation, Remote Controller Operation and Client IE Web Operation. Each method allows user to operate the DVR conveniently.

Using the mouse to operate the DVR device is simple and easy. At the live view screen, a right-mouse click will bring up the Tool Bar; left-mouse click will confirm the options selection. Simply follow the on-screen display to complete an operation selection or adjustment.

This chapter describes the Menu Structure and most of the General Operations users will be used in operating the DVR.

1 Menu Structure

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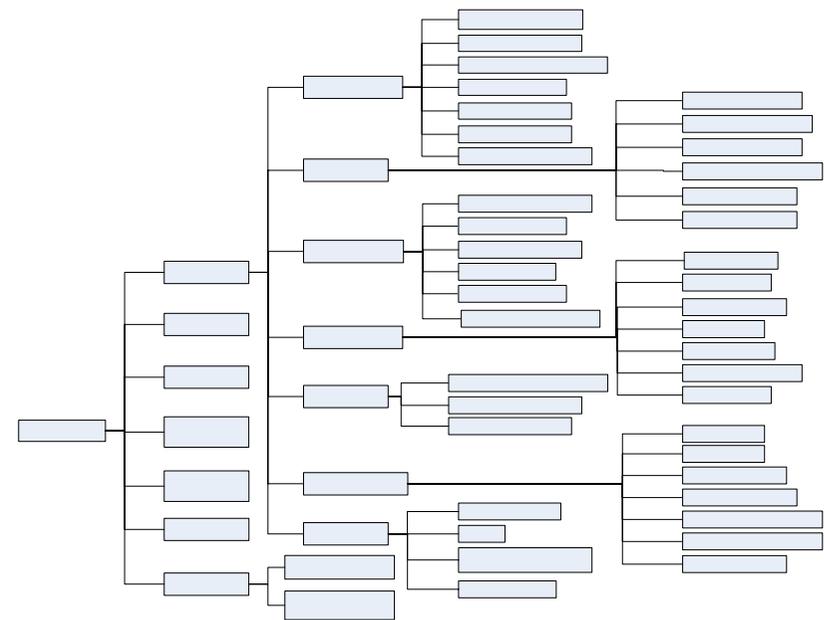


Fig III-1 Menu Structure

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2 Menu Operations

1) General Operations

Press **【SET】** button to enter into system setting screen.

Press **【●】** button to start/stop recording manually.

Press **【▶||】** button to play record file.

Press **【PTZ】** button to enter PTZ control screen.

Note: This manual indicates the Menu selection icons and selection boxes in **【XX】**; the buttons in Menu screen (except menu selection icons) in **<XX>**; the buttons on front panel and remote controller in **【XX】**.

2) Menu Selection

Move the highlighted icon at the menu using **【▲】、【▼】、【◀】、【▶】** buttons, and press **【OK】** button to confirm selection, or press **【ESC】** or **【↩】** button to return to upper menu.

3) Sub Menu Selection

Selection box: Move highlighted icon at the selection box using **【◀】、【▶】** buttons, and press **【OK】** button to confirm selection. Multiple items are allowed to be selected together at once by left clicking mouse.

Sub menu list: Move highlighted icon at the sub menu using **【◀】、【▶】** buttons, or roll mouse to select the item directly. Only one item can be selected for this setting.

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Edition box: Type numbers by pressing the number buttons. Press **【DEL】** to delete the character before cursor and press **【OK】** or **【ESC】** button to confirm and exit.

Sub screen button: Press it to pop up sub screen. When in sub screen, select **【Confirm】** to save configuration and return to the upper menu. Press **【ESC】** or select **【Cancel】** to return to the upper menu without being saved.

4) Screen Operation

Use **【◀】**, **【▶】** to move highlighted icon to any of the selection boxes. Press **【OK】** button to switch to another selection status. Use **【▲】**, **【▼】** to specify the sub menu value where sub menu selections exist.

5) Save/Exit

Exit: Click  button on the right upper corner or single right click mouse or press **【ESC】** button to enter into the Save & Exit screen. You can select exit directly or exit after being saved.

Note: There are three different ways to take effect: take effect instantly, take effect after being saved, and take effect after restarting device. Please refer to the navigation for details.

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IV Operations

This chapter describes the operations for the 4ch, 8ch, and 16 ch DVR systems.

1 Power On

1) Startup

Press **【Power On/Off】** button to start the device, and the Power LED will light. Please refer to [2.6 Rear Panel Connection](#) for details of the connection method. A login box will appear on the screen. Please select proper user and type in relevant password to login.

Note 1: It takes about 60 seconds to boot up the DVR system.

Note 2: Modify password by selecting <Tool Bar>→<System>→<System Setting>→<Password Setting>. Set as indicated, new password will take effect instantly.

Note 3: Manufacture Default – Login ID <Admin>, password 888888; Login ID <User>, password is 666666. Admin password can be restored to factory defaults by short-circuit the “JP 10” or “JP 15” on main board. User password can be reset by Admin by IE in **【User Management】**

Note 4: If the DVR has no Hard drive installed, or the Hard drive connection is not correct, buzzer will sound and “NO Hard disk” will appear on the screen.

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2) System Settings

Language: Please enter <Tool Bar>→<System>→<System Setting>→<Language> to set language.

VGA Resolution: Please enter <Tool Bar>→<System>→<System Setting>→<VGA Resolution> to set VGA resolution and refresh rate. It supports 800×600@75Hz、800×600@60Hz、1440×900@60Hz、1280×1024@60Hz、1024×768@75Hz、1024×768@60Hz currently. Please select relevant values according to the parameters of VGA.

Date/Time: Please enter <Tool Bar>→<System>→<System Setting>→<Time Format> to set time format. DVR support 12 hours and 24 hours format. Please enter <Tool Bar>→<System>→<System Setting>→<Time Setting> to set date and time.

Video Standard: Please enter <Tool Bar>→<System>→<System Setting>→<Video Standard> to set video standard. DVR support PAL, SECAME, or NTSC. Please set according to the parameters of camera.

Note 1: In order to avoid recording time confusion, it is recommended to stop recording before modify the system time.

Note 2: Set "Language" and "Time" will take effect instantly. Set "Record Resolution" and "Video Standard" will take effect after saved.

Note 3: Users can refer to the navigations on the bottom of the main screen to look for relevant guides.

2 Preview

After power on the system, the screen has live view area and tool bar. Right click mouse in preview mode or press **【OK】**

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on the front panel to show the Tool Bar. Videos, channel name, time, and alarm notifications will be displayed on the screen.

1) Preview Operation

View Mode Switching

In 4/9/16 splits view mode, a currently selected tile will have white border. Use mouse or press **【Direction】** buttons to select the tile from one to another. If the audio output device is connected, the audio sign will show on the particular tile.

User can select to display a single channel by pressing the corresponding **【Numbers】** buttons.

When in single view mode, user can enter into 4/9/16 splits view mode by pressing  button directly, or reverse.

Note: For 8 channel DVR, the view mode can be directly switched by tool bar. Please refer to 4.2.3 "Tool Bar"

Image Parameters Setting

Please enter <Tool Bar>→<System>→<Camera Setting>→<Image Setting> to set brightness, contrast, hue and saturation.

It will take effect instantly.

Note 1: User can set image parameters of one channel at a time or all channels together by selecting **【All】** in <Camera Channel>.

Note 2: In preview mode, brightness, contrast can be adjusted by remote controller.

2) OSD (On Screen Display) Settings

Please enter <Tool Bar>→<System>→<Record Setting>→<OSD Setting> to set channel name and system time. The

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channel name will be displayed on upper left corner and the channel time will be displayed on the right corner of the screen.

3) Channel Status Display

The channel status included: “Motion detection triggered recording” / “Common recording” / “Motion recording” / “Alarm triggered recording” / “External alarm input” / “Alarm output”.

Indication of “Motion detection” / “Common recording” / “Alarm recording” will display on the upper right corner of screen. The details are as follows:

 indicates “Motion detection”. The settings of Motion detection include sensitivity and area selection. Please see Motion Detection Settings for details.

 Blue indicates “Common recording”. Please see Recording for details.

 Green indicates “Motion detection triggered recording”.

 Red indicates “Alarm triggered recording”.

 Grey indicates “Manual recording”.

Indication of “External alarm input” / “Alarm output” will be displayed on system status column or Tool Bar. The details are as follows:

: The 4/8/16 icons indicate the alarm input status. When alarming, it changes into red . External alarm input can trigger multiple events handling, please see [Alarm Settings](#) for details.

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 The 1/4 icons indicates alarm output. When alarming outputs occurred, it changes into red 

4) System status bar

In preview mode, the system status bar will display current system status, including: "External alarm input" / "Alarm output" / "Hard disk capacity" / "Number of client connection" / "System time."

 Indicates the hard disk is working. The number indicates the percentage of the total capacity of the hard disk.

 Indicates "Hard disk error" Or "No hard disk".

 Indicates client connection. The numeric figure shows the number of linked client.

 Indicates "No client connected"

Note: Some products do not support the system status bar.

5) Tool Bar

Right mouse click or press **【OK】** button in preview mode, the Tool Bar will show as below:



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- : Hide the tool bar.
- : System configuration. Please see [3.1 Menu Structure](#) for details.
- : Manual record. Please see [4.3.1 Manual record](#) for details.
- : Search, playback and backup record files, please see [4.5 Video Playback](#) and [4.6 Video Backup](#) for details.
- : PTZ operation. Please see [4.4.1 PTZ Control](#) for details.
- : Alarm notification. Click this button will pop a message to show the present alarm information.
- : Power Off button. Click this button to turn off the DVR.
- : Alarm input and output notifications.
- : To set the preview mode of “Single channel view”, “4 splits view”, or “9 splits view”
- : To adjust the screen, 8 pixels per unit.
- : To reduce or increase screen in vertical direction.
- : To reduce or increase screen in horizontal direction.
- : To move the screen up, down, left, right.
- : Zoom out and center the screen.

Note 1: The function hint will show if the cursor is moved over to a button.

Note 2: When DVR in NTSC system, screen display max resolution is 720*480.

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3 Recording

Recording type contains Manual recording and Schedule recording. The Manual recording has higher priority and therefore if there is a conflict setting between the Manual and Schedule recording, the Manual recording will overwrite the other setting until it is cancelled.

There are four recording: “Common recording” / “Alarm triggered recording” / “Motion detection triggered recording” / “Alarm & Motion detection triggered recording”, each of them has different grid color and each color indicates a particular recording status. Please see [Fig IV-1 record schedule](#) for details.

Recording resolution: Options for "CIF" (352 x 240) / "Half D1" (352 x 480) / "D1" (704 x 480).

Recording quality: Options for various bit rate: “Best 768Kbps” / “High 640Kbps” / “Better 512Kbps” / “Common 384Kbps”.

Recording frame rate: In NTSC, the frame rate options are “All” / “15” / “7” / “3” / “1” / “Customized”. Default is “All”, 25 fps for PAL and 30 fps for NTSC.

Recording Resource: “Video” for video only or “Video and Audio” for recording video and audio.

Sub-stream: To adjust sub-stream value, enabled this function and press **【ok】** to go to the sub-stream menu. The sub stream frame rate ranges from 1 to 15 frames, and bit rate ranges from 32K to 512K.

Note 1: Please refer to [Appendix 6.2](#) for the methods of calculating HDD capacity.

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Note 2: The setting of Sub-stream for some products must enter [Advanced Setting] .

1) Manual Recording

Please enter <Tool Bar>→<Manual Record> to record on a specific channel.

Press **【●】** button to Start/Stop recording manually.

NOTE1: This type of manual recording is called “common recording”.

2) Scheduled recording

Please enter <Tool Bar>→<System>→<Record Setting> to set recording schedule. The setting screen is shown as the figure below:

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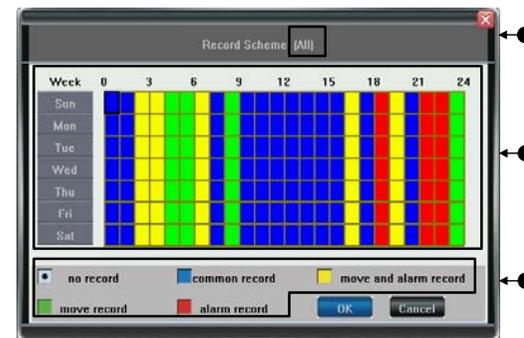


Fig IV-1 Record Schedule

- ①. The current recording channel number
- ②. The recording schedule
- ③. Description of recording type

Users are free to select a week day or the day of a period of time. System provides a recording option for hours every day or a week day. The unit is hour and one grid indicates one hour.

- ①. Move highlighted icon to a time grid using **【Direction】** buttons.

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②. Specify the recording type by repeat pressing **【OK】** button or double left click of the mouse, (the color of the grid will change relevantly).

③. Select **【OK】** to confirm settings. The settings will take effect after being saved.

Note 1: User can copy the current setting onto the neighboring grid by pressing **【Fn】** button first, then **【Direction】** buttons, and then the **【Fn】** button again to exit. User can also drag mouse to set.

Note 2: When Motion detection recording is selected, the motion detection sensitivity and area should be set ahead. Please refer to [4.4.2 Motion Detection Settings](#) for details. When alarm recording is selected, the alarm triggering settings should be set ahead. Please refer to [4.7.2 Event Handling](#) for details.

4 Camera Control

1) PTZ Control

PTZ Settings

Enter <Tool Bar>→<System>→<Camera Setting> to set camera channel, protocol, baud rate and ID.

Note: Different PTZ controlled by one PCI should have corresponding PTZ ID. There are 16 PTZ ID in the DVR currently: 0-15.

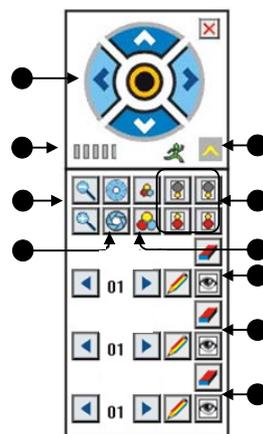
PTZ Operations

In preview mode, select the tile/channel (in 4/9/16 splits view mode, the selected tile is with highlight white border) using

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mouse or 【Numbers】 buttons, and then enter <Tool Bar>→<PTZ Control> to the PTZ Control screen that described as the table below:

Table IV-1 PTZ Operation Description



NO.	Name	Description
①	Direction	Click the arrow icons to control direction of PTZ. Click the center icon  to call sequence or run scanning. Please refer to the PTZ manual for details of PTZ scanning mode.
②	Speed	Set the turning speed of PTZ camera.
③	Advanced	Click  and  to show/hide the advanced setting screen (the part under the  button).
④	Focus	Click to zoom in/out (it is disabled for cameras with automatic zoom).
⑤	Iris	Click to adjust the image brightness (it is disabled for cameras with automatic iris adjustment).

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⑥	Auxiliary	<p>Open/close auxiliaries.</p> <p>Click  to open and click  to close. Different functions respond to different protocols. The auxiliaries include light, rain brash, and power etc. Please refer to PTZ manual for details. NOTE: DVR support up to 2 auxiliaries, and Client web side support up to 4 auxiliaries.</p>
⑦	Focus	<p>Click to focus the object (it is disabled for cameras with automatic focus).</p>
⑧	Preset	<p>Preset is to set camera position, focus, zooming, and iris position, and then mark them in numbers. Up to 16 presets can be set currently.</p> <p>Set preset:</p> <ol style="list-style-type: none"> 1. Select the preset number as calling name. 2. Position the camera at desired position including direction, focus, iris and zoom value. 3. Click the Set button . <p>Call preset:</p> <ol style="list-style-type: none"> 1. Select the preset number you want to call. 2. Click the Go-to button . <p>Clear/reset preset:</p> <ol style="list-style-type: none"> 1. Select the preset number you want to clear/reset.

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		2. Click the clear button  .
⑨	Sequence	<p>Sequence is to set the camera movement following the route of multiple presets.</p> <p>Set sequence:</p> <ol style="list-style-type: none"> 1. Select preset number you want to call. 2. Click Set button . 3. Repeat step 1 and 2 to add the presets 4. Click Run button . <p>Clear sequence:</p> <p>Click the  button to clear sequence.</p>
⑩	Track	<p>Track is a continuous running route of camera.</p> <p>Set track:</p> <p>Click the  to start setting.</p> <p>Move the PTZ camera along the track and pattern you want it to run.</p> <p>Click the  again to finish setting.</p> <p>Click the  to run track and click again to stop running.</p> <p>NOTE: Some types of PTZ.camera does not support tracking function.</p>

Note: DVR support up to 2 auxiliaries, and Client web side support up to 4 auxiliaries.

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2) Motion Detection Settings

Motion detection Settings has two sections: Sensitivity, and Detection area. The Sensitivity includes three levels: High, Mid, and Low. Please select <Tool Bar>→<System>→<Camera Setting>→<Motion Detection> to set the level.

Detection area setting: Drag mouse to create grid on screen, the selected area will be highlighted in blue. Save and exit to confirm the settings.

5 Playback

1) File Search

Specify the date/time and channel number by selecting <Tool Bar>→<Playback>. Click 『Search』 in the pop-up screen to start searching the desired recording files. The searched results will show on the screen in different colors representing different record types. Please see [Fig IV-1 Record Schedule](#) for details of colors description.

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Fig IV-2 File Search

- 1 Left-click the mouse to start the playback time line, a pink line will appear. Left-click the mouse again to set the playback end time. Move the cursor to the time line and right-click to clear the selection.
- 2 Check channel selection box to select the playback channel.
- 3 Click  to enlarge the timeline if necessary.
- 4 Click  to start playback. Click  to start backup the recorded files.

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2) Playback Control



: Fast backwards, the available fast backwards speeds are: 8X and 16X.



: Pause the current playback, or stop the current Pause.



: Stop playing.



: Fast Forward, the available forward speeds are 1X, 8x 16x, 1/2X and 1/4X.



: Go to next frame.



: Click to switch from single view mode to 4/9 splits view mode, or reverse.

The status of playback will display on the upper right corner of the screen:

Indication	16X	8X	1X	1/2X	1/4X	8X	16X
Speed	16X fast forward	8X fast forward	Normal playing	1/2X forward	1/4X forward	8X fast backwards	16X fast backwards

Note: When playback only one channel, the image will display in full-screen.

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6 Backup

Enter <Tool Bar>→<Playback> to search, backup and playback the specific recorded files.

Click  to enter the backup screen. System will detect all backup devices available and display them on screen. Select the suitable device and record type, and click  to start storing. If there is no backup device found, a prompt tip will appear to remind users.

Note: The record types include H.264 Raw and MP4. When backup in MP4 types, the special plug-in player will also be backed up into backup device. After player plug is installed, the stored video files can be played by Windows Media Player.

7 Alarm Settings

Make sure that the alarm input/output cables are connected correctly. Please refer to [2.6 Rear Panel Connection](#) for details.

Select <Tool Bar>→<System>→<Alarm Setting> to configure alarm parameters in the pop-up screen.

Note: All settings will take effect after being saved

1) Alarm Input

The alarm input attribution includes N/O. and N/C. Please select a suitable attribution according to the types of alarm device connected and control modes of alarm device adopted.

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N/O.: Normal open. Circuit connected when alarm signal triggered.

N/C.: Normal connected. Open when alarm signal triggered.

2) Event Handling

The Alarm Triggered Event Handling included: Record/Alarm output/PTZ/Sound output/Report to alarm center.

Note 1: Before setting the Alarm Triggered Record, please set the recording schedule at "Record Schedule".

Note 2: Before setting the Alarm Triggered PTZ, please select the channel number, and then check the box. (Only 1 channel can be selected)

Note 3: In 4channel DVR, event handling sound / report to alarm center need to be set in IE browser. Please refer to "5.2 Web Client Operation Table IV-1"

8 Maintenance

Please enter <Tool Bar>→<System>→<Maintenance> to enter screen of maintenance.

1) Log View

1 Select the type of log to be searched: All/ Operation/ Exception/ Alarm.

2 Select the time scope to be searched.

3 Click [Search] to display the detail information of log.

Note 1: If the logs searched contains alarm event log, user can directly play the video recorded during the alarm event

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by clicking  on the right side of screen.

Note 2: The maximum number of logs supported currently is 3000. The storage mode adopts overwrite mode: continuously overwrite the old data when the database is full.

2) Upgrade

The upgrade modes supported three methods: USB/ IE/ Remote Software:

USB: Make sure the USB device is connected correctly and the upgrade applications have already being copied into USB root directory. Please follow the prompts to operate.

After the upgrade is completed, the Restart prompt screen will appear. Please restart the device in order to activate the latest software.

IE: Please refer to [5.2.2 Device Parameters Settings](#) for details.

Remote Software: Please follow the user's manual of remote software to operate.

3) Device Information

HDD Size: Shows the total capacity and remaining spaces of HDD

Hardware Version: Shows the hardware version

Software Version: Shows the software version

Release date: Shows the current software release date

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4) Format HDD

If the HDD has been used in the DVR, please backup all the recorded files on another storage media before formatting HDD.

Please stop recording at the beginning of HDD formatting, and follow the prompts to operate.

5) Lock Screen

Please enter <Tool Bar>→<System>→<Save Setting>→<Log Out>, the preview screen will appear together with the log-in box. Please type in password to log out.

6) Restore to factory defaults

Please Enter <Tool Bar>→<System>→<Save Setting>→<Restore Defaults>, a confirmation window will pop up, click to start restoring the system.

Note 1: Please refer to Appendix VI for the default values.

Note 2: The system language, time, camera P/N system, and network settings (IP address, subnet mask, gateway, HTTP port) will not be recovered by restoring to factory defaults.

9 Advanced Settings

Operation in this chapter is only available for administration level; please use Admin ID to login. Some settings could only be operated via client software over Internet.

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1) Spot

Please enter <Tool Bar>→<Setting >→<System >→[[Advanced Setting>>]], select <SPOT SETTING >→[[>>]] to enter the setting screen.

Set SPOT channel and time: the DWELL time decides a period of the selected channel

Click [[Add]] to add the channel to the Matrix output. The video output will take effect after saved.

All video channels connected with DVR video inputs can be sequentially switched for SPOT monitoring output.

2) Authority Manage

Please enter <Tool Bar>→<Setting >→<System >→[[Advanced Setting>>]], select <AUTHORITY MANAGE >→[[>>]] to enter the setting screen.

Authority setting contains the authority options of local and remote operations.

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Fig IV-3 Authority Setting

3) Advanced Setting Of Camera

Please enter <Tool Bar>→< Setting >→< Camera >→ [[Advanced Setting>>]]

MOTION HANDLING

When a channel is set under motion detection; and such channel is set with Motion Handling. Once when a motion is detected, it will activate the following action: “RECORD” / “ALARM OUT” / “BUZZER” / “UPLOAD”.

Note: Please refer to “4.2.2 Motion Detection Settings” for detection area and sensitivity setting.

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VIDEO LOST HANDLING

When a channel is set with Video Lost Handling, and such channel has video lost, it will activate the following actions:
“ALARM OUT” / “BUZZER” / “UPLOAD”.

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V Network Operation

1 Network Settings

1) Common Setting

Please enter <Tool Bar>→<System>→<Network Setting>→<Network Connection>, there are three connection types: Static IP, DHCP and PPPoE.

Static IP: This connection requires a Static IP address. Fill in the screen with IP address, subnet mask, and gateway. Once the setting is complete, it is recommended to ping the IP address at a networked PC to ensure the connection works.

DHCP: This connection requires a DHCP server in a network. A dynamic IP address will be assigned automatically and displayed on IP Address field.

PPPoE: Click [>>] to bring up the setup screen. Type user name and password and click [OK] to confirm. The system will dial automatically, and an IP address will be assigned and displayed automatically on IP Address field.

Types of ports:

HTTP Port: It is the port number of browsing through IE (Internet Explorer). Default is 80.

Signal Port: It is the first entry communication port between web client and the DVR, which is mainly used for controlling log-in/out, real-time preview, remote playback, and remote download, etc.

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Media Port: It is for media stream transmission includes real-time streaming, voice streaming and file streaming, etc.

Note 1: All network settings will take effect after the DVR is being saved.

Note 2: Some models need to enter <Network Setting>→ [Advanced Setting>>] to set PPPoE.

2) Advanced Setting

Please enter <Tool Bar>→< Setting >→< Net >→ [Advanced Setting>>]

PPPoE Setting

Select PPPoE and click [>>], the PPPoE setup screen will appear. Type in user name and password and click OK to confirm. The system will dial automatically, and an IP address will be assigned and displayed automatically on IP Address field.

DNS ADDRESS

Type the DNS server IP address.

DDNS

Select DDNS and click [>>], the DDNS setup screen will appear. Select a DDNS server and type in the DDNS address, user name and password.

Auto Register

Select Auto Register and click [>>], the register setup screen will appear. Type in the register server IP, port and register interval time.

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File Sharing

When the File Sharing function is activated, user's PC is able to access video files in DVR HDD via Network neighborhood.

Open Network neighborhood, type "\\ IP address, for example: \\ 192.168.10.220, enter the login interface, type in the Super Admin user name and password, then the shared files will be able to access. (Open folder "videoout".)

Note: Install plug-in to Windows Media Player for playback.

2 Web Client Operation

Open IE browser, type IP address, the log-in screen will appear.

Note 1: If PPPoE or DHCP is selected, user has to check IP address again after restarting device.

Note 2: If it is the first time login through IE, please install the Active X for IE and type user name and password. Default user name and password are: Admin (case sensitive). If the plug-ins can not be downloaded normally, please lower IE's security level:

Click **Tools** and choose **Internet Options** in the IE menu bar to enter the 'Internet Options' page. Choose **Security** and click **Custom level...** to enter the 'Security Settings' page, Enable ActiveX controls and plug-ins, Click **OK** to save the settings.

Note 3: Compared with the local side, the added settings on IE Web client side are as the table below:

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Table V-1 Settings added on IE side

Menu	Contents
<Server> Tab	Name of DVR is configurable on Web client side.
	Enable PPPoE, the DNS address is configurable.
	The address and port of host PC is configurable.
	The DDNS is configurable.
<Channel> Tab	Motion detection can trigger audio alarm, remote notification and alarm output. Support multiple channels recording triggered by motion detection. (Only one channel recording can be triggered by motion detection on local side.)
	The handling of video lost is selectable: audio alarm, remote notification and alarm output.
<Alarm> Tab	The handling of external alarm input is selectable: audio alarm, remote notification and alarm output. Support Multiple channel recording triggered by alarm input.
<User> Tab	The password and authority of Admin and User can be modify.

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<Device> Tab	User can adjust DVR time accordance with PC time.
<State> Tab	Device states can be viewed directly.
PTZ	Support up to 2 auxiliary channels on local side and 4 auxiliary channels on IE side: 1、2、3、4。

1) Web Screen Description

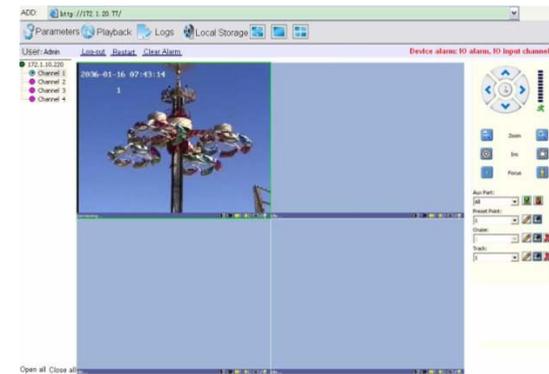


Fig V-1 Web Screen

Address

Display the DVR IP address.

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Tool Bar



The description of icons from left to right is:

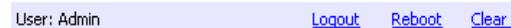
Configure device parameters.

Search and playback recorded files.

View logs and export them.

Set the storage directory of recorded files.

Click to switch image view modes among full-screen, single view mode and 4/9/16 splits view mode.



Log-out, restart device, Clear alarm

Alarm Notification

When network connection is broken or abnormal, the alarm notification of “No heartbeat of device, please check the network!” will be displayed at the upper right side of the main screen. After network recovery, the preview will be displayed automatically.

When alarms of remote notification occur, the alarm notification with alarm input number contained “Device alarm: IO alarm, IO input x” will be displayed at the upper right side of the main screen.

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When alarms of motion detection with remote notification occur, the alarm notification with the alarm channel number contained “**Device alarm: motion detection, channel X**” will be displayed at the upper right side of the main screen.

When alarms of video loss with uploading to center occur, the alarm notification with the alarm channel number contained “**Device alarm: video loss, channel X**” will be displayed at the upper right side of the main screen.

Preview

-  : Adjust image contrast up/down.
-  : Adjust brightness up/down.
- : Start/Stop voice monitoring. The icon will turn to green when recording.
- : Start/Stop recording. The icon will turn to green when recording.
- : Click to snapshot.
- : Stop preview.

Note: Click  Local Storage to set the storage directory of record files and pictures captured.

PTZ Setting

The PTZ setting of client web is similar as the PTZ operation of local device, please refer to [4.4 Camera Control](#).

Note: IE side support 4 auxiliaries setting.

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2) Device Parameters Settings

Click , the parameters configuration screen will appear. All configurations are divided into the following selections:



<Server>

It includes the configuration of server, network, and version information. All configurations can be set in <Tool Bar>→<System>.

Note: If selected the DHCP mode, an IP address will be assigned automatically.

<Channel>

User can set motion detection, video loss, OSD, image bit rate and frame rate, image parameters and record schedule.

Note: User can first input settings for a single channel, then copy the settings to the other channels.

<Serial>

User can set PTZ protocol, baud rate, and address code here. All settings can be done by selecting from <Tool Bar>→<System>→<Camera Setting>.

<Alarm>

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User can set IO alarm and event handling here. All settings can be done by selecting from <Tool Bar>→<System>→<Alarm Setting>.

<User Management>

It includes user authority and password setting. Relevant interface information should be <Tool Bar>→<System>→<System Setting>→ [[Advanced Setting]] “User” authority and password can be changed under “Admin” login.

<Device>

Upgrade: Click [[Browse]] to select the software package, and click [[Start Upgrade]] to proceed. User can stop the progress of upgrade by clicking [[Stop Upgrade]] .

Adjust Time: Click [[Adjust Time]] to adjust time of device.

<State>

It store HDD information and channel state.

3) Playback

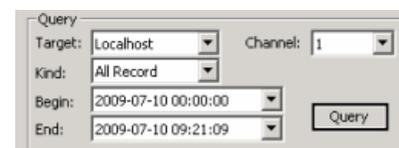
Click  Playback, the playback screen will pop-up. It includes file search, playback and download.

File Search

The file search part is on the upper right side of the screen, please set target, type, start time and end time. Then click

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Click [Query] to start searching. The result will list on the table. Specify the files in the table list and click on the playing control button or download button to playback.



A dialog box titled "Query" with the following fields and controls:

Target:	Localhost	Channel:	1
Kind:	All Record		
Begin:	2009-07-10 00:00:00		
End:	2009-07-10 09:21:09		

Query

File Playback

The play control screen is on the left side of the screen. It includes image display area, play control bar, and channel information.

Click [Play], the selected record files will be displayed in time order. The progress of playing is shown as the figure below:



The playback control bar is shown as below. The icons descriptions from left to right are as follows:



Play; Pause; Stop; Go to next frame; Fast forward option (Each click will double the speed of playback. The playback speed are 2X, 4X, 8X, and 16X); Slow play option (Each click will reduce the playback speed by half. The speeds are 1/2X,

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1/4X, 1/8X, and 1/16X); Enhance contrast; Reduce contrast; Enhance brightness; Reduce brightness; Open/Close voice; Go to previous file; Go to next file ( and  is enabled only when multiple record files being selected to play); Snapshot (the storage directory can be set on the pop-up screen by clicking ).

Information of the selected recording files will be displayed in the area shown below. It includes device's IP address, current playback speed, channel number and start/end time of the recording files.



File Download

The File download operation buttons are on the bottom right of the screen.

Click  to set the storage directory. Click  to start downloading.

4) Bidirectional Talk

Click  in the Tool Bar to enable the bidirectional talk between Client Web and DVR. A microphone should be connected to the device through the Line-in interface. Click  again to stop talking.

5) Log

Click  , the system log screen will appear. There are four options: All, according to time, according to type,

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according to time and type.

To search logs, select the search mode and channel number, then click [Search] to proceed. Click [Export] to export logs in html format.

6) Remote Upgrade

Select <Server>-<Manage>, click [Browse] to specify the file for upgrade, and click [Start] to upgrade. User can click [Stop] to stop upgrading in progress.

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VI Appendix

1 Specifications

1) 4ch and 8ch DVR Specifications

Table VI-1 Specifications

DVR Type		4 channel DVR	8 channel DVR
System		Linux 2.6 O/S Pentaplex operation: record, playback, preview and network browse, backup supported.	
I/O Interface	Video Input	4 channel, BNC, 1Vp-p, 75Ω PAL (625 line, 50 f/s), NTSC (525 line, 60 f/s), SECAM(625 line, 50 f/s)	8 channel, BNC, 1Vp-p, 75Ω PAL (625 line, 50 f/s), NTSC (525 line, 60 f/s), SECAM(625 line, 50 f/s)
	Audio Input	4 channel, RCA, 2Vp-p, 600Ω	4 channel, RCA, 2Vp-p, 600Ω
	VGA Output	1 channel, DIN-15(optional); 800x600@60, 800x600@75, 1024x768@60,	

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		1024x768@75, 1280x1024@60, 1440x900@60	
	CVBS Output	1 channel, RCA, 1Vp-p, 75Ω	1 channel, BNC, 1Vp-p, 75Ω
	Audio Output	1 channel, RCA, 2Vp-p, 600Ω	1 channel, RCA, 2Vp-p, 600Ω
	USB Interface	USB interface USB2.0 - Support USB flash drive, portable HDD, USB mouse, USB CD-RW, USB DVD-RW.	USB interface USB2.0 - Support USB flash drive, portable HDD, USB mouse, USB CD-RW, USB DVD-RW.
	RS422	1 port, receiving and transmitting duplex supported.	
	Network Interface	RJ45 10/100M self-adaptive	
	Alarm Input	4 channel NO/NC	
	Alarm Output	1 channel NO/NC, relay: 30VDC 1A, 125VAC 1A	
	SATA Interface	1 SATA port, 1 SATA HDD up to 1T supported.	
Video & Audio			
Video	Video	H.264 Baseline	

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	Compression	
	Video Standards	PAL/NTSC/SECAM
	Video Compression Resolution	PAL:352×288 (CIF) NTSC: 352×240 (CIF)
	Frame Rate	PAL:25F/S/CH 1, 3, 6, 12, 25 and user-defined optional; NTSC: 30F/S/CH 1, 3, 7, 15, 30 and user-defined optional.
	Video Output	32kbps-2048kbps (14M byte/hour - 922M byte/hour)
	Preview Resolution	PAL: 720×576 (D1), horizontal line 550, vertical line 450 NTSC: 720×480 (D1), horizontal line 550, vertical line 400
	Playback Resolution	PAL: 352×288 (CIF), horizontal line 300, vertical line 250 NTSC: 352×240 (CIF), horizontal line 300, vertical line 220
Audio	Audio Compression	G.726 ADPCM
	Input/Output	8KHz

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	Sampling Rate	
	Audio Channel Type	Mono
	Sampling Bit	16 bit
Environmental	Power Supply	DC 14-19V 2.5A, power adapter is connected outside.
	Operating Temperature	0°C — +50°C
	Operating Humidity	10% ~ 90%RH
	Power Consumption	<12W (without HDD)
	Dimension	340mmx260mmx50mm(W*D*H)

Table VI-2 Specifications

2) 16 Ch Specifications

Table VI-3 Specifications

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DVR Type		16 channel DVR
System		Linux 2.6 O/S Pentaplex operation: record, playback, preview and network browse, backup supported.
I/O Interface	Video Input	16 channel, BNC, 1Vp-p, 75Ω
		PAL (625 line, 50 f/s), NTSC (525 line, 60 f/s), SECAM(625 line, 50 f/s)
	Audio Input	4 channel, RCA, 2Vp-p, 600Ω
	VGA Output	1 channel, DIN-15(optional); 800x600@60, 800x600@75, 1024x768@60, 1024x768@75, 1280x1024@60, 1440x900@60
	CVBS Output	1 channel, BNC, 1Vp-p, 75Ω
	S-Video Output	1 channel, 4-Pin SVideo, 75Ω
	Spot Output	1 channel, BNC, 1Vp-p, 75Ω
	Audio Output	1 channel, RCA, 2Vp-p, 600Ω
USB Interface		2 USB port, USB2.0 High-Speed (front) and USB1.1(rear) for USB flash disk, USB mouse, portable USB HDD, USB CD/DVD-RW

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	RS422	1 port, receiving and transmitting duplex supported. Note: R + / R- support 485 keyboard
	Line in	1 port, Audio line input for voice
	Network Interface	RJ45 10/100M self-adaptive
	Alarm Input	16 channel NO/NC
	Alarm Output	4 channel NO/NC, relay: 30VDC 1A, 125VAC 1A
	SATA Interface	4 SATA port, 1 SATA HDD up to 1.5T supported.
Video & Audio		
Video	Video Compression	H.264 Baseline
	Video Standards	PAL/NTSC/SECAM
	Video Compression Resolution	PAL:352×288 (CIF) NTSC: 352×240 (CIF)

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	Frame Rate	PAL:25F/S/CH 1, 3, 6, 12, 25 and user-defined optional; NTSC: 30F/S/CH 1, 3, 7, 15, 30 and user-defined optional.
	Video Output Bit Rate	32kbps-2048kbps (14M byte/hour - 922M byte/hour)
	Preview Resolution	PAL: 720×576 (D1), horizontal line 550, vertical line 450 NTSC: 720×480 (D1), horizontal line 550, vertical line 400
	Playback Resolution	PAL: 352×288 (CIF), horizontal line 300, vertical line 250 NTSC: 352×240 (CIF), horizontal line 300, vertical line 220
Audio	Audio Compression	ADPCM-IMA
	Input/Output Sampling Rate	8KHz
	Audio Channel Type	Mono
	Sampling Bit	16 bit

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Environmental	Power Supply	ATX : 220V+10% 50Hz+2% / 110V 60Hz AC
	Operating Temperature	0°C -- +50°C
	Operating Humidity	10% ~ 90%RH
	Power Consumption	<14W (without HDD)
	Dimension	440mmx 370mmx 70mm (W*D*H)

Table VI-4 Main Functions

Main Functions	
Operating Interface	Multiple control methods: mouse, IR remote controller, front panel and GUI with navigation supported. Multiple languages: English, Spanish, Traditional Chinese and Simplified Chinese. Recording status and alarming status displayed directly on desktop and front panel.
Record	Five recording modes: Manual, Schedule, Motion Detection, Alarm, and Motion Detection

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	<p>& Alarm.</p> <p>Selectable Recording Quality: Best, High, Mid, Low and User-defined.</p>
Playback	<p>Playback progress bar.</p> <p>Multiple channel video/audio playback simultaneously.</p> <p>Play, pause, stop, single frame forward, fast forward and backward.</p>
Backup	<p>Multiple backup modes: USB flash disk, USB HDD, External CD-RW or DVD-RW.</p> <p>Output format - H.264 RAW</p>
Network	<p>IPv4, PPPOE client, DHCP client and TCP/UDP protocol.</p> <p>The Web Client and Client Application Software are provided for remote configuration, video browse, local recording, local and remote playback, and remote PTZ control.</p> <p>Network transmitting supports independent coding.</p> <p>The time delay of LAN is less than 300ms.</p>
Log Operation	<p>The log operation and alarm will be saved automatically. User can play the recorded files directly when the alarm event occurs.</p>
PTZ Control	<p>Multiple protocols: Support Pelco-P, Pelco-D, and Samsung, etc.</p>

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	Multiple PTZ operations: Pan, Tilt, Zoom, Preset, Sequence, Track and Auxiliary Switch.
Alarm Management	4 channel alarm input NO/NC. Motion detection and Video loss alarm. Trigger recording, Link to PTZ preset and “Beep” alarm. The alarm information can be sent to Web Client or Client Application Software through network.
Account Management	Support Dual account. Users can set & recover password, authentication management.
Auxiliary Function	Support Hardware Watch Dog. DVR will restart if operations does not responded for 30 seconds or more.

2 Methods of Calculating HDD Capacity

- 1) Calculate the maximum capacity of the build-in hard disk.

Timing Recording:

Step 1: Calculate the maximum capacity of the hard disk needed in selected channel per hour, assume S_i (MByte) (“i” is the channel number), and assume the bit rate of the channel selected as D (Kbit/s). The calculation formula is:

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$$S_i = (D * 3600) / (8 * 1024) = D * 0.439453125 \text{ MB}$$

Step 2: Confirm the storage time length, assume “T” = hours. The total capacity of the hard disk needed in selected channel for T hours “St” is:

$$S_t = T * S_i$$

Step 3: Confirm the total numbers of channels, assume “n” = channel numbers. The total maximum capacity of the hard disk needed “Sc” is:

$$S_c = S_1 + S_2 + \dots + S_n$$

Alarm Recording:

Assume the alarming rate is $\alpha\%$. The capacity of the hard disk needed in alarm recording “Sa” is:

$$S_a = S_c * \alpha\%$$

2) Calculate the compression bit rate for recording T hours.

Timing Recording

Step 1: Assume the capacity of the hard disk is “S”, the total numbers of the channel as “n”. The capacity of hard disk needed per channel “Di” is:

$$D_i = S / n$$

Step 2: Assume the total recording time is “T” hours. The capacity of the hard disk needed per hour per channel “Dt” is:

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$$Dt = Di / T$$

Step 3: The bit rate of all the channels “Dc” is:

$$Dc = Dt * (8*1024) / 3600 = Dt * 2.2756 \text{ (Kbit/s)}$$

Alarm Recording

Step 1: Assume the alarming rate is $\alpha\%$, capacity of hard disk is “S”, the total numbers of the channel is “n”. The capacity of hard disk needed per channel “Di” is:

$$Di = (S / n) * \alpha\%$$

Step 2: Assume the recording time length is T (hours). The capacity of hard disk needed per hour per channel “Dt” is:

$$Dt = Di / T$$

Step 3: The bit rate of all channels “Dc” is:

$$Dc = Dt * (8*1024) / 3600 = Dt * 2.2756 \text{ (Kbit/s)}$$

3 Default Values

Table VI-5 Default Values

Menu		Options in menu	Default
System	LANGUAGE	English	English

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Settings	Video Standard	PAL、NTSC、SECAM	Auto adjust
	Record Resolution	CIF, Half D-1, Full D-1	CIF
	VGA Setting	800×600@75Hz、800×600@60Hz、 1440×900@60Hz、1280×1024@60Hz、 1024×768@75Hz、1024×768@60Hz	1024x768@60 Hz
	Time Format	12 hours, 24 hours	12 hours
	Password Setting	Click into sub menu screen.	Admin:888888 User:666666
Record Settings	Record Schedule	Click into sub menu screen.	24 hours Common recording
	Video Quality	Best, High, Better, Common	High
	Record Frame Rate	PAL: All, 12, 6, 3, 1, Customized NTSC: All, 15, 7, 3, 1, Customized SECAM: All, 12, 6, 3, 1, Customized	All

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	Record Resource	Video, Video & Audio	Video & Audio
	OSD Setting	Channel name, Channel name and time, time, none	Channel name and time
	Sub-stream	Frame rate and bit rate can be set: Frame rate:1-15 frame/second Bit rate: 32-512	Deactivated Frame rate:15 Bit rate:288
Camera Settings	PTZ Protocol	Pelco-P、Pelco-D、Samsung、Panasonic、LILIN	Pelco-P
	PTZ Baud Rate	1200、2400、4800、9600	2400
	PTZ ID	Click into sub menu screen.	1
	Color Setting	brightness, contrast, hue and saturation: 8\8\8\8	8\8\8\8
	Motion Detection	High Sensitivity, Medium Sensitivity, Low Sensitivity	Medium Sensitivity
	Motion Detection Event Handling	Triggered alarm, alarm output, sound, report to alarm center	Triggered recording current channel
	Video Loss Handling	Alarm output, sound, report to alarm center	Deactivated
Network	Network	Static IP、Dynamic access of IP、PPPoE	Static IP

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Settings	IP Address	Click into sub menu screen.	192.168.0.10
	Subnet Mask	Click into sub menu screen.	255.255.255.0
	Gateway	Click into sub menu screen.	192.168.0.1
	HTTP Port	Click into sub menu screen.	80
	Command Port	Click into sub menu screen.	5050
	Media Port	Click into sub menu screen.	6050
	DNS address	Click into sub menu screen.	202.103.264.68
	Dynamic Domain Name	Click into sub menu screen.	Deactivated
	Auto Register	Click into sub menu screen.	Deactivated
	File Sharing	Click into sub menu screen.	Deactivated
Alarm Settings	Alarm Input Type	N/O. N/C.	N/O.
	Event Handling	Trigger record, Trigger alarm output, Sound alarm, Trigger PTZ preset	Trigger alarm output and sound