

C922

Edition 9.2

Issued on September 2009

NetDVR User Manual

2/5

IP-CCTV Solution Manuals

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To contact us:

Manufacturer

China: www.ildvr.com

U.S.A.: www.ildvr-usa.com

ILDVR Global Distribution & Service

Armenia: www.ildvr.am

Bulgaria: www.ildvr.bg

Canada: www.ildvrusa.com

Germany: www.ildvr.de

Indonesia: www.ildvr.com.id

Kazakhstan: www.ildvr.kz

Netherland: www.ildvr.nl

Norway: www.ildvr.no

Poland: www.ildvr.pl

Russia: www.il-dvr.ru,
www.ildvrcom.ru

Tunisia: www.ildvr-tn.com

Turkey: www.ildvr.com.tr

Ukraine: www.ildvr.com.ua

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Introduction of IP-CCTV Solutions

Thank you for choosing this product for your security video surveillance system. This operation manual illustrates how to set up hardware and software explains each individual icon function and demonstrates how to use the system effectively in a stable environment. Prior to install/utilize the system, operators should go through this manual thoroughly. Local suppliers may support them in due course.

IP-CCTV Product Lines

Item	Product Name	Video Record Type	Why it?
1	PC-DVR (DVR card)	Local HDD	High resolution, high quality, friendly GUI interface, convenient operation, easy to expand cameras, powerful integration ability.
2	NetDVR (Stand Alone)	Local HDD	Stable, no risk of computer virus, easy maintenance
3	IP Camera	Local SD card and network	Next generation product, all in one combo, easy installation, the best cost effective.
4	IP Speed Dome	Network stream	Has all traditional high speed dome features but overcome the coaxial cable distant limit
5	IP Video Server	Network stream (5001HS both SD card and network)	Convert existing analog camera to IP camera, directly upgrade to IP video surveillance system
6	IP Matrix/TV-out (Decode card)	N/A	Utilize existing TV-wall facility

IP-CCTV Solution hardware&software structure

Data Analytics



Car license plate Access control POS machine

Analog Video In

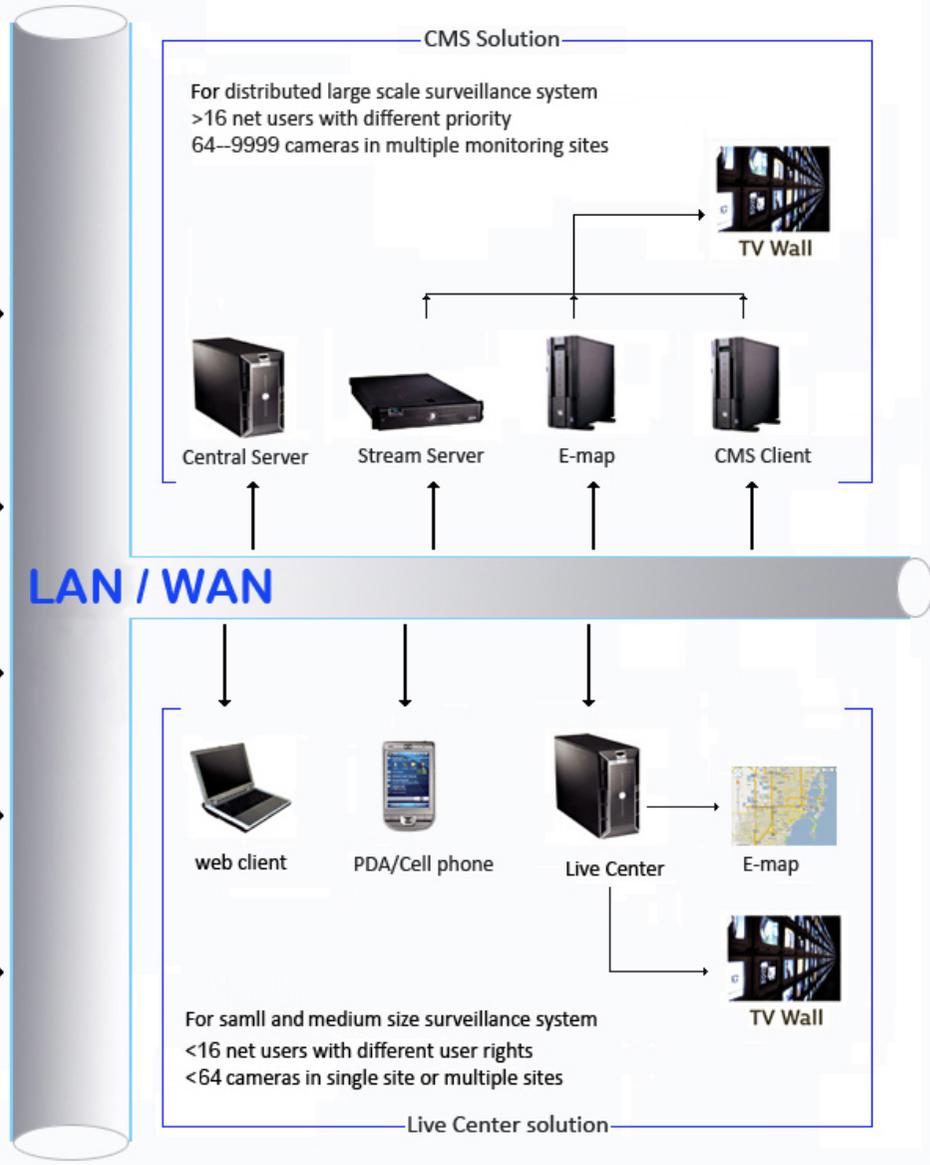


Analog camera IR camera Analog PTZ

Audio in and Alarm in



Microphone Smoke sensor IR sensor Fire alarm panel



1 Product Features and Specifications

1.1 Compression

- H.264 hardware compression. Support up to 16 channels video input (PAL/NTSC). Each channel is independent and real time (PAL: 25 FPS, NTSC: 30FPS). Support both variable bitrate and variable frame rate.
- Support up to 16 channels audio input. Each channel is independent OggVorbis compression and bitrate is 16Kbps.
- Compressed video and audio are synchronous. You can select either mixed stream or only video stream.
- Support 4CIF, DCIF, 2CIF, CIF and QCIF resolution.
- Support multi-area motion detection.
- Support OSD and changeable OSD position.
- Support LOGO and changeable LOGO position.

1.2 Local Function

Record

- Support multiple record types includes real time record, manual record, motion detect record, external alarm record, motion & alarm record, motion | alarm record.
- Support 8 IDE HDD and each HDD can support 2000GB.
- Support FAT 32 file system.
- Support HDD S.M.A.R.T technology.
- Support auto-cycle or none cycle record.
- Support multiple backup media and file clips. Support USB memory, USB HDD, USB CD-R/W and IDE CD-R/W.

Preview and playback

- Support analog monitor and VGA output.
- Support multiple preview modes.
- Support sensitive area mask.
- Support camera spiteful block alarm.
- Support 2-ch synchronous playback. Support multiple operations: forward, backward, pause, frame-by-frame, etc.
- Support play back by files or by time.
- Display local record status.

PTZ

- Support many kinds of PTZ protocol.
- Support preset, sequence and tour.

Alarms

- Support Email AlarmNotification
- Support exception alarm, motion detection alarm, external alarm, etc.

Others

- Support IR remote control.
- Support RS-485 keyboard.
- Support multi-level user management.

1.3 Network

- Support TCP, UDP, RTP, Multicast for network preview.
- Support PPPoE for broadband dialup.
- Support PSTN for narrow band dialup.
- Support dynamic DNS (DDNS)
- Support remote parameters setup.
- Alarm information can be sent to remote center.
- Network control PTZ.
- Network record the real time stream.
- Network download and playback the recorded files in NetDVR.
- Remote upgrade the firmware.
- RS-232 supports transparent channel function so that the remote PC can use NetDVR to control serial devices.
- Support bi-direction voice talk or one-way voice broadcast.
- Support IE to preview and configure NetDVR.

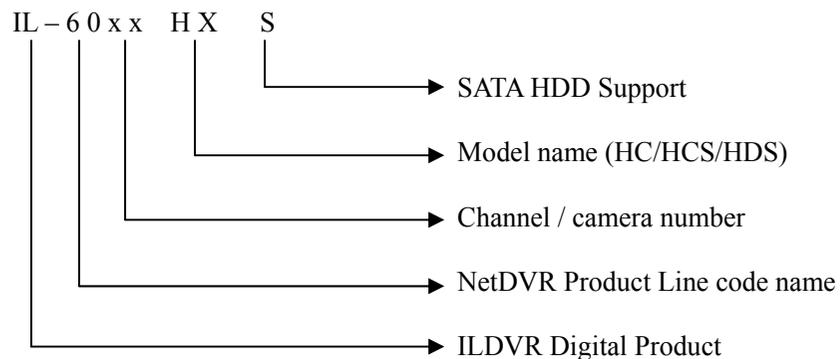
1.4 Specification

Version Difference

Firmware Version1.5 is used for IDE interface hard disk (discontinuous IL6000HC series)

Firmware Version2.0 and later version are used for SATA interface hard disk (IL6000HCS series, IL6000HDS series and IL6000HN(S))

Model Description



Specification

	IL6000HN	IL6000HCS	IL6000HDS
Video compression	H.264		
Preview resolution	PAL: 704*576, NTSC: 704*480		
Playback resolution	QCIF/CIF	QCIF/CIF/2CIF/ DCIF	QCIF/CIF/2CIF/ DCIF/4CIF
Video input	4/8	4/8/12/16	4/8/12/16
Video input interface	BNC (Electrical Level: 1.0Vp-p, resistance: 75Ω)		
Video output	1 channel, BNC (Electrical Level: 1.0Vp-p, resistance: 75Ω)		
Video loop out	No		
Video aux output	Yes		
Frame rate	PAL: 1/16—25FPS, NTSC: 1/16—30FPS		
Stream type	Video/Video&Audio		
Max bit rate	32Kbps--2Mbps, self-define		
Audio input	1	4/8/12/16	4/8/12/16
Audio input interface	BNC (Linear Electrical Level, Resistance: 1kΩ)		
Audio output	1 channel, BNC (Linear Electrical Level, Resistance: 600Ω)		
Audio compression	OggVorbis		
Audio compression rate	16Kbps		

Voice talk	1 channel, BNC (Linear Electrical Level, Resistance: 1KΩ)	
Communication interface	1 RJ45 10M/100M Self-adaptive Ethernet Interface 1 RS232 interface 1 RS485 interface	
Keyboard interface	2 RJ45	
HDD interface	1 SATA HDD can support 2000GB	Up to 8 SATA interface support 8 SATA HDD and each HDD can support 2000GB
USB interface	1 USB interface, USB1.1, can support USB flash memory, USB HDD and USB CR-R/W	
VGA interface	1 VGA interface, support resolution: 800×600/60Hz, 800×600/75Hz, 1024×768/60Hz	
External alarm in	4/8/16	
Relay output	2/4	
Power supply	100~240VAC, 6.3A, 50~60 HZ	
Power consumption	20—42W (without HDD)	
Working temperature	-10 to +55 centigrade degree	
Working humidity	10°C--90°C	
Size	315mm x 230mm x 45mm	19" Standard (450mm*450mm*95mm)
Weight	Less than 8Kg (without HDD)	

For IL6000HCS series, only 1st, 5th, 9th and 13th channels can support 2CIF/DCIF/4CIF. Other channels can only support QCIF/CIF.

NTSC: 176*120(QCIF), 352*240(CIF), 704*240(2CIF), 528*320(DCIF), 704*480(4CIF)

PAL: 176*144(QCIF), 352*288(CIF), 704*288(2CIF), 528*384(DCIF), 704*576(4CIF);

2 Installation

2.1 Before Installation

- When you get the product, please check all items included in packing list. If any of the items is missing, please contact your dealer.
- Before you install the NetDVR, please make sure the power of NetDVR is switched off
- Check the 220V/110V shift switch if it is set correctly to your city power
- Check your HDD interface if it matches your NetDVR HDD interface (refer to specifications)
- Installation instrument: One cross screwdriver (#2 or 6.0 mm).

In order to run NetDVR stably, please install the NetDVR in well ventilation space with allowed range of temperature and humidity as claimed in specifications.

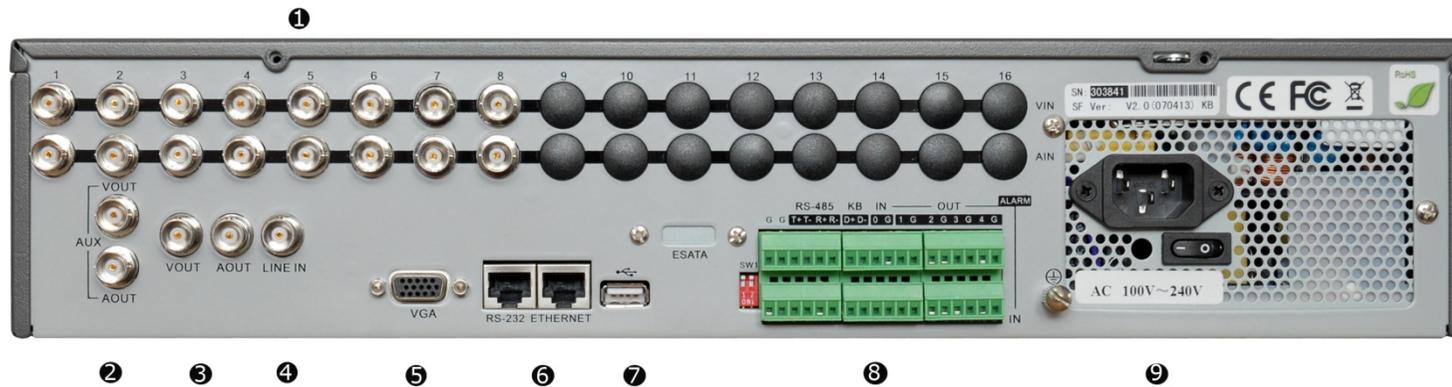
2.2 HDD Installation

Installation notice: The NetDVR has no HDD when leaving factory. After you install the HDD, you must format them. Please refer to section 5.14

- Open the NetDVR cover. Take off the HDD mounting plate.
- If you install IDE interface HDD, please set master and slave HDD correctly.
- Place the HDD on the mounting plate and fix it with screws.
- Place the mounting plate back to the NetDVR and fix it with screws.
- Connect the ATA/SATA data cable correctly.
- Plug the HDD power connector.
- Cover and fix the NetDVR case.

2.3 Rear Panel Description

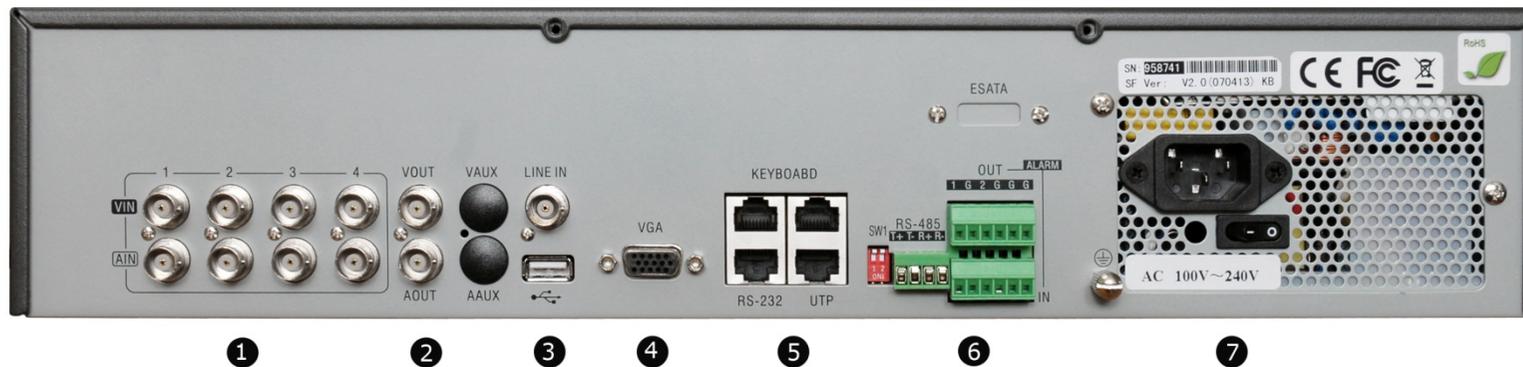
IL6008HDS Rear Panel (Please refer to real product for different model)



Index	Physical Interface	Description
1	Video Input	Standard BNC.
	Audio Input	Standard BNC.
2	AUX Video Output	Auxiliary video output
	AUX Audio Output	Auxiliary Audio output

3	Video Output	Connect monitor, output video and menu.
	Audio Output	Local audio output.
4	Line In	Audio line input for voice.
5	VGA Interface	VGA display.
6	RS-232	Connect RS-232 devices. Refer to Appendix B for pin definition.
	RJ45 Network Interface	Connect network devices. Refer to Appendix B for pin definition.
7	USB Interface	USB memory disk, USB HDD, USB CD-R/W
8	RS-485	PTZ connection. Refer to Appendix B for pin definition.
	Keyboard Interface	One is for ILDVR keyboard. Another is for NetDVR cascade.
	External Alarm Input	8/16 Alarm in.
	Relay Output	4 Alarm out
9	AC Input	Use switch to change AC voltage 220/110V.

IL6004HDS Rear Panel (Please refer to real product for different model)



Index	Physical Interface	Description
1	Video Input	Standard BNC
	Audio Input	Standard BNC
2	Video Output	Connect monitor, output video and menu.
3	Audio Output	Local audio output.
	Line In	Audio line input for voice.
	USB Interface	USB memory disk, USB HDD, USB CD-R/W
4	VGA Interface	VGA display.
5	Keyboard Interface	One is for ILDVR keyboard. Another is for NetDVR cascade.
	RS-232	Connect RS-232 devices. Refer to Appendix B for pin definition.
	UTP Network Interface	Connect network devices. Refer to Appendix B for pin definition.
6	RS-485	PTZ connection. Refer to Appendix B for pin definition.
	External Alarm Input	4 Alarm in
	Relay Output	4 Alarm out
7	AC Input	Use switch to change AC voltage 220/110V.

2.4 External Alarm In/Out Connection

Alarm input connection

Alarm input port

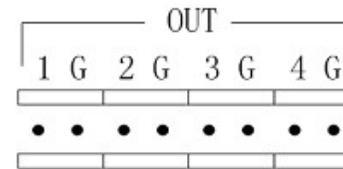
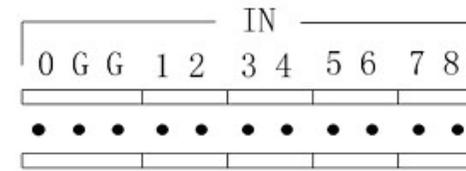
1~8: Alarm inputs, support normal open/normal close.

G: GND of sensor.

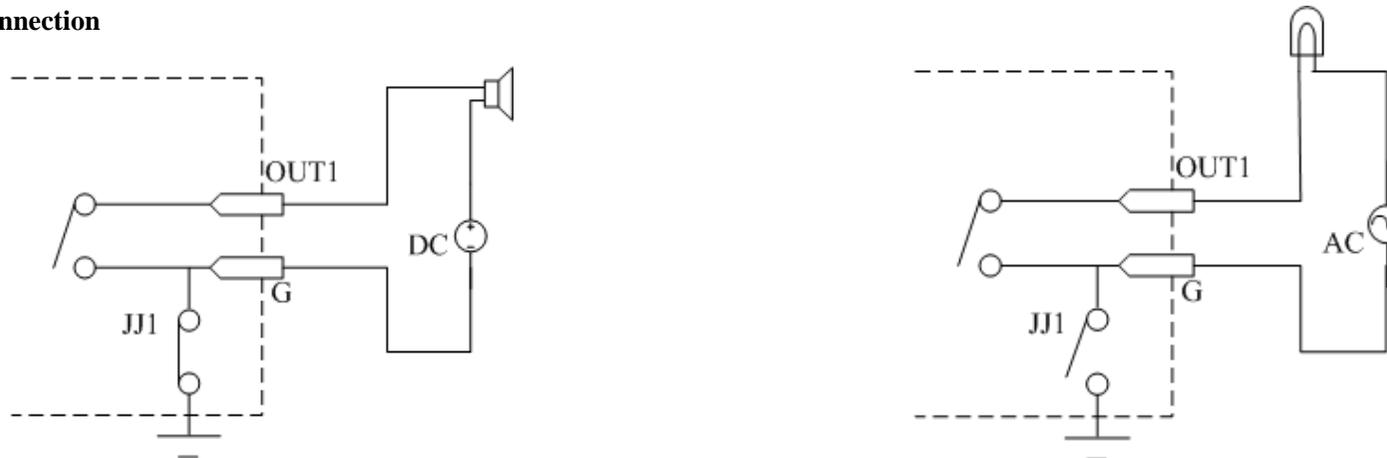
0: Reserved.

Alarm output

1G~4G: 4 relay outputs.
(G= GND)



Alarm output connection



Please note the usage of jumper JJ1. If you use DC, either connection is OK. We suggest you to use those DC under 12V, 1A.

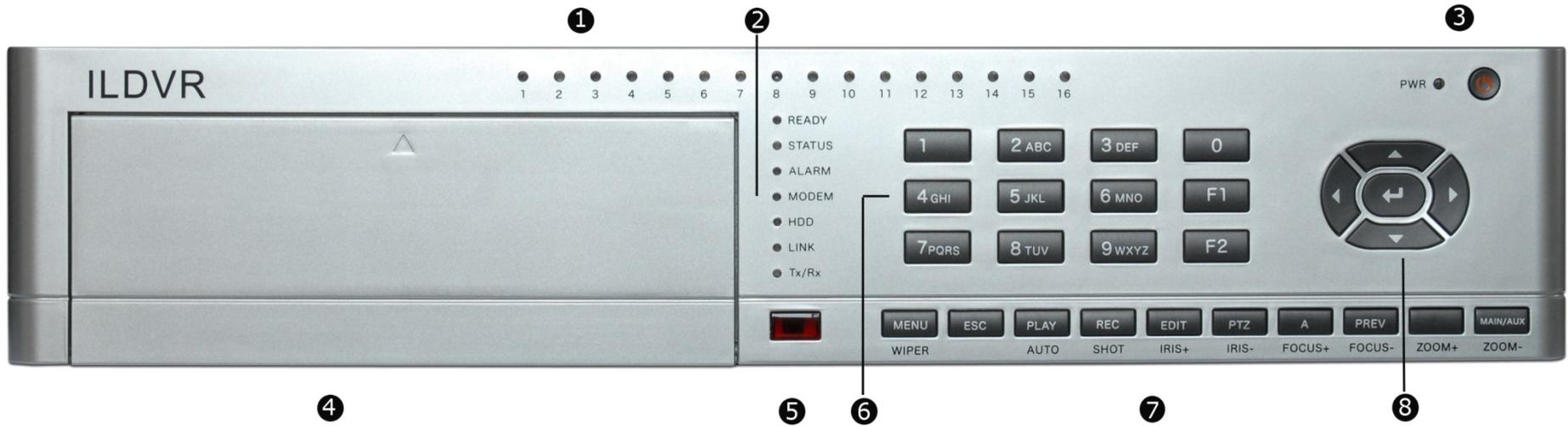
If you use AC power supply for relay output, please open the jumper. There are 4 jumpers (JJ1, JJ2, JJ3 and JJ4) in NetDVR main board, corresponding with 4 alarm outputs. The default is closed.

Warning: If you use AC input for relay output, please open the jumpers.

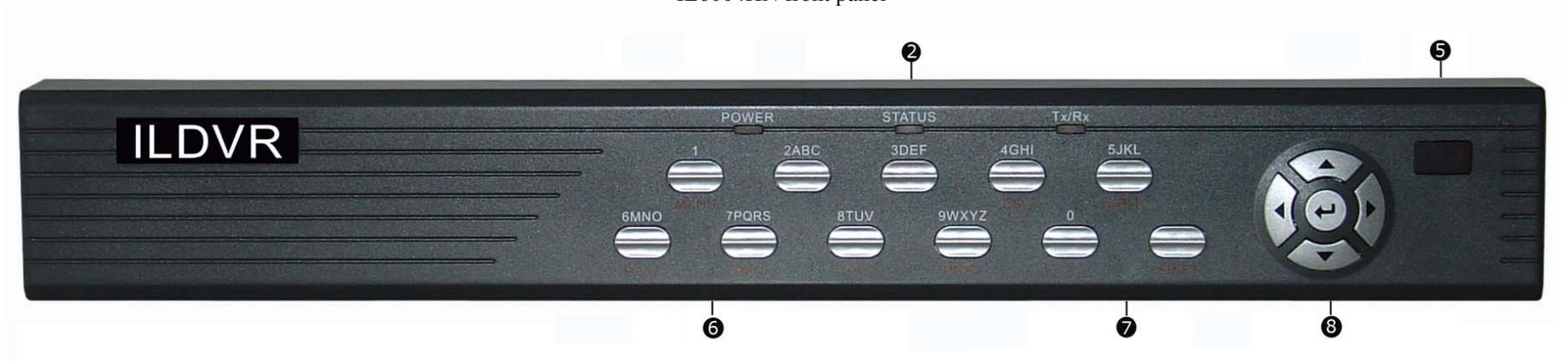
3 Front Panel and Remote Controller Introduction

3.1 NetDVR Front Panel

IL6000HCS series and IL6000HDS series front panel



IL6004HN front panel



Index	Type	Name	Description
1	Camera Status Lamps	1-16	Show channel 1-16 status. Green means recording; Red means network transmission; Orange means recording and network transmission. Lamp flicker and red means the corresponding HDD has error.
2	System Status Lamps	READY	NetDVR is ready.
		STATUS	Green means you can use IR remote control.
		ALARM	Red means there is alarm.
		MODEM	Green means modem connection and dial-up successful.
		HDD	Twinkle in red means reading or writing HDD.
		LINK	Green means network is OK.
		Tx/Rx	Twinkle in green means data is being transmitted.
3	Power Lamp	PWR	Device switch with power indicator lamp. Green means NetDVR is working; Red means NetDVR is powered off. No light means no power is supplied.
	Power On/Off Button		Turn on and /or shut down NetDVR
4	CDRW Cover		Push to open CDRW
5	IR Receiver		When using the remote controller keep it face to IR Receiver
6	Input Keys	Numeric Keys	Input number, lower case and upper case character and symbols
		F1	Function key = [LIGHT] in PTZ control.
		F2	Function key = [AUX] in PTZ control.

7	Compound Keys	MENU	<ol style="list-style-type: none"> 1. Switch preview mode into menu 2. Brush control short key [WIPER] 3. Press [MENU] for more than 5 seconds to cancel button beep sound
		ESC	Cancel and back to parent menu
		PLAY	<ol style="list-style-type: none"> 1. Local playback 2. [AUTO] in PTZ mode
		REC	<ol style="list-style-type: none"> 1. Manual record; 2. [SHOT] in PTZ mode (adjust preset)
		EDIT	<ol style="list-style-type: none"> 1. In edit state, delete current cursor character 2. [IRIS+] in PTZ control 3. Select ✓ to enable or “X” to disable
		PTZ	<ol style="list-style-type: none"> 1. Enter into PTZ control mode 2. [IRIS-] in PTZ control
		A	<ol style="list-style-type: none"> 1. Input switch (number, lower case, upper case and symbol) 2. [FOCUS+] in PTZ control 3. In preview mode, display or hide the channel status bar
		PREV	<ol style="list-style-type: none"> 1. Multi screen preview switch 2. Switch menu mode into preview 3. [FOCUS-] in PTZ control
		(Blank)	[ZOOM+] in PTZ control
		MAIN/AUX	<ol style="list-style-type: none"> 1. Auxiliary video out and audio out 2. [ZOOM-] in PTZ control
		Shift	Switch key function between control and input, only apply to IL6004HN
8	Control Keys	Direction Keys	<p>Composed of [↑], [↓], [←] and [→]</p> <ol style="list-style-type: none"> 1. Menu mode, use [←] / [→] to select [↑] / [↓] to edit 2. PTZ direction control 3. Playback speed control
		ENTER	<ol style="list-style-type: none"> 1. Menu confirmation 2. Select ✓ to enable or “X” to disable 3. Pause playback

3.2 IR Remote Controller



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

Loading the batteries into the IR controller

- Remove the battery cover.
- Insert a pair of AAA 1.5V battery. Please take care that the poles (+ and -) are correctly positioned.
- Replace the battery cover.

Start to use IR controller

IR controller is designed to control multiple NetDVR devices. It recognizes the target NetDVR by device ID.

Press [DEV] key, input the NetDVR device ID (default is "03", it can be changed in "Display" menu) and then press [ENTER] key. If the "STATUS" lamp of NetDVR front panel is turned into green, it means you can use IR controller to operate this NetDVR.

Stop using IR controller

When IR controller status is on, press [DEV] key again, the "STATUS" lamp will be turned off. The IR controller cannot control this NetDVR.

Turn off the NetDVR

When IR controller status is on, press [POWER] key for several seconds, the NetDVR will be turned off.

When IR controller cannot work normally

- Check IR Receiver if it is masked
- Check IR Controller's sensor if it is masked
- Replace new batteries
- If the problem still exists, please change another IR Controller to try again or contact your dealer for repair.

4 Basic Operation

4.1 Power on

If [POWER] lamp is off, please switch on the power button on the rear panel.

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

When NetDVR is started, [POWER] lamp is turned to green. The monitor will display DSP and HDD initialized information. The first row represents DSP initialization. The icon “✓” means DSP is OK. The icon “X” means the DSP initialized error. The second row represents HDD initialization. For IDE HDD, sequence icons represent IDE1 master and IDE1 slave, IDE2 master and IDE2 slave, and so on. For SATA HDD, sequence icons represent SATA1, SATA2, SATA3, and so on. If the HDD icon is “X”, it means the corresponding HDD is not installed or not detected.



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

4.2 Preview

NetDVR will go to preview mode after initialization. You can see date & time, camera name and camera status icon on the screen. Change system date and time in “Display” menu. Refer to section 5.3. Change camera name in “Image” menu. Refer to 5.4.

Also on screen you can see recording status and alarm status of each camera. These two kinds of status auto shift sequentially. Press [A] key to hide or display the camera status bar.



Camera recording status is defined as following:

Camera alarm status is defined as following:

Icon	Icon Color	Status Description
①	White	No video signal
●	Yellow	Video input
●	Pink	Manual recording
●	Green	Real time recording
●	Blue	Motion detect recording
●	Red	External alarm recording

Icon	Icon Color	Status Description
①	White	Video lost
●	Yellow	Camera Tampered alarm
●	Pink	Motion&External alarm
●	Green	No alarm
●	Blue	Motion alarm
●	Red	External alarm

Press numeric keys to switch individual camera preview. If NetDVR has less than 10 channels, press one numeric key to switch corresponding channel. For example pressing [4] key to preview 4th camera. If NetDVR has 10 or more channels, press two numeric keys to switch corresponding channel. For example, press [0] [4] to preview 4th camera, and press [1] [2] keys to preview 12th camera.

Press [EDIT] key to manual cycle preview. You can set the auto preview mode in “Preview” menu, refer to 5.11.

Press [PREV] key to switch multi-channels preview.

4.3 User Name and Password

Note: When NetDVR is delivered from factory, there is only one default administrator named “admin” setup, its default password is “12345”. This administrator name cannot be modified but its password can be modified. You can create 15 users and define their user rights.

Highlight item is current active item. Use [↑] or [↓] keys to change current selection.

Use [→] keys to move highlight item forwardly. Use [←] keys to move highlight item backwardly.

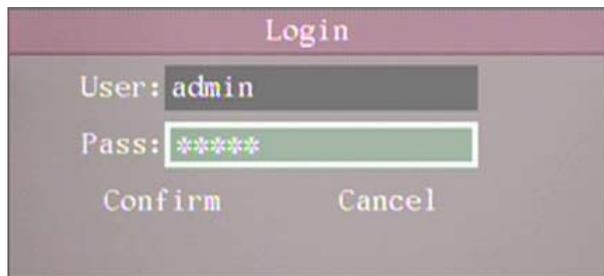
Login dialog is following:

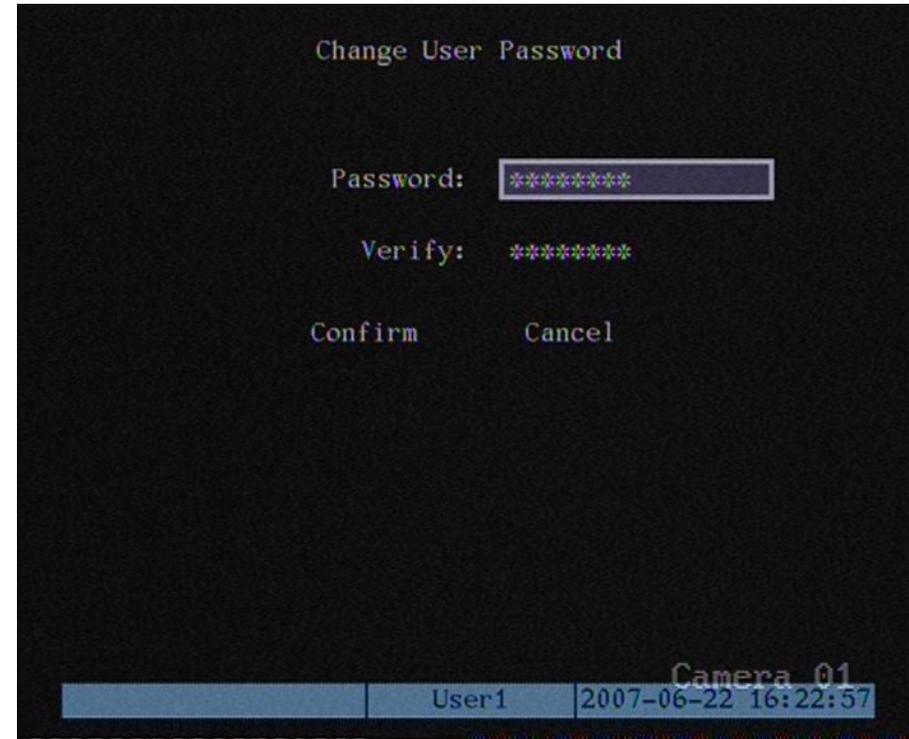
Use [↑] / [↓] keys to select one user, press [→] key to enter into “Password” input box. Inputs corresponding password then press [ENTER] key to exit. The highlight item will move to “Confirm”. Pressing [ENTER] key to finish dialog. If the NetDVR sound a beep, it means the user name and/or password is not matched. After three times beep, NetDVR will return to preview mode.

Change password

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

If you login as other user ID the “User” icon will display as “Password” icon.





Step1: Login to main menu

Press [MENU] key, select your user name and input the correct password in the login dialog interface. The main menu interface shows as following.

Step 2: Enter “User” Sub-menu

Move the highlight icon to “Password” icon by using [→] or [←] keys. Press [ENTER] key to enter into following password submenu:

Step 3: Input new password

Press [EDIT] key to enter into input box. Use numeric keys to input new password. The password can be up to 16 numerals. It also can be null. Press [ENTER] after finish input. Move to “Verify” item then input password again.

Note: In edit box, use [→] or [←] to move cursor, use [EDIT] key to delete the numeral in backward the cursor.

Step 4: Change password successfully

Move the highlight item to “Confirm” then press [ENTER] key. If the password is modified successfully, you will get the main menu. Otherwise an error dialog will pop up. You can repeat step 3 to try again.

4.4 PTZ Control

Note: The operator must have the “PTZ control” right.

PTZ control interface

To get into the PTZ control interface under preview mode, press [PTZ] key, select user name and input the correct password in the login dialog, you can enter into PTZ control interface.

To get into the PTZ control interface under menu mode, press [PTZ] key to enter into PTZ control interface directly.

There is “PTZ Control” prompt in the PTZ control interface. The displayed camera name indicates which channel’s PTZ is under control. For example, “Camera 01” means you are controlling the 1st camera PTZ.

Select channel

In PTZ control mode, you can press numeric keys to change the camera you want to control. If NetDVR has less than 10 channels, press one numeric key to select. For example, press [2] key to select 2nd camera PTZ.

If NetDVR has 10 or more channels, you must press two numeric keys to select. For example, press [0] [2] to select 2nd camera PTZ. Press [1] [2] to select 12th camera PTZ. After you select the PTZ camera, you can use the short keys to control PTZ.

PTZ control keys description

Direction control keys:	[↑], [↓], [←], [→]
ZOOM control keys:	[ZOOM+], [ZOOM-]
FOCUS control keys:	[FOCUS+], [FOCUS-]
IRIS control keys:	[IRIS+], [IRIS-]
Adjust preset keys:	[REC/SHOT]
Auto control key:	[PLAY/AUTO]
Wiper control key:	[WIPER/MENU]
Light control key:	[LIGHT/F1]
Auxiliary device control key:	[AUX/F2]



Adjust preset description

In PTZ control mode, press [REC/SHOT] key, and press the preset number (three numeric keys), NetDVR will adjust the corresponding preset number. Repeat pressing [REC/SHOT] key, and press the preset number, NetDVR will continually adjust that preset number. When you exit PTZ control mode, the camera will stay at the current position.

Note: The PTZ preset number is set already. Please refer to PTZ menu for preset setup. Firmware Version 1.5 can support up to 128 preset.

Start/Stop auto in PTZ control mode

In PTZ control mode, press [PLAY/AUTO] key to start PTZ auto-pan function. Press [PLAY/AUTO] key again to stop. When PTZ is in auto mode, if you exit PTZ control mode, PTZ will continue auto-pan function. You must enter into PTZ control mode again, and press [PLAY/AUTO] key to stop it.

Exit PTZ control mode

Press [ESC] or [ENTER] to exit and back to preview mode.

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

4.5 Manual Record

Manual record

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

Description

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

Channel: List the channel number that NetDVR has.

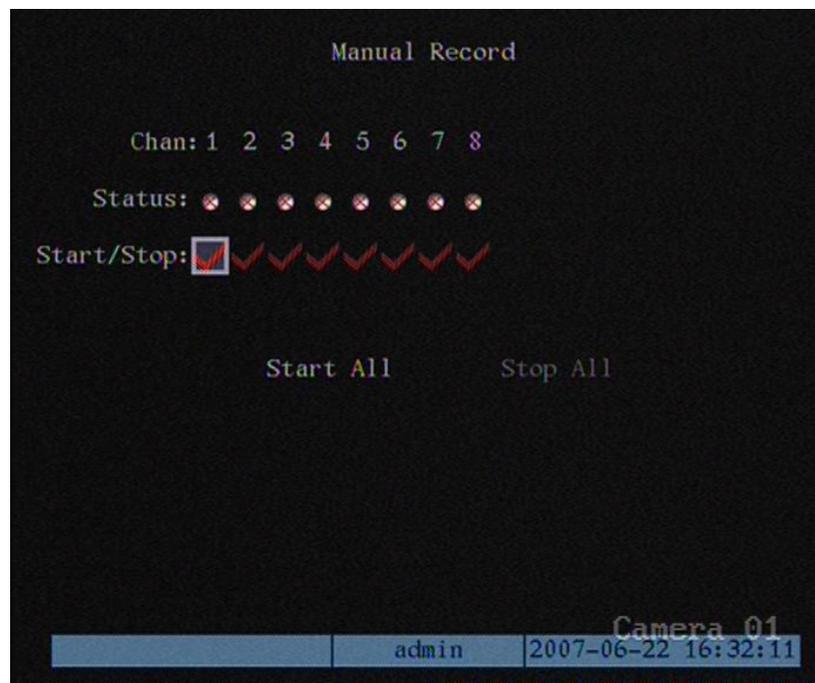
Status: Channel work status has 4 cases: ⊗ means idle. Green means the channel is recording (including real time recording, alarm recording, motion detection recording). Red means network transmission. Orange means both recording and network transmission.

Start/Stop: “✓” means you can start corresponding channel recording. “X” means you can stop recording.

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

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

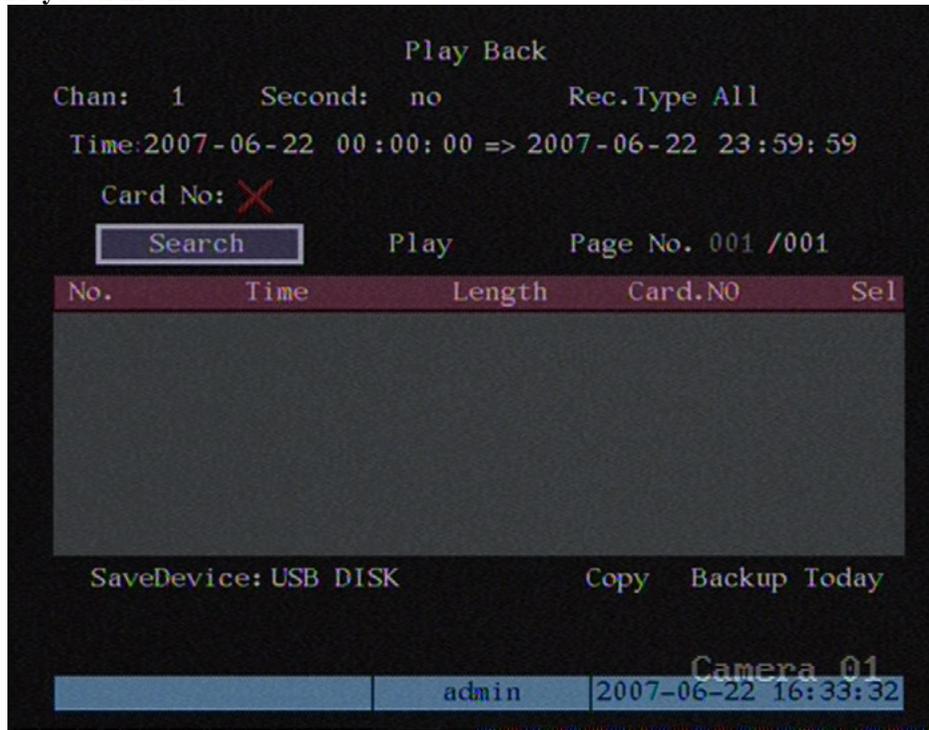
Exit manual record



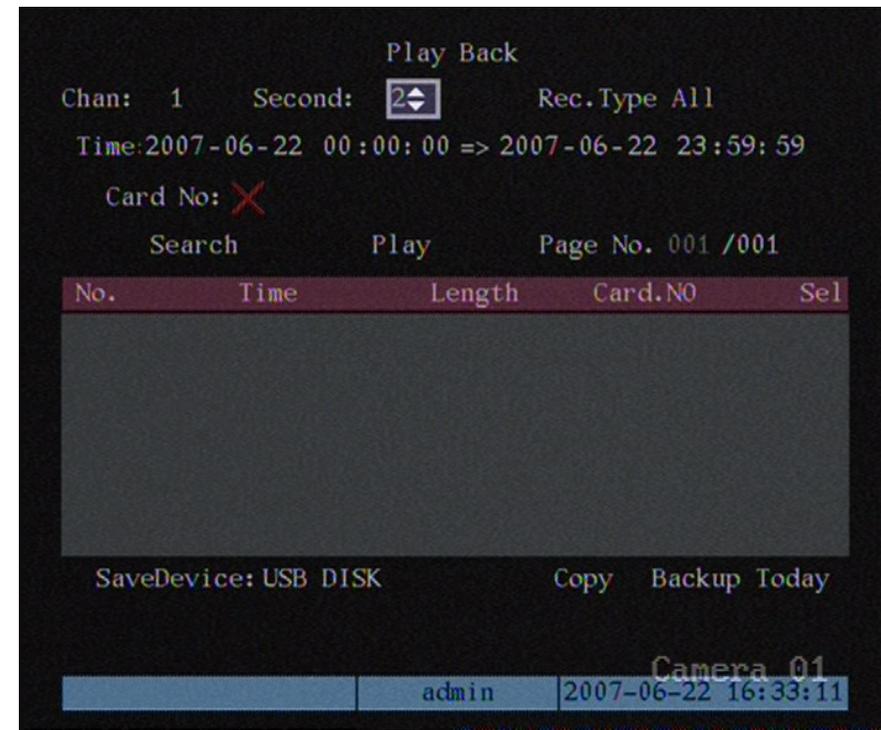
Press [ESC] key to enter into preview mode. Press [MENU] key to enter into main menu. Press [PLAY] key to enter into playback menu. Press [PTZ] key to enter into PTZ control mode.

4.6 Playback

Playback interface



One Channel Playback



Two Channels Playback

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

Description

If NetDVR only supports one channel playback, you cannot select second channel. If NetDVR can support two channels playback, you can select second channel.

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

Second Channel: If NetDVR support 2-ch playback, you can use [↑] or [↓] key to select the second channel except the main channel. These two channels can be playback synchronously. If you select the second channel as none, only the main channel is playback.

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

Time Section: You can define the search time section. Move highlight item to the time edit box, use numeric keys to input the detail time.

Card Number: NetDVR can get text number through RS-232 or network port. The text is sent from devices such as ATM machine, POS machine or others. NetDVR can overlay the text on the real time image and record. You can use the text to search the recorded files and playback them. Use the numeric keys to input the text number.

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

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

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

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

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

Copy: Start to backup.

Backup Today: Backup all recorded files of today.

Three kinds of playback mode

- **Search and playback file:** In the playback interface, you can select main channel, second channel (2-ch playback), record type, time section. Move highlight item to “Search” and press [ENTER] key, NetDVR will search and list the matched files.

If there are more than 8 matched files, you can use “Page No.” to select your page (use numeric keys or [↑] [↓] keys to select page). In the file list box, using [↑] [↓] keys to move the scroll bar to the file, press [ENTER] key to playback the file. If the second channel is selected, these two channels can be playback synchronously. If NetDVR cannot find the matched files a failure dialog will pop-up.

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

- Search by Card No and Playback file:** In the playback interface, select main channel, second channel (2-ch playback), record type, enable card No. search option (“✓”) and input the card number, move highlight item to “Search”, press [ENTER] key, NetDVR will search and list the matched files. If the matched files are more than 8, you can use numeric keys or [↑] [↓] keys to select page. Use [↑] [↓] keys to move scroll bar to the file, press [ENTER] key to play the selected file. If NetDVR cannot find matched files, one message pops up.

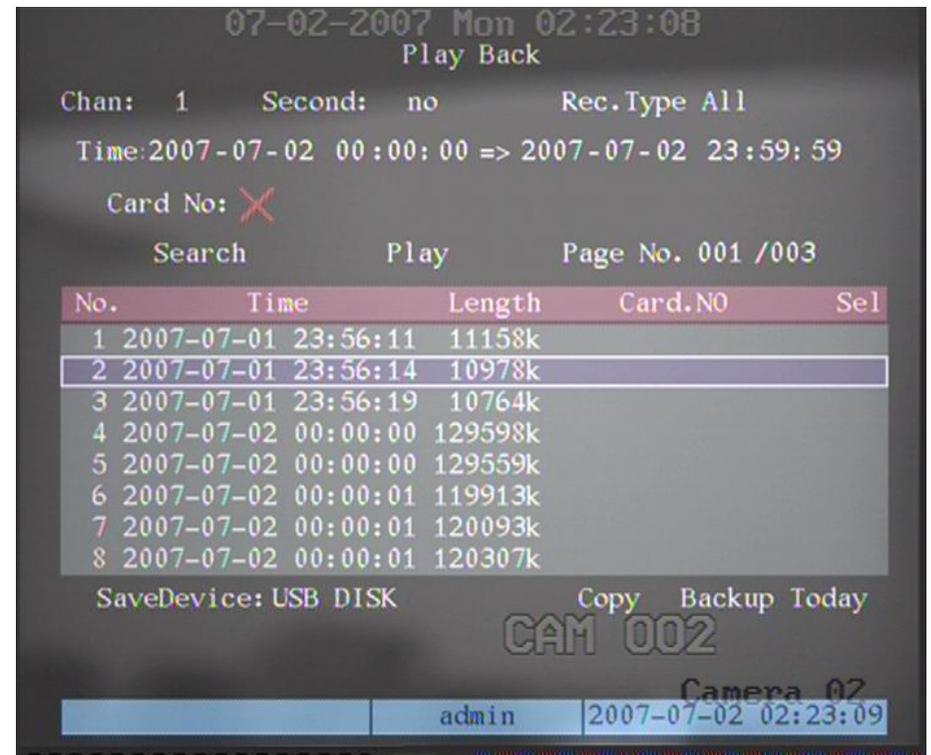
Operation when playback

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

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

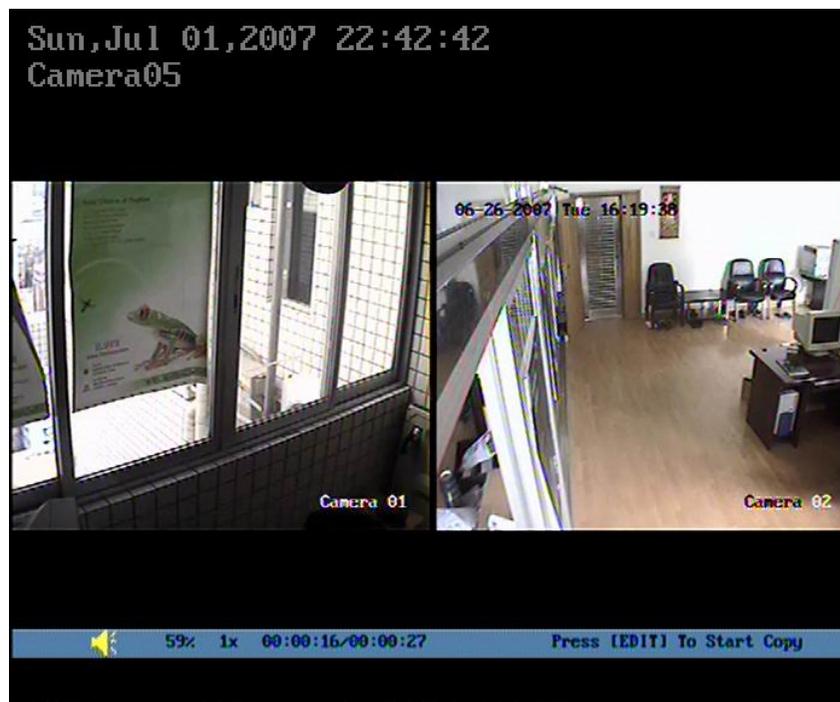
Note: When NetDVR is busy, if you select high play speed, maybe there is difference for actual play speed.

Playback picture:





One Channel Playback



Two Channels Playback

Exit playback

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

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

4.7 Backup Recorded Files

Note: The operator must have “Playback” right. Please connect with backup devices before you start to backup.

In the playback interface, you can back up the recorded files.

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

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

Backup today recorded files

In the playback interface, move highlight item to “Backup Today”, press [ENTER] key, all today’s recorded files on of all channels will be backup to the save device.

A pop-up dialog will display the backup status.
 If backup device is not connected correctly or NetDVR cannot detect the backup device, the Device Error dialog will pop-up. Please ask the administrator for more information.



Backup the files that matched your requirement

Step 1: Search the matched files

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

Step 2: Select the files that you want to backup

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

Step 3: Select backup device

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

Step 4: Start and finish backup

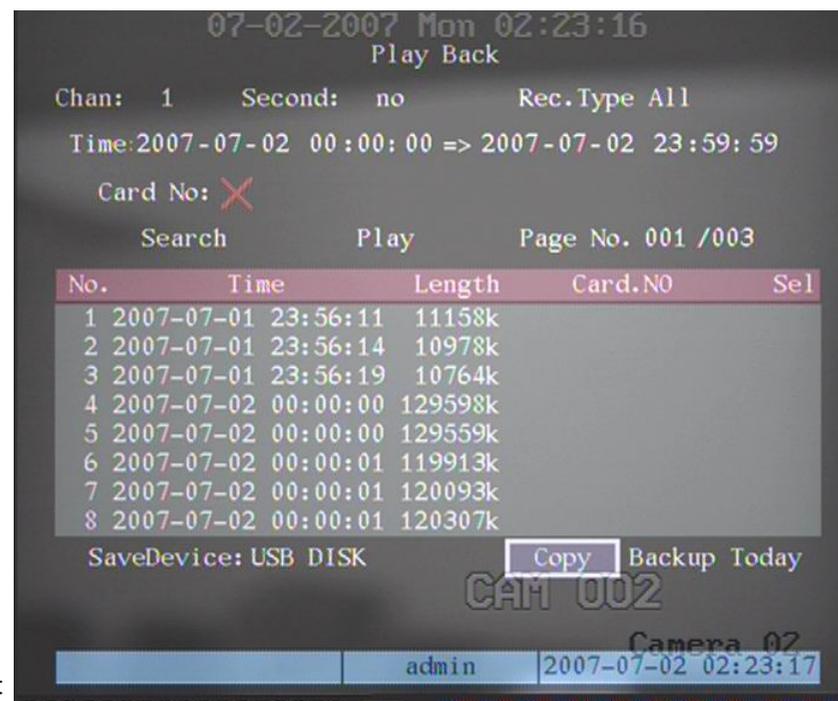
Move highlight item to “Save” and press [ENTER] key to start backup. When backup is started, corresponding message box will pop-up to indicate the result.

Backup video segment

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

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

Note: The backup function is effective when two channels are playback synchronously. In such case, each channel can backup 30 segments.



Playback the video segment

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

4.8 Voice Talk

Initiative remote chat [VoIP] is not available. But passive VoIP is possible. You can use Live Center or CMS software to initiate remote chat with NetDVR.

4.9 Auxiliary Video Output

Press [MAIN/AUX] key, you can switch any channel live video input to the auxiliary video output. To utilize this feature you must set camera Layout channel in the Preview menu.

Step 1: Press [MAIN/AUX] to enter into video matrix control mode.

Step 2: Select video input channel. Press two numeric keys to select video input channel (01-16), the corresponding channel video will be displayed on that auxiliary video output. You can press other two numeric keys to output the corresponding channel video.

Step 3: Define other auxiliary video output. Repeat above steps.

Step 4: Exit matrix control mode. Press [ESC] key.

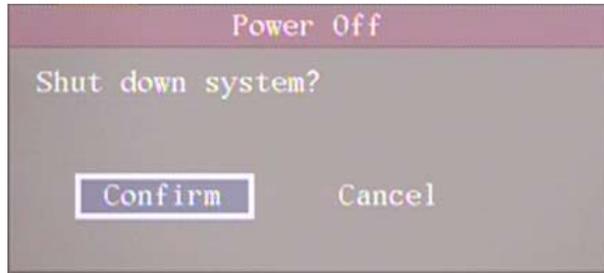
For example: Press [MAIN/AUX] to enter into video matrix control mode, press [0] [1], then the video of 1st channel will be displayed on that 1st auxiliary output. If you press [1] [5] numeric key, the video of 15th channel will be displayed on the auxiliary output. Press [ESC] to exit matrix control mode.

4.10 Shut Down NetDVR

Note: Do not switch off the power directly in case of damaging HDD. The correct step is using “Power Off” in the “Utilities” menu, or [POWER] key on the front panel or on IR controller to shut down NetDVR normally

Use menu

Enter into “Utilities” submenu, move highlight item to “Power Off” icon and enter into power off dialog, press “Confirm” to shut down the NetDVR.



Use [POWER] key of front panel or IR controller

Press [POWER] key for about 3 seconds.

In preview mode, a login dialog will pop-up, select user name and input password, press [Enter] to enter into power off dialog and press “Confirm” to shut down NetDVR. If you input error password for three times, NetDVR will return preview mode.

In menu mode, if the user has “Utilities” right, you can enter into power off dialog. Press “Confirm” to shut down NetDVR. Otherwise, the user cannot shut down NetDVR.

If NetDVR is shut down correctly, the [POWER] lamp is in red.

Note: When message of “Shut down...” is appeared, please do not press [POWER] key any more, otherwise NetDVR cannot be shut down.

Shut down NetDVR abnormally

Use the power switch of real panel

When NetDVR is running, if you switch off the power, the HDD in NetDVR will be damaged. Please avoid such operation.

Take away the power cord

Please avoid taking away the power cord directly when NetDVR is running.

Note: In some cases, when the power supply is abnormal, NetDVR will be damaged. We suggest you to use the stable power supply.

5 System Menu Operation and Parameters Configuration

5.1 Main Menu Overview



The main menu interface has the following items:

Menu Name	Function	Menu Name	Function

Display	Unit Name Device ID Require Password Screen Saver Video Standard Brightness Menu Transparency VGA Resolution DST Setup Date and Time	Image	Camera name and position setup Adjust Brightness, Contrast, Hue and Saturation OSD Display mode, position and OSD format setup Mask area setup Video tampering area and response setup Video signal loss Motion detection sensitivity, area and response setup
Recording	Overwrite/Stop recording Resolution and recording Parameters setup Record schedule Pre-Record time Post-Record time	Network	NetDVR IP address and TCP port DNS IP Multicast IP address Remote host IP and TCP port NAS IP and Directory PPPoE username and password
Alarms	Alarm input type (Normal open/ Normal close) Alarm response and PTZ linkage Alarm output and schedule	Exceptions	Exception type Exceptions response
PTZ	PTZ parameters Preset Setup Sequence Setup Tour Setup	RS232	RS232 parameters RS232 work mode
Preview	Preview mode Switch time Enable/Disable audio preview Preview layout (AUX VOUT)	User	Add or delete user Password setup or modification User rights setup
Transact	Text input mode ATM IP address ATM type Text information	Utilities	Save Parameters Restore parameters Upgrade firmware HDD management Stop alarm output Reboot Power off View log System information

5.2 Basic Menu Operation

How to enter into menu mode

Press [MENU] key to enter into NetDVR main menu.

How to change/move highlight item

Highlight item is current active item. Use [→] keys to move highlight item forward. Use [←] keys to move highlight item backward.

How to set Check Box parameter

Use [ENTER] or [EDIT] key to switch over.
“√” means enable and “X” means disable.

How to set List Box parameter

Use [↑] or [↓] keys to change current selection.

How to set Edit/Input Box parameter

Press [EDIT] key to enter into edit/input status, you can input characters as following:

- Press [A] key to select number, upper case, lower case or symbols
- Use [→] and [←] keys to move cursor
- Use [EDIT] key to delete the character in backward the cursor
- Press [ENTER] or [ESC] to exit edit

How to execute and save your settings

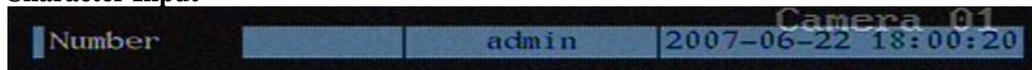
Press [Confirm] to save parameters and return to parent menu. Press [Cancel] button to discard your settings and return to parent menu. The button in gray color means it can be operated only after it is enabled.

How to exit menu

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

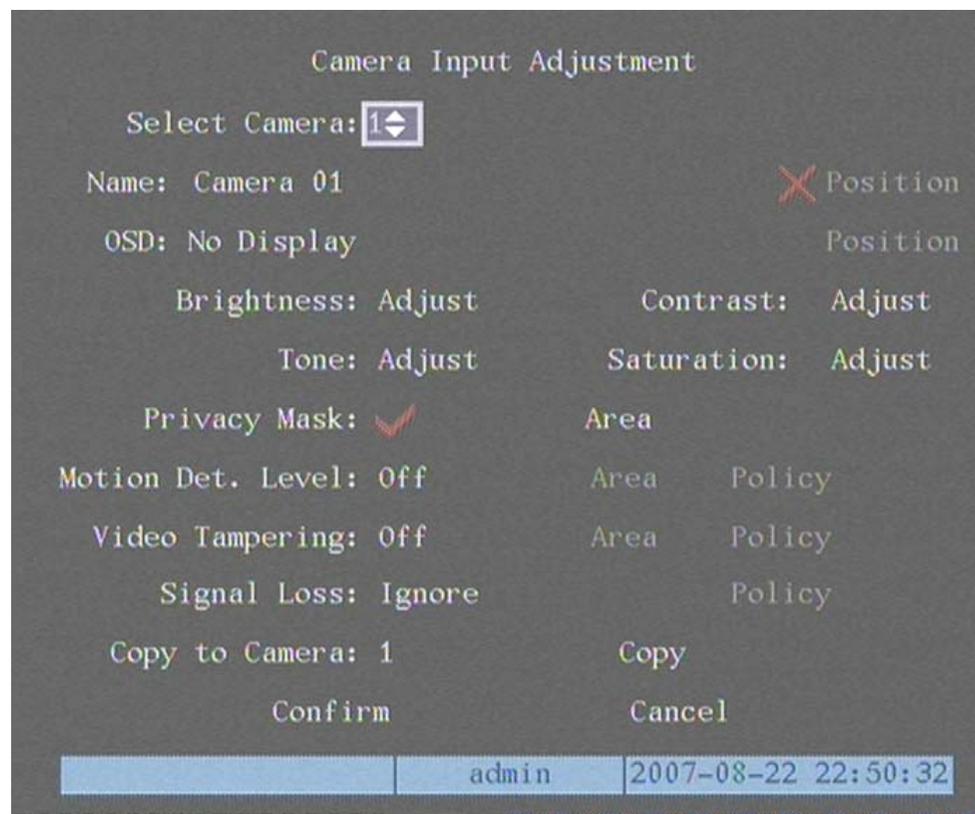
In the menu interface, if you enter into edit status (for example, in the “camera name” edit box). The input status will appear at the bottom of screen.

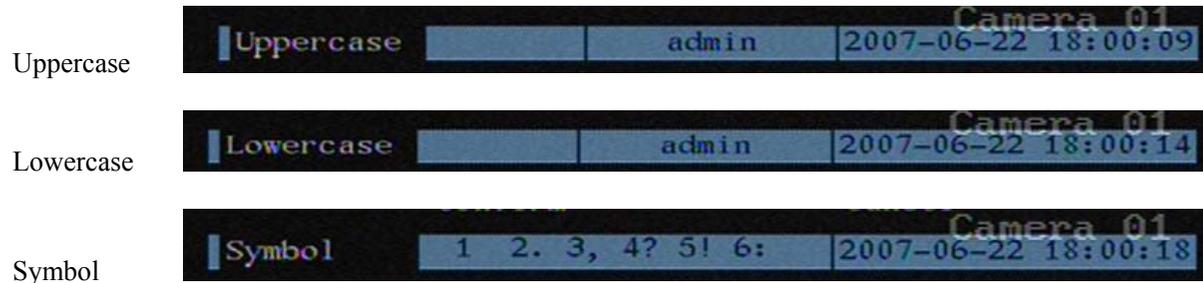
Character Input



At above edit status you can press numeric keys to input digital number.

Press [A] key to change input methods. There are 4 Edit Status in total: “Number”, “Uppercase”, “Lowercase” and “Symbol”.





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

When the following parameters are modified and saved, the NetDVR system will ask for you to reboot NetDVR to make the new parameters take effect. Change other parameters do not need to reboot.

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

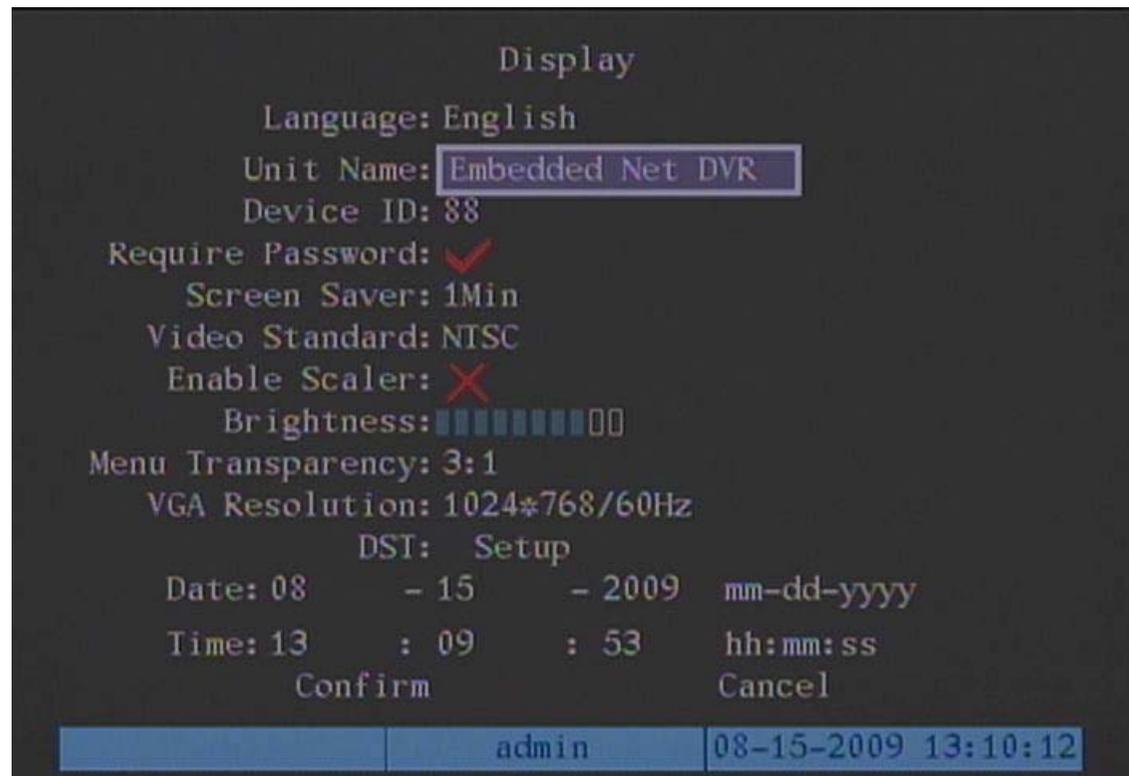
5.3 Display

Language

Set NetDVR system language: English/Russian/Spanish

Unit Name

Give a name for DVR as network alias



Device ID

Set ID number for remote controller identification.

Require Password

Enable or disable password protection

Screen Saver

Setup VGA screen saver time

Video Standard

Set camera video format PAL or NTSC

Enable Scaler

Enable or disable video zoom function

VGA Resolution

There is a VGA interface at the NetDVR real panel to connect with VGA monitor. You can select VGA resolution from three options: 1024*768/60Hz, 800*600/60Hz and 800*600/75Hz. Use [↑] [↓] key to select. Press “Confirm” button to save or “Cancel” to abort.

Menu Brightness and Transparency

Setup menu displaying style

OSD Setup

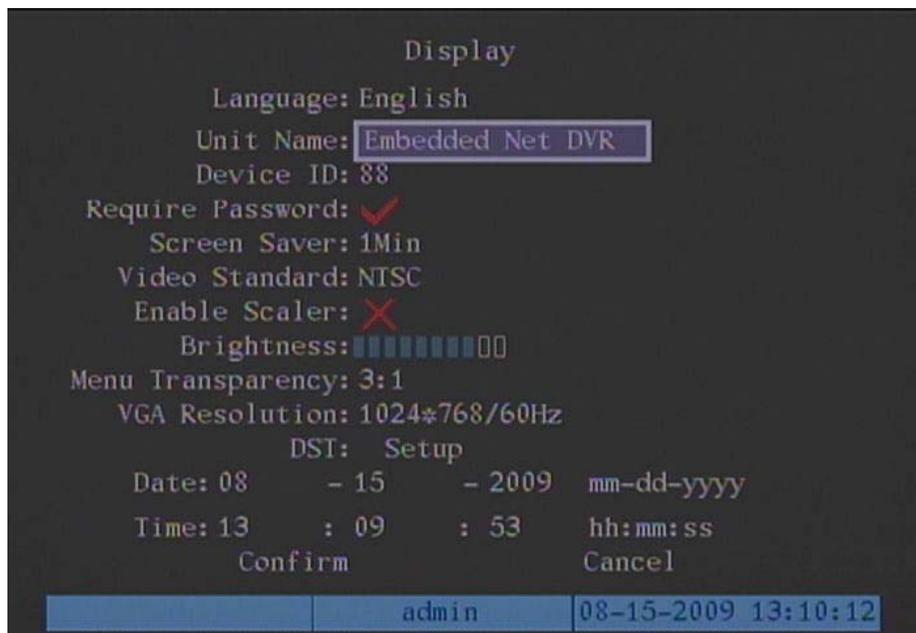
OSD content includes system time and camera name. OSD settings include system time, time format, time display position, camera name, camera name display position, etc.

System Time

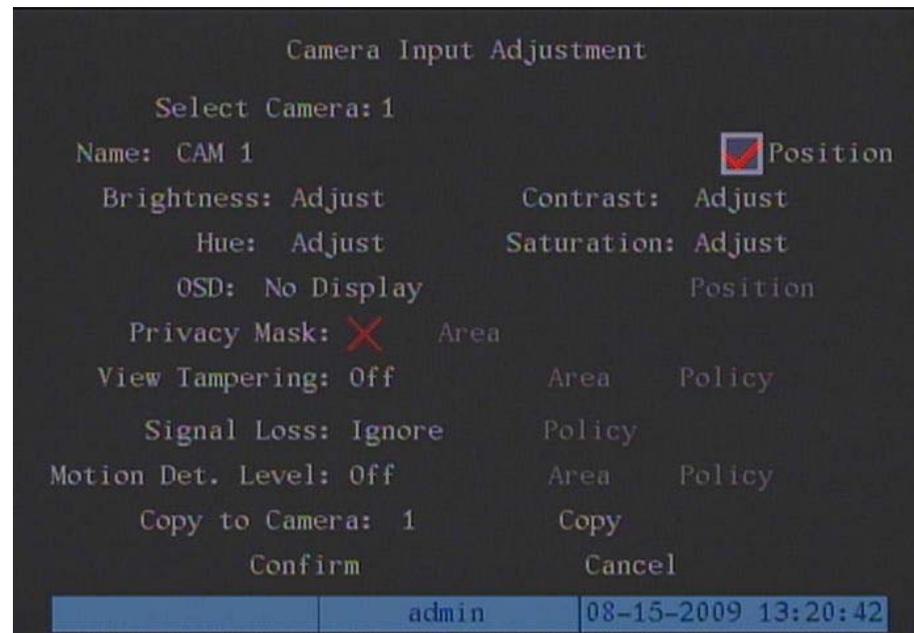
In “Display” menu, you can modify NetDVR system date and time.

Camera name and other settings

Refer to next section



OSD setup



OSD display mode

5.4 Image

This section describes the most complicated settings of camera property. You can setup individual camera property independently. Of course you can copy the properties of one camera to all cameras.

5.4.1 OSD Display Mode

There are 4 options: Opaque&Steady, Transparent&Steady, Transparent&Flashing, Opaque&Flashing.

5.4.2 Display Position and Format

Move highlight item to “Position” button on the right of “OSD”, press [ENTER] to enter into setup interface. There are 22*18 (for NTSC, 22*15) small panes, and OSD position is in red. You can use [↓] [↑] [→] [←] keys to move the OSD position. Press [EDIT] key to select OSD format. There are following OSD formats:

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

Here YYYY means year, MM means month, DD means day, W means weekday, hh means hour, mm means minute and ss means second. Press [ENTER] to save and return to “Image” menu or press [ESC] abort modification.

After finish the properties setup of one camera, you can copy its parameter to any other camera or all cameras.

5.4.3 Camera Name and Position

Camera Name and position

Note: camera name cannot be copied.

Camera name setup

Step 1: Select one camera.

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

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

Step 4: Move highlight item to “Confirm” button, press [ENTER] to save the modification and you can see the new camera name. Press “Cancel” button or [ESC] key to abort.

Camera name position setup

If you don't need display camera name, please set OSD “No Display”

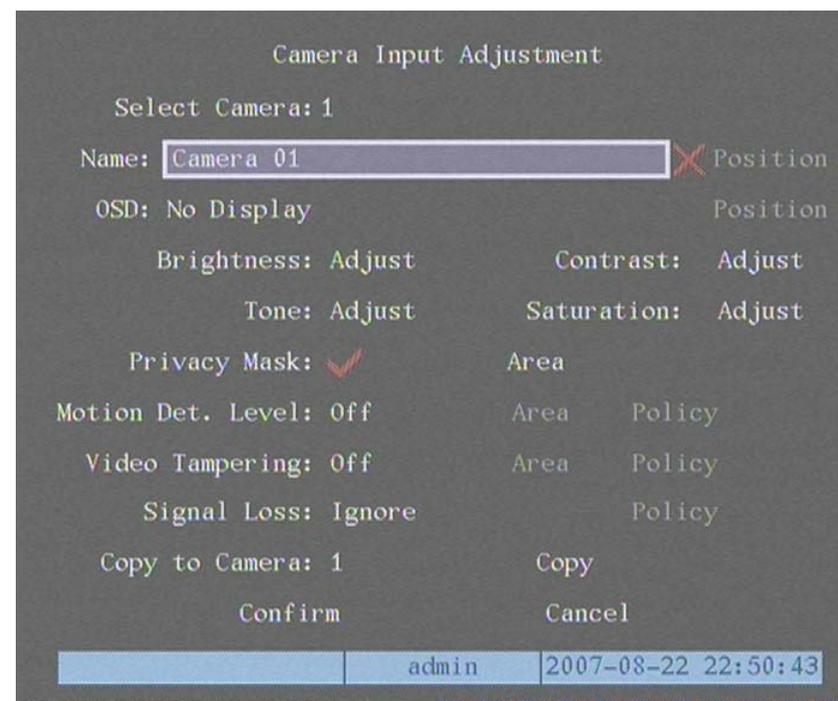
You can setup the camera name position and copy the position to other camera.

Step 1: Enter into “Image Setup” menu.

Step 2: Select one camera.

Step 3: Enable the check box on the right of camera name, move highlight item to “Position” button, press [ENTER] to enter into camera name position setup interface. Use [↓], [↑], [→] or [←] keys to move camera name position.

When the position is OK, press [ENTER] and return to “Camera Input Adjustment” interface, press “Confirm” button to save it. Press “Cancel” button or [ESC] key to abort the modification.



5.4.4 Video Parameters Setup

For different camera and different background, in order to get the best video image, you need adjust video parameters such as brightness, saturation, contrast and hue, etc. You can setup the camera parameters individually and/or copy it to any other camera.

Step 1: Enter into “Camera Input Adjustment” interface

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

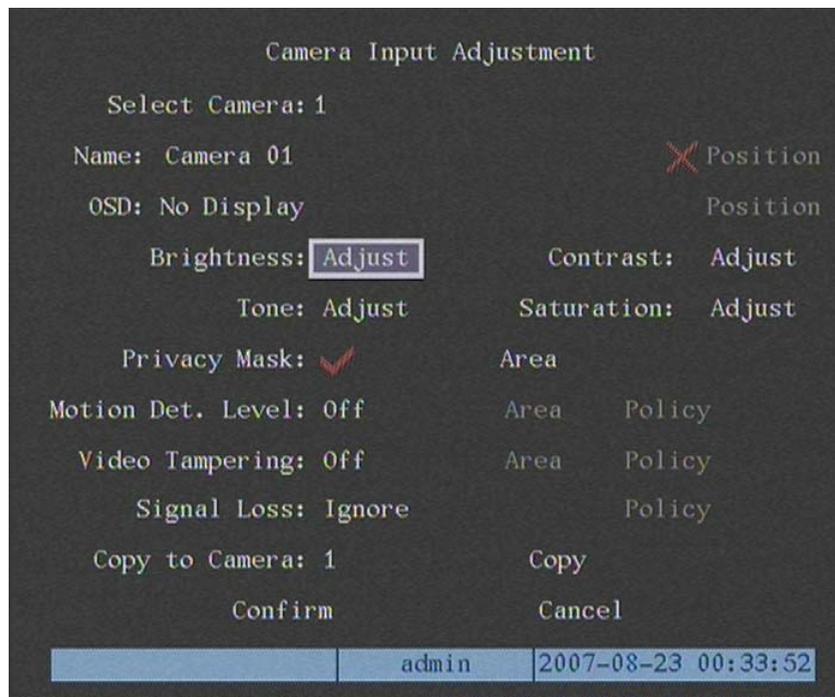
Step 3: Adjust brightness, contrast, saturation and hue

Move highlight item to the “Adjust” button on the right side of Brightness, Contrast, Saturation and Hue. Press [ENTER] key to enter into adjustment interface.

In the adjustment interface, there is one scroll bar at the bottom, you can use [↑] [↓] keys to adjust and can find the video change.

When you are satisfied with the real time video image, press [ENTER] to return to “Image Setup” menu.

Step 4: After finish one camera setup you can copy it to other camera or repeat step2 and step3 to adjust other camera. In “Camera Input Adjustment” interface, press “Confirm” button to save parameters, press “Cancel” button or [ESC] key to abort modification.



5.4.5 Mask Area Setup

In some cases, users want to mask a sensitive area. This area will not be preview and recorded. It is called mask area.

Step 1: Enter into “Camera Input Adjustment” interface

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

Step 3: Enter into mask area setup interface

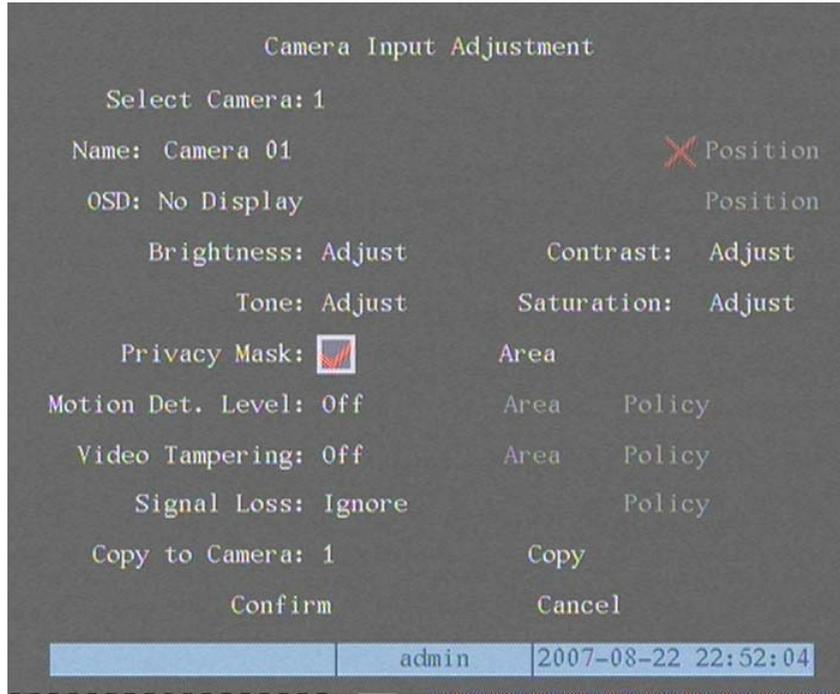
Enable the check box beside “Privacy Mask” item. Move highlight item to “Area” button on the right of mask check box, press [ENTER] key to enter into mask area setup interface.

Step 4: Setup mask area

In the mask area setup interface, there is one small pane of yellow on the up left corner. For PAL camera, the whole screen is divided into 22*18 panes (22*15 for NTSC). Use [↑] [↓] [→] [←] keys to move the yellow pane to any target position then press [EDIT] key, the yellow pane will turn into red. This red area is the

mask area. Repeat above steps to expand the red area.

The maximum mask area size is 8*8 panes and the minimum size is only one pane. You can setup 4 mask areas for one camera in total. After finish setup press [ENTER] key to return to “Camera Input Adjustment” interface. You can press [A] key to clear all mask areas.



Step 5: Save mask area

You can repeat step2 to step4 to setup other camera’s mask area. In “Camera Input Adjustment” interface, press “Confirm” button to save the mask area, press “Cancel” button to abort.

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

Here is an example of mask area function (next page).

5.4.6 Video Tampering Alarm

If this function set to enable, when someone blocks the camera spitefully, NetDVR will make warning alarm.

Step 1: Enter into “Camera Input Adjustment” interface

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

Step 3: Select sensitivity level

Use [↑] [↓] keys to select the sensitivity level for “Video Tampering” item (Default is OFF). The 3 options are: Low, Normal and High.

Select any one of them to activate “Area Setup” and “Policy Setup” function.

Step 4: Video tampering area setup

Move highlight item to “Area” button, press [ENTER] key to enter into area setup interface. The setup method is the same as mask area setup but only one video tampering area can be set.

Step 5: Video tampering alarm setup

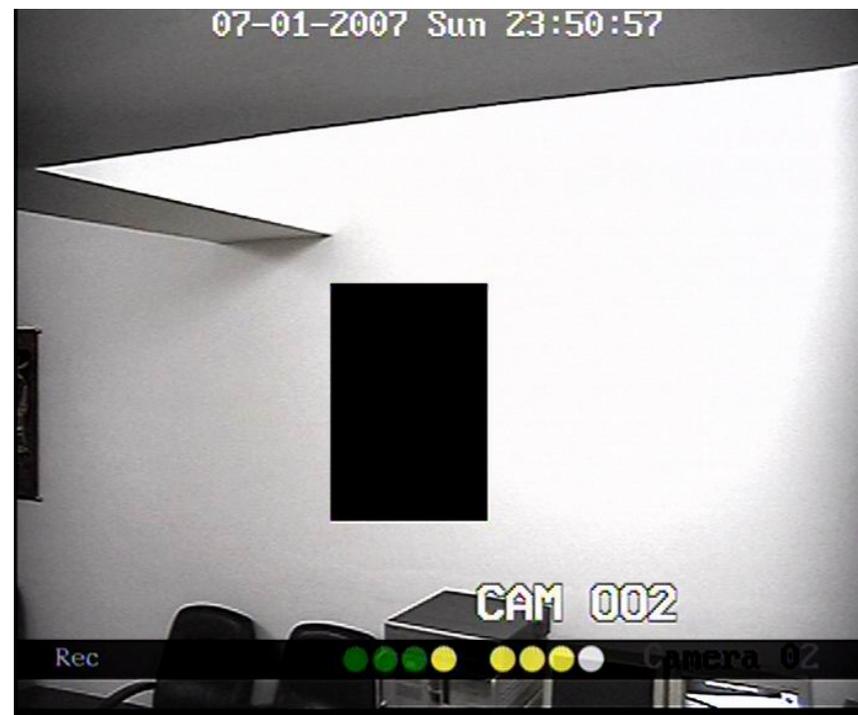
Move highlight item to “Policy” button, press [ENTER] key to enter into “Video Tampering Control” menu

Step 6: Alarm schedule setup

When a video tampering alarm happens, NetDVR will control the alarm based on the schedule.

You can set 4 periods for each weekly day.

Also you can copy the schedule of one day to other days.



Notes: Time periods cannot be repeated in one day. Please reboot NetDVR to make the parameters to take effect.

Step 7: Setup alarm policy

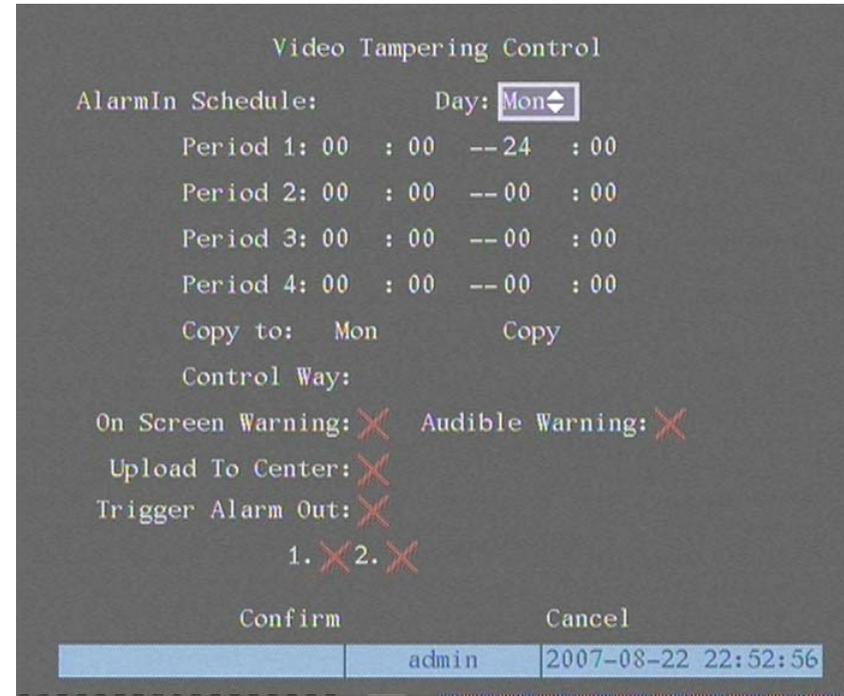
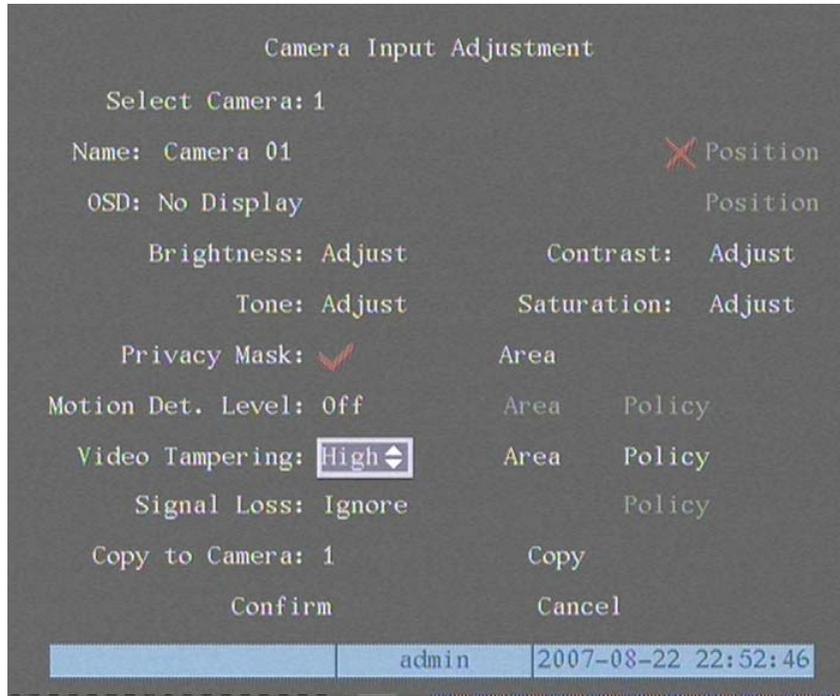
If a video tampering alarm happens in schedule, NetDVR will respond based on the policy. You can select single or multiple responses including “On Screen Warning”, “Audible Warning”, “Upload to Center” and “Trigger Alarm Output”. Use [↑] [↓] and [EDIT] key to enable or disable them.

Step 8: Save alarm setup

After finish setup, press “Confirm” button to return to “Camera Input Adjustment” interface. In “Camera Input Adjustment” interface, press “Confirm” button to save current camera parameters then return to main menu.

Step 9: Save all cameras

If you want to setup other cameras, please repeat step 2 to step 8. In “Image Setup” menu, press “Confirm” key to save all cameras parameters. Press “Cancel” button or [ESC] key to abort.



Select “Off” option for “Video Tampering” will delete the video tampering area.

Note: Only one video tampering area can be set for each camera. The video tampering area cannot be copied. If the schedule is modified, you must reboot NetDVR to make the parameters to take effect.

5.4.7 Motion Lost Alarm

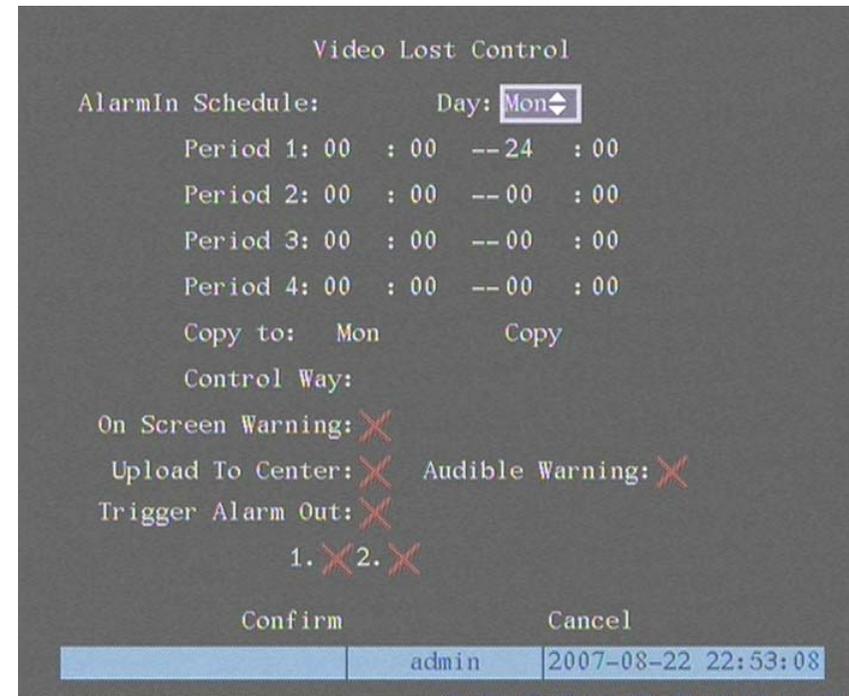
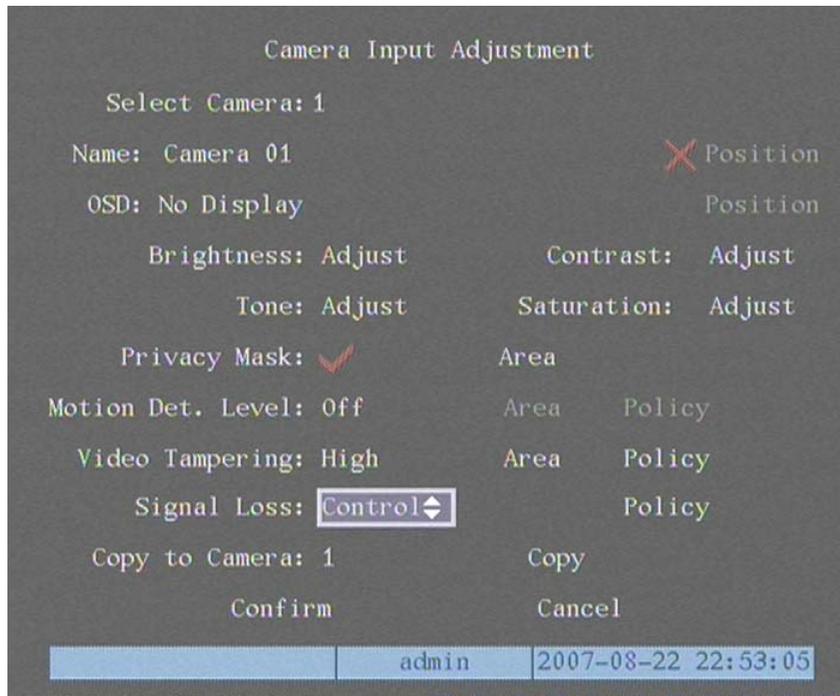
If this function set to enable, when the camera video is lost, NetDVR can make a video lost warning.

Step 1: Enter into “Camera Input Adjustment” interface

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

Step 3: Enter into “Video Lost Control” interface

Move highlight item to the list box on the right of “Signal Loss” item, use [↑] key to select “Control” option. Then move highlight item to the “Policy” button on the right, press [ENTER] to enter into “Video Lost Control” interface:



Step 4: Setup alarm schedule

You can setup working schedule. Only when the video lost happens in the schedule, NetDVR will respond. You can set 4 periods for each weekly day. Also you can copy the schedule of one day to other days.

Notes: Time periods cannot be repeated in one day. Please reboot NetDVR to make the parameters to take effect.

Step 5: Setup alarm policy

You can select single or multiple responses including “On Screen Warning”, “Audible Warning”, “Upload to Center” and “Trigger Alarm Output”. Use [↑][↓] and [EDIT] key to enable or disable them.

Step 6: Save alarm setup

After finish setup, press “Confirm” button to return to “Camera Input Adjustment” interface. In “Camera Input Adjustment” interface, press “Confirm” button to save current camera parameters then return to main menu.

Step 7: Save all cameras

If you want to setup other cameras, please repeat step 2 to step 8. In “Image Input Adjustment” menu, press “Confirm” key to save all cameras parameters. Press “Cancel” button or [ESC] key to abort.

5.4.8 Motion Detect Alarm

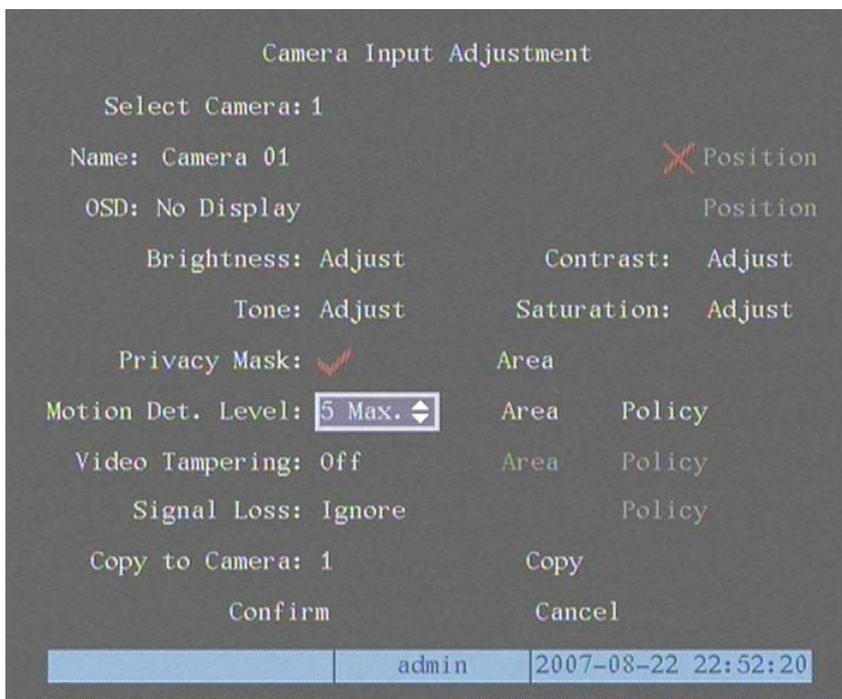
If this function set to enable, when there is motion detection, NetDVR will make warning alarm.

Step 1: Enter into “Image Input Adjustment” menu:

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

Step 3: Select motion detection sensitivity level

The motion detection sensitivity levels list in the list box on the right of “Motion Det. Level” item. There are 7 options in total, from 0 (the lowest) to 5 (the highest) and “Off”. Use [↑] [↓] keys to select one. If you select “Off” option, NetDVR will not respond even if there is motion detection. Select one of 0 – 5 to activate “Area” button and “Policy” button.



Step 4: Motion area setup

You must define motion detect areas so that NetDVR will respond when there is a motion in those areas. Move highlight item to “Area” button on the right of

sensitivity list box, press [ENTER] key to enter into “Motion Area Setup” interface.

The whole screen is divided into 22*18 panes (NTSC: 22*15). There is a pane of yellow on the up left corner. The motion area setup steps are the same as mask area setup (refer to section 5.4.5). The differences are that you can use [PTZ] key to set the whole screen as motion detect area and multiple motion areas can be defined.

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

Clear part of motion area: Move the yellow pane to a start pane then press [EDIT], you will find the yellow pane turn to black. Use [↓] or [→] key to enlarge or shrink the black area. Press [EDIT] key to clear this part motion area. Press [Enter] key to save settings and return to “Image Input Adjustment” menu. Press [ESC] to cancel setup.

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

The following keys are used to setup motion areas:

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

The motion detection areas show as following illustration.

Step 5: Motion alarm policy

Move highlight item to the “Policy” button on the right of “Motion Det. Level” item, press [ENTER] key to enter into “Motion Alarm Control” menu

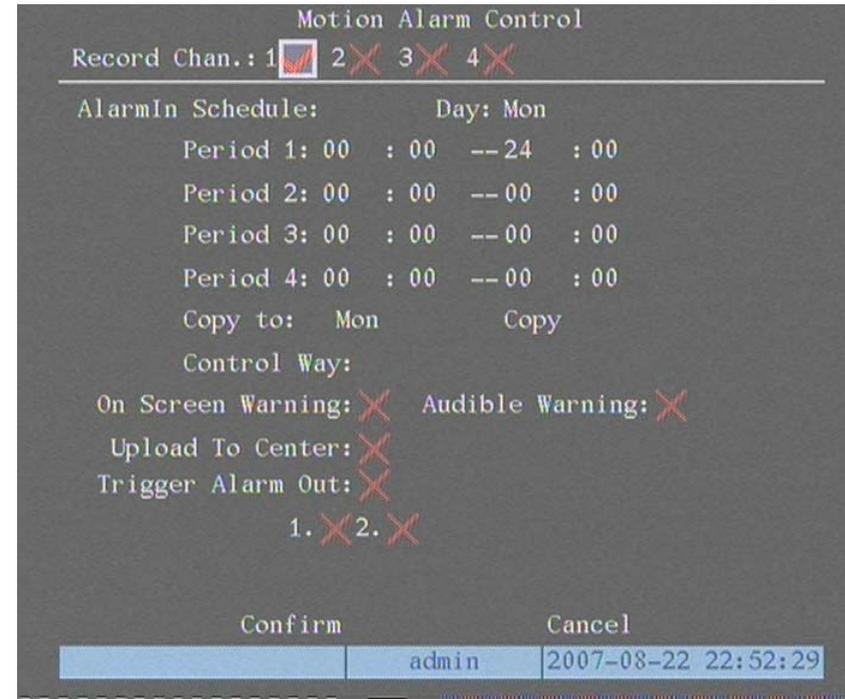
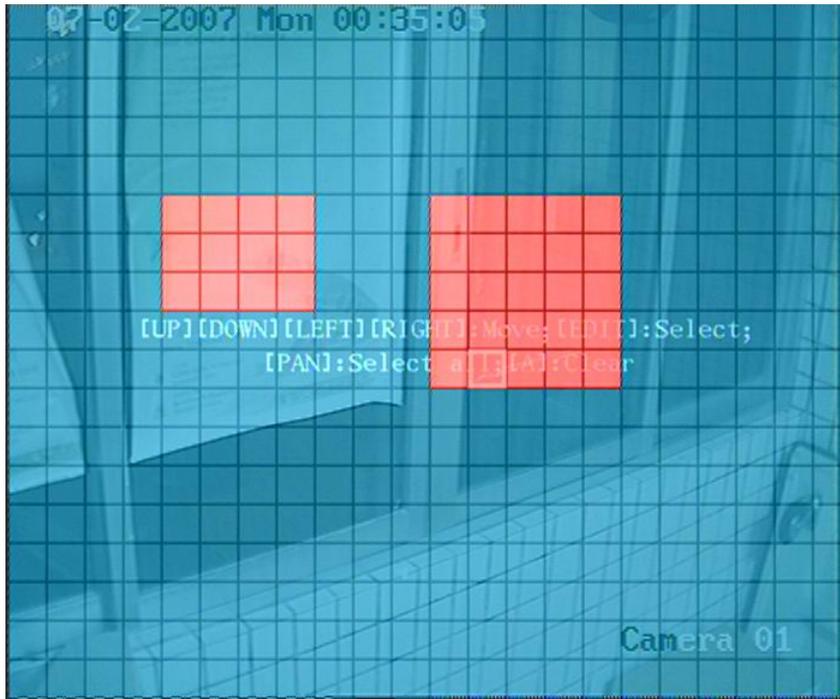
Step 6: Motion alarm record channel setup

When motion alarm happens, it can trigger camera(s) linked to the sensor to start recording. Linked camera can be single camera or multiple cameras. In “Motion Alarm Control” menu, use [ENTER] or [EDIT] key to enable the check box of target channel.

Note: In order to make the camera starting record, in “Recording” menu, you must enable recording schedule and set “Rec Type” as “Motion Detection” or “Motion Alarm”. Please refer to section 5.5 for recording setup.

Step 7: Motion alarm schedule

When a motion alarm happens in schedule, NetDVR will control the alarm based on the schedule. You can set 4 periods per day. Also you can copy the schedule of a day to other days.



Notes: Time periods cannot be repeated in one day. Please reboot NetDVR to make the parameters to take effect.

Step 8: Motion alarm control way setup

You can select single or multiple responses including “On Screen Warning”, “Audible Warning”, “Upload to Center” and “Trigger Alarm Output”. Use [↑][↓] and [EDIT] key to enable or disable them.

If “On Screen Warning” is enabled, when a motion alarm happens and NetDVR is in preview mode, NetDVR will pop-up the linked camera. If multiple cameras are triggered, NetDVR will pop them up one by one every 10 seconds. When motion alarm disappeared, NetDVR will restore to preview mode.

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

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

Note: Motion Detect area cannot be copied.

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

5.5 Recording

5.5.1 Recording Menu Description

If HD Full

Two options are available: “Overwrite” and “Stop recording”.

If you select “Overwrite”, NetDVR will overwrite the earliest record files and record continuously when there is no free space in all HDD.

If you select “Stop recording”, NetDVR will control it as “Hard Disk Full” exception when there is no free space in all HDD, refer to section 5.8.

Select Camera

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

Stream Type

Two options are available: “Audio&Video” stream and “Video” stream only.

Selecting “Audio&Video” to record both video and audio.

Note: If you change this option, please reboot NetDVR to make parameter to take effect.

Resolution

The resolution options from low to high are: QCIF, CIF, 2CIF, DCIF, 4CIF.

For IL6000HCS series NetDVR: Only 1st, 5th, 9th and 13th can support QCIF, CIF, 2CIF, DCIF and 4CIF resolution, other channels can only support QCIF and CIF resolution.

For IL6000HDS series NetDVR: All channels can support QCIF, CIF, 2CIF, DCIF and 4CIF resolution.

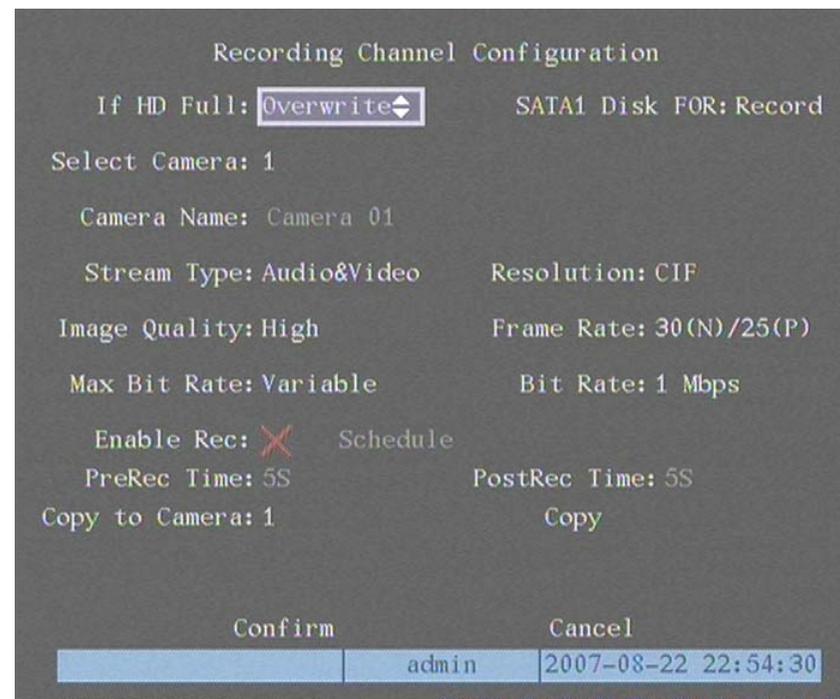
Note: If you change this option, please reboot NetDVR to make parameter to take effect.

Bit Rate Type

There are two options: “Variable” and “Fixed”.

Setup to variable bit rate, NetDVR can adjust the actual bit rate according to the video movement. When there is little movement, NetDVR will use low bit rate, while there is much movement, NetDVR will use high bit rate. So NetDVR can save HDD usage and network bandwidth with Variable Bit Rate.

Setup to fixed bit rate, NetDVR will use the fixed bit rate to compress image. The bit rate size is defined in “Max Bit Rate” option. In this case, user can easily calculate the record file size and network bandwidth according their requirement of image quality.



Max Bit Rate

The max bit rate has many options (bps): 32K, 48K, 64K, 80K, 96K, 128K, 160K, 192K, 224K, 256K, 320K, 384K, 448K, 512K, 640K, 768K, 896K, 1M, 1.25M, 1.5M, 1.75M, 2M and “User define”.

If setup to variable bit rate, when the video input has great movement, we need to limit the max bit rate. The max bit rate has relation with resolution. That means high resolution needs high bit rate. For CIF resolution, the typical max bit rate is 384K-768Kbps. For DCIF resolution, the typical bit rate is 512K-1Mbps. For 4CIF resolution, the typical bit rate is 1Mbps-1.5Mbps.

Image Quality

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

Frame Rate

Frame Per Second. Options are: Full (PAL is 25 FPS and NTSC is 30FPS), 20, 16, 12, 10, 8, 6, 4, 2, 1, 1/2, 1/4, 1/8 and 1/16. Low frame rate match low bit rate.

PreRecord Time

Setup enable motion detection record or external alarm record, you can define PreRecord time. The options are: No PreRecord, 5 Seconds (default setting), 10 Seconds, 15 Seconds, 20 Seconds, 25 Seconds, 30 Seconds and Max PreRecord.

MaxPreRecord is to save all data in PreRecord buffer. The MaxPreRecord time is related with bit rate. The lower bit rate, the longer MaxPreRecord time is. If the bit rate (Max bit rate) is very low, and you select “PreRecord Time” as “5 Seconds”, maybe the actual PreRecord time is more than 5 seconds. On the other hand, if the bit rate is high, and set “PreRecord Time” as “30 Seconds”, maybe the actual PreRecord time is less than 30 seconds.

PostRecord Time

Setup enable motion detection record or external alarm record, when external alarm or motion alarm has stopped, NetDVR will continue recording for a predefined time. The options are: 5 Seconds (default), 10 Seconds, 30 Seconds, 1 Minute, 2 Minutes, 5 Minutes and 10 Minutes.

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

Schedule: When enable record function, you can setup record schedule.

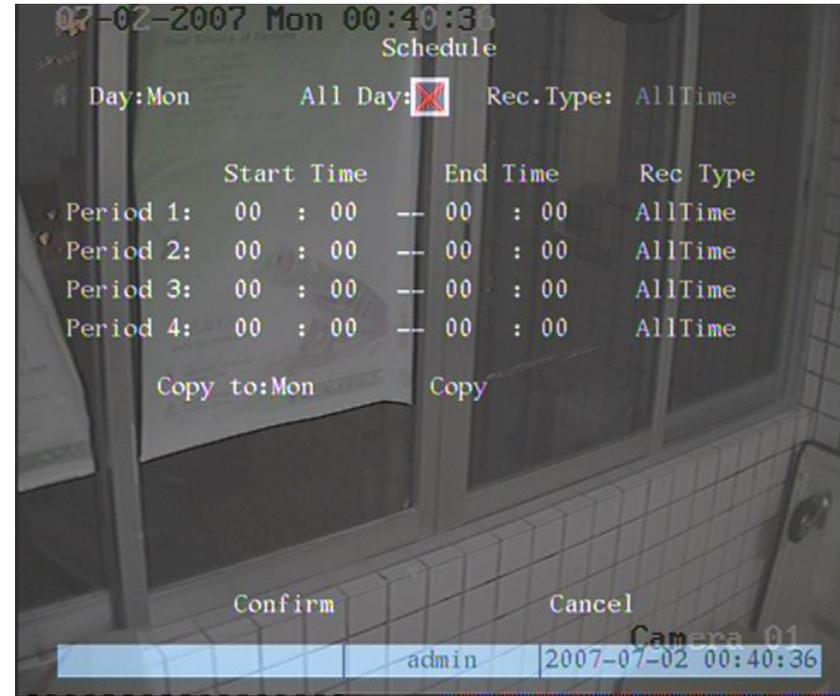
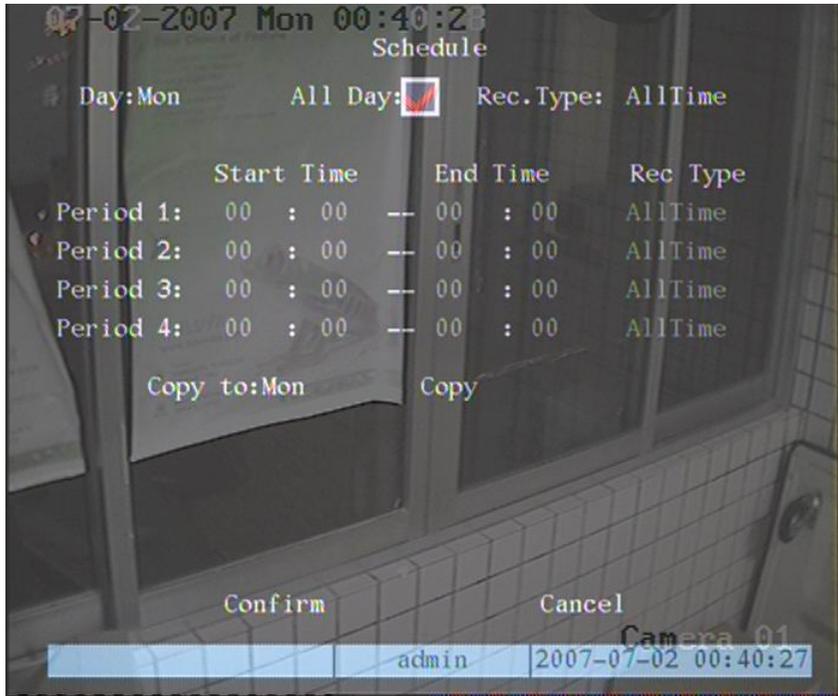
5.5.2 All Day Recording Setup

Step 1: Enter into recording schedule menu

In Recording Channel Configuration interface, use [ENTER] or [EDIT] key to enable record function (Enable Rec.). Press “Schedule” button to enter into Schedule interface.

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

Use [↑] [↓] keys to select a weekly day. Move highlight item to the check box on the right of “All Day”, press [ENTER] or [EDIT] key to enable “All Day” option.



Step 3: Record type

Rec.Type item has these options: All Time, Motion Detect, Alarm, Motion|Alarm, and Motion&Alarm. For All Day Record mode, only one record type can be selected.

Step 4: Copy to other days

Instead of repeat step2 and step3 to setup other days, you can copy the current schedule to other days.

Step 5: Save and exit

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

5.5.3 Part Time Recording Setup

Step 1: Enter into recording schedule menu

In Recording Channel Configuration interface, use [ENTER] or [EDIT] key to enable record function (Enable Rec.). Press “Schedule” button to enter into Schedule interface.

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

Use [↑] [↓] keys to select a weekly day. Move highlight item to the check box on the right of “All Day”, press [ENTER] or [EDIT] key to disable “All Day” option.

Step 3: Setup time period and record type

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

Note: The time periods in one day cannot be repeated.

Step 4: Copy to other days

Instead of repeating step2 and step3 to setup other days, you can copy the current schedule to other days.

Step 5: Save and exit

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

Note:

- 1) **If record type is “Motion Detect” or other related types, you must setup “Motion Detection” in order to trigger motion recording (refer to section 5.4.8).**
- 2) **If record type is “Alarm” or other related types, you must setup “Alarms” in order to trigger alarm recording (refer to section 5.7).**
- 3) **The time period is among 00:00 - 24:00.**

5.6 Network

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

“Network” menu description:

NIC type: Default is “10M/100M Auto”, the other options are: 10M Half-Dup, 10M Full-Dup, 100M Half-Dup and 100M Full-Dup.

IP address: Setup a static IP address. If there is DHCP server in network, you can set the IP as “0.0.0.0”. In reboot process, NetDVR will search the DHCP server and get one dynamic IP address. This item will display the dynamic IP address. If NetDVR uses PPPoE function and NetDVR can dialup Internet, this item will display the dynamic Internet IP address.

Port: Network access TCP port, must be greater than 2000.

Mask: Sub net mask.

Gateway: The default gateway

DNS IP: Applicable if NetDVR uses PPPoE function and has one dynamic IP address.

When you set DNS IP with one fixed Internet IP, NetDVR will send some information such as NetDVR name, NetDVR serial number, NetDVR current IP to that fixed IP address. We call that fixed Internet IP as DNS IP. The DNS server with that fixed Internet IP can receive NetDVR information and used to resolve NetDVR dynamic IP. This DNS is special software, not the normal domain name server.

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

Alarm Host IP and Port: If you set this IP and port, when alarm or exception happens, NetDVR will send information to that host IP. The center with this IP can receive alarm and exception information from NetDVR.

NFS: Network Access Storage. NetDVR will regard network HDD as local HDD and send the real time image to that network HDD. NFS IP: The IP of that network storage server. Dir: The directory name shared by that network storage server.

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

PPPoE: NetDVR support PPPoE dial-up function.

Example: Use PPPoE function

Step 1: Enter into “Network” menu.

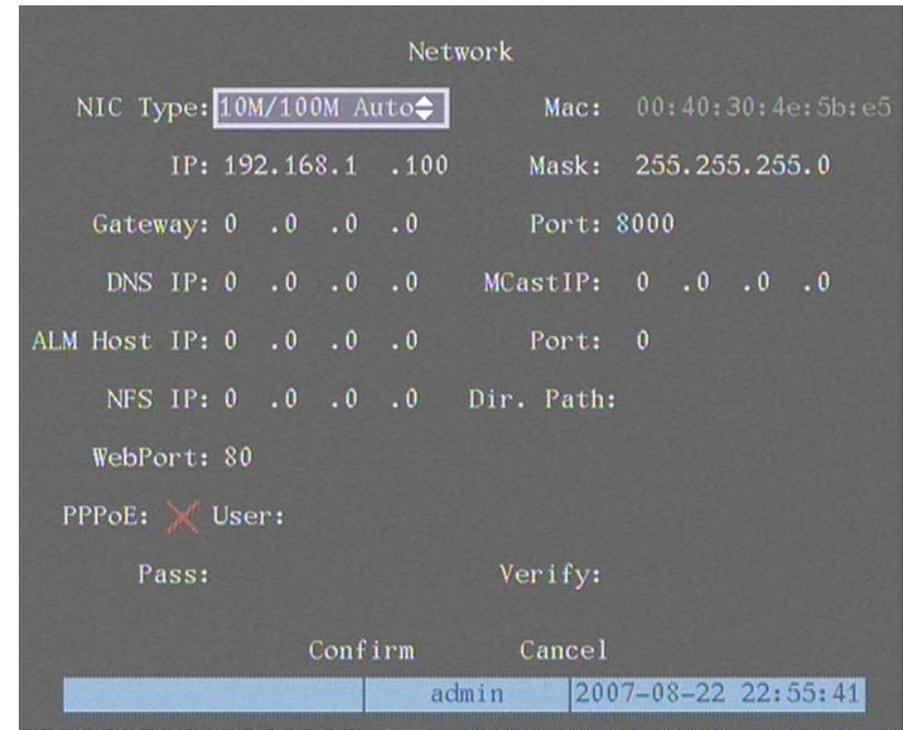
Step 2: Select NIC type.

Step 3: Input port number. In the port edit box, use numeric keys to input port number. The port number must be more than 2000.

Step 4: Input DNS IP. Input the ISP DNS Server IP address.

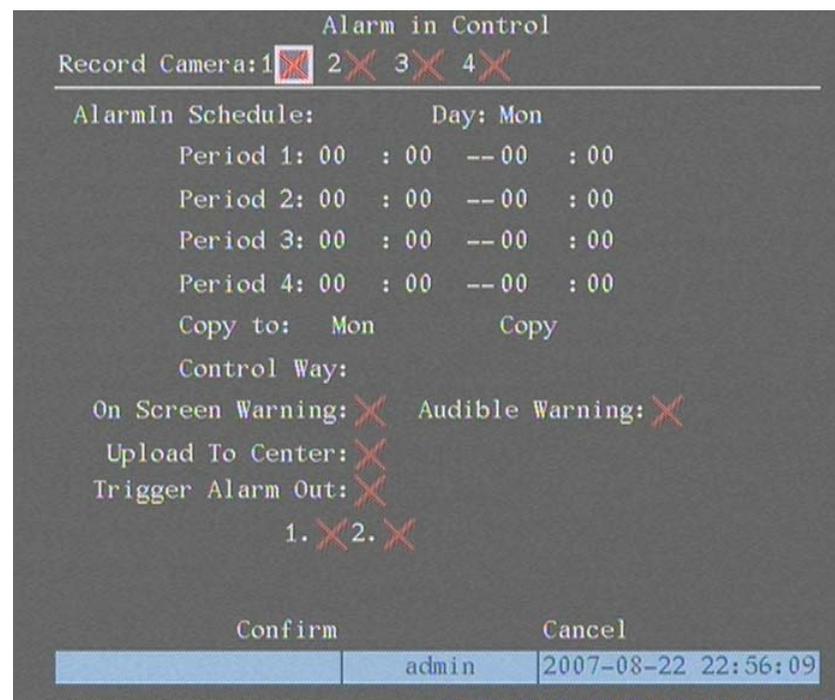
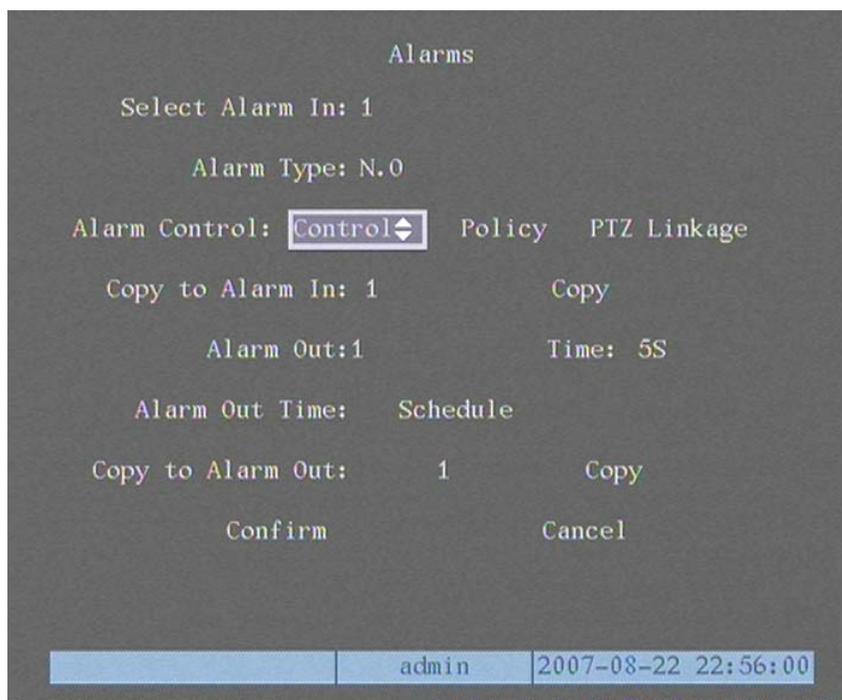
Step 5: Input PPPoE parameters. Use [ENTER] or [EDIT] key to enable PPPoE function. Input PPPoE login username, password and verify password.

Step 6: Save parameters. In “Network” menu, press “Confirm” to save parameters. Reboot NetDVR to make parameters effective. In reboot process, NetDVR will start dialup using PPPoE function. If NetDVR dialup Internet successfully, NetDVR will display the dynamic Internet IP address in “Network” menu.



5.7 Alarm

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



5.7.1 External Alarm Input Setup

Step 1: Select one alarm input

Use [↑] [↓] keys to select one alarm input.

Step 2: Alarm type

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

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

There are two options for “Alarm Handling” item: “Ignore” and “Control”. Select “Control” to activate “Policy” and “PTZ Linkage” buttons on right side. Move highlight item to “Policy” button and press [ENTER] key to enter into “Alarm in Control” sub menu:

Step 4: Alarm trigger record channel setup

Each camera can be set to linkage record for each alarm input. In the “Alarm In Handling” sub menu, use [ENTER] or [EDIT] key to enable record channel.

Note: In order to trigger the channel to record, in “Recording” menu, you must enable recording and select record type as “Alarm” or other related type. Please refer to section 5.5.

Step 5: Schedule for alarm control ways

When external alarm happens in the schedule, NetDVR will response according to the control ways. There are 4 time periods for one day. Input start time and end time for each time period.

Step 6: Alarm control way

You can select single or multiple responses including “On Screen Warning”, “Audible Warning”, “Upload to Center” and “Trigger Alarm Output”. Use [↑] [↓] and [EDIT] key to enable or disable them.

If “On Screen Warning” is enabled, when a motion alarm happens and NetDVR is in preview mode, NetDVR will pop-up the linkage camera. If multiple cameras are triggered, NetDVR will pop-up them one by one every 10 seconds. When the motion alarm is disappeared, NetDVR will restore preview mode.

Step 7: Save setup

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

Step 8: PTZ Linkage

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

Select one camera then select one of following PTZ linkage:

- **Preset:** Set the check box as “✓” to enable preset, in the preset number edit box input one preset number that has been setup already. Please refer to section 5.9 for preset setup.
- **Sequence:** Set the check box as “✓” to enable sequence and input one sequence number that has been setup already. Please refer to section 5.9 for sequence setup.
- **Tour:** Set the check box as “✓” to enable tour. Please refer to section 5.9 for tour setup.

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

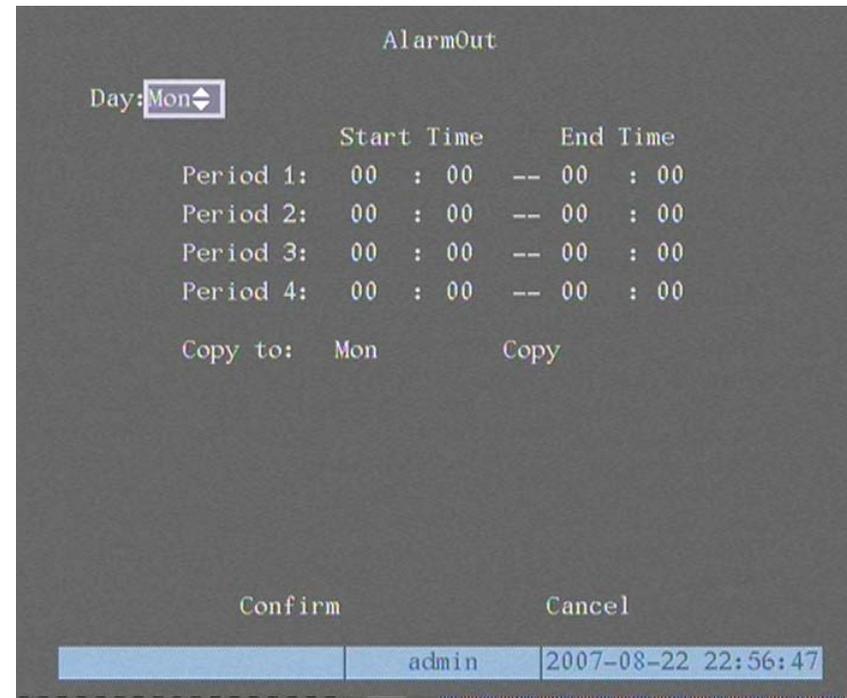
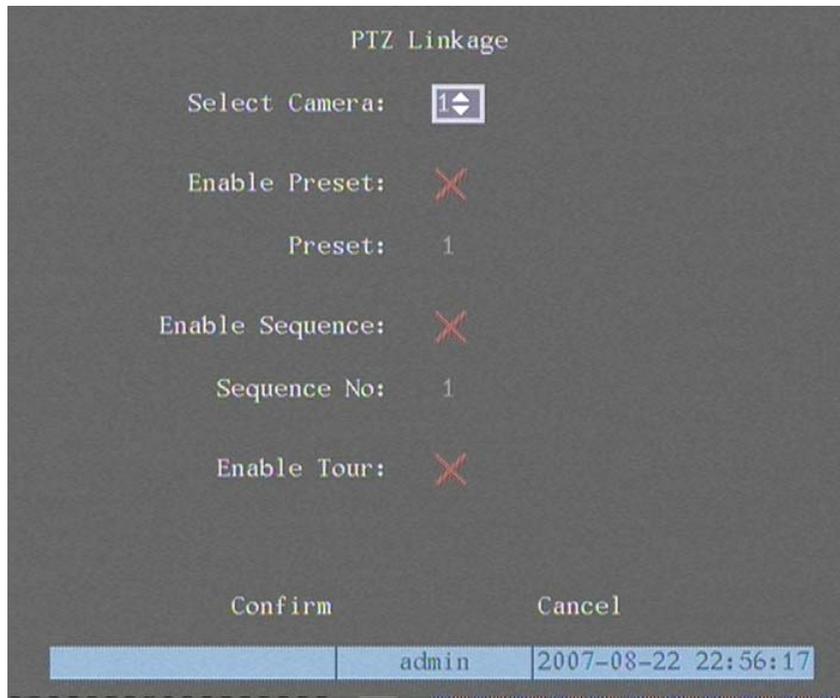
Note: Please make sure that the PTZ you are using supports preset, sequence and tour functions. One external alarm input can trigger multiple cameras PTZ linkage.

Step 9: Copy the parameters to other external alarm input

You can copy the parameters of current alarm input to other external alarm input.

Step 10: Save setup

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



5.7.2 Alarm Relay Out Setup

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

Step 2: Select delay time

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

Step 3: Enter into alarm out schedule

Setup the Alarm Out schedule to make alarm output effective. Move highlight item to “Schedule” button on right side of “Alarm Out Time” item, press [ENTER] key to enter into the corresponding schedule menu.

Step 4: Setup alarm out schedule

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

Step 5: Copy alarm output parameters to other alarm output

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

Step 6: Save setup

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

5.8 Exceptions

The exceptions include hard disk full, hard disk error, illegal access, IP address conflict, network failure, and NTSC / PAL differ.

Enter into “Exceptions” menu you can select single or multiple control ways, here it is:

- Audible Warning: NetDVR beep warning.
- Upload to Center: Send exception information to center host PC.
- Trigger Alarm Output: trigger local relay output.

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

5.9 PTZ

Note: All the PTZ settings here cannot be used in ILDVR Live Center.

There is one RS-485 port at NetDVR rear panel used for PTZ control.
You can setup RS-485 parameters to match your PTZ protocol.

In main menu, move highlight item to PTZ icon and press [ENTER] key, you can enter into PTZ menu as following.

5.9.1 PTZ Menu Description

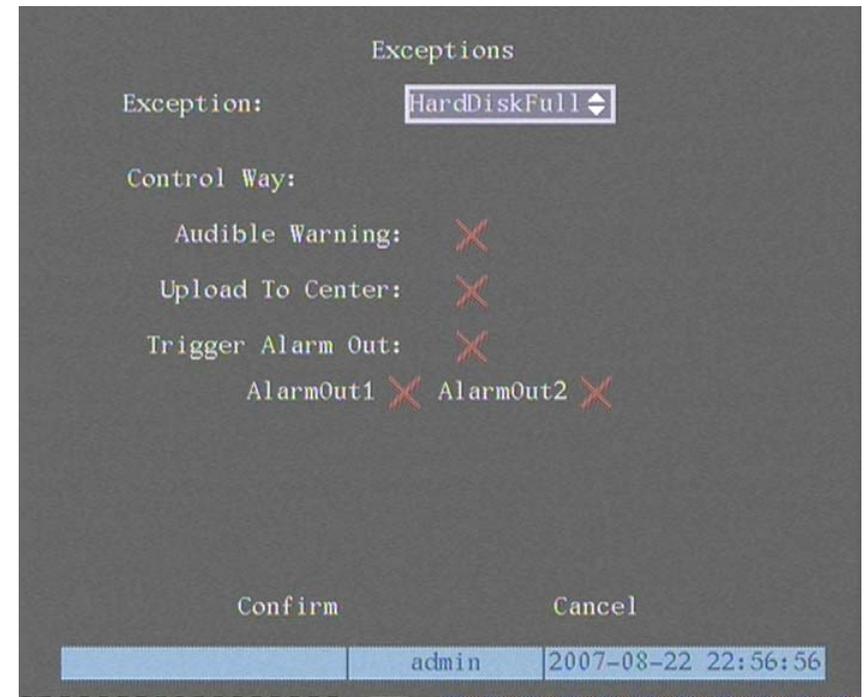
RS-485 parameters: Including baud rate, data bit, stop bit, parity, flow control, etc. These parameters must match the PTZ Protocol parameters.

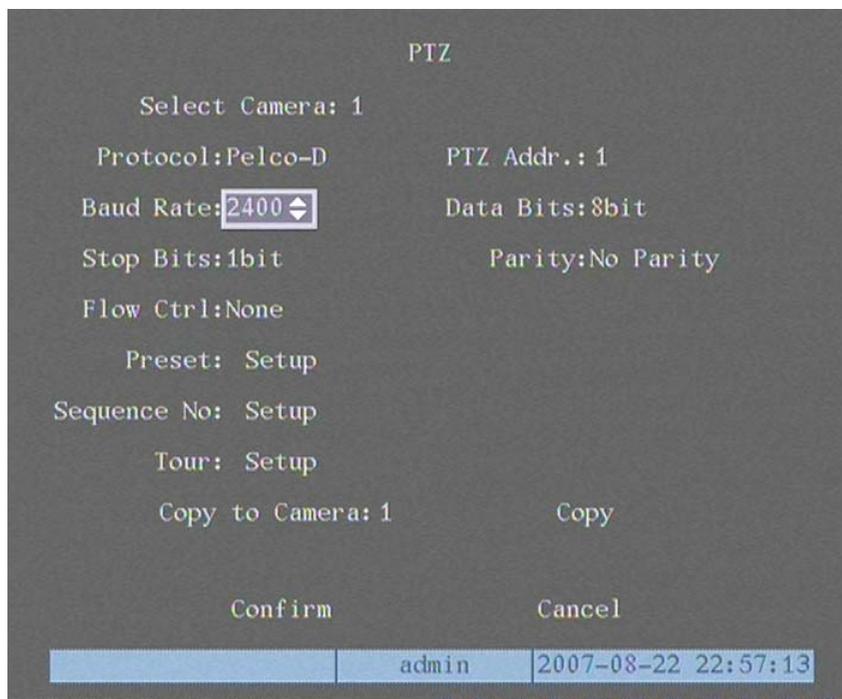
PTZ address: Each PTZ has one different address.

PTZ type: NetDVR had the following PTZ protocol: LiLin-1016, LiLin-820, PIH-7625, Pelco-D, Pelco-P, VCOM VC-2000, DM DynaColor, Samsung, Kalatel-312, CELOTEX, LG, Panasonic, ACES etc. Other PTZ protocols will be added with the new firmware.

Sequence: Each sequence is made-up of several tours. Each tour point includes one preset number, Dwell time (idle time) and Dwell speed (moving speed). Please make sure the PTZ you are using can support sequence function before you start to setup. You can save 16 sequences.

Tour: Tour is remembering the track of PTZ movement. Please make sure the PTZ you are using can support tour function.





5.9.2 Preset Setup

Move highlight item to “Setup” button on the right of “Preset”, press [ENTER] key to enter into preset setup menu. You can save 128 presets. Please make sure the PTZ support preset function before you setup preset.

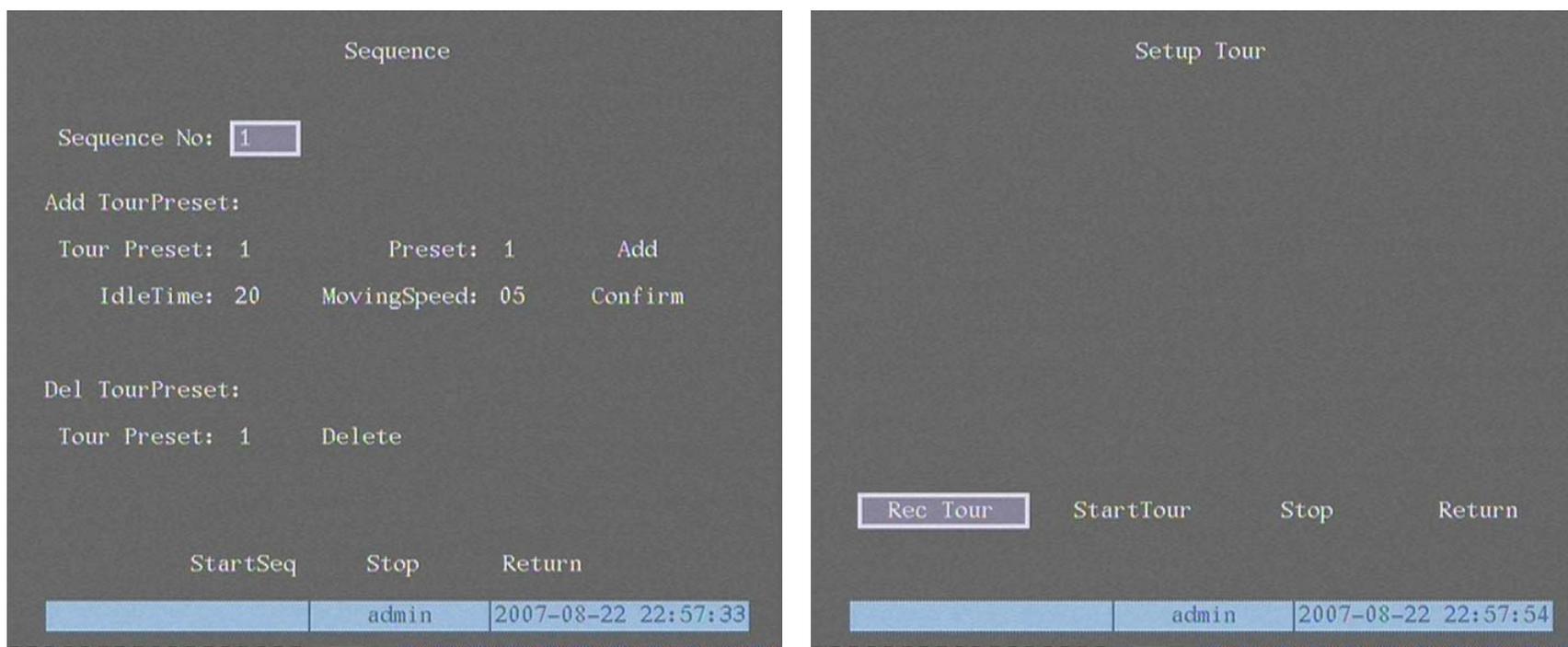
Add preset number: Input preset number (among 1-128) in the edit box then press “Adjust” button to enter into PTZ control interface. In PTZ control interface, you can use direction keys to adjust PTZ position, and use [IRIS+] [IRIS-] [FOCUS+] [FOCUS-] [ZOOM+] [ZOOM-] keys to adjust iris, focus and zoom.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

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

Delete preset number: In “Preset” setup menu, input one preset number, press “Delete” button, you can delete this preset number. After deleting, press “Return” button to “PTZ” menu. In “PTZ” menu, press “Confirm” button to save all modification.

5.9.3 Sequence Setup

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



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

Press “Add” button to add one tour preset. Press “Confirm” button to save the tour preset into the sequence. After finish setup the sequence number, press “StartSeq” to check the current sequence. Press “StopSeq” button to stop checking. You can delete tour presets in one sequence.

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

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

5.9.4 Tour Setup

In “PTZ” menu, press “Setup” button on the right side of “Tour” item, you can enter into “Tour” setup menu. Press “Rec Tour” button to enter into “PTZ control” interface. You can start controlling PTZ with direction keys, press [ENTER] to save the operation track and return “Tour” setup menu. Press “Start Tour” button to

repeat the PTZ track until you press “Stop” button. Press “Return” button back to “PTZ” menu. In “PTZ” menu, press “Confirm” button to save this tour. Please make sure the PTZ you are using can support tour function.

5.10 RS232

There is one RS-232 port at NetDVR rear panel. In main menu, move highlight item to “RS232” icon and press [ENTER] key, you enter into “RS232” setup menu.

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

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

- Console: Connect with PC serial port.
You can use HyperTerminal or NetTerm to control it.
- PPP: Connect Modem, using PSTN to transfer video image.
- Transparent channel: Connect serial devices.
Remote PC can control these Serial devices through network.

PPP Mode: Only used when work mode is “PPP”.

There are two options: “Active” and “Passive”.

“Active” means NetDVR will dialup through PSTN.

Currently “Active” function is not available.

“Passive” means NetDVR will wait for dialup.



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

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

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

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

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

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

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

Confirm: Save parameters and return main menu.

Cancel: Abort modification and return main menu.

Example: PPP (Modem) passive dialup through PSTN There are two Modems. One is connected NetDVR RS-232 port with DCE cable. The other is connected with PC COM port.

Setup at NetDVR end

Step 1: RS232 setup

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

Step 2: Video setup

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

Step 3: Save setup

In “Recording” menu, press “Confirm” button to save parameters.

Step 4: Setup Modem used on NetDVR side

Use DCE cable to connect Modem with PC serial port. You can use HyperTerminal or NetTerm to setup modem:

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

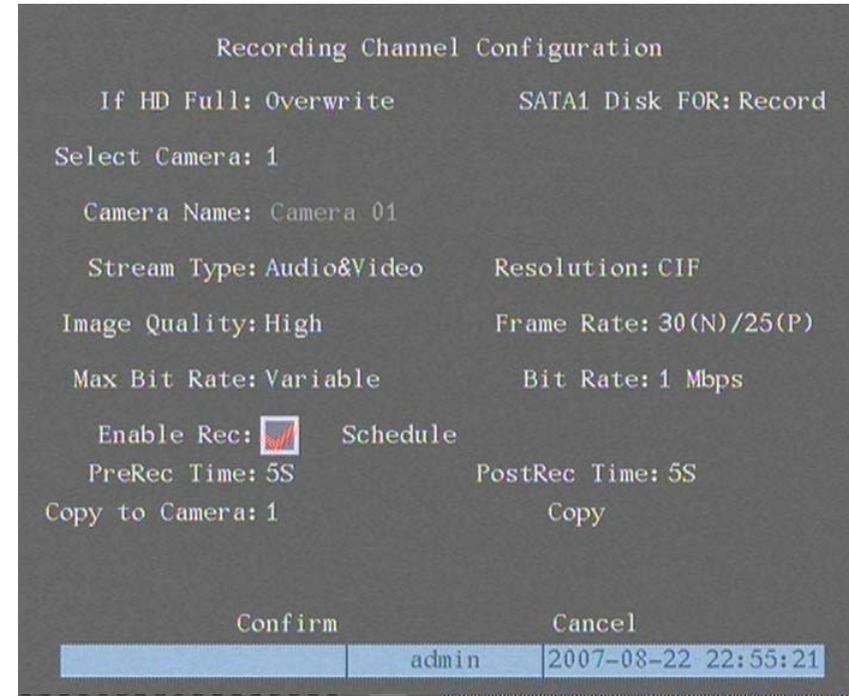
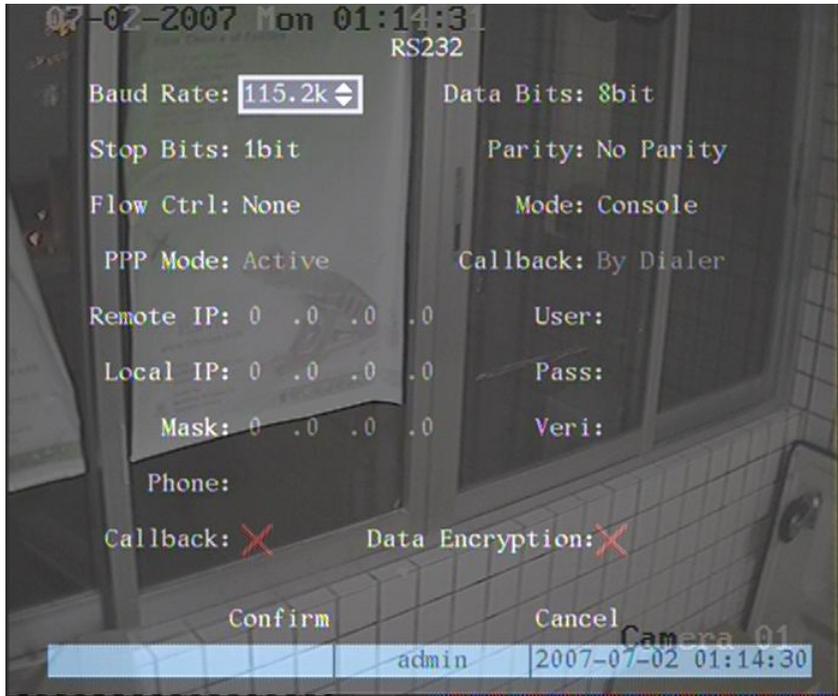
AT&S0=1 ---- Set Modem as answer

ATE0 ---- Not display the input characters

ATQ1 ---- Commit instruction and not display

AT&W&W1 ---- Save parameters

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



Setup at PC end

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

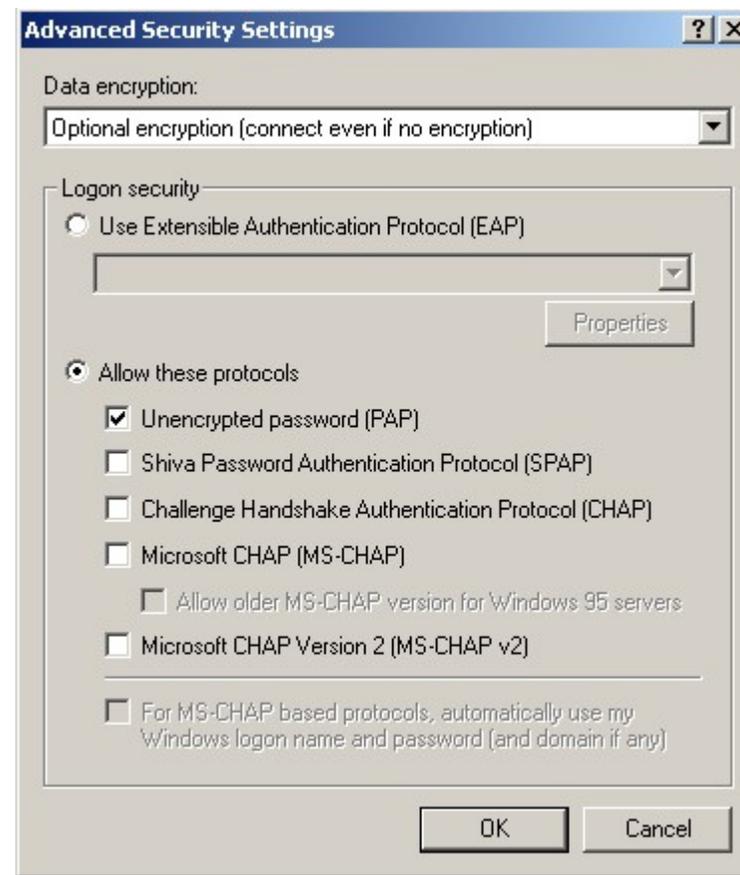
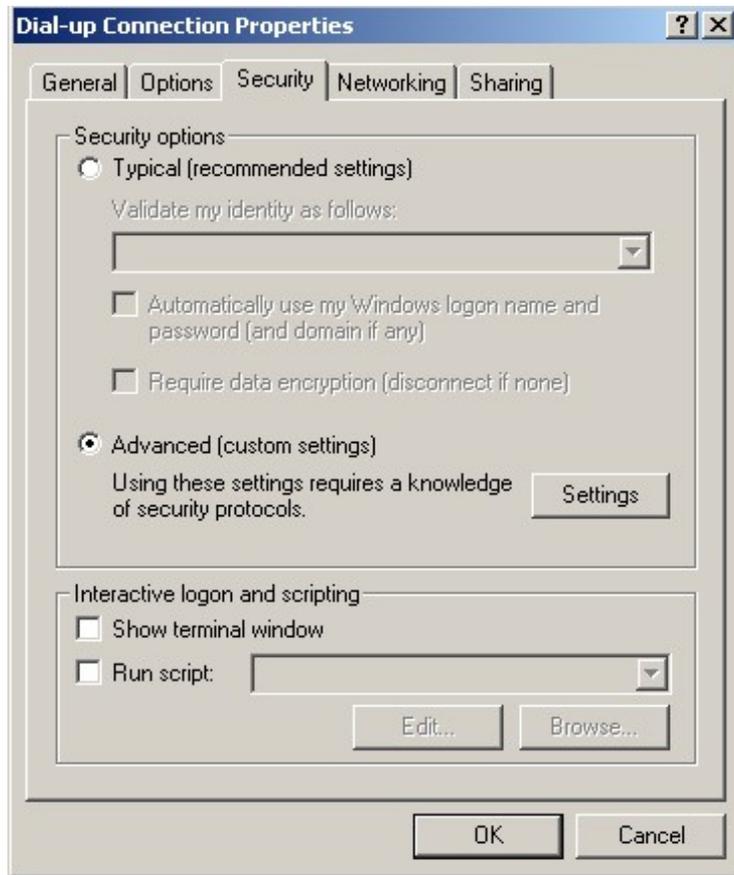
AT&F ---- Restore default parameters (Generally, Modem is hard flow control)

AT&W&W1 ---- Save parameters

Step 2: Setup “Network and Dial-up Connection”

Open “Network and Dial-up Connections” in control panel, then press “New Connection...”, select “Dial-up to private network” according to the guide. Select the corresponding MODEM, input the telephone number to be dialed in the next step, finish it according to the guide. At this time, you will find a new program named “Dial-up Connection” in “Network and Dial-up Connections” folder.

Setup should be specially pay attention to: Open the properties of the new-established dialup program, select “Advanced” (custom settings) in security option, press setup, set it in the popup dialogue box that is “Advanced Security Settings” as follows:



Step 3: Establish the dialup connection

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

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

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

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

```

C:\>ipconfig

Windows 2000 IP Configuration

PPP adapter

    Connection-specific DNS Suffix . :
    IP Address . . . . . : 192.1.0.1
    Subnet Mask . . . . . : 255.255.255.255
    Default Gateway . . . . . : 192.1.0.1

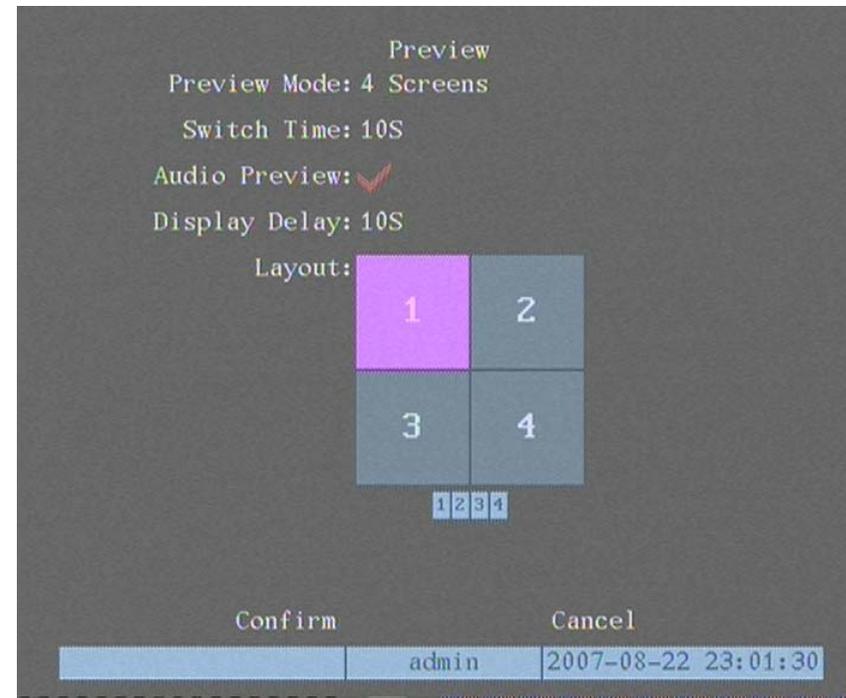
C:\>ping 192.1.0.2

Pinging 192.1.0.2 with 32 bytes of data:

Reply from 192.1.0.2: bytes=32 time=138ms TTL=64

Ping statistics for 192.1.0.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 138ms, Maximum = 138ms, Average = 138ms

```



5.11 Preview

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

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

Step 2: Preview properties:

Preview mode: Use [↑] [↓] key to select one mode. If NetDVR has only 1 channel, you can select only “1 Screen” option. If NetDVR has 4 channels, there are “1 Screen” and “4 Screen” options. If NetDVR has more than 4 but less than 9 channels, there are “1 Screen”, “4 Screen” and “9 Screen” options. If NetDVR has 16 channels, there are “1 Screen”, “4 Screen”, “9 Screen”, “12 Screen” and “16 Screen” options.

Switch Time: Use [↑] [↓] keys to select switch time. There are many options, including “5 Seconds”, “10 Seconds”, “20 Seconds”, “30 Seconds”, “1 Minutes”, “2 Minutes”, “5 Minutes” and “Never”. If you select “Never”, the preview image will not be switched automatically. For example, for 16 channels NetDVR, if you select “4 Screen” preview mode and “20 Seconds” switch time, NetDVR will cycle display 4 channels image every 20 seconds.

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

Display Delay: Setup the time of video staying on screen.

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

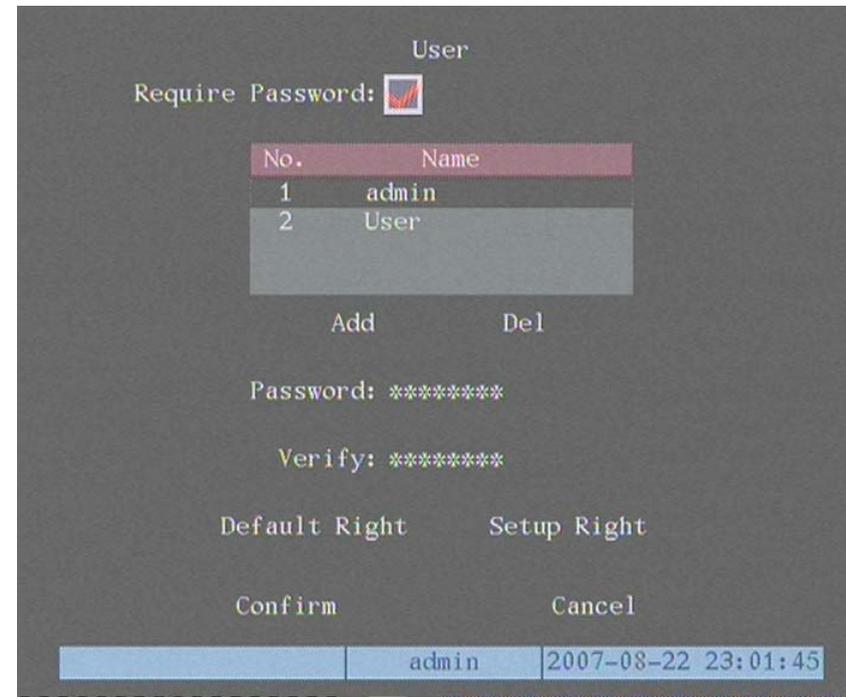
Firstly select the biggest screen preview mode, for example, for 16-channel NetDVR, select “16-Screen” preview mode so that all windows are display in the square. Secondly, move highlight item to one of these windows, press numeric keys to input camera index (If NetDVR has less than 10 channels, just use one numeric key, otherwise, use 2 numeric keys). The small window will display that camera number. In this way you can change the display order. If you press 0 or 00, then the corresponding window will not display live video. After you define the camera preview order, you can select preview mode to meet your demand.

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

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

5.12 User

5.12.1 Password Modification



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

Move highlight item to “User” icon, press [ENTER] key to enter into “User Management” submenu.

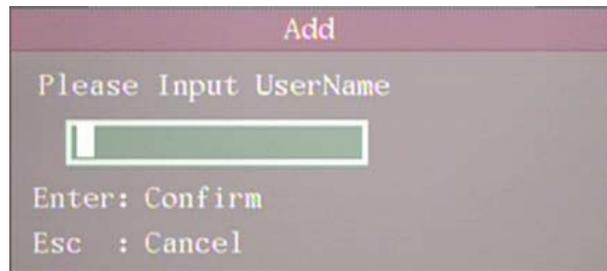
In the user name list box, only “admin” exists. You can use [→] key, move highlight item to password edit box, and press [EDIT] key to enter into edit status. Press numeric keys to input the new password. The password is only combined by 16 numerals at most. After finish input password, press [ENTER] key to exit. Move highlight item to “Verify password” edit box, input the verify password. Move highlight item to “Confirm” button, and press [ENTER] , if password and verify password are the same, the password will be saved and take effect.



If password and verify password are not same, a warning message box will be appeared. In this case, press [ENTER] to return password edit box, and input new password again.

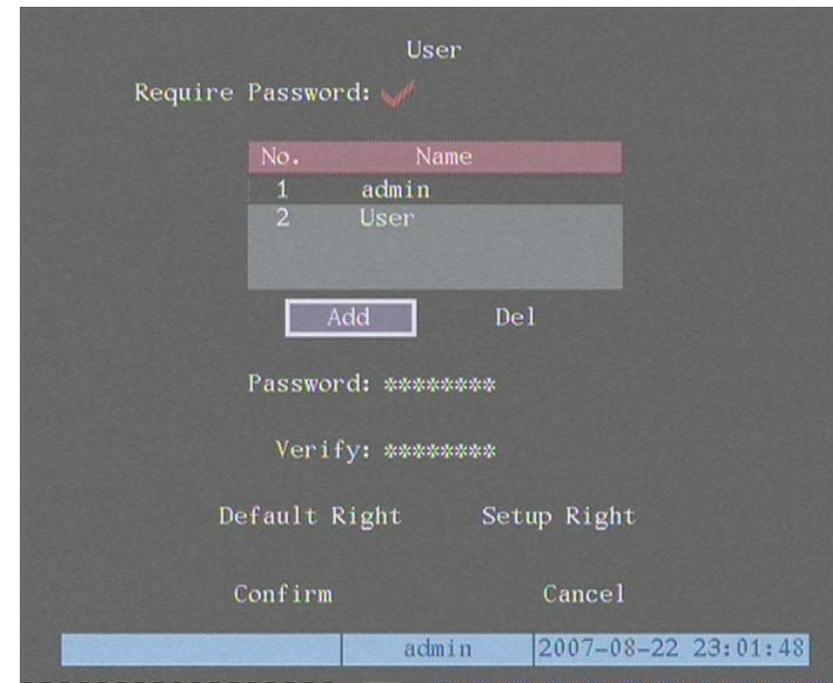
5.12.2 Add and Delete User

Step 1: Enter into “User Management” menu



Step 2: Add new user name

In the “User Management” menu, move highlight item to “Add” button and press [ENTER] , in the pop-up dialog, input the new user name, press [ENTER] and return “User Management” menu. 15 users can be added in total.



Step 3: Setup password for new user

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

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

Step 4: Setup user rights for new user

The new added user does not have any operational right. You must setup user right.

In the users list box of “User Management” menu, use [↑] [↓] keys to select the new user name, then move highlight item to the “Default Rights” button, press [ENTER] the user will have the default rights. The default rights include local playback, remote playback and view log.

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

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

After finish, press “Confirm” button to save modification. Press “Cancel” button to abort.

Step 5: Save the new user’s password and rights

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

User rights description

“Local Rights”:

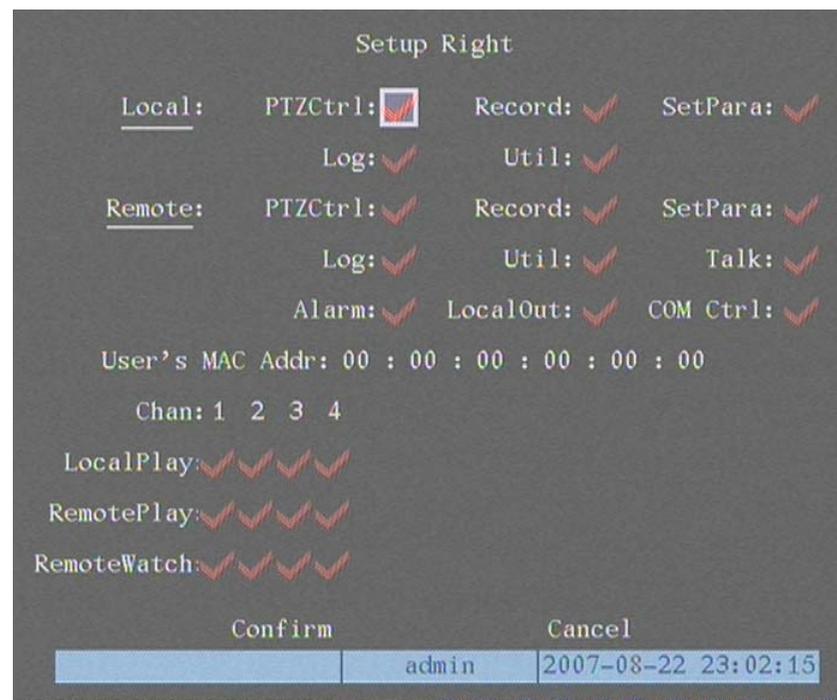
Local rights are for local operation, such as the operation using front panel, IR controller and RS-485 keyboard.

PTZ control: Locally control PTZ

- Record: Manual start/stop recording
- Playback: Local playback and backup the recorded files
- Parameters Setup: Locally setup the NetDVR parameters
- Log: Locally view the log on NetDVR
- Utilities: Locally upgrade firmware, format HDD, reboot NetDVR and shut down NetDVR, etc.

“Remote Rights”:

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



- Com Control: NetDVR RS-232 transparent channel function

MAC address

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

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

Delete user

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



5.13 Transact

Transact

Transaction Information

The NetDVR can actively obtain or passively receive credit card numbers from an ATM machine linked through network or serial port, and credit card numbers can be overlay on live video, record and playback. The following description indicates how to carry out relevant parameter setting according to different linkages to an ATM machine. In “Transaction Information” menu, there are 4 kinds of text capture solutions:

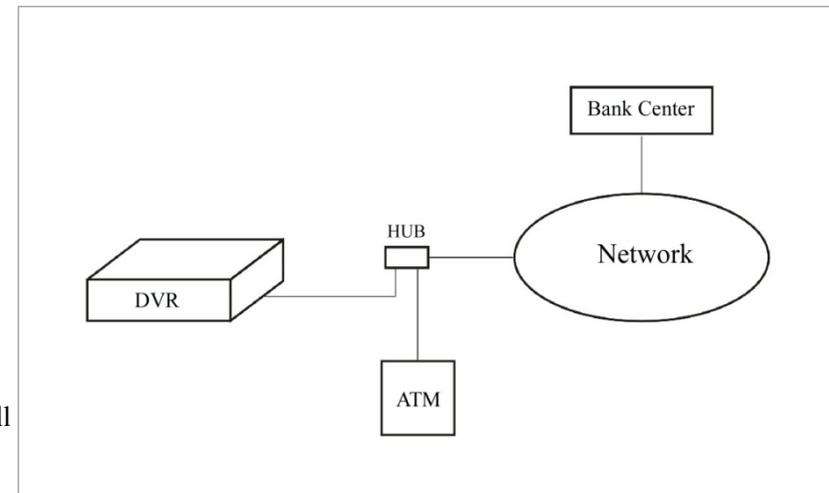
- Network Sniff:** Obtain the transaction information such as credit card numbers actively through network.

The network connection and the corresponding setup menu are illustrations as following:

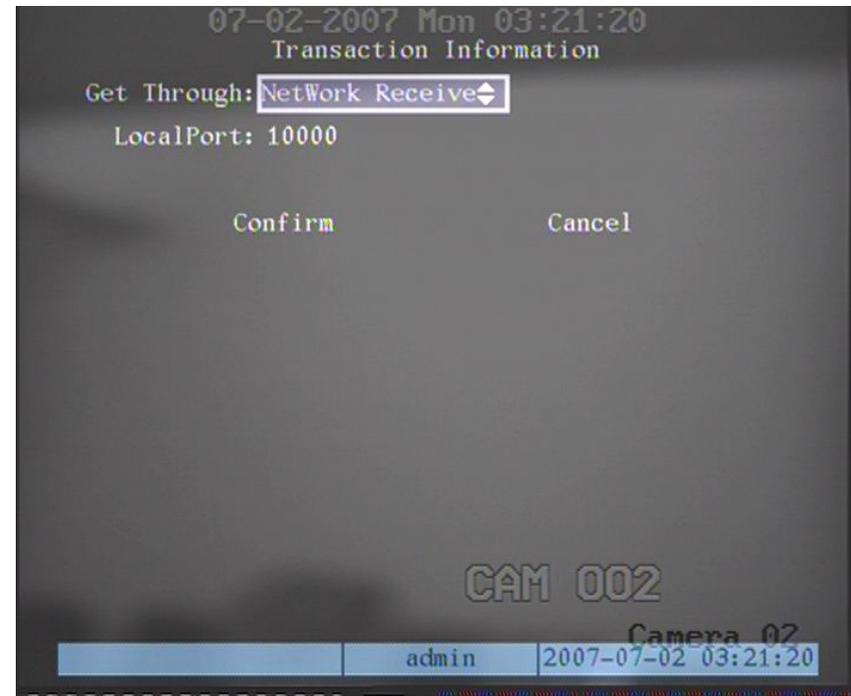
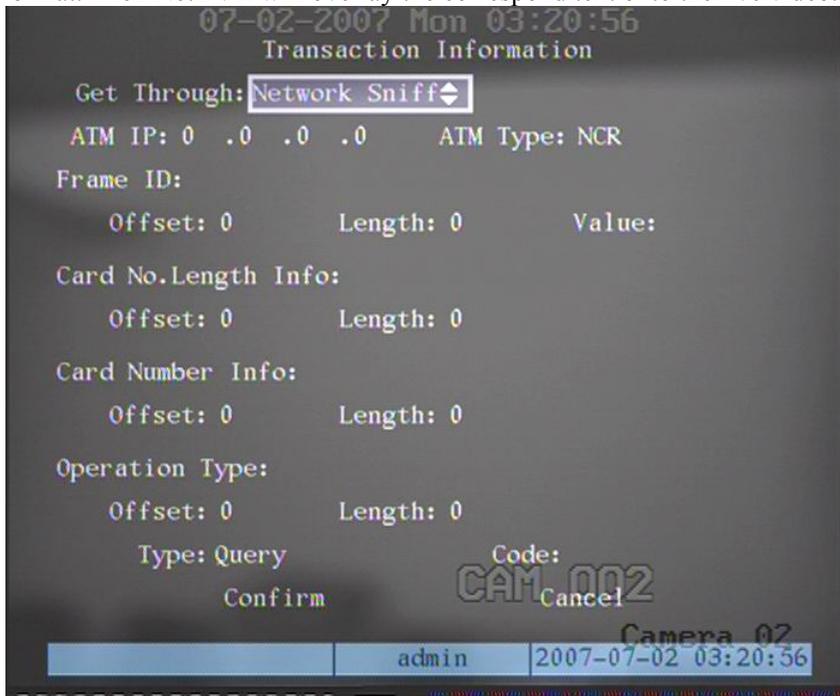
You need to setup the following information:

- IP address of ATM machine
- Type of ATM machine
- Start & end position, length and the content of data message
- Start & end position and length of credit card number
- Start & end position and length of transaction type
- Transaction type and code

When the ATM machine is sending transaction information to the bank center, NetDVR will capture the data package over the network, and analyze the data according to the preset



format. Then NetDVR will overlay the correspond text onto the live video.

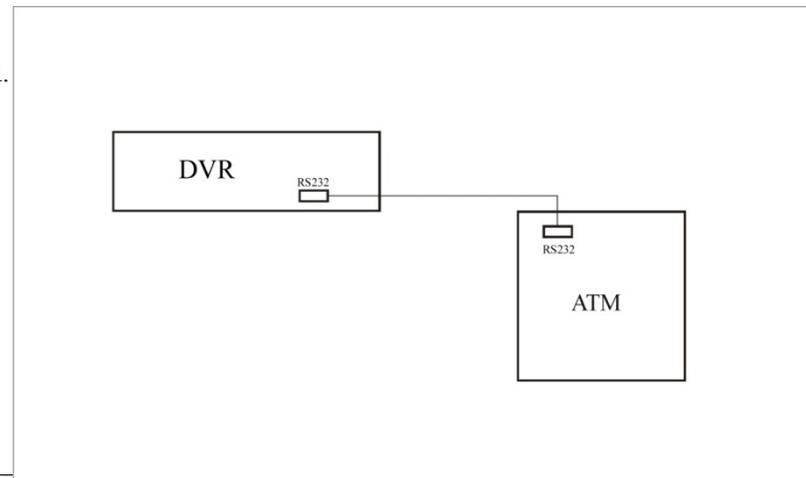


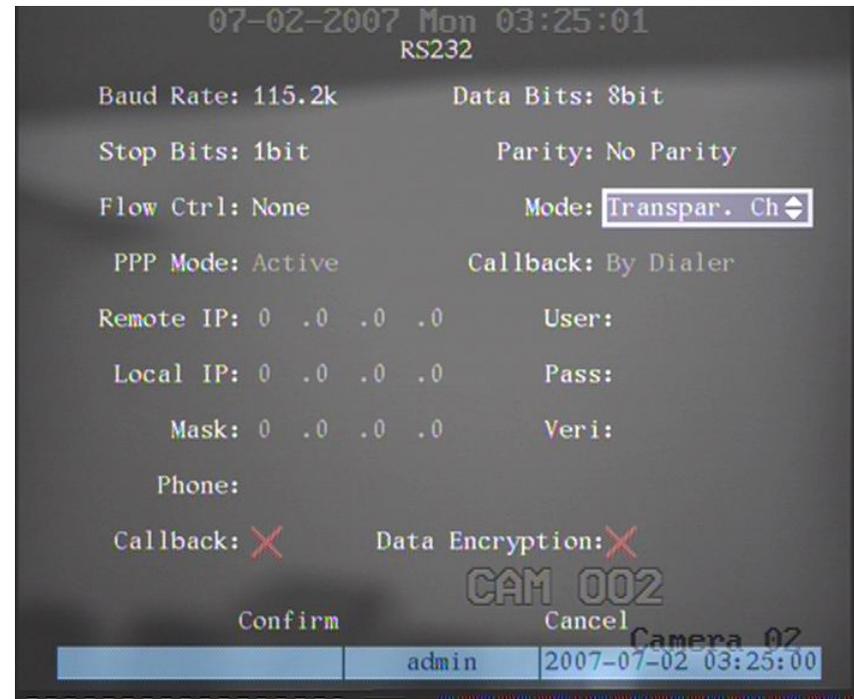
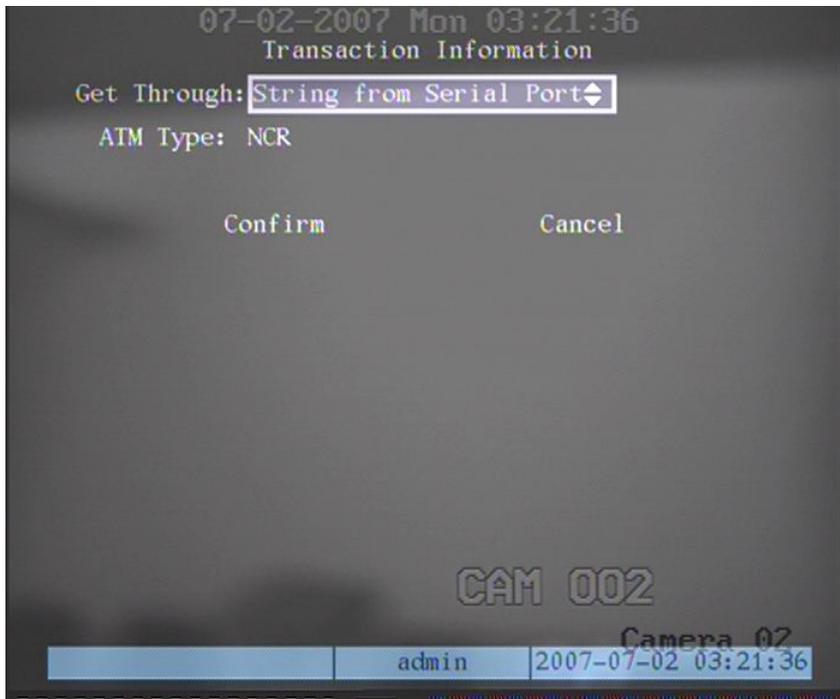
b. Network Receive: The NetDVR receives data sent by the ATM machine over the network. You only need to setup a NetDVR listen port. The default port value is 10000.

In this case, you must develop the software to run in the ATM machine based on special protocol. The software will send the transaction information directly to the NetDVR. NetDVR will receive, analyze and overlay the text on live video.

c. Receive data sent by ATM through serial port

The connection is the diagram on the right
The diagram on the right illustrates the connection
The corresponding setup menu is as follows. You only need to setup the ATM machine type.

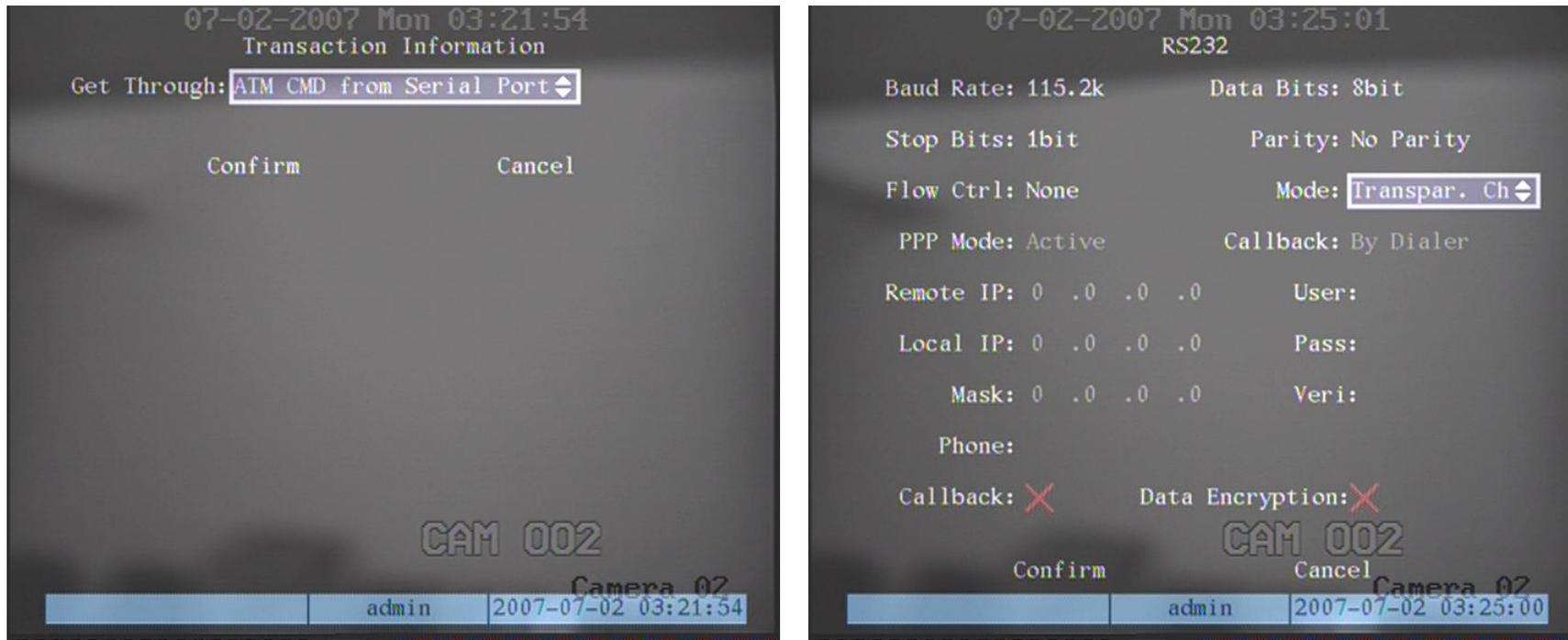




In this case, you must set the RS-232 of NetDVR as transparent channel mode as indicated

A special program must be written and installed in the ATM machine that will send the credit card number, transaction code to the NetDVR through the RS-232 port. Please provide detail ATM machine communication protocol for actual projects.

d. Receive the command sent by ATM through serial port



In the case, you must set the RS-232 of NetDVR as transparent channel mode as indicated.

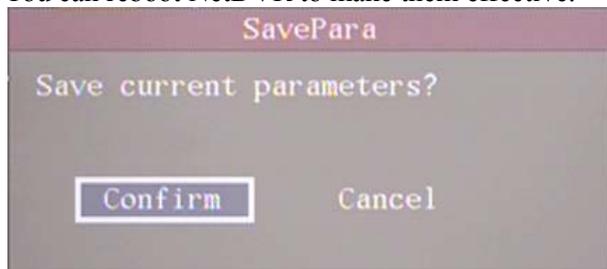
Also, custom software must be run in the ATM machine, and send command to the NetDVR through RS-232 port based on ILDVR communication protocol.

5.14 Utilities

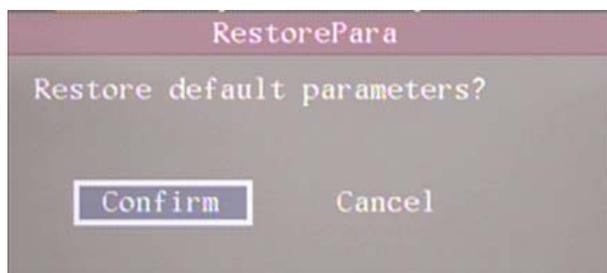
There are many tools in “Utilities” menu, “SavePara”, “RestorePara”, “Upgrade”, “Hard Disk”, “Stop Alarm Out”, “Reboot”, “Power Off”, “View Log” and “System Info”.

Save Parameters

Save factory default parameters into FLASH memory.
You can reboot NetDVR to make them effective.



Restore Parameters



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

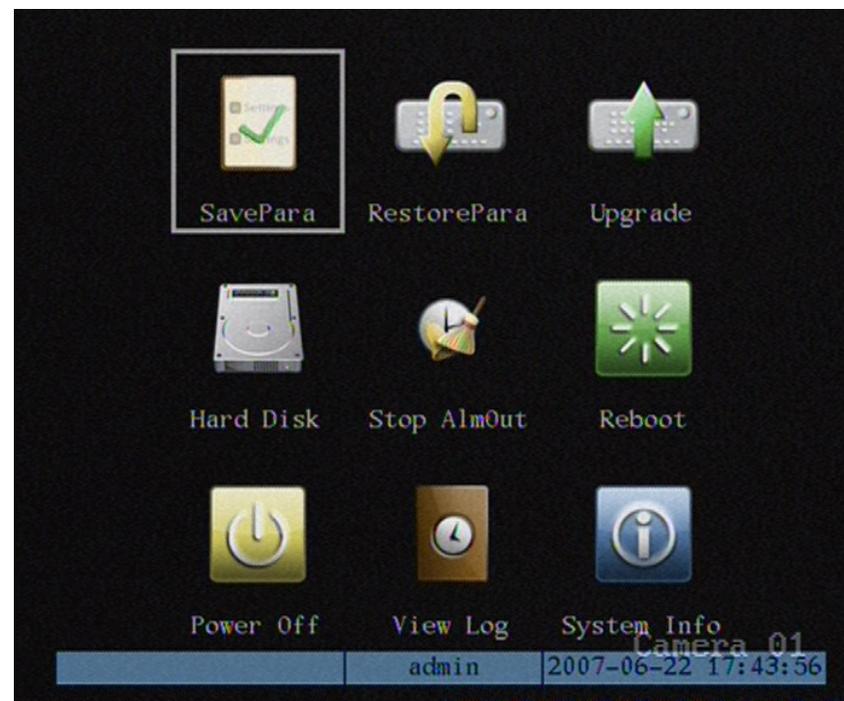
Upgrade

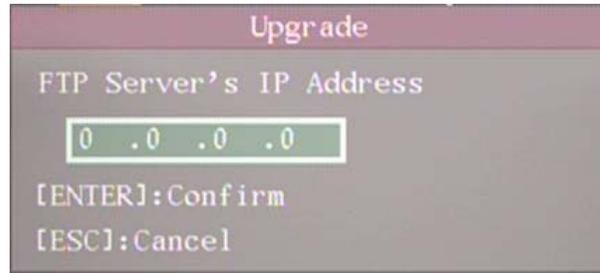
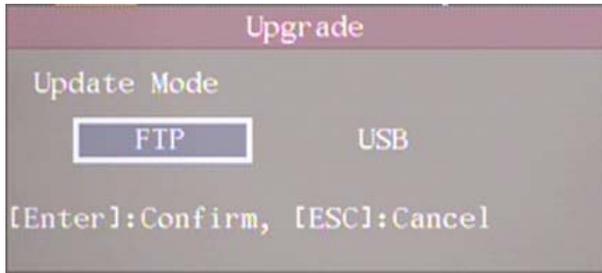
You can use this function to upgrade the firmware. Please confirm the language is matched. Press "Upgrade" icon, in the pop-up dialog, you can select either "FTP" or "USB" upgrade mode.

If you select "FTP" mode, you will enter into "FTP Upgrade" menu as following. Input FTP server IP then press [ENTER] key NetDVR will connect with FTP server through network and download the firmware file.

If you select "USB" mode, please make sure you connect one USB flash memory with NetDVR and the firmware file is in its root directory.

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





Hard Disk Management

Check HDD work status

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

Format HDD

Before formatting HDD please stop all recording. After formatting you must reboot the NetDVR otherwise it will not work properly.

Clear Alarm Out

Clear the alarm output manually.

Reboot

Reboot NetDVR.

Power off

Shut down NetDVR.

View Log

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

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



By Type

View system log information of the assigned type.
Log Type is divided into “Major Type” and “Minor Type”.
Major type includes operation, alarm and exception.

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

In alarm major type, the minor type includes: External Alarm In, External Alarm Out, Motion Detect Start, Motion Detect Stop, Video Tamper Start, Video Tamper Stop.

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

For example: The steps of viewing alarm log.

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

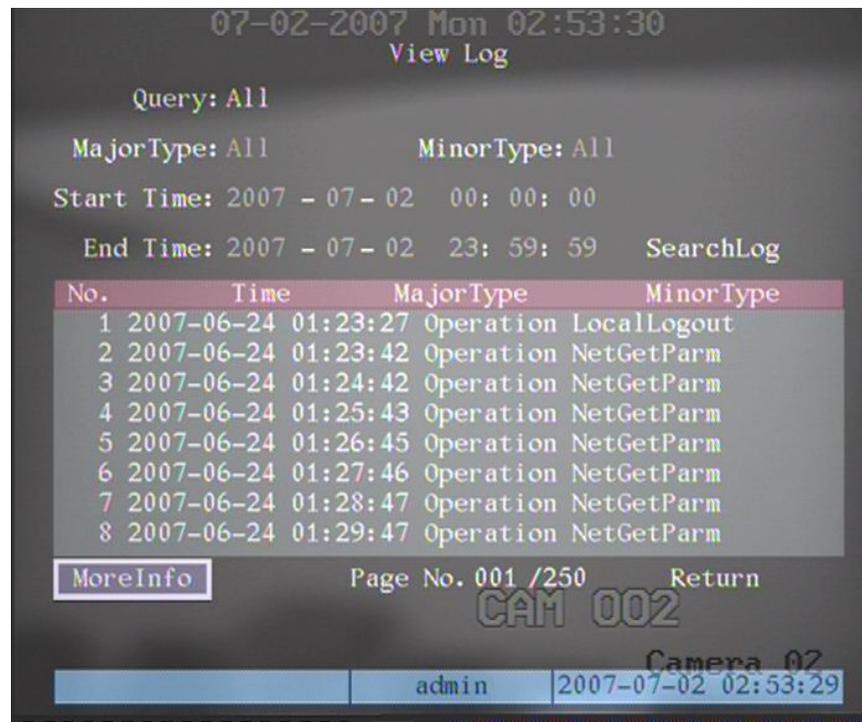
Step 2: For “Major Type” option, select “Alarm” option. For “Minor Type” option, select one of following options: All, External Alarm In, External Alarm Out, Motion Detect Start, Motion Detect Stop, Video Tamper Start, Video Tamper Stop.

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

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

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

By Time



View the log in a period of time.

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

Step 2: Input start time and stop time.

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

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

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

By Type&Date

View one kind of log in the assigned time period.

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

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

Step 3: Input start time and stop time.

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

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

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

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

System Info

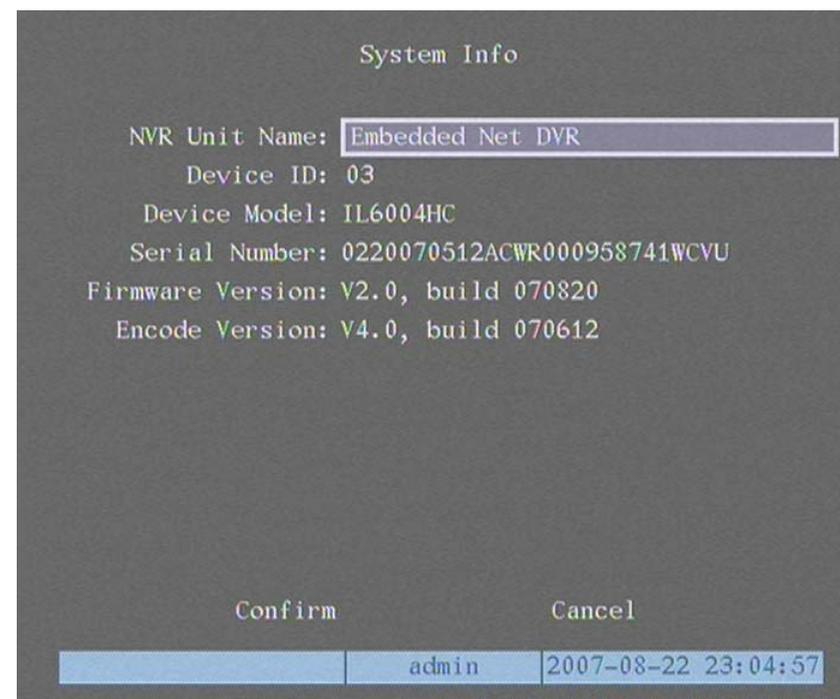
Unit name

In the “Display” menu there is an item named “Unit Name”.

The default unit name is “Embedded Net DVR”. Move highlight item to unit name edit box, press [EDIT] key to enter into edit status, you can modify the unit name. Press [ENTER] key to finish modification. Select “Confirm” button and press [ENTER] to save the new unit name. Press “Cancel” button or [ESC] key to abort modification.

Device ID

When use IR remote controller to operate NetDVR, you must use device ID to select NetDVR. The default ID is “88”. If there are more than one NetDVR in one place, please define different device ID for each NetDVR. Otherwise the IR controller will control all NetDVR with the same device ID at the same time. In “Display” menu, move highlight item to the device ID edit box. In the edit status you can use numeric keys to input new device ID. The device ID value is ranged among 01-100. After finish the modification, press “Confirm” button to save it or press “Cancel” button to abort modification.



6 IE Web Client

NetDVR embeds web server, users can easily remote access it by Internet Explorer to perform remote preview, remote control PTZ, remote playback, remote setup and download archive video, etc. But IE web client is limited to point-to-point connection. It can only connect one NetDVR at a time. So this kind of simple and economic solution is suitable for personal usage or small business.

For more complicated surveillance system and perform more power functions, please refer to Live Center solution and CMS solution.

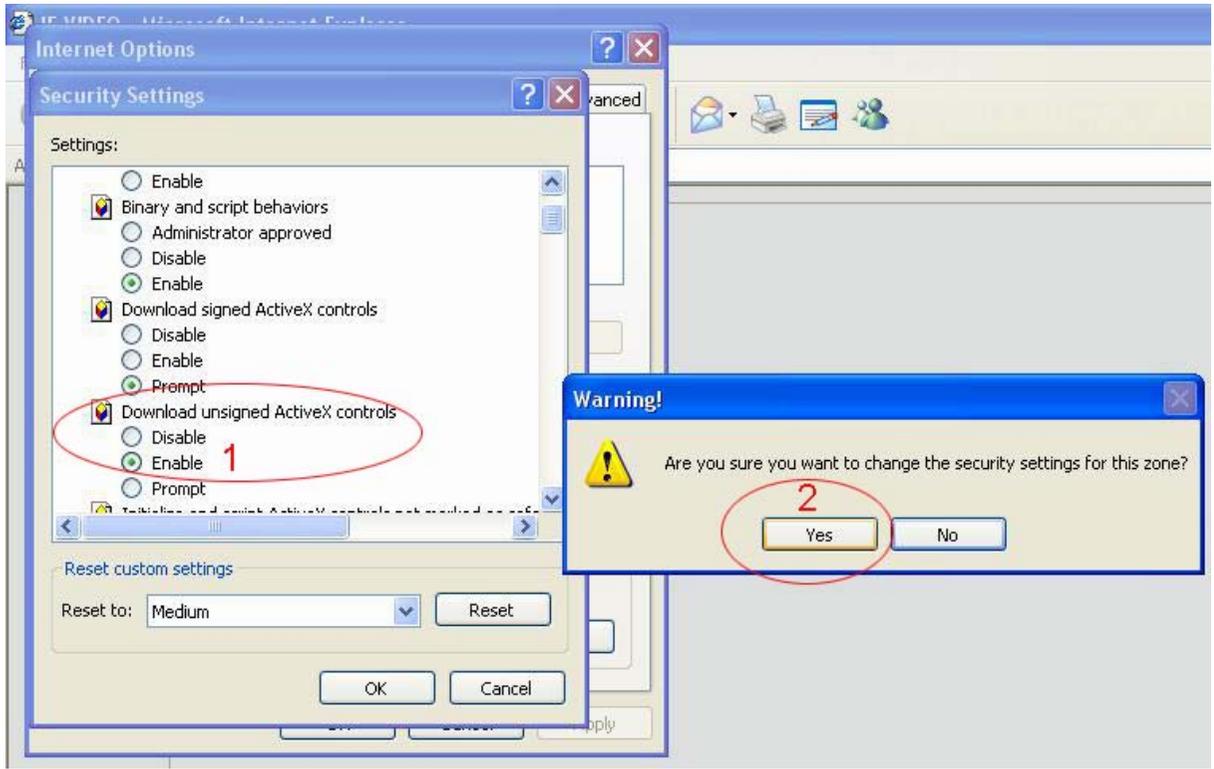
6.1 Login to NetDVR

Run Internet Explorer, input the NetDVR server IP address in the IE address box then press Enter key. A Security Warning interface will appear after getting connection with DVR server, this is ActiveX controls and plug-ins installation interface at first time running. Click “Yes” to continue.

If you have correctly configured the NetDVR server with DNS/DDNS, you can also input the DVR server domain name and web listen port in the IE address box.



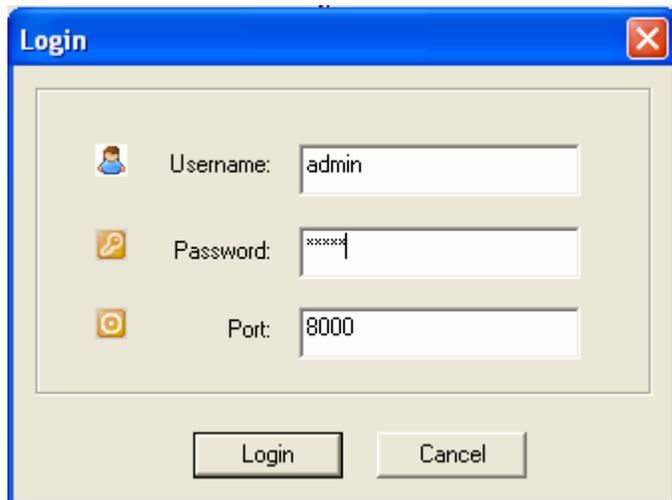
Windows IE security settings prevent users from installing unsigned ActiveX controls. You can change settings to enable downloading of unsigned ActiveX controls. After the installation is finished please change IE security setting again to original settings. See the following 2 figures.



When the following dialog interface appears, click OK button to install ActiveX controls.



After finish installation of ActiveX controls the following web client login interface will appear. Input correct User name, Password and TCP port. Click "Login" button.



6.2 Remote Live Viewing



Main interface

Control buttons



All channels connect button.



All channels disconnect button



Capture image button



Manual record button, the video save in local disk, default save directory is D:\webrecord\. To play the saved video, you must use the utility Player.exe



No record button.



Start remote talk button.



Stop remote talk button



Logout button



Login button



Live viewing button



Remote playback button



Remote setup button



Remote log search button



Split mode shift button



PTZ control button, center is auto.



Preset control button, input preset number then click button



to call it. Click button



to save it.



Wiper on/off button



Light on/off button



Lens control button



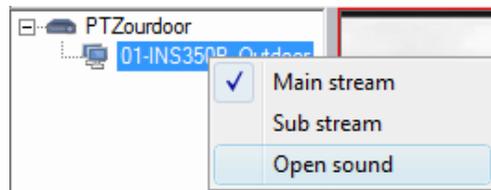
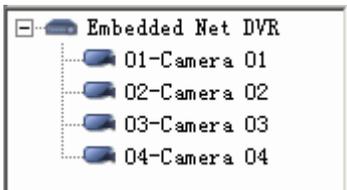
From up to down, adjust voice volume, brightness, contrast, tone and saturation.



Click it to restore default



Display computer CPU info, date & time and login ID information.



Display video server device name and channel connection information. You can double click the channel icon to get connection. From Right-click menu, select main-stream or sub-stream, open audio spy.

Connecting operation steps:

- Click (select) one blank window that you want view remote video
- Double click channel icon to display that camera.



Or click button to get all channels connecting.



Remote Live Preview

6.3 Remote Search and Download

CPU:11%
2007-08-22 23:15:58
admin

Embedded Net DVR

- 01-Camera 01
- 02-Camera 02
- 03-Camera 03
- 04-Camera 04

File Type: ALL Search by card no Card No.:

Start Time: 8/21/2007 12:00:00 AM End Time: 8/22/2007 11:59:59 PM

File name	Start time
ch03_30000001000000	20070821071548
ch03_30000009000000	20070821081659
ch03_300000014000000	20070821091409
ch03_300000018000000	20070821100212
ch03_300000018000106	20070821113117

08-21-2007 Tue 07:16:08 (S)

08-21-2007 Tue 08:26:59 (S)

Camera 02

08-21-2007 Tue 09:24:34 (S)

08-21-2007 Tue 09:14:09 (S)

Camera 04

Camera 03

67/72121 00:00:02/00:48:04 ch03_300000014000000

Remote playback operation steps

In main interface click button  to enter into remote playback interface. See as above diagram.

Select target search camera in the camera list box

- Select record file type
- Select archive time
- Click “Search” button to list all matching files in file list box
- Select target playback file then click play button. Or double click the selected file.

Download Video

In remote playback interface, selecting a target file from file list box in the right, then click download button  to save download and save it to local disk. Default save directory is C:\Download\

Other operations

While playing back archive video, click “Capture” button  to take a snapshot. Default save directory is C:\Capture\

While playing back archive video, click “Clip” button  to begin a video clip. Click it again to end video clip.

During playing back, you can click  to pause, click  to play, click  to stop, click  to decrease playing speed, click  to increase playing speed, and click  to play in frame one by one.

 Adjust voice volume

 Switch one channel and 4 channel viewing mode.

Card No.: This feature is only available to IL6000HA series ATM/POS NetDVR. Search video by bankcard info.

6.4 Remote Setup

In the web client main interface, click remote setup button  to enter remote setup interface. There are 7 pages in total. In these pages you can change system parameters, reboot NetDVR, load default parameters, etc.

Remote Configuration

Server configuration | Channel configuration | COM configuration | Alarm configuration | Use

Server Configuration Information

Unit name	Embedded Net DVR	Cycle record	YES
Device ID	3	Enable scaler	Off
Channel amount	4	Harddisk amount	1
Alarm input number	4	Alarm output number	2
Server type	DVR_HC_S		
Serial number	IL6004HC02200705124CWR000958741W/CVU		

Network Configuration Information

NIC type	10/100M Auto	MAC	00:40:30:4e:5b:e5
IP address	192 . 168 . 1 . 100	Port	8000
Subnet mask	255 . 255 . 255 . 0	Gateway	0 . 0 . 0 . 0
DNS host IP	0 . 0 . 0 . 0	Multicast IP	0 . 0 . 0 . 0
Remote host IP	0 . 0 . 0 . 0	Remote host port	0
PPPoE	Off	PPPoE IP	0 . 0 . 0 . 0
PPPoE user		PPPoE password	
NFS host IP	0 . 0 . 0 . 0	NFS directory	
HTTP port	890		

Server Version Information

Version	V2.0 build 070820	Firmware version	0x66008781
Encode version	V4.0 build 070612	Previous version	6

ReSet | Reboot | Save | Exit

Server Configuration

Read NetDVR system version info and modify device name and device ID. Modify network parameters. Refer to sector 5.14 “System Information” and sector 5.6 “Network”.

Remote Configuration

Server configuration | **Channel configuration** | COM configuration | Alarm configuration | Use

Channel configuration

Select channel: Channel01

Camera name: Camera 01 (Note: Channel name can not be copied)

Schedule Setup PreRec T. 5s PostRec T. 5s

Motion Det. Area setup Schedule PTZ link (Note: Area can not be copied)

Channel name X-coordinate 512 Y-coordinate 512

OSD X-coordinate 0 Y-coordinate 0 Display week
 Properties: Transparent&&Flashing Type: MM-DD-YYYY (MDY)

Type: Major stream Frame type: BBP I Frame: 100

Image quality: High Frame rate: 30N/25P Stream type: Video&&Audio

Resolution: CIF Bitrate type: Variable Max bitrate: 1024Kbps

Copy to: All channels copy

Overlay text

	x	y	Overlay content
<input type="checkbox"/> Area 1	0	0	
<input type="checkbox"/> Area 2	0	0	
<input type="checkbox"/> Area 3	0	0	
<input type="checkbox"/> Area 4	0	0	

ReSet Reboot Save Exit

Channel Configuration

Setup camera parameters include all contents of “Display”, “Image” and “Recording” in NetDVR menu. Refer to sector 5.3 to 5.5.

Remote Configuration

Server configuration | Channel configuration | **COM configuration** | Alarm configuration | Use

RS232 Configuration Information

Baud rate: 115.2k | Data bits: 8 | Stop bits: 1
 Parity: No | Flow control: None | Mode: Console

PPP: | Dial back mode: |
 User name: | Password: |
 Remote IP: 0 . 0 . 0 . 0 | Verify: |
 Local IP: 0 . 0 . 0 . 0 | Subnet mask: 0 . 0 . 0 . 0
 Phone: | Data encrypt Dial back

RS485 Configuration Information

Channel No.: Channel01 | Baud rate: 9600 | Data bits: 8 | Stop bits: 1
 Parity: No | Flow control: None
 PTZ type: Pelco-D | PTZ address: 1

Copy To: All channels | copy

ReSet | Reboot | Save | Exit

COM Configuration

Modify RS232 settings and setup PTZ parameter. Refer to sector 5.10

Remote Configuration

Server configuration | Channel configuration | COM configuration | Alarm configuration | Use

Alarm parameter

Alarm parameter: Alarm parameter:01

Alarm name:

Alarm type: Normal open

Alarm input Schedule PTZ link

Copy To: All alarm number copy

Alarm output

Alarm output: Alarm output 01 Schedule

Alarm output time: 5s

Copy To: All alarm output copy

Exception Configuration

Exception type: HDD full

On screen warning Audible warning Upload to center

Trigger alarm out:

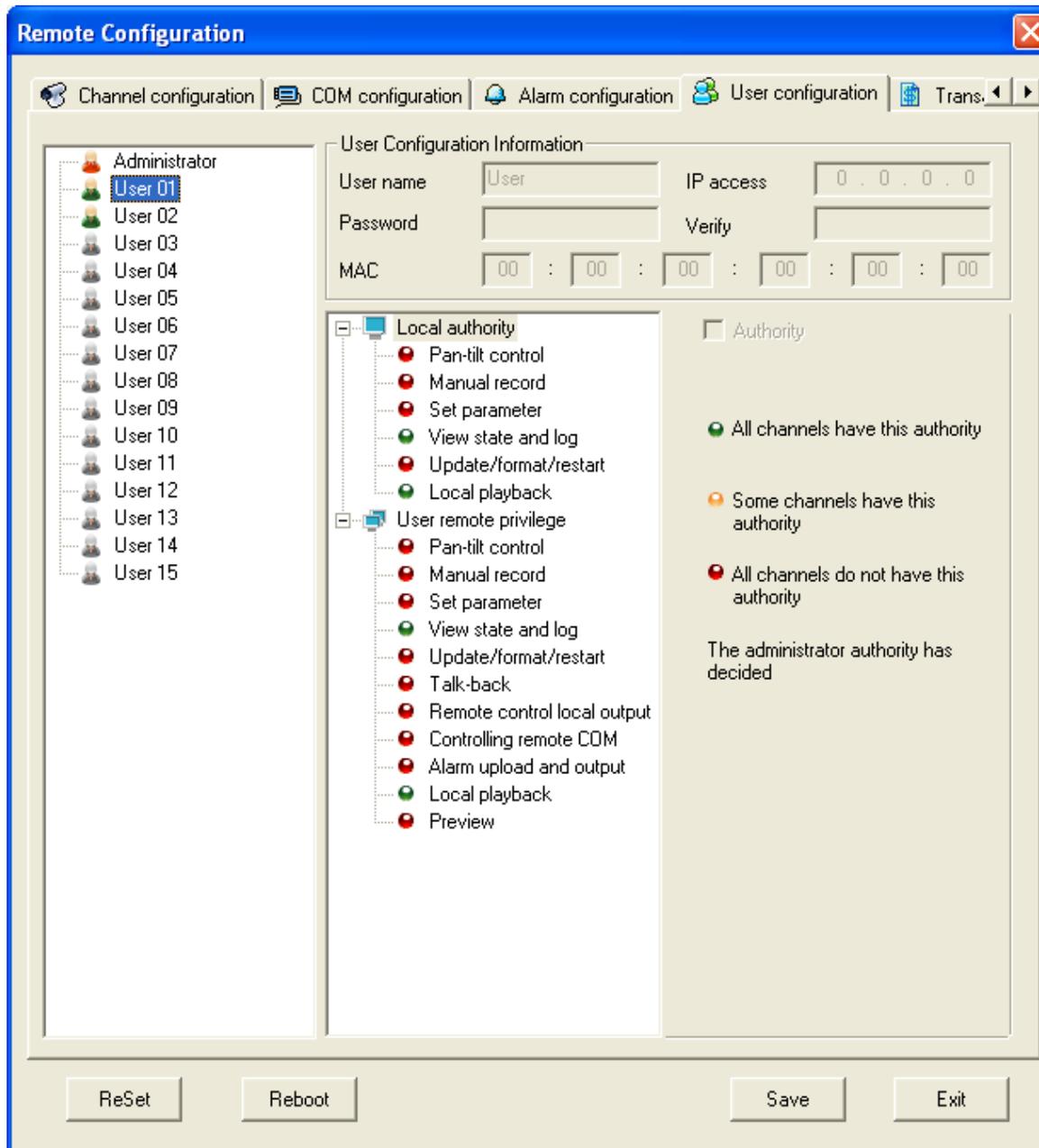
Output1 Output2 Output3 Output4

ReSet Reboot Save Exit

Alarm Configuration

Setup external alarm input parameters, relay out parameters and Exception alarm settings.

Refer to sector 5.7 and 5.8



User Configuration

User name, password and user right management.
Refer to sector 5.12

Remote Configuration

Alarm configuration | User configuration | **Transaction configuration** | Others

Get through: Network sniff

ATM IP: 0 . 0 . 0 . 0 ATM type: NCR

Frame ID:

Offset: 0 Length: 0

Value:

Card No. length:

Offset: 0 Length: 0

Card No. information:

Offset: 0 Length: 0

Transaction type:

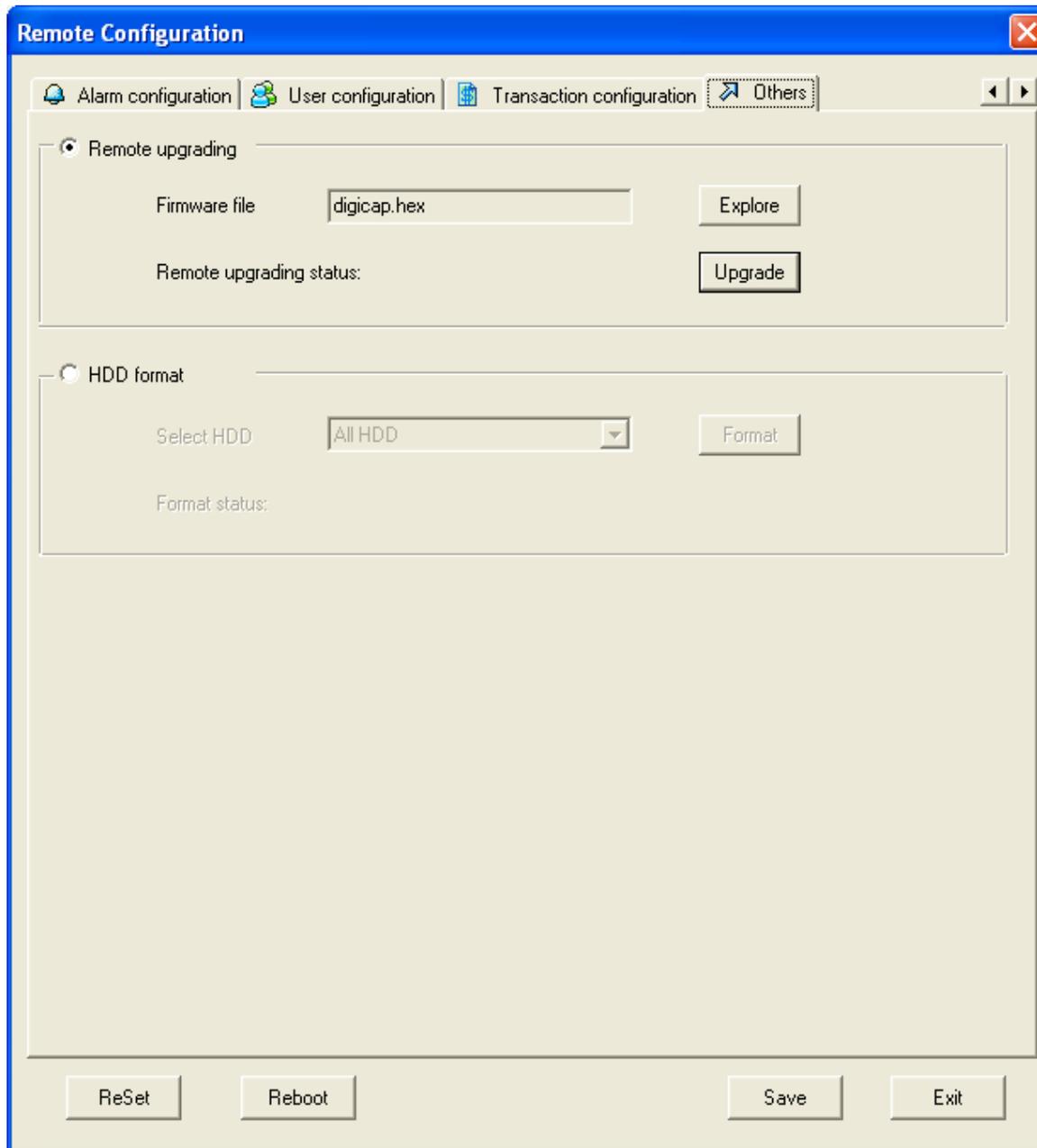
Offset: 0 Length: 0

Type: Query Code:

ReSet Reboot Save Exit

Transaction Configuration

This feature is only available to IL6000HA series ATM/POS NetDVR. Refer to sector 5.13



Others

This is the system utility. In this page you can upgrade system software and format HDD.

Appendix A Trouble Shooting

	What's wrong	How to do
1	Turn on the power switch, but the "Power" light in front Panel does not turn on and fan does not work.	Power cable is broken. Power supply is broken.
2	Turn on the power switch, the "Power" light in front Panel turn to green but fan does not work.	Front panel cable is broken. Fan is broken.
3	NetDVR continuously reboot after start up and makes a beep sound every 10 seconds.	Upgrade the wrong firmware Compression board has problem Main board has problem
4	There is no image in the monitor connected with VOUT after NetDVR is started.	The cable connected with the monitor is broken. Rear panel of NetDVR has problem Main board of NetDVR has problem
5	Cannot find the hard disk in reboot process.	Hard disk cable is broken. The power cable of hard disk is not connected. Hard disk is broken.
6	No response in HyperTerminal interface.	Baud rate is not matched. RS-232 cable is broken. Serial port of PC is broken. RS-232 port of NetDVR is broken.
7	NetDVR cannot control PTZ through RS-485 port.	RS-485 cable is not connected correctly or broken. PTZ parameters error. RS-485 port of NetDVR is broken.
8	Client software cannot view NetDVR live image.	Network is error. Connect wrong NetDVR (wrong IP, port number, username or password, etc.)

Appendix B Compatible Hardware Lists

Items	Hardware models for IL6000HC series	Hardware models for IL6000HCS/HDS series
USB CD-R/W	<ol style="list-style-type: none"> 1. BENQ external 5232WI-ok2 2. ASUS CRW-4824A + USB Convertor case 3. SONY CD-R/RW CRX230AD + Convertor cable 4. SONY CD-R/RW CRX225E + Convertor cable 5. BENQ external EW162I-OK2 	<ol style="list-style-type: none"> 1. BENQ external 5232WI-ok2 2. ASUS CRW-4824A + USB Convertor case 3. SONY CD-R/RW CRX230AD + Convertor cable 4. SONY CD-R/RW CRX225E + Convertor cable 5. BENQ external EW162I-OK2
IDE CD-R/W	<ol style="list-style-type: none"> 1. Sony CD-R/RW CRX225E 2. NEC DVD R/RW & CD-R/RW ND-3500A 3. Toshiba Samsung CD-RW SH-R522 4. LG GCE-8525B CD-R/W 	
HDD	<p>IDE HDD list</p> <p>Maxtor:</p> <ol style="list-style-type: none"> 1. DiamondMax Plus 9 80G ATA/133 HDD 2. DiamondMax Plus 9 160G ATA/133 HDD 3. DiamondMax Plus 9 200G ATA/133 HDD 4. MaxLine Plus II 250G ATA/133 HDD 5. MaxLine II 300GB ATA/133 HDD 6. MaxLine III 300GB ATA/133 HDD <p>Seagate:</p> <ol style="list-style-type: none"> 1. Barracuda 7200.7 40G 2. Barracuda 7200.7 80G 3. Barracuda 7200.7 120G 4. Barracuda 7200.7 160G 5. Barracuda 7200.7 200G 6. U Series 9 ce ST3160022ACE 160GB 7. DB35 Series ST3250823ACE 250GB <p>West Digital:</p> <ol style="list-style-type: none"> 1. WD Caviar WD400BB 2. WD Caviar WD800BB 3. WD Caviar WD1200BB 4. WD Caviar WD2000BB 5. WD Caviar WD2500BB 6. WD Caviar SE WD1600BB 7. WD Caviar SE WD2000JB 8. WD Caviar SE WD2500JB 9. WD Caviar SE WD3000JB 	<p>SATA HDD list</p> <p>Maxtor:</p> <ol style="list-style-type: none"> 1. DiamondMax 10 Model: 6L160M0 160GB SATA150 HDD 2. MaXLine Plus II 250GB SATA/150 HDD 3. DiamondMax 10 Model: 6L080M0 80GB SATA150 HDD <p>Seagate:</p> <ol style="list-style-type: none"> 1. Barracuda 7200.8 250G (+5V +12V 0.46A 0.56A) Model: ST3250823AS 2. Barracuda 7200.9 200G (+5V +12V 0.46A 0.56A) Model: ST3200827AS 3. Barracuda 7200.9 160G (+5V +12V 0.46A 0.56A) Model: ST3160812AS 4. Barracuda 7200.7 160G (+5V +12V 0.72A 0.35A) Model: ST3160023AS 5. Barracuda 7200.7 120G (+5V +12V 0.63A 0.74A) Model: ST3120827AS 6. Barracuda 7200.9 80G (+5V +12V 0.46A 0.56A) Model: ST3808110AS 7. DB35.1 Consumer Storage ST3250823SCE 250GB <p>West Digital:</p> <ol style="list-style-type: none"> 1. WD Caviar SE WD 2000 (5VDC 12VDC 0.92A 0.90A) MDL: WD 2000JS-00MHB1 2. WD Caviar SE16 WD 2500 (5VDC 12VDC 0.92A 0.90A) MDL: WD 2500KS-00MJB1 3. WD Caviar SE WD 1600JS (5VDC 12VDC 0.92A 0.90A) MDL: WD 1600JS-00MHB0WD Caviar SE WD1200JS 4. WD Caviar SE WD 1200JS (5VDC 12VDC 0.92A 0.90A) MDL: WD 1200JS-00MHB0 5. WD Caviar SE WD 800 (5VDC 12VDC 0.45A 0.50A) MDL: WD 800JD-75MSA1

Appendix C IKB-2888 Keyboard Operation

1. Key Features and Specifications

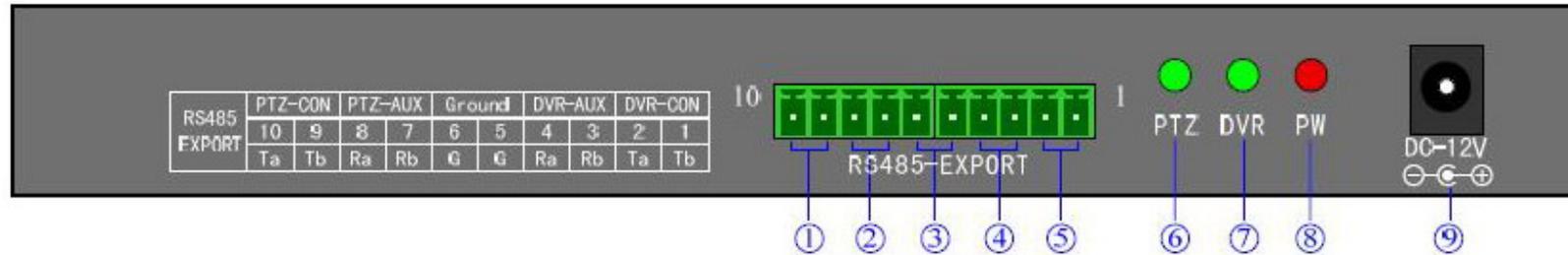
- **Manage NetDVR:** IKB-2888 keyboard works with all models of IL6000HCS/HDS/HN series of NetDVR. It can manage up to 31 NetDVR. It has the full functions of remote controller and front panel.
- **Control Speed Dome through NetDVR or directly:** Support up to 496 Speed Domes through NetDVR (31 DVRs *16ch). Support up to 255 Speed Domes (address are among 0~254) if Speed Dome RS485 port connects to keyboard RS485 port directly.
- **Multiple PTZ Protocols:** Built in multiple PTZ protocols. For specific project that existed protocols cannot fulfill the requirement ILDVR offers software upgrade service without changing any hardware.
- **Cascade Connection:** IKB-2888 keyboard supports one master keyboard and 15 slave keyboard cascade connections. Keyboard IDs range from 0 to 15.

Specifications

Keyboard model	IKB-2888
Support NetDVR number	31
Support PTZ number	255
Control model	RS-485 half-duplex mode Baud rate: 1200 ~ 19200bps
Communication interface	RS485 port
LCD screen	128mm×64mm
Joystick	3D
Max. cable length	1200m
Power supply	DC12V
Working temperature	-10℃-- +55℃
Working humidity	10%--90%
Size	360mm*200mm*108mm
Weight	3.2KG

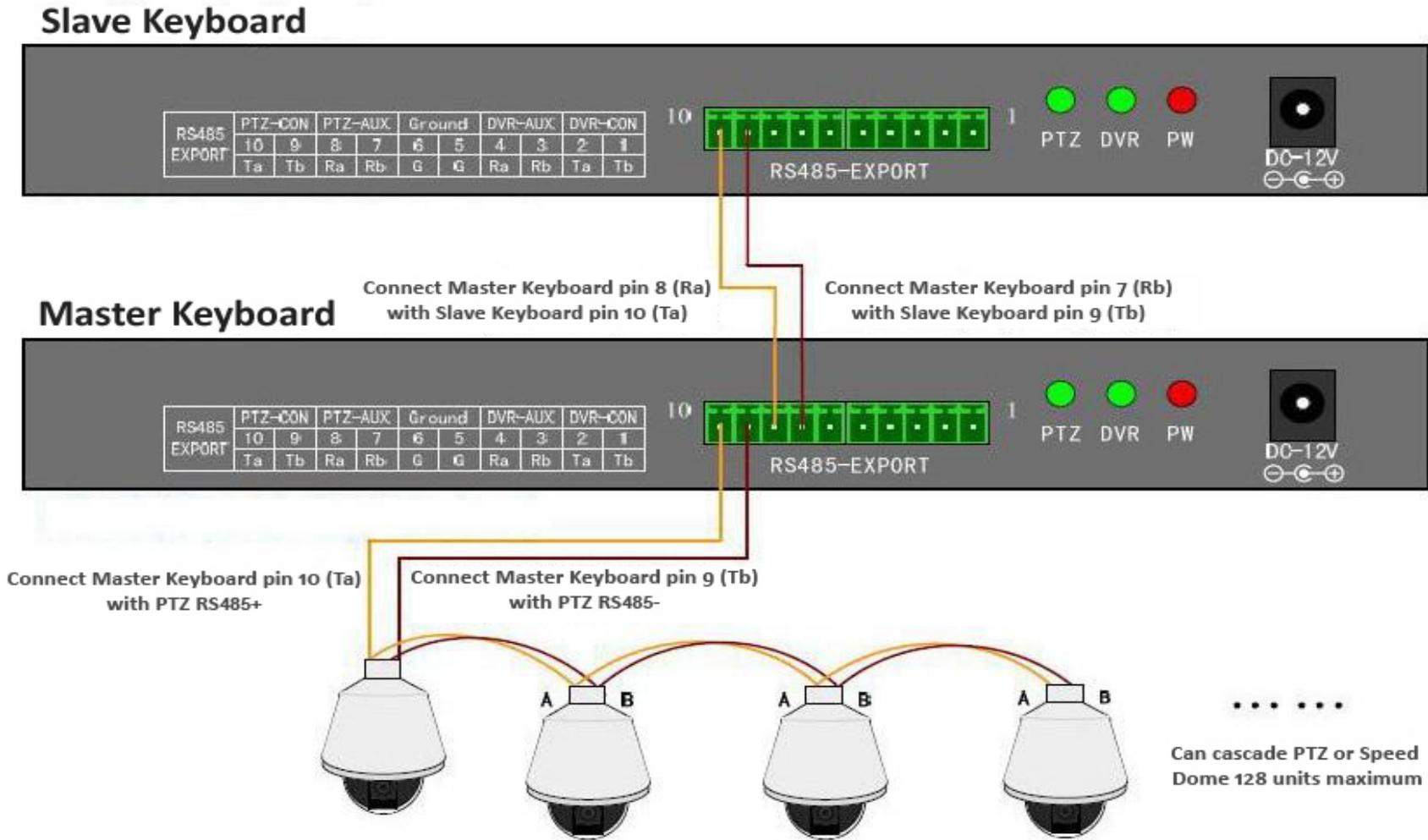
2. Wire Ports

2.1 Back panel interface

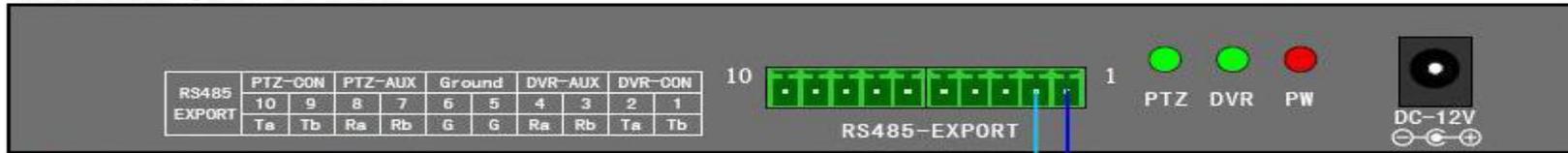


Item	Name	Descriptions
①	PTZ-CON	Master keyboard RS485 port. Ta=RS485+, Tb=RS485-. When there is only one keyboard in use, it must be used as master keyboard.
②	PTZ-AUX	Slave keyboard connection port. Ra (pin8) connects to slave keyboard Ta (pin10). Rb (pin7) connects to slave keyboard Tb (pin9).
③	Ground	Ground terminal
④	DVR-AUX	Slave keyboard NetDVR connection port. Ra (pin4) connects to Ta (pin2) of slave keyboard. Rb (pin3) connects to Tb (pin1) of slave keyboard.
⑤	DVR-CON	Master keyboard NetDVR connection port. Ta (pin2) connects to D+ of NetDVR KB port. Tb (pin1) connects to D- of NetDVR KB port. When there is only one keyboard in use, it must be used as master keyboard.
⑥	PTZ	PTZ work status indicator (Green=on).
⑦	DVR	DVR work status indicator (Green=on).
⑧	PW	Power indicator (Red=on).
⑨	DC-12V	DC 12V power input

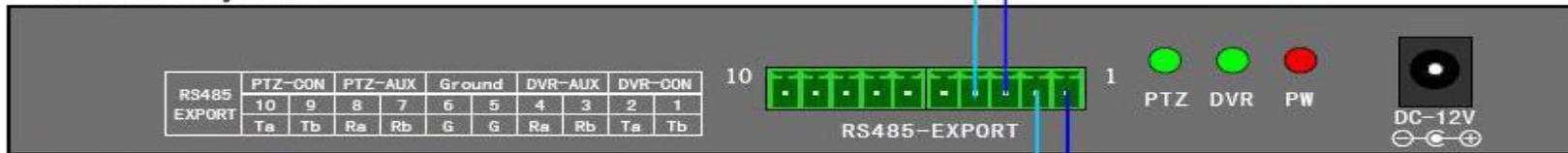
2.2 Typical Wiring Diagram



Slave Keyboard



Master Keyboard



Connect Master Keyboard pin 4 (Ra) with Slave Keyboard pin 2 (Ta)

Connect Master Keyboard pin 3 (Tb) with Slave Keyboard pin 1 (Tb)

Connect Master Keyboard pin 2 (Ta) with NetDVR KB port pin D+ (or NetDVR RJ45 keyboard port pin 3)

Connect Master Keyboard pin 1 (Tb) with NetDVR KB port pin D- (or NetDVR RJ45 keyboard port pin 4)

NetDVR 1



NetDVR KB port pin D+ (or NetDVR RJ45 keyboard port pin 3)

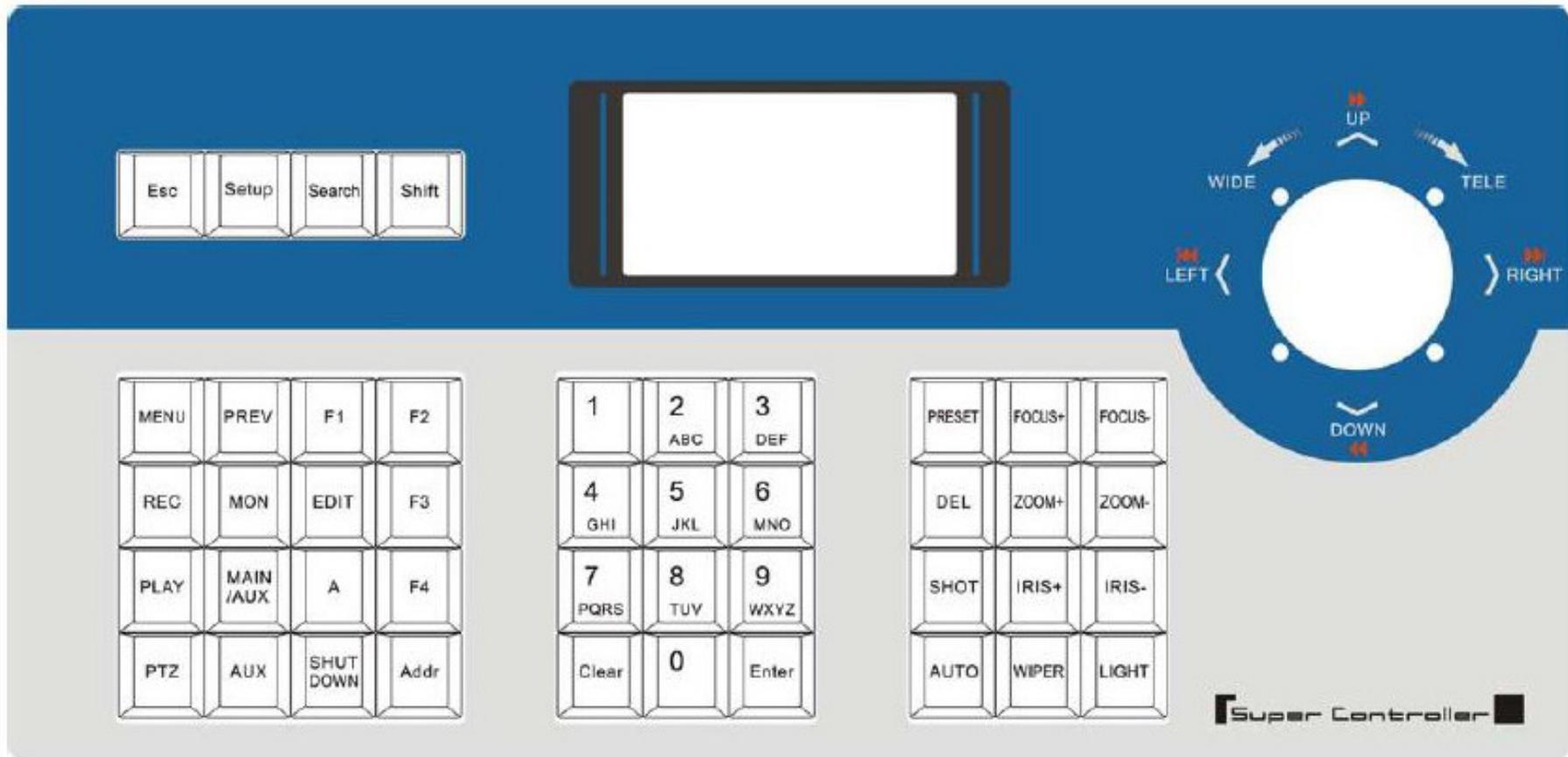
NetDVR KB port pin D- (or NetDVR RJ45 keyboard port pin 4)

NetDVR 2



Can cascade NetDVR 31 units maximum

2.3 Front panel description



LCD screen

All operation steps will be displayed on the LCD screen. The screen will automatically turn to screen save mode in 30 seconds without any input.

Definitions of keys

Name of key	Description of operation function
ESC	Back to up-level menu
Setup	Hold on 3 seconds to enter keyboard configuration status (default password: 8888)
Search	To view the keyboard system info such as device serial number, model name and PTZ protocol
Shift	Switch the CONTROL mode between NetDVR and speed dome
MENU	Show the main menu
PREV	Switch the split viewing mode of 1x, 4x, 9x, and 16x
F1, F2, F3, F4	Speed dome function key. Refer to LCD screen indication depending on the PTZ protocol to operate
REC	Shift to NetDVR manually record mode.
MON	Special control key the four auxiliary outputs of NetDVR (hold on 2 seconds)
EDIT	Edit/change the inputs.
PLAY	Enter NetDVR playback status.
MAIN/AUX	Switch the main/aux output port (hold on 2 seconds)
A	Switch input method
PTZ	Enter NetDVR PTZ control status.
AUX	Reserved in NetDVR control mode
Shut Down	Power off NetDVR
Addr	Change the NetDVR device ID or PTZ address to operate
Clear	Clean the current input
ENTER	Confirm the current input
0-9	Numeric key of 0, 1, 2, 3, 4, 5, 6, 7, 8, 9
A-Z	Letter key of A-Z (26 letters)
PRESET	Setup the speed dome preset
DEL	Delete the speed dome preset
SHOT	Call the speed dome preset
Auto	Run the speed dome tour (depending on the connected speed dome, please refer to the speed dome operation guide)
FOCUS+	Set the lens focus near
FOCUS-	Set the lens focus far

ZOOM+	Zoom in the lens
ZOOM-	Zoom out the lens
IRIS+	Open the lens iris
IRIS-	Close the lens iris
WIPER	PTZ wiper on/off
Light	PTZ light on/off

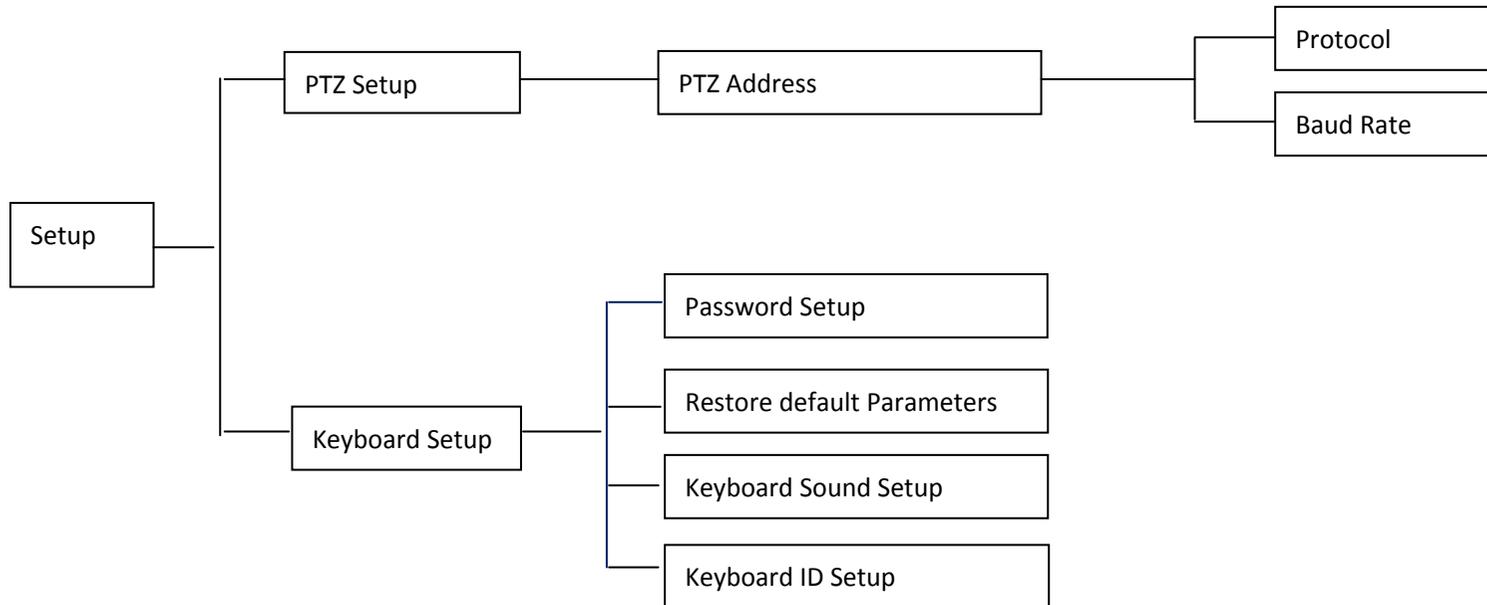
Joystick movements

Figure	Operation	Descriptions
	up	In PTZ control mode: control the movement of pan/tilt In DVR control mode: play fast when playback the record file
	down	In PTZ control mode: control the pan/tilt to move upon In DVR control mode: play slowly when playback the record file
	left	In PTZ control mode: control pan/tilt to move left In DVR control mode: move backward when playback the record file
	right	In PTZ control mode: control pan/tilt to move right In DVR control mode: move forward when playback the record file
	rotate left	Zoom in the lens
	rotate right	Zoom out the lens

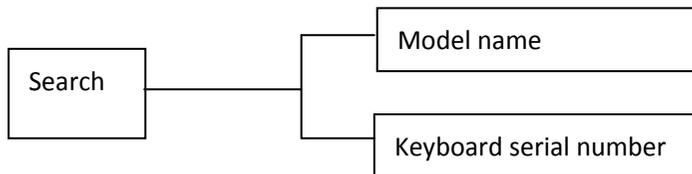
3. Keyboard Configuration

3.1 Keyboard menu structure tree

Configuration menu structure: Press SETUP key and hold on 3 seconds to enter setup interface, default password is “8888”



Keyboard system info menu structure: Press SERACH key to display the keyboard system info.



3.2 Configuration illustration

Here is an example to illustrate how to setup speed dome, change the PTZ protocol of speed dome 002 to PELCO-D, then change the baud rate to 2400.

- In the mode of standby (icon a), press and hold on the “Setup” key for 3 seconds, login the main menu (icon b).
- Input the password (icon c, default password: 8888).
- Press [Enter] into setup menu, move the joystick up / down to choose [PTZ SETUP] / [SYS SETUP] (icon d).
- Choose [PTZ SETUP] and press [Enter] into [PTZ SETUP].
- Move the Joystick left and right to select the address (ID) of speed dome, e.g. 002 (icon e, f), then press [Enter] into next level menu (icon g).
- Move the joystick up / down to select PTZ protocol, e.g. PELCO-D (icon h).
- Move the joystick right to change the baud rate (icon i), and then select the correct baud rate (icon j).
- Press [Enter], then press “ESC” back to the standby mode (icon a).
- Configuration is done



4. Control Speed Dome through NetDVR

In this application the Speed Dome RS485 port connects to NetDVR RS485 port. Multiple speed domes may have same address (ID) if their RS485 ports connect to different NetDVR separately. Operation steps are:

Step 1: Set every NetDVR device ID an exclusive number such as 01, 02, 03, and so on.

Step 2: Set every speed dome address (ID) an exclusive number such as 01, 02, 03, and so on. These speed domes are all connected to one NetDVR.

Step 3: Press “Shift” key to enter NetDVR working mode

Step 4: Press “Addr” key then input NetDVR device ID to select a target NetDVR device.

Step 5: Press “Enter” key to confirm your selection.

Step 6: Press “PTZ” key then input a target speed dome ID number that you want to control.

Step 7: Begin PTZ control

Step 8: To change other speed dome just input the ID number then begin PTZ control.

5. Control Speed Dome directly

In this application the Speed Dome RS485 port connects to keyboard RS485 port directly. Every speed dome must has an exclusive address (ID), address are among 0~254.

Operation steps are:

Step 1: Set every speed dome address (ID) an exclusive number such as 01, 02, 03, and so on.

Step 2: Press “PTZ” key then input a target speed dome ID number that you want to control.

Step 3: Begin PTZ control.

Step 4: To change other speed dome just input the ID number then begin PTZ control.

<End>

Technical Support Information

Please fill in this form in order to get prompt technical service in case of emergency!

Item	Description
NetDVR Model Name	
NetDVR serial number	
Firmware Version	
Purchasing date	
Dealer's Contact info	Company name: Technical Engineer: Tel: Fax: Email: