PLANET
Networking & Communication

User's Manual

H.265 36-Ch NVR with 8-bay Hard Disks

► **NVR-3685**

www.PLANET.com.tw

Copyright

Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

1. Reorient or relocate the receiving antenna.
2. Increase the separation between the equipment and receiver.
3. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
4. Consult the dealer or an experienced radio technician for help.

FCC Caution

To assure continued compliance, for example, use only shielded interface cables when

connecting to computer or peripheral devices. Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Federal Communication Commission (FCC) Radiation Exposure Statement

This equipment complies with FCC radiation exposure set forth for an uncontrolled environment. In order to avoid the possibility of exceeding the FCC radio frequency exposure limits, human proximity to the antenna shall not be less than 20 cm (8 inches) during normal operation.

Safety

This equipment is designed with the utmost care for the safety of those who install and use it. However, special attention must be paid to the dangers of electric shock and static electricity when working with electrical equipment. All guidelines of this and of the computer manufacture must therefore be allowed at all times to ensure the safe use of the equipment.

CE Mark Warning

This is a Class B product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

WEEE Regulation

To avoid the potential effects on the environment and human health as a result of the presence of hazardous substances in electrical and electronic equipment, end users of electrical and electronic equipment should understand the meaning of the crossed-out wheeled bin symbol. Do not dispose of WEEE as unsorted municipal waste and have to collect such WEEE separately.

Energy Saving Note of the Device

This power required device does not support Stand by mode operation. For energy saving, please remove the AC-plug to disconnect the device from the power circuit. Without remove the AC-plug or switch off the device, the devices will still consuming power from the power circuit. In the view of Saving the Energy and reduce the unnecessary power consuming, it is

strongly suggested to switch off or remove the DC-plug for the device if this device is not intended to be active.

Revision

User's Manual of PLANET H.265 36-Ch Network Video Recorder
Model: NVR-3685
Rev: 1.0 (July, 2016)
Part No. EM-NVR-3685_v1.0

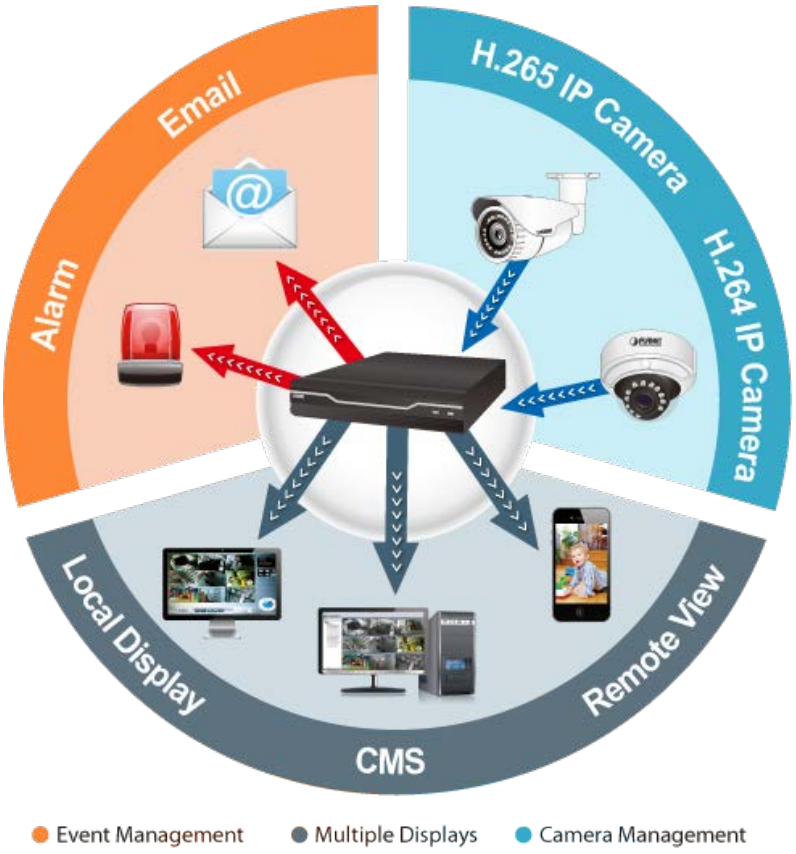
Table of Contents

Chapter 1. Product Description

Ideal Solution to Storing More Videos

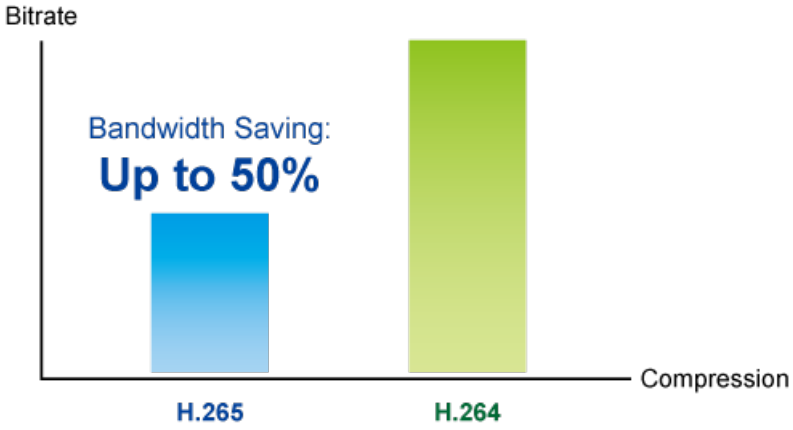
PLANET NVR-3685, a new H.265 IP surveillance solution, is designed to work with PLANET H.265/H.264 cameras or ONVIF cameras for chain stores, public places and other security monitoring applications. The NVR-3685 is a Linux-embedded NVR that can connect up to 36 IP cameras and supports 8 hard disks. The unit employs RAID 0/1/5 to optimize the process of securing data easily and quickly.

Besides, the NVR-3685 features dual Gigabit Ethernet ports, eMap, dual local display, e-SATA, and PLANET DDNS. Once the NVR-3685, armed with a complete surveillance equipment, detects any suspicious events, you will be alerted with alarm via email; FTP, HTTP and TCP servers; and more. The NVR-3685 is thus able to further enhance security within the premises to protect your property. Moreover, it is fully compatible with mobile app and Internet Explorer on Windows operating system for multi-platform remote access.



Bandwidth Saving

With H.265 compression technology and embedded with 8 HDDs design providing up to 48TB, the NVR-3685 offers over 30% more of recording capacity than systems employing H.264 compression. This advance gives users larger storage space for longer durations of video recording.



Location Management with eMap

The eMap function helps visualize the layout of IP cameras in the surveillance network enabling you to quickly identify the location of each IP camera, especially when an alarm

occurs. Just upload the pictures of the monitoring locations and drag and drop the IP camera icons to the right place on the eMap.

High-resolution Local Display

The NVR-3685 comes with HDMI and VGA video output interfaces for dual local display. It can be connected to an HDMI monitor and VGA monitor separately, where live viewing contents or playback contents can be displayed simultaneously. With the dual local display function, users can monitor locally with high flexibility in a different display resolution, thus eliminating the need for a separate PC to view video from the unit. Besides, the NVR also can be operated with the USB mouse to configure and monitor all the system easily.

Real-time, Remote Monitoring

You are able to search and install Planet IP cameras via Web interface with more convenience and efficiency. Besides the Web interface, the NVR also supports aCV5 and iCV5 viewer app software for smart phone, so you can connect to the NVR anywhere, anytime.

Live View and CMS Administration

The Central Management System (CMS) of the NVR-3685 can manage up to 256 channels. With low bitrate transmission and unlimited group management, the CMS is able to view a maximum of 64 channels on one page and you may switch between groups to see up to 256 channels of live view or a maximum of 16 channels of playback on one page. The CMS of the NVR-3685 is good for chain stores via Internet, large installations in the LAN environment, or any environment where its control center is utilized to monitor via multiple NVRs.

1.1 Product Features

➢ Hardware

- Linux-embedded, highly-reliable standalone NVR
- Supports dual Gigabit Ethernet ports
- Supports VGA/HDMI dual local display
- Supports 8 SATA HDDs, up to 6TB per HDD
- Supports e-SATA

➢ Video and Audio

- Simultaneous recording and live video streams
- Up to 36 channels of video recordings
- Supports H.265/H.264 compression
- Video resolution up to 5 megapixels (2560 x 1920)
- Supports throughput up to 300Mbps
- 2-way audio (G.711, G.726)

➢ Video Recording/Backup

- Scheduled recording of 36 IP cameras simultaneously
- Samba path supported
- Supports RAID 0/1/5
- Exports recorded video files in the AVI format to USB device or local storage
- Instant event notification and recording

➢ Network Service

- Easy access with PLANET Dynamic DNS and built-in NTP server
- Supports PPPoE/DHCP/static network connection
- Supports low bit-rate connection for remote access

➢ Easy Installation and Management

- ONVIF compliant for interoperability
- Location management with emap
- Supports multiple languages
- Auto discovered by management software
- Web-based and management utility for easy configuration

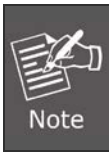
- Manages up to 256 channels through central management software
- Supports mobile phone remote view

*The remote control and joystick are optional

1.2 System Requirements

The following are the minimum system requirements for the system to operate Network Video Recorder (NVR):

Operating System	Microsoft® Windows® 2000 Professional, Windows® XP Professional (32 bit) or Windows® Server 2003 (32 bit) **Browser** Microsoft Internet Explorer 7 or above
CPU	Minimum Intel® Pentium® 4 2.4 GHz or higher (Dual Core is recommended); minimum 1GB of RAM (2GB or above is recommended)
Network	Minimum 10/100 Ethernet (Gigabit Ethernet is recommended)
Graphics Adapter	AGP or PCI-Express, minimum 1024 x 768, 16 bit colors. (We highly recommend to work above the 1024 x 768 resolution to get the full experience of the software.)



Make sure your display DPI setting is set to default at 96dpi.
To set DPI value, right-click on desktop, choose “Settings” tab >> “Advanced” >> “General”

1.3 Packet Contents

- 1 x NVR
- 1 x Power Cord
- 8 x SATA Cable
- 1 x Screw Packet
- 2 x Rack Mount
- 1 x Quick Installation Guide

1.4 Specifications

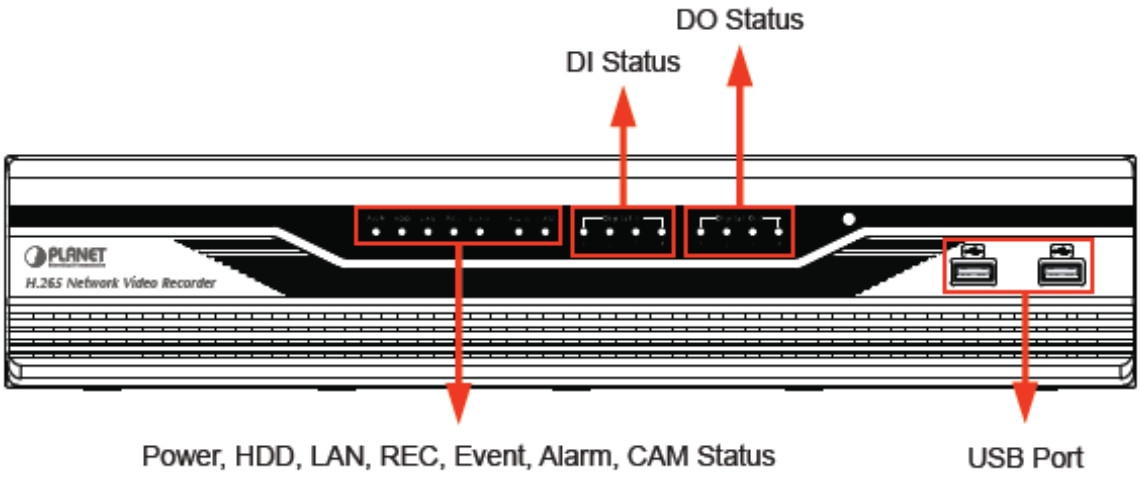
Product	NVR-3685
Hardware	
Ethernet	2 x RJ45, 10/100/1000BASE-T (failover)
USB Interface	2 x USB 2.0 and 1 x USB 3.0 for backup device and mouse
Video Interface	VGA and HDMI video interfaces
Audio Interface	1 x mic-in (phone jack 3.5mm), 1 x audio-out (phone jack 3.5mm)
Storage Device	8 x 3.5” SATA III hard disk connector, 1 x e-SATA connector
LED	Power, HDD, LAN, REC, Event, Alarm, Camera, DI and DO
Button	Reset
Buzzer	1 x buzzer
DI and DO	4 x digital in, 4 x digital out
Camera	
Max. Channels	Up to 36 IP cameras in H.265 only mode Up to 32 IP cameras in mixed mode
Camera Added	Manual/Auto Search/Auto Setup
Video	
Compression	H.265/H.264
Resolution	5M, 3M, Full HD, SXGA, VGA, QVGA
Max. Live View Frame Rate (Local Display)	Mixed mode: 960fps H.265 only mode: 1080fps
Max. Playback Frame Rate (Local Display)	Mixed mode: 960fps H.265 only mode: 1080fps
Max. Live View Frame Rate (Remote)	Mixed mode: 960fps H.265 only mode: 1080fps
Max. Playback Frame Rate (Remote)	480fps
Max. Throughput	300Mbps
Snapshot	• Preview snapshots in HDD or removable device • Search event snapshots

	● Back up to removable device
Audio	
Audio Type	2-way
Audio Format	G.711, G.726
Live View	
Display Mode	Live View, Playback, Full Screen
Split Screen	1, 4, 9, 16, 25, 32, 36 (H.265 mode), Full Screen
Full Screen	1/4/9/16/25/32/36
PTZ Support	Preset, tour, auto pan, iris, focus, speed and joystick
Playback	
Split Screen	1, 4, 9, 16, 25, 32, 36 (H.265 mode), Full Screen
Search Mode	Simple, graphic, event
Play Method	Play, Reverse, Pause, Seek, Pre I-frame, Next Frame, Search by Time or Event
Record	
Recording Mode	● Scheduled recording of each camera ● Round the clock, motion record mode, DI detection, event triggering ● Pre-alarm/Post-alarm configuration ● Auto recycle
Monitor	
Dual Monitor	Displays the same contents, depending on max. channels
Monitor Resolutions	1920 x 1080, 1440 x 900, 1280 x 1024, 1024 x 768
Network and Configuration	
Network Service	Fixes IP/DHCP/PPPOE/DIPS Report/UPNP/DDNS/DHCP Server
Notification	SMTP/HTTP/FTP/TCP
Triggers and Event	
Event Type	● Motion ● Disconnection ● Digital Input ● Scheduled Triggering ● HDD Error

	• Schedule-able Event Detection
Event Action	• Display on Screen • DO • Buzzer Alarm • Snapshot • Recording • Mail • FTP • TCP • HTTP
Management	
Number of Groups	2 (Administrator and User)
Privileges	Live View, Playback, Record, Setting, PTZ, Two-way Audio
User Interface	• Graphic local user interface (operated by mouse) • Web browser (Internet Explorer 7 or above) • CMS utility
Log Type	System/event/bit-rate
Software Utility	Search utility, mobile app, CMS
Language	English, Traditional Chinese, German, Greek, Thai
Environment	
Power	115/230 AC, 60/50Hz, 8A (max.)
Consumption	350W
Operating Temperature	0~40 degrees C
Storage Temperature	-40~70 degrees C
Humidity	0~85% (non-condensing)

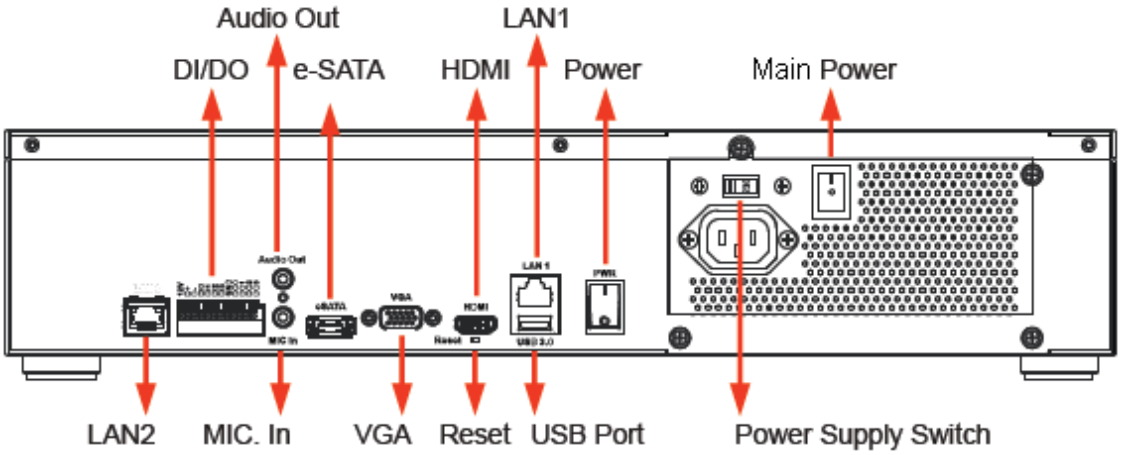
1.5 Physical Specifications

Front Panel



LEDs	Description
PWR	LED on when system is ready
HDD	LED on when HDD is reading or writing
LAN	LED on when network is communication
REC	LED on when record schedule is on
Event	LED on when event detection schedule is on
Alarm	LED on when hard disk writes error
CAM	LED on when system has camera disconnected
Digital In (1~4)	LED on when digital input X is closed
Digital Out (1~4)	LED on when digital output X is closed
USB (USB2.0 x 2)	For connecting USB stick or mouse

Rear Panel



Connector	Description
USB (USB 3.0 x 1)	For connecting USB stick to backup
Reset	Press and hold reset button to factory default
HDMI	HDMI output
VGA	VGA output
e-SATA	Connect to e-SATA storage device
LAN1/LAN2 (Fail over)	10/100/1000Mbps network.
I/O	DI x 4 / DO x 4 (12V out, RS485 D+, RS485 D-, DI0~DI3, Ground, DO0~DO3)
Audio	Audio out / Mic in
AC-In	Switch current voltage with 115V or 230V
Power	Switch to “I” for power on; switch to “O” for power off

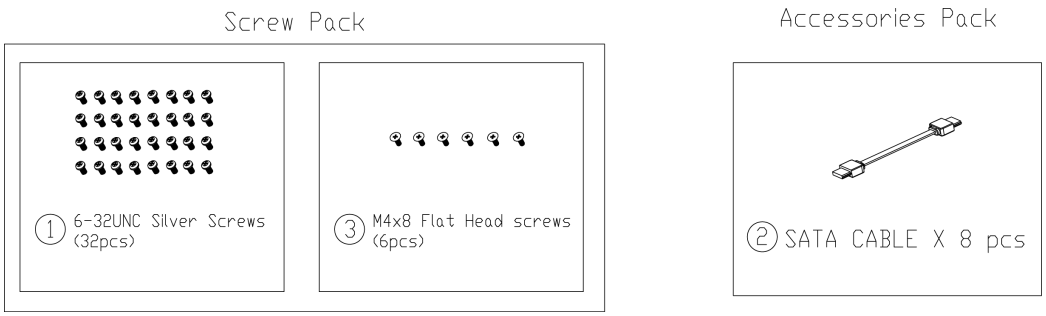
Note

Failover:

1. If both ports are connected to Ethernet, the system will adopt LAN1 first.
2. When LAN1 fails, the system will change to LAN2 automatically.

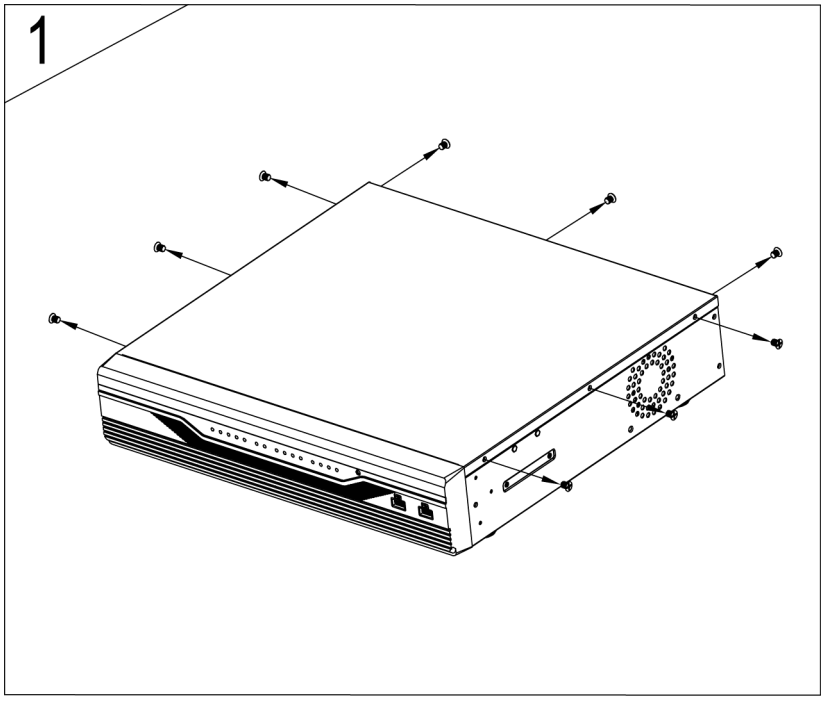
Chapter 2. Hardware Installation

2.1 Accessories Check

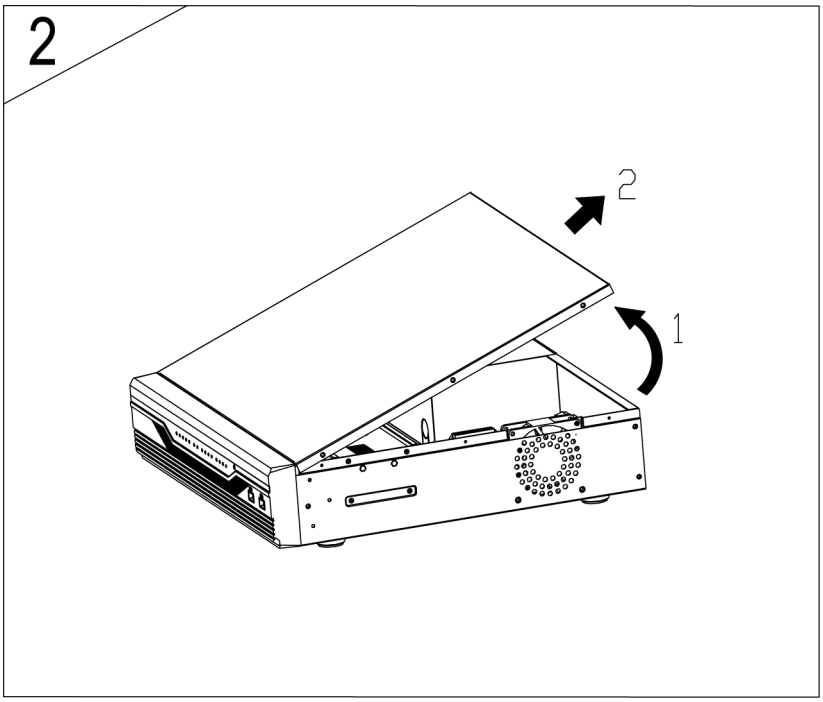


2.2 Installation

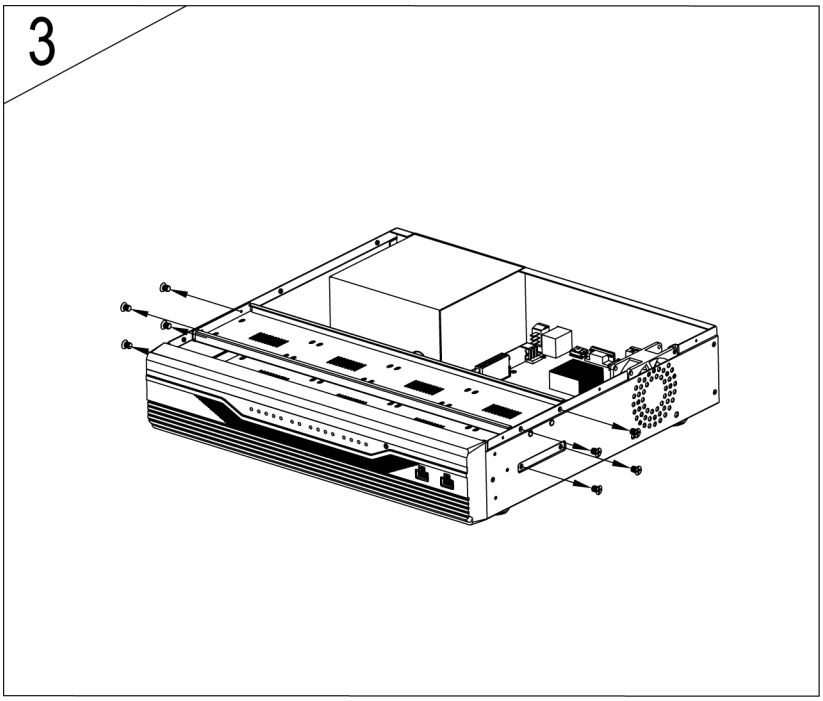
1. Remove all screws on the box.



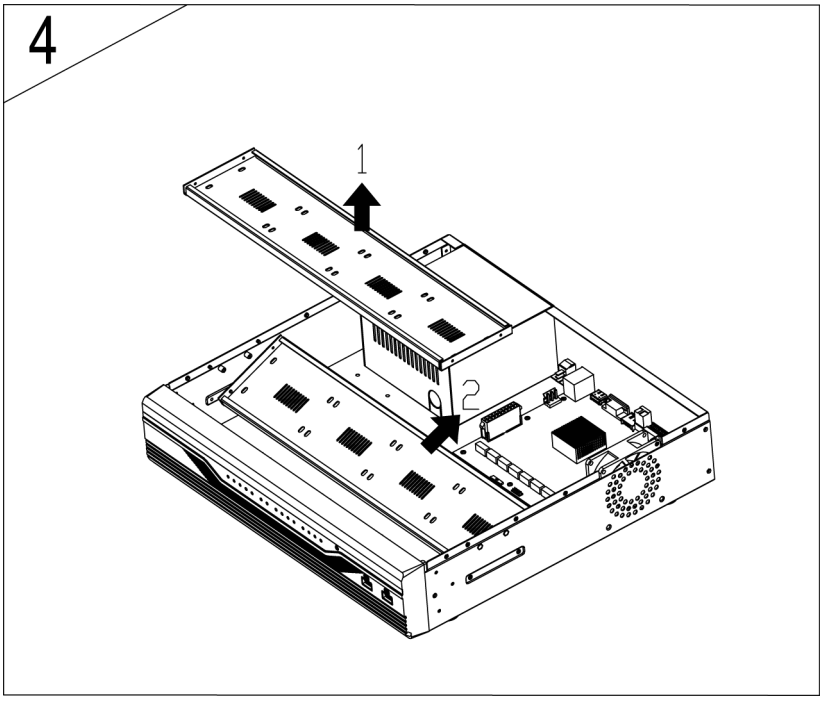
2. Push up and remove the cover.



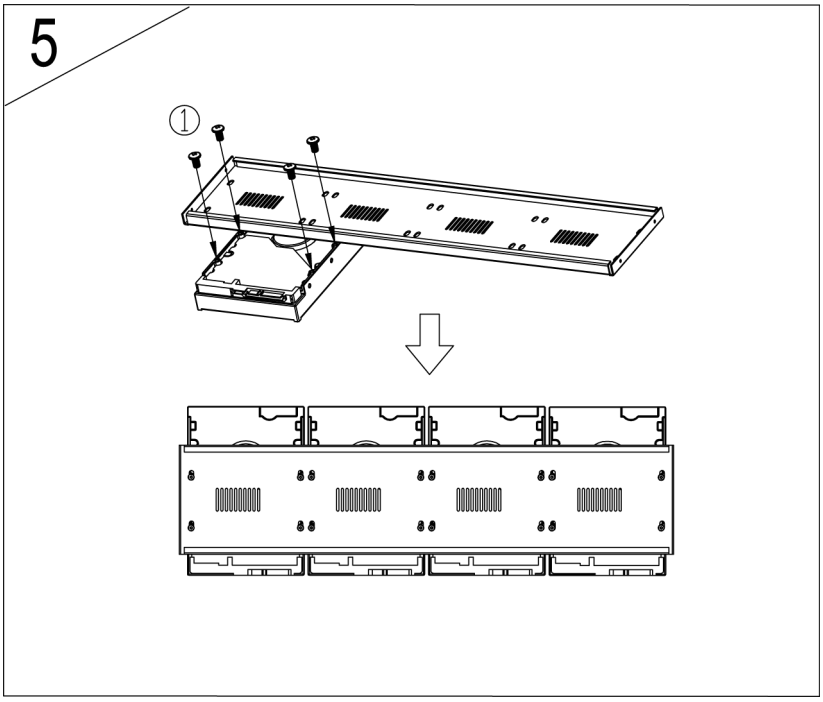
3. Remove the screws on the fixed plates of hard drives and case.



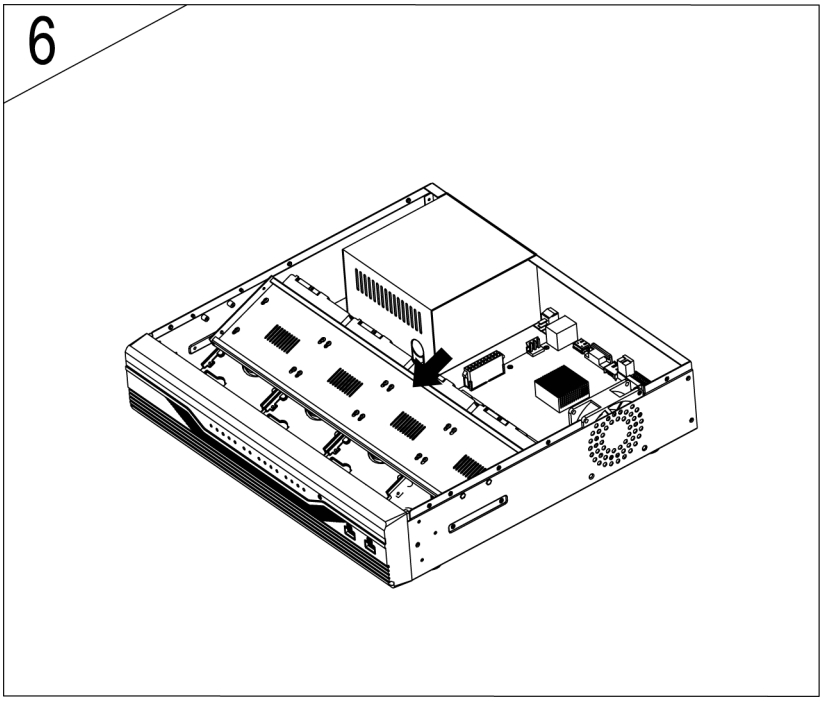
4. Take out the 1 and 2 fixed plates for hard drives.



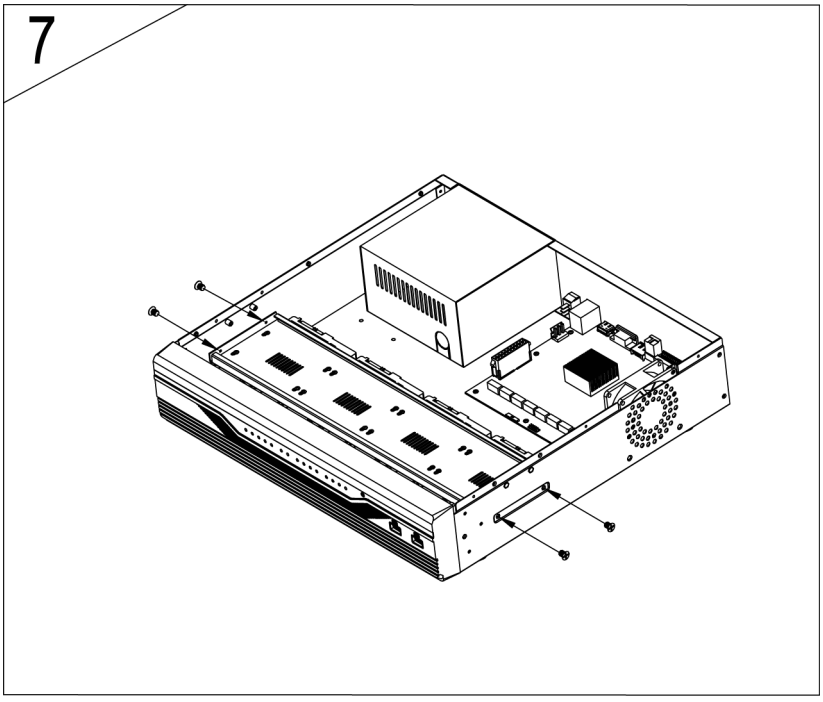
5. Install the hard drives on the fixed plates with screws.



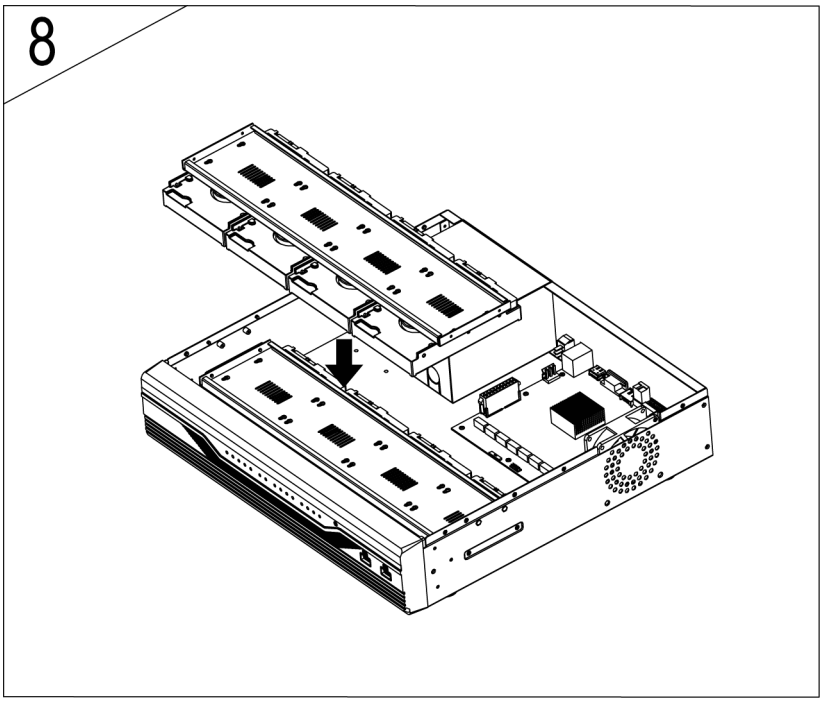
6. Place back the bottom of fixed plates of hard drives.



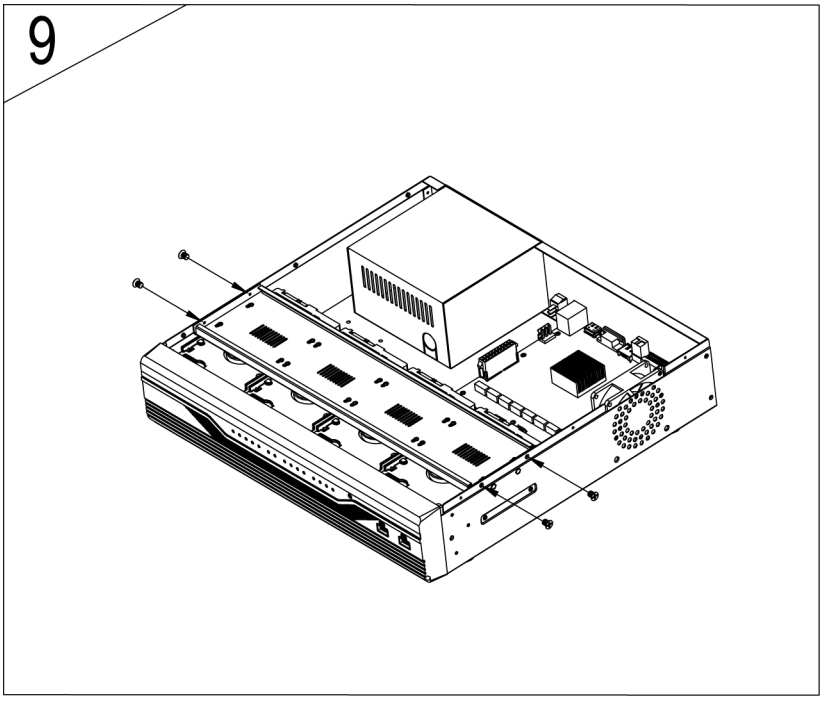
7. Latch the fixed plates of hard drives and case with screw.



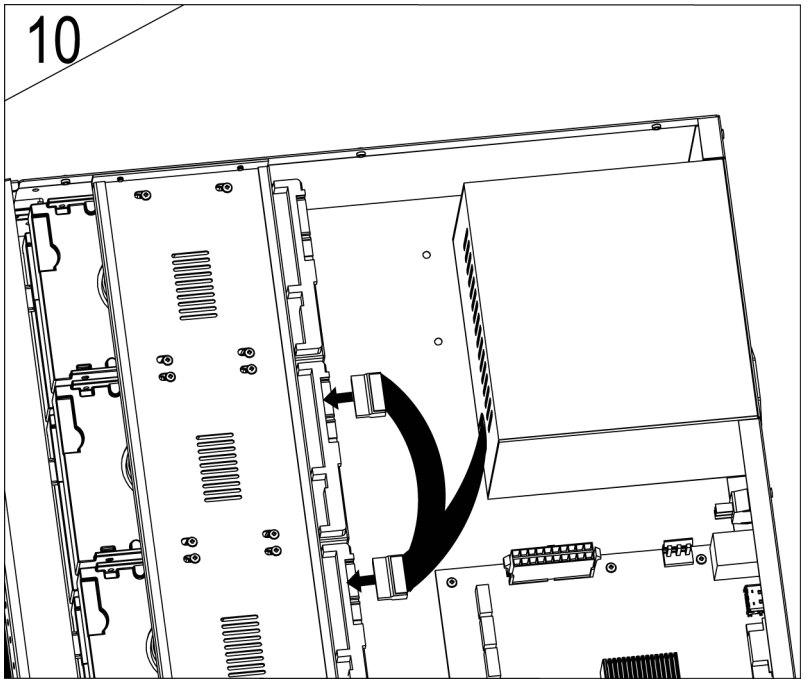
8. Place back the upper of fixed plates of hard drives on the other.



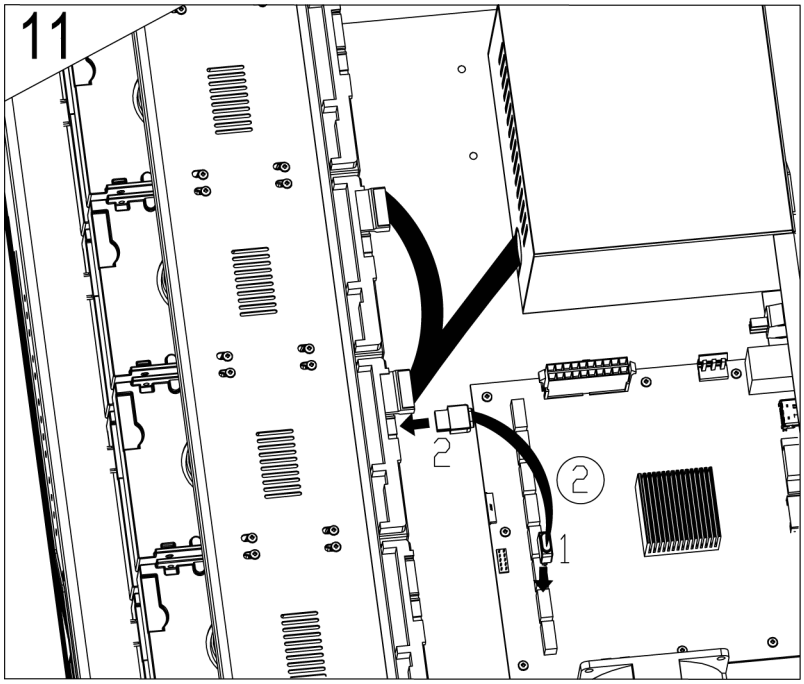
9. Latch the fixed plates of hard drives and case with screws.



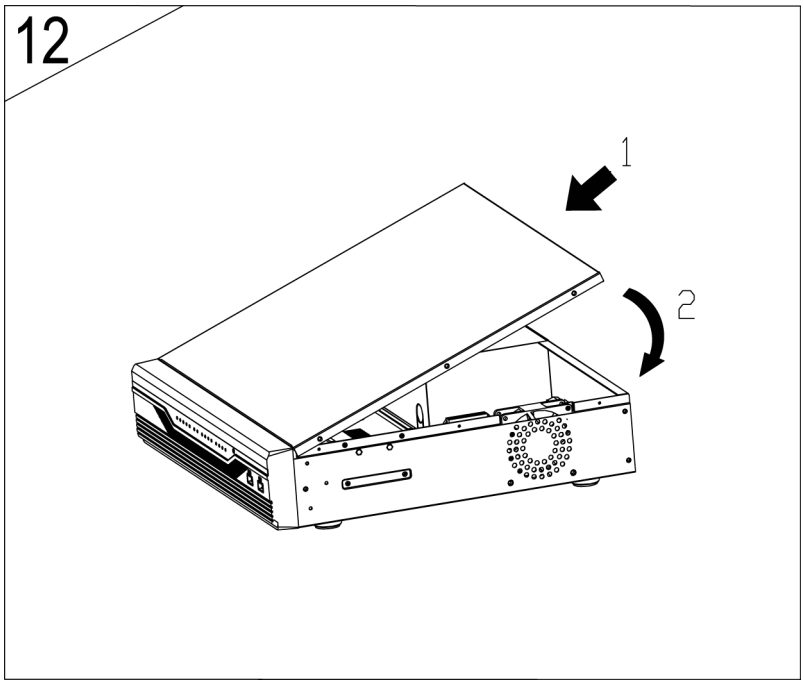
10. Connect the power cable to the hard drives.



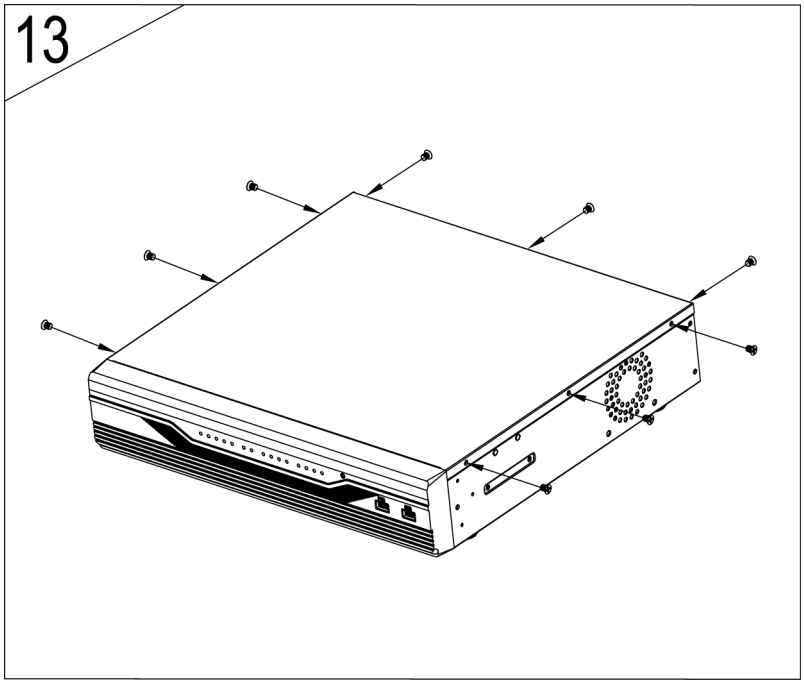
11. Connect the SATA cable to the hard drives.



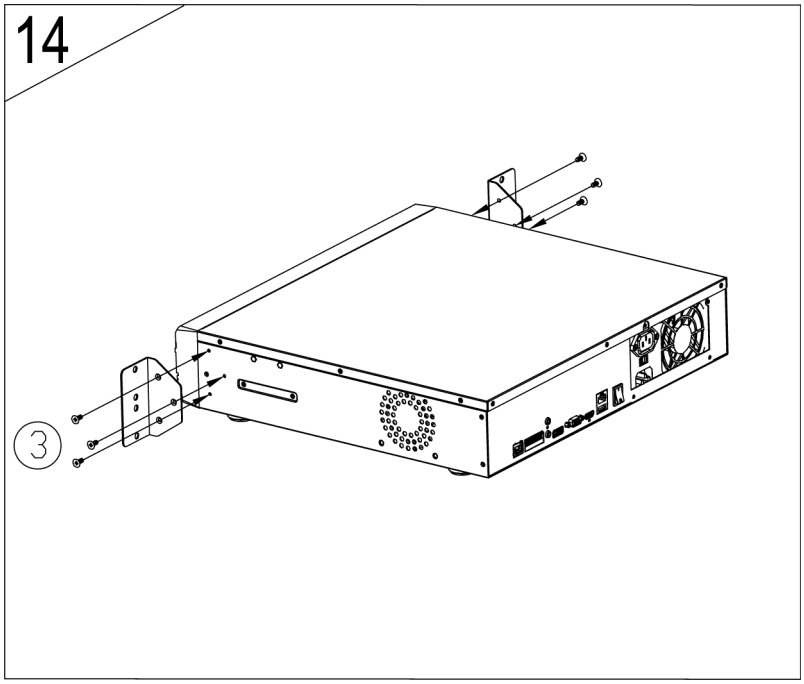
12. Put the cover back.



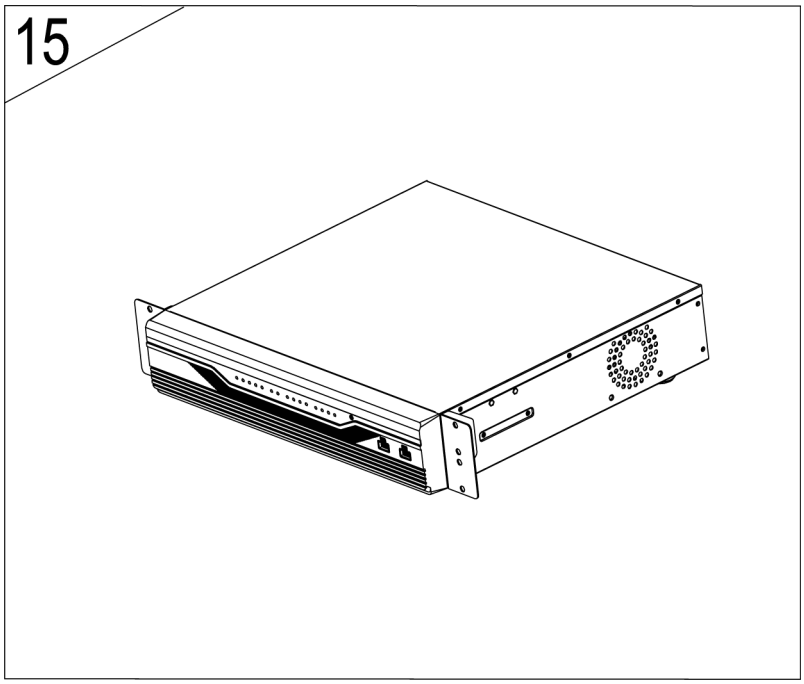
13. Assemble all screws to the box.



14. Latch the rack mounting ears on case with screws.



15. The HDD has been completely assembled.



Chapter 3. Connecting to the NVR

There are various ways you can connect to the NVR and below are the suggested methods for different network setups:

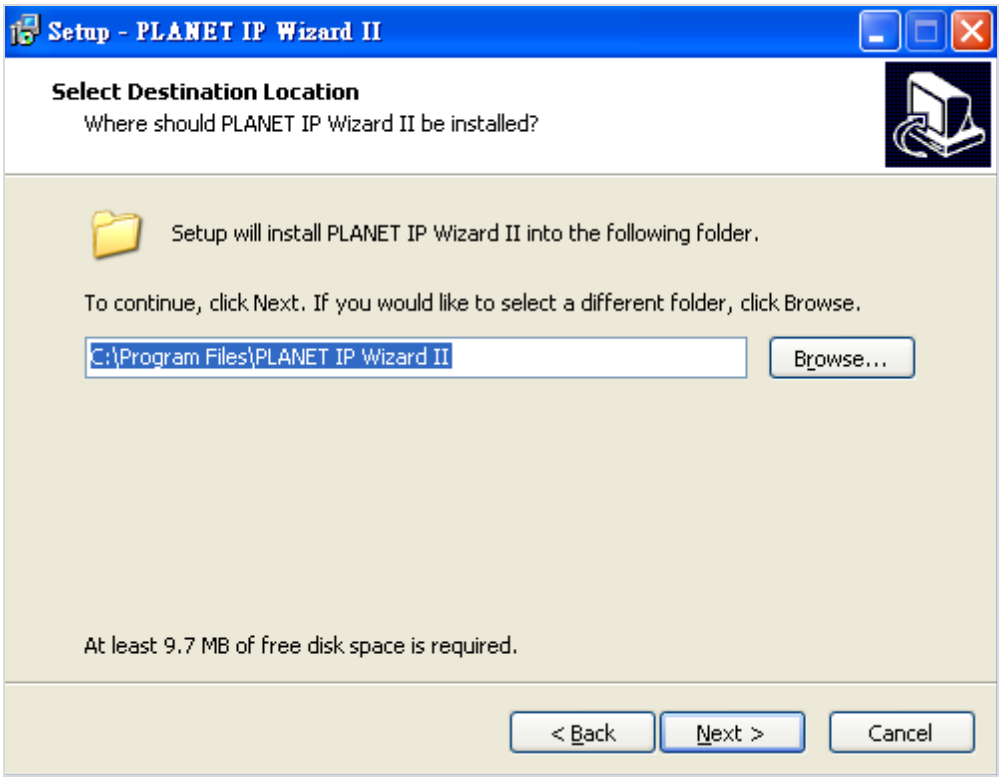
The NVR is placed in a network with a DHCP server: Connect to the NVR by using **"PLANET IP Wizard II"** Utility.

The NVR is placed in a network without DHCP server (or you are connecting to it directly): **Access NVR with its default IP (192.168.0.20).**

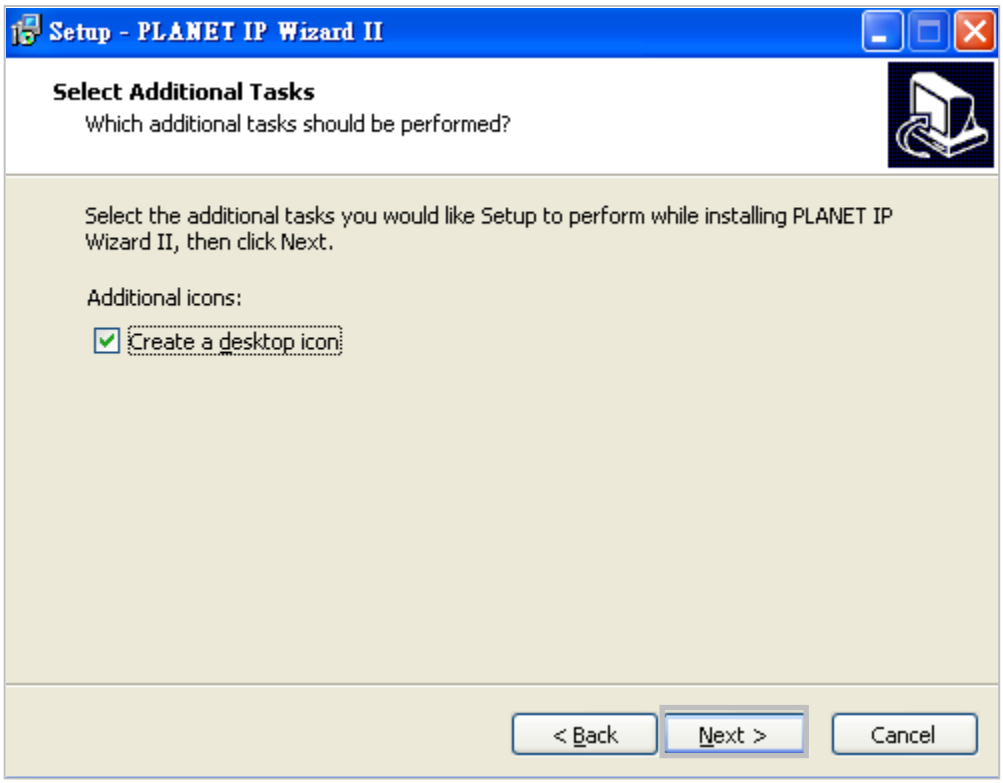
3.1 Using Device Search Utility

If the NVR is placed in a corporate network or a local area network where a DHCP server is already presented, please install the "PLANET IP Wizard II" utility from "Download" of NVR-3685 Web page.

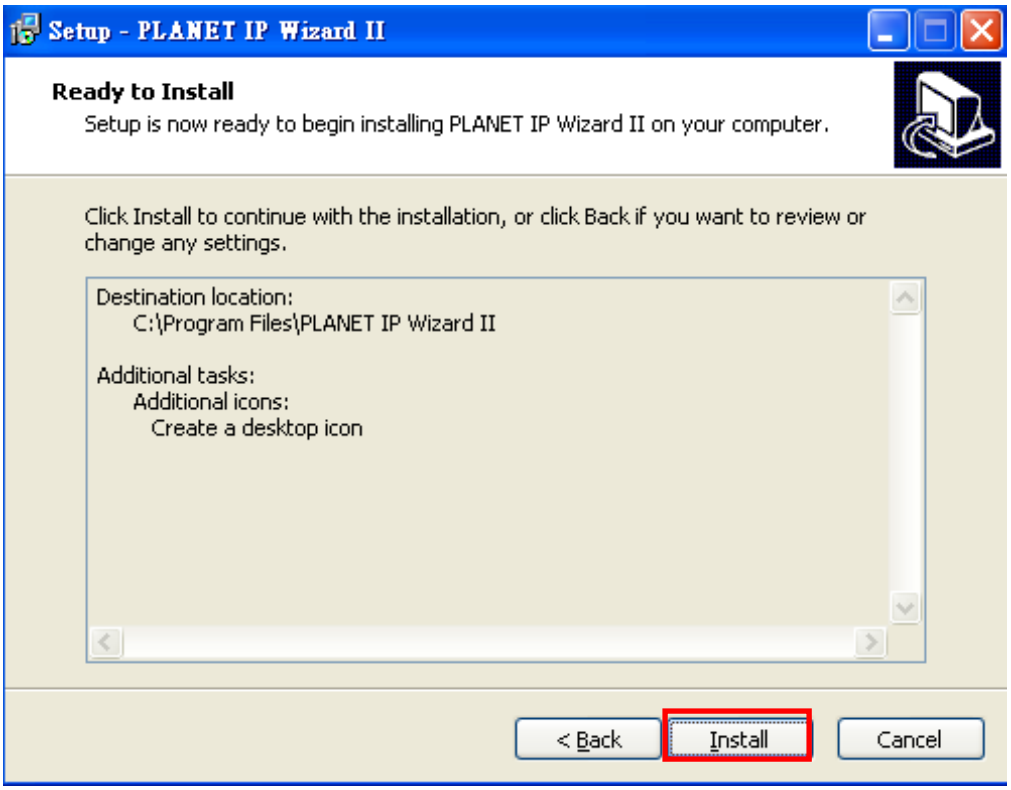
To begin, launch the “PLANET IP Wizard II” utility from PLANET website and proceed with the installation.



Please click “Next” to continue.



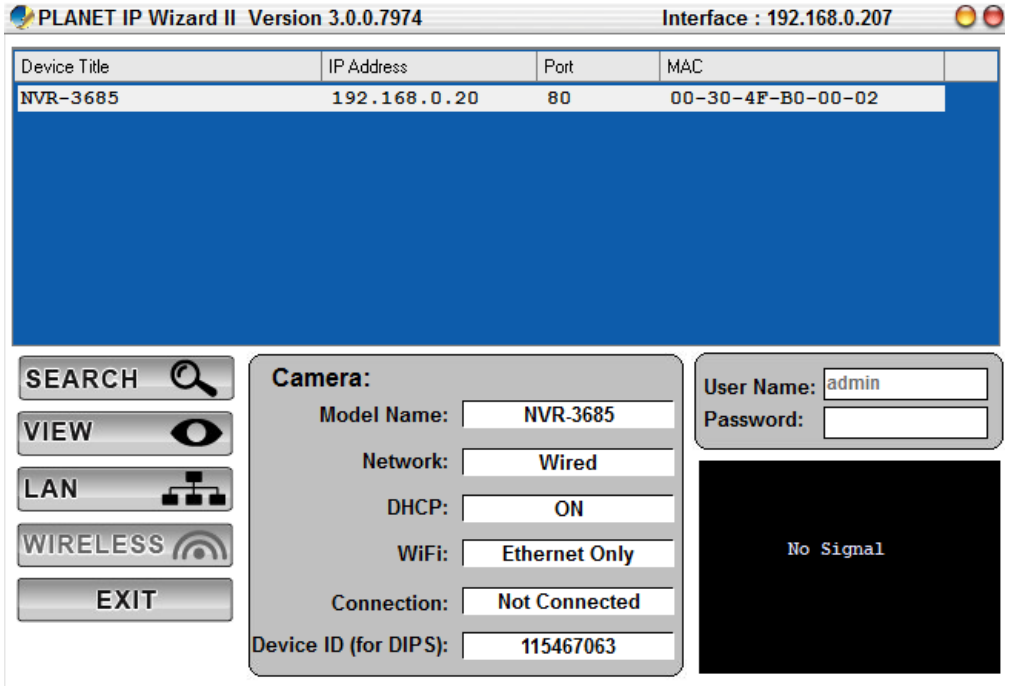
Please click “Install” to start the installation.



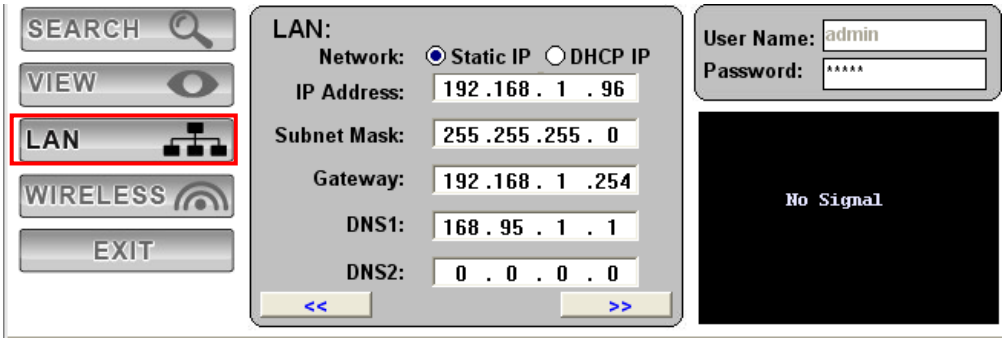
Once the installation is completed, please click “Finish”.

Please go to Start => Programs => PLANET IP Wizard II => PLANET IP Wizard II to run the search tool. Then you will see the utility start searching the network.

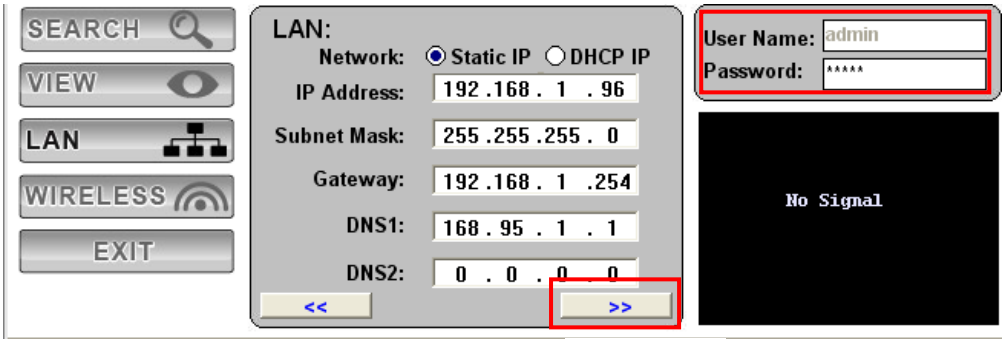
The NVR should be located and its IP address should be displayed; double-click on it and the program should automatically access the NVR's web administration page from your default browser.



You may change NVR's IP address by clicking on the button highlighted below.

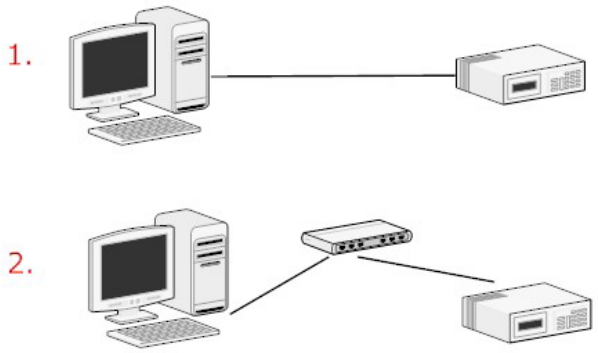


You will be prompted for the NVR's login information before proceeding to change device's IP address.

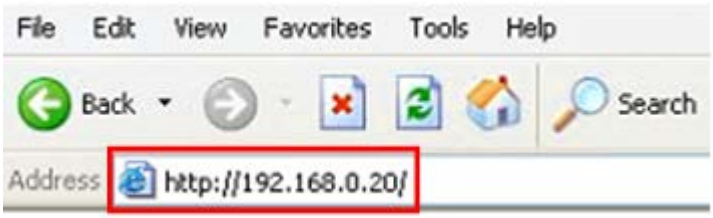


3.2 Accessing NVR with its default IP address

The NVR comes with a pre-configured static IP address "**192.168.0.20**". However, it is only used when there is no DHCP server presented in the network. Connect the NVR and PC to your switch or hub, or connect the PC directly to the NVR using a crossover Cat5 Ethernet cable.



The PC that is connected directly to the NVR (or within the same local area network) should receive an IP from it. Simply access the NVR from your Web browser with NVR default IP address.



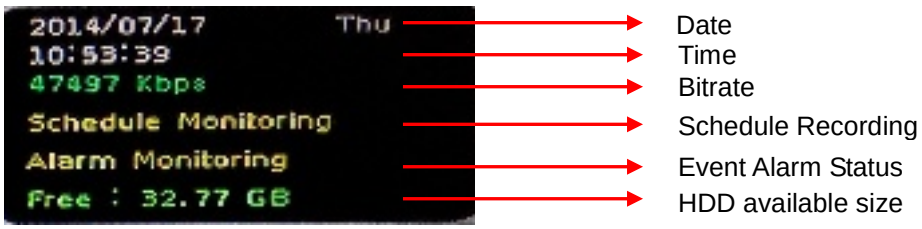
You should be prompted for the user name and password. Enter its default username "**admin**" and password "**admin**", and then click" OK" to enter the system.

Chapter 4. System

4.1 Main Console

This is the main control panel of the system providing live stream preview, system setup, two-way audio, playback, volume control, snapshot, start or stop monitoring, and PTZ controls.

4.2 System Information



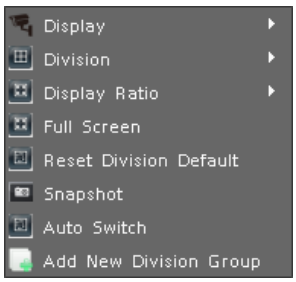
4.3 Screen Division

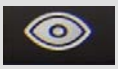
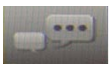
Assign the preview screen to the expected layout division by clicking these buttons.

Switch to 1 division

	Switch to 4 division
	Switch to 9 division
	Switch to 16 division
	Switch to 25 division
	Switch to 32 division
	Switch to Full screen, and click mouse right button to cancel Full Screen
	Logout/firmware version display

4.4 Sub-screen Functions

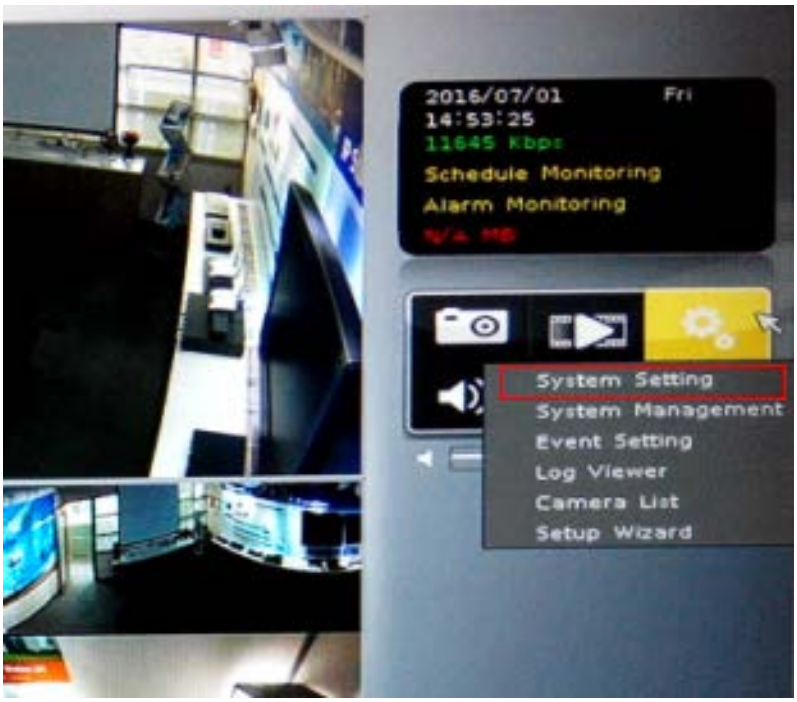
Digital Zoom	Sub-screen window supported digital zoom; operating steps are as follows: 1. Click on preview image for switch current focus channel. 2. Scroll the mouse wheel; forward for digital zoom-in, and backward for zoom-out. 3. Switch division mode will reset digital zoom status to default.
 Popup Menu	Click right button of mouse and select an option from the popup menu. 1. Change current channel display camera. 2. Change current division mode. 3. Switch to current channel display ratio mode. 4. Switch to Full Screen mode/Cancel Full Screen mode. 5. Reset all channels to default camera list. 6. Snapshot current display. 7. Enable/Disable auto switch. 8. Add new division group

 Setting	Click it to set up system and view log
 Playback	Click it to go to “Playback” page to search and display needed video
 Snapshot	Click it to take a snapshot to the HDD; you can manage snapshots on “snapshot” page under system management
 Audio Volume Control	Click it to switch between normal and mute
 Schedule Monitoring	Click it to enable or disable scheduled monitoring; the recording will be stopped if it is disabled
 Two-way Audio	Click it to start or stop two-way audio of selected channel
 PTZ Control	Move PTZ camera direction by clicking direction buttons
 PTZ Control Home	Click it to make camera return to home position
	Move the thumb to control speed
 Tour	Select a tour setting from combo box and click “go” button to start tour, click “Stop” button to stop tour
 Preset	Select a preset position from combo box and camera will move to preset position after clicking
 IRIS	Adjust camera’s IRIS setting, or set it to auto
 Focus	Adjust camera’s focus setting, or set it to auto
 Zoom	Zoom-in or zoom-out focus
 PAN	Start camera auto pan or stop

For NVR quick installation, please refer **to Chapter 10 Setup Wizard**.

Chapter 5. System Setting

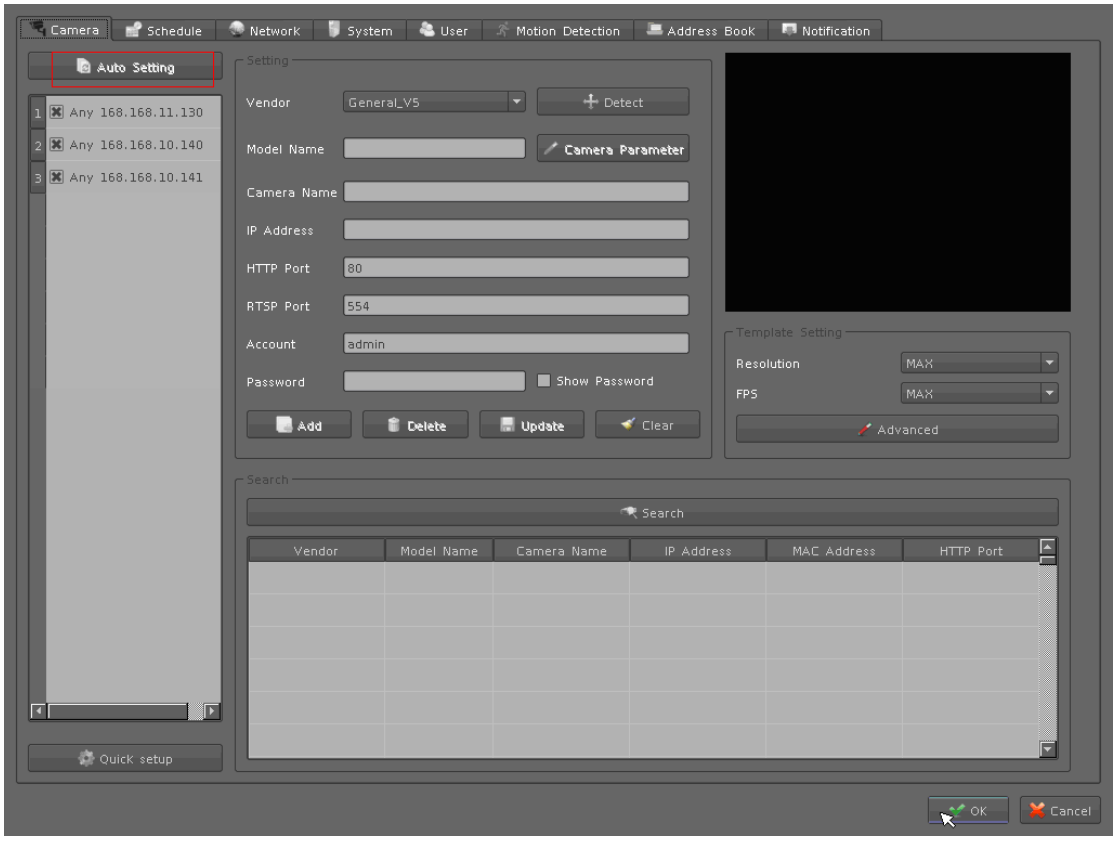
Click the setup button and select “System Setting” from pop-up menu to approach system setting dialog.



5.1 Camera Setup

5.1.1 Auto Setting

Click the “Auto Setting” button for adding cameras to system automatically, and maximum number of cameras depends on mixed mode or H.265 mode.

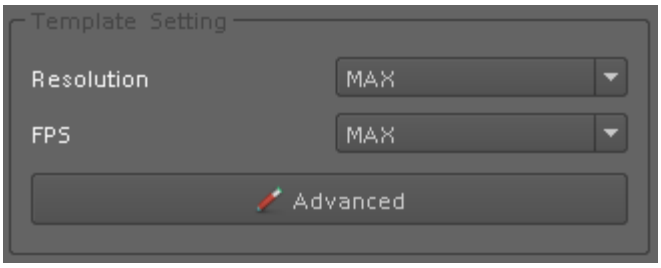


After clicking the button, system will show the fuzzy search filter dialog. You could input the search filter with model name, IP address or MAC address, or you could keep them empty to search all cameras.

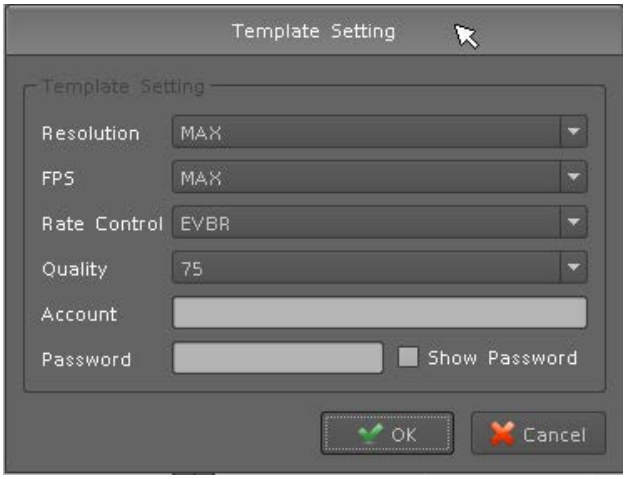
Auto setting could insert Intranet's cameras even these cameras are located behind several switch hubs. Besides, you could directly insert cameras on NVR's switch hub and then click the "Auto Setting"button to add them to system. Through "Auto Setting"function , you do not need to key-in any network IP address or sub-mask parameter. All you need to do is click the "Auto Setting"button to finish the job of inserting IP camera.

5.1.2 Template Setting

When you use "Auto Setting" or add a new camera, system will read the camera template from "Template Setting" to fill out the camera parameter.



After the template has been confirmed, you will no longer need to set up parameter of camera again in most cases. You could set up the quick template from camera setting page and only need to set the camera's resolution and frames per second. If you need to set up more details in template, please click the "Advanced" button to approach the template setting dialog.

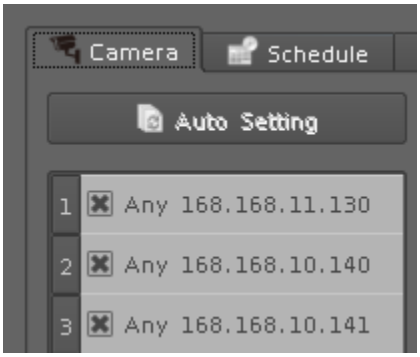


Resolution	The new camera will try to fit the selected resolution. When you select "Max", the camera will adopt maximum resolution. If you select another resolution, the system will choose a resolution for the camera.

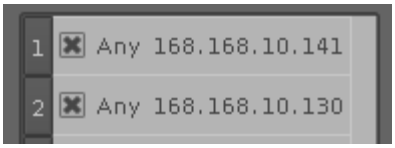
FPS	Set up frames per second for camera; system will try to set a near or equal FPS to camera.
Rate Control	Set up the rate control algorithm of new camera.
Quality	If you select EVBR for new cameras, you could set up the then VBR quality here.
Account	Set up the default login user account of camera.
Password	Set up the default login password of camera.

5.1.3 Camera List

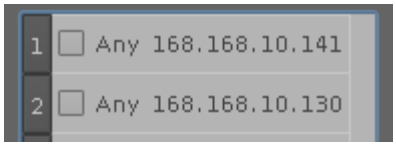
List all inserted IP camera model names and IP addresses. It is able to display detailed information and live streaming video by clicking the row of camera.



Check the box to make the camera available for video streaming; otherwise, the camera will be disabled if the check box is empty.



Enable



Disable

Switch Camera sequential

Click right button of mouse on the camera, and select another camera in the popup menu. System will switch to these two camera's settings.

Quick Setup

1. Select a camera
2. Click "Quick Setup" button.

3. Select an action:

   Copy to:

   Copy selected camera's settings to all channel or single channel

   Switch To:

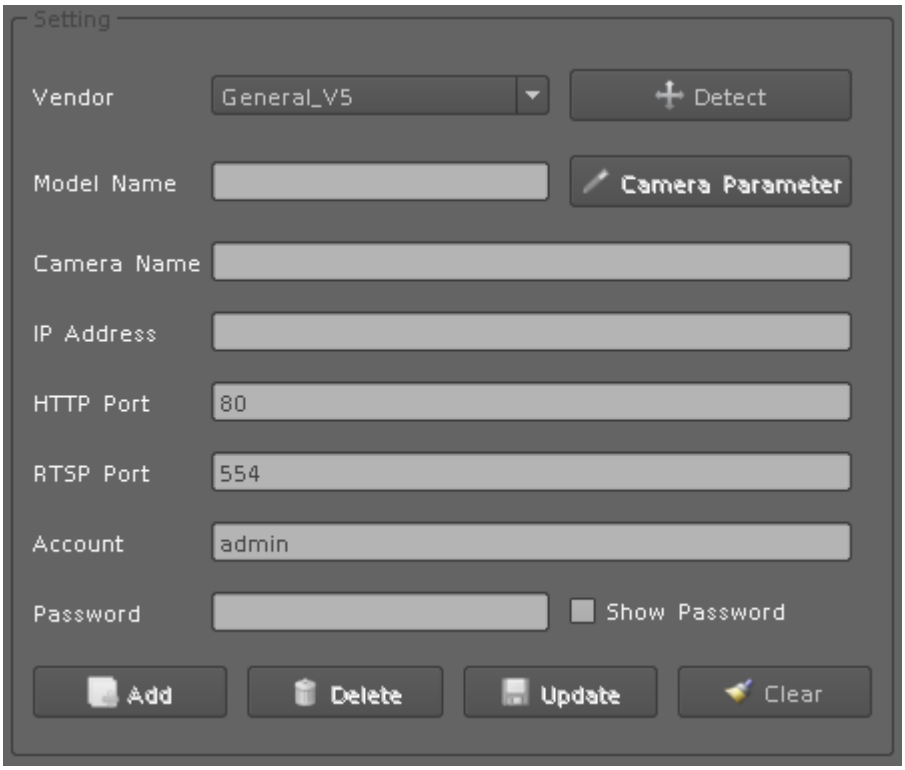
   Switch selected camera and target camera sequential position.

   Remove all:

   Remove all camera settings.

5.1.4 Camera Setup

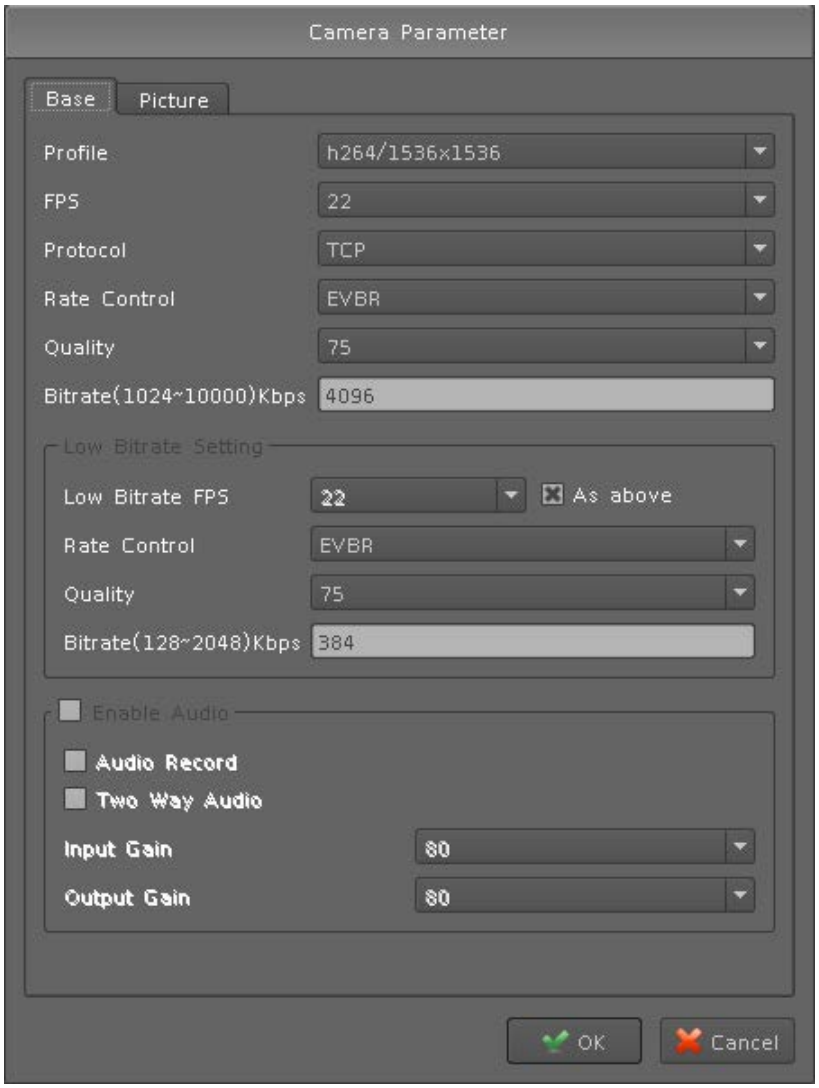
Key-in or modify camera information here.



Vendor	You may select camera vendor or use ONVIF protocol for camera connection.
Detect	Check camera available and receive camera model name.
Camera Name	Key-in camera name.
IP Address	Key-in camera's IP address.
HTTP Port	Set up camera's HTTP port, default is 80.
RTSP Port	Set up camera's RTSP port for TCP streaming, default is 554.
ONVIF Authentication	Enable or disable WSSE authentication of selected camera

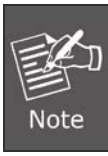
Account	Set up the login user name of camera.
Password	Set up the login password of camera.

5.1.5 Parameter Setting



Profile	Select video codec and resolution for live viewing and recording.
FPS	Select FPS for live viewing and recording.
Protocol	Select protocol HTTP/TCP and UDP.
Rate Control	Select EVBR or CBR for better video performance.
Quality	Select video quality by numbers.
Enable Audio	You have to enable audio for two-way audio function.
Audio Recording	Enable it for audio recording.
Two-way Audio	Enable it for two-way Audio function.

Input Gain	Adjust the gain to reduce the input audio noise.
Output Gain	Adjust the gain to reduce the output audio noise.



The parameter dialogs are different for each vendor. It depends on camera's capability.

Add Camera:

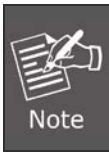
1. Click "Search" button and wait for search job to finish.
2. Select a camera on search result list.
3. Preview live streaming video on preview window to confirm current camera.
4. Click "Add" button to add selected camera into system.

Delete Camera:

1. Select a camera from installed camera list.
2. Click "Delete" button to remove selected camera from list.

Update Camera setting:

1. Select a camera from installed camera list.
2. Modify camera's setting at each setting fields.
3. Click "Update" button to save modified result.

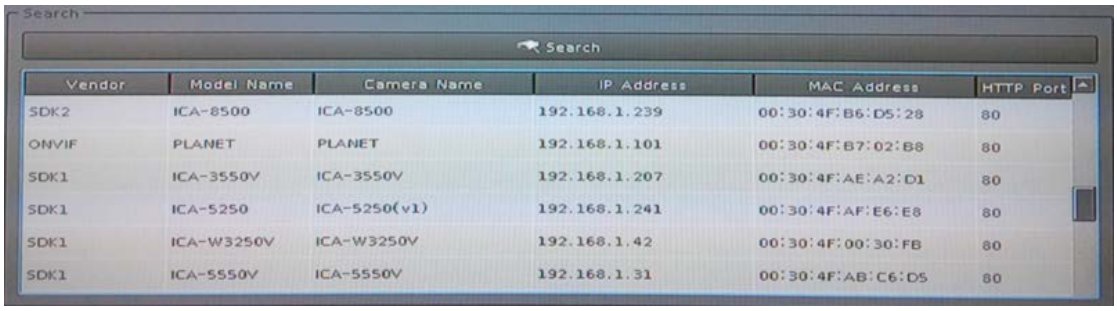


Updated setting will write to disk after clicking "OK" on the bottom of the page. If you click "Cancel" button to leave setting page, system will ignore all your modified settings.

Clear button: Clear all setting fields.

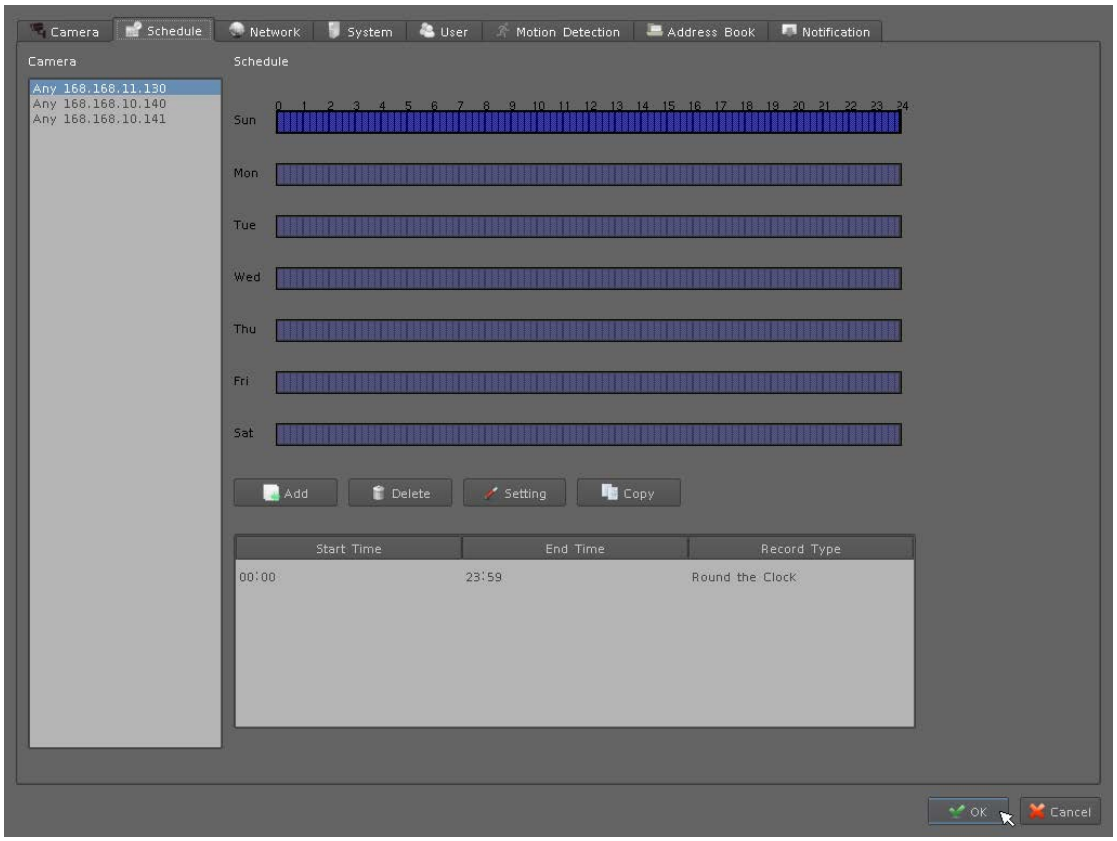
5.1.6 Search Camera

Click “Search” button and system will list all cameras that can be searched in “Search List”. You can click on each row to preview live video streaming. In addition, you can click on the header column for sorting the current row data.



5.2 Schedule Setting

Schedule setting allows you to set up different times for recording. You may define multiple recording types for each day or within 24 hours.



The step to configure recording schedule

Step 1. Select a camera:

Select a camera for schedule configuration.

Step 2. Select a weekday:

Select a weekday bar; system will list time periods with this weekday.

Step 3. Configure time period:

Add new period: Drag mouse cursor on blank area or click “Insert” button to set up

Configure period setting: Once new period is inserted, system will pop up period setting dialog. Adjust required parameters for start time, end time, pre-alarm and post-alarm when the period is set up for motion detection recording.

Step 4. Select a record mode:

Select a record mode from “Round the clock”, “Motion detection”, “DI detection” or “Event Detection” for this period. You should select a DI input source and define alarm condition when you select the “DI detection”.

Step 5. Modify existing record schedule:

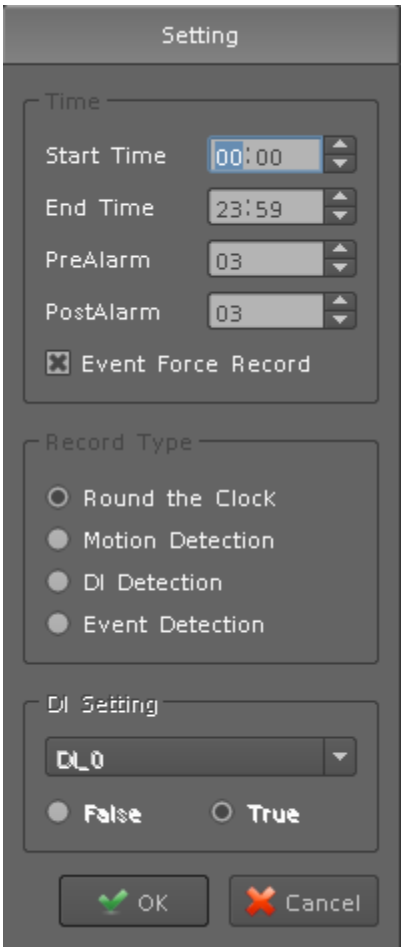
Click a period from weekday bar or select a period from list and then click “Configure” button.

Step 6. Remove a record schedule:

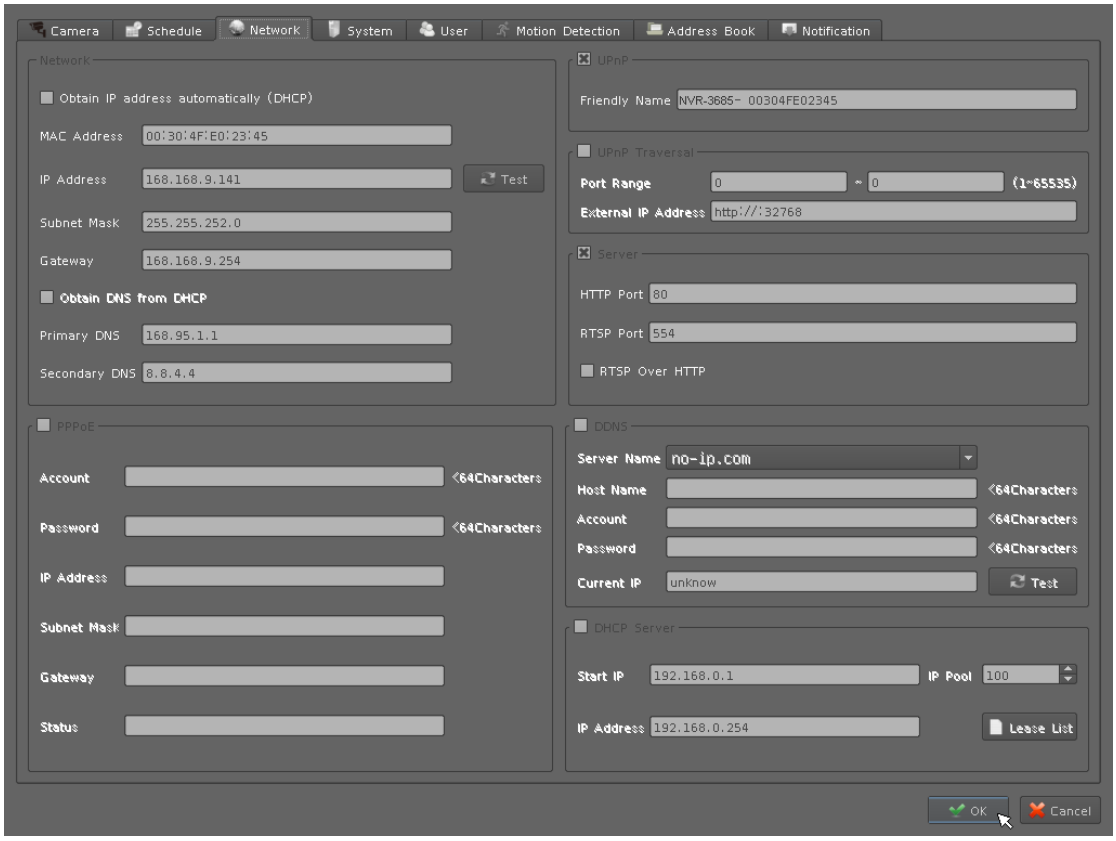
Select a period from weekday bar or list and then click“Delete” button.

Step 7. Copy a period to all:

Select a period from weekday bar or list and then click“Copy” button. The system will copy current selected weekday’s periods to all weekdays.


Setting
Time
Start Time
00:00
End Time
23:59
PreAlarm
03
PostAlarm
03
Event Force Record
Record Type
Round the Clock
Motion Detection
DI Detection
Event Detection
DI Setting
DI_0
False
True
OK
Cancel

5.3 Network Setting



5.3.1 Network

DHCP Setting	Check the “Obtain IP address automatically (DHCP)” to get IP address from DHCP server automatically.
MAC Address	Display MAC address of this NVR.
IP Address	Input the fixed IP address if you have disabled the DHCP function, and then click “Test” button to detect IP conflict.
Subnet Mask	User defines.
Gateway	User defines.
Obtain DNS from DHCP	User defines.
Primary DNS	User defines.
Secondary DNS	User defines.
DNS Setting	Check “Obtain DNS from DHCP” to get DNS setting from DHCP server. It only works on DHCP when enabled. If “Obtain DNS from DHCP” is disabled, you could key-in DNS server IP in the text box.

5.3.2 PPPoE

Enable/Disable	Select the radio boxes to enable or disable PPPOE function.
Account	Key-in login user name of PPPOE server.
Password	Key-in login password of PPPOE server.
IP Address	Display current IP address which is assigned by PPPOE server.
Subnet Mask	Display current subnet mask which is assigned by PPPOE server.
Gateway	Display current gateway which is assigned by PPPOE server.
Status	Display PPPOE status.

5.3.3 UPnP

Friendly Name	Display UPnP friend name on network

5.3.4 UPnP Transversal

Enable UPnP Traversal to auto-request port mapping with router, and define maximum and minimum port value here.

Port Range	User defines.
External IP Address	User defines.

5.3.5 Server

Enable server option to start HTTP and RTSP server. When remote service is started, user is able to connect remote service via IE browser.

HTTP Port	Set up HTTP service port here. The default setting is 80.
RTSP Port	Set up RTSP service port here. The default setting is 554.
RTSP over HTTP	Enable RTSP over HTTP function and the remote live streaming will use HTTP protocol and HTTP port.

5.3.6 DDNS

The NVR-3685 provides PLANET DDNS function to allow you to map a domain name to the dynamic IP address of a network device.

Sever Name	Select a DDNS server (e.g. PLANET DDNS).
Host Name	Key-in DDNS domain name.
Account	Key-in account of DDNS service.
Password	Key-in password of DDNS service.
Current IP	Click “Test” button to connect DDNS service and system will display current public IP address.

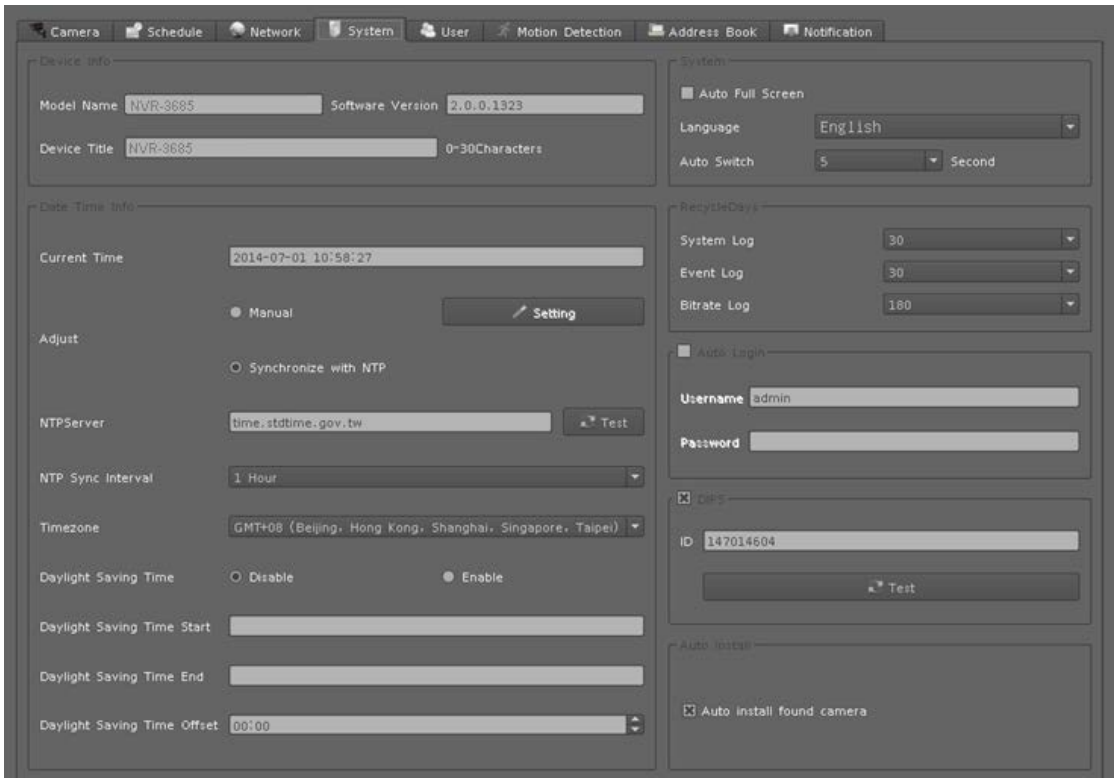
5.3.7 DHCP Server

DHCP Server function allows you to assign dynamic IP address to cameras in the same LAN.

The steps for configuring DHCP Server are as follows:

1. Enable DHCP Server check box.
2. Key-in a start IP or use default“192.168.0.1”.
3. Select IP pool from 1 to 253 or use default 100.
4. Click “Lease List” button to show leased IP list.

5.4 System Setting



5.4.1 Device Information

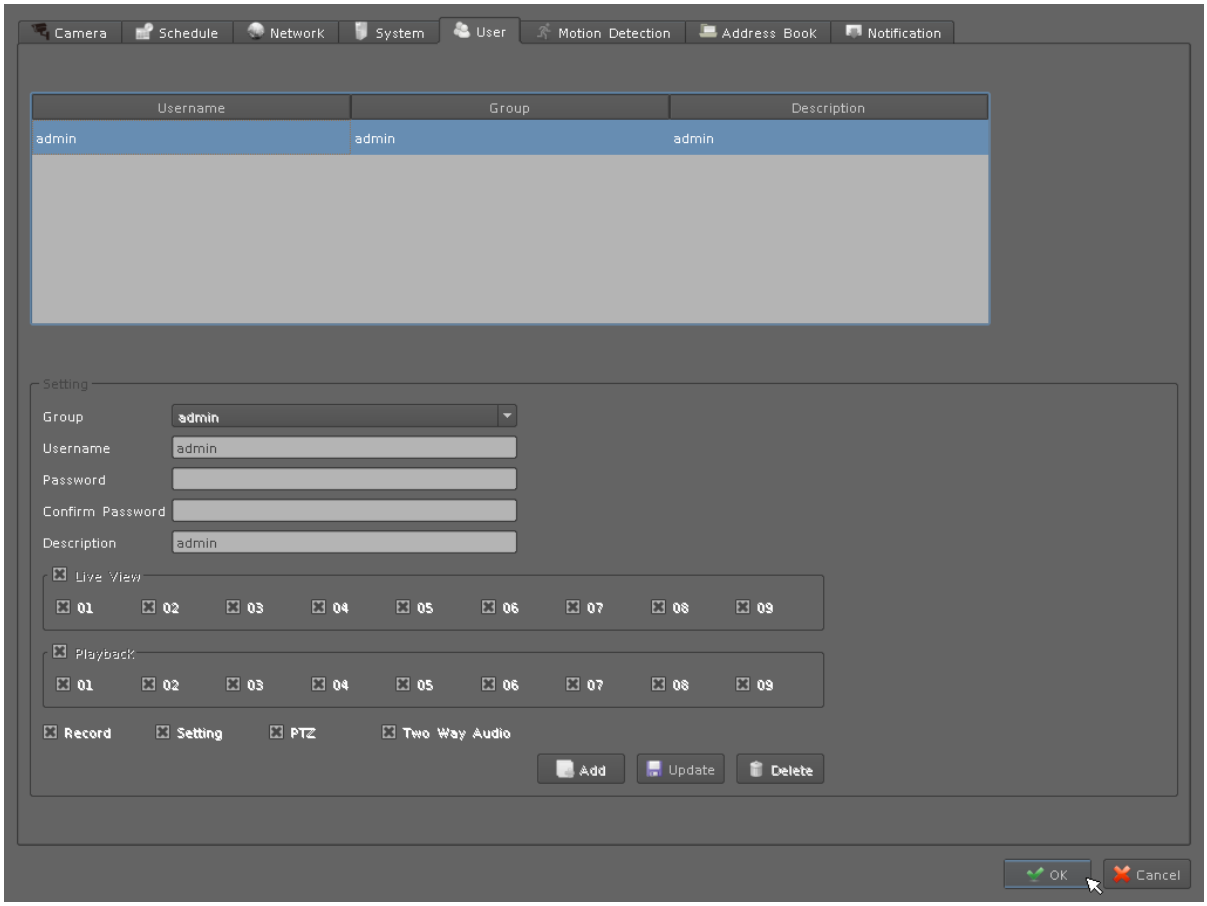
The “Device Information” provides the general information of the device such as firmware version and model name.

Model Name	Display model name.
Device Title	Key-in device title here.
Software Version	Display current firmware version

5.4.2 Date & Time Info

Server Date & Time	Display current system date-time.
Adjust	**Manual:** Click setting to approach date-time setting dialog and select current date and time now; click “OK” to change system time or click “Cancel” button to abort configuration. **Synchronize with NTP (default):** Enable synchronize date-time with NTP service.
NTP Server	Key-in NTP server IP or domain name. If you use the domain name to connect NTP server, the DNS service must be enabled.
NTP Sync Interval	Select time period to synchronize with NTP service.
Time Zone	Select the time zone of NVR location.
Daylight Saving	Enable or disable daylight saving mode.
Daylight Saving Start Time	Configure daylight saving start time; it works with daylight saving mode when enabled.
Daylight Saving End Time	Configure daylight saving end time; it works with daylight saving mode when enabled.
Daylight Saving Offset	Configure daylight saving offset time with current time; it works with daylight saving mode when enabled.
Auto Login	Enable auto login mode to login with defined user name and password when system boots up.
User	Key-in auto login user name.
Password	Key-in auto login password.
System Setting	Enable “Auto full screen” to switch to full screen mode when system boots up. 1. Change display language from language combo box. 2. Adjust auto switch interval seconds.
DIPS	Display device DIPS ID. Click “Test” button for test connection with DIPS server.
Recycle Days	Select log keep days
Auto Install	Enable the function of auto install found camera.

5.5 User Setting

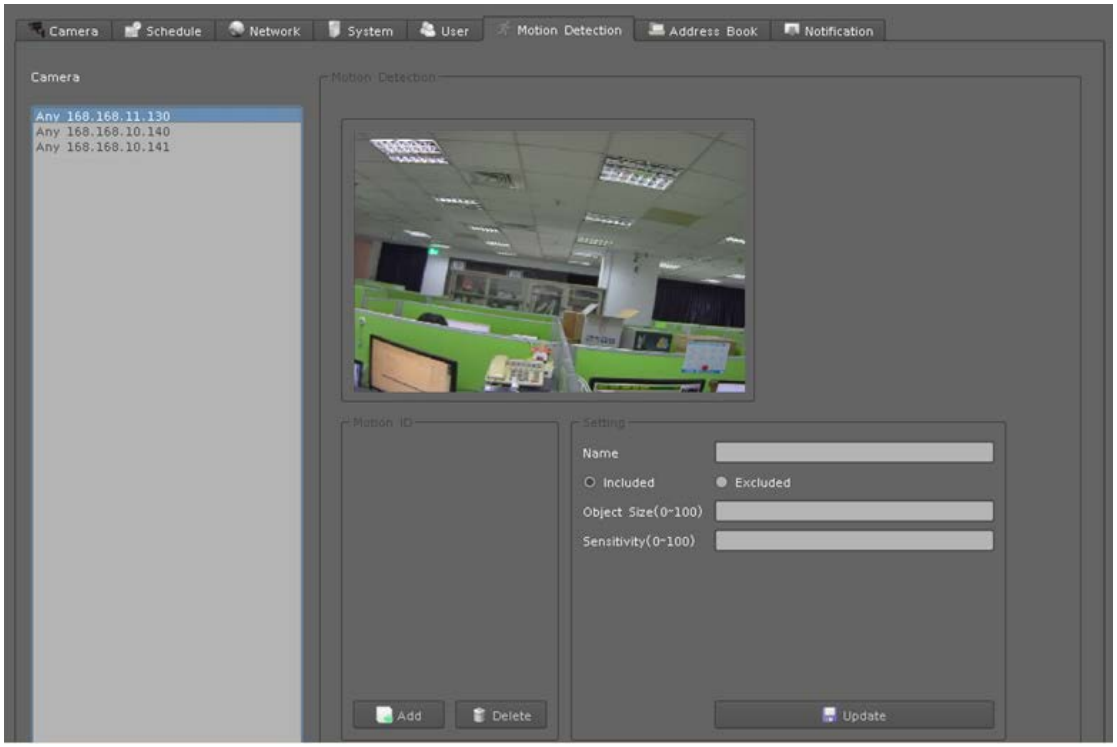


You may manage all user accounts or groups for different functions to access cameras.

Group	Select user's login group.
Username	Set up username for account.
Password	Set up password for account.
Confirm Password	Confirm the password is correct.
Description	Describe the user or group.
Live Viewing	Define the access permission for each user to have live viewing.
Playback	Define the access permission for each user to play back camera.
Record	Define user permission for recording.
Setting	Define user permission for system setting.
PTZ	Define user permission for PTZ controls.
Two-way Audio	Define user permission for two-way audio.
Add	Click to add user after keying-in the user information.

Modify	Select a user first. After modifying user information, you can click “Modify” button to update user information to setting.
Delete	Select a user first and then click “Delete” button to remove selected user from setting.

5.6 Motion Detection Setting



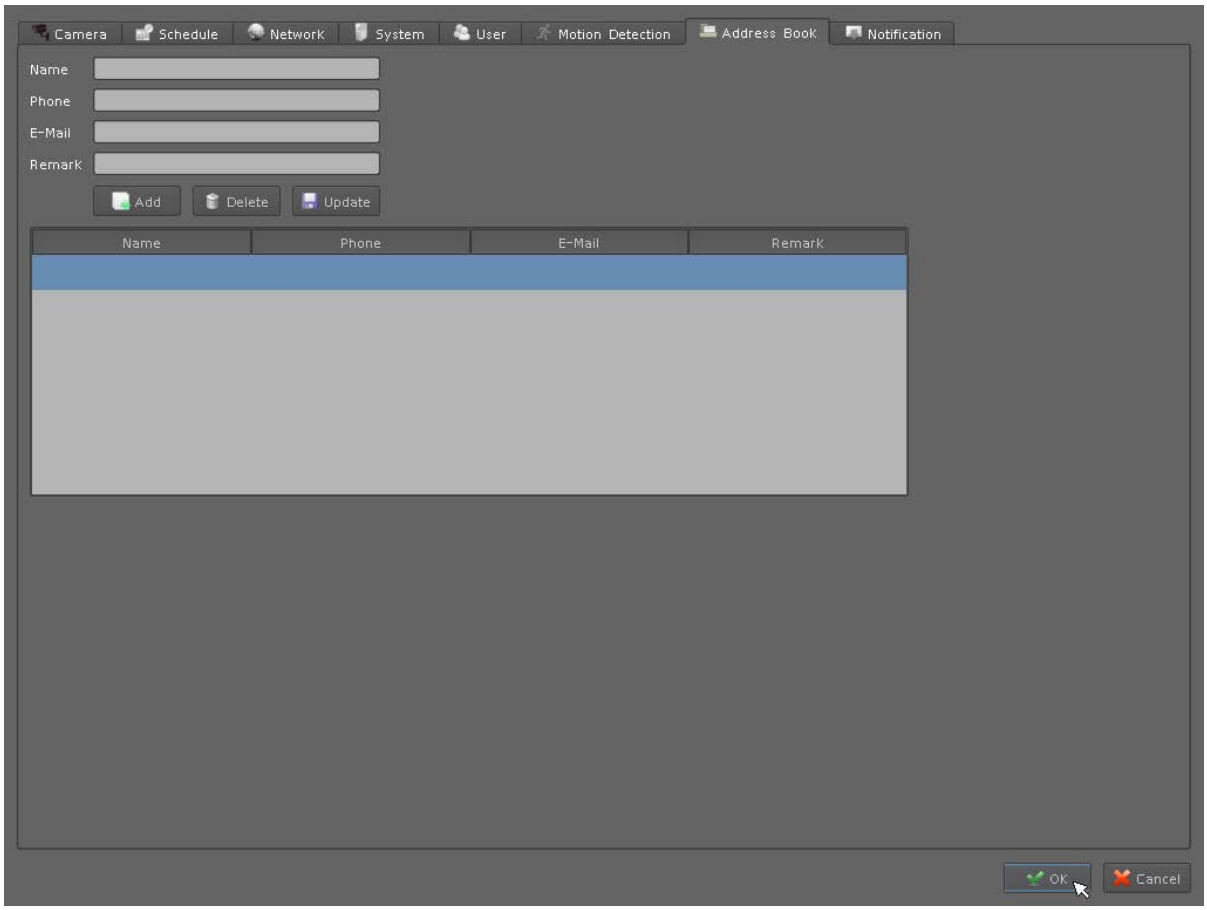
You may set up to 10 regions of each camera for motion detection setting.

Select a camera	Click on camera list and select a camera to set up motion detection.
Add new motion detection	Click “Add” button to insert new motion window and then the new window will appear on the left-upper corner.
Enable motion window	Check the window name to enable motion detection.
Modify motion detection area	Move mouse cursor to motion window border, and drag cursor to resize motion window. Drag mouse cursor on motion window to re-position of motion window.
Remove motion window	Click on motion window or window’s name to set up focus window and then click “Delete” button to remove it.
Modify motion	Click on motion window or window’s name to set up focus window

parameter	and then edit its motion parameters. You must click “Update” button to save modified values, otherwise the settings will be lost.
Name	Key-in motion window’s name.
Include / Exclude	Include indicates system will detect motion inside of window area. Exclude indicates system will detect motion outside of window area.
Object Size	Set up motion detection object size whose value is between 0 and 100. The larger value indicates the object is bigger in the defined detection area.
Sensitivity	Set up motion detection sensitivity whose value is between 0 and 100.The larger value indicates the motion detection is more sensitive.

5.7 Address Book Setting

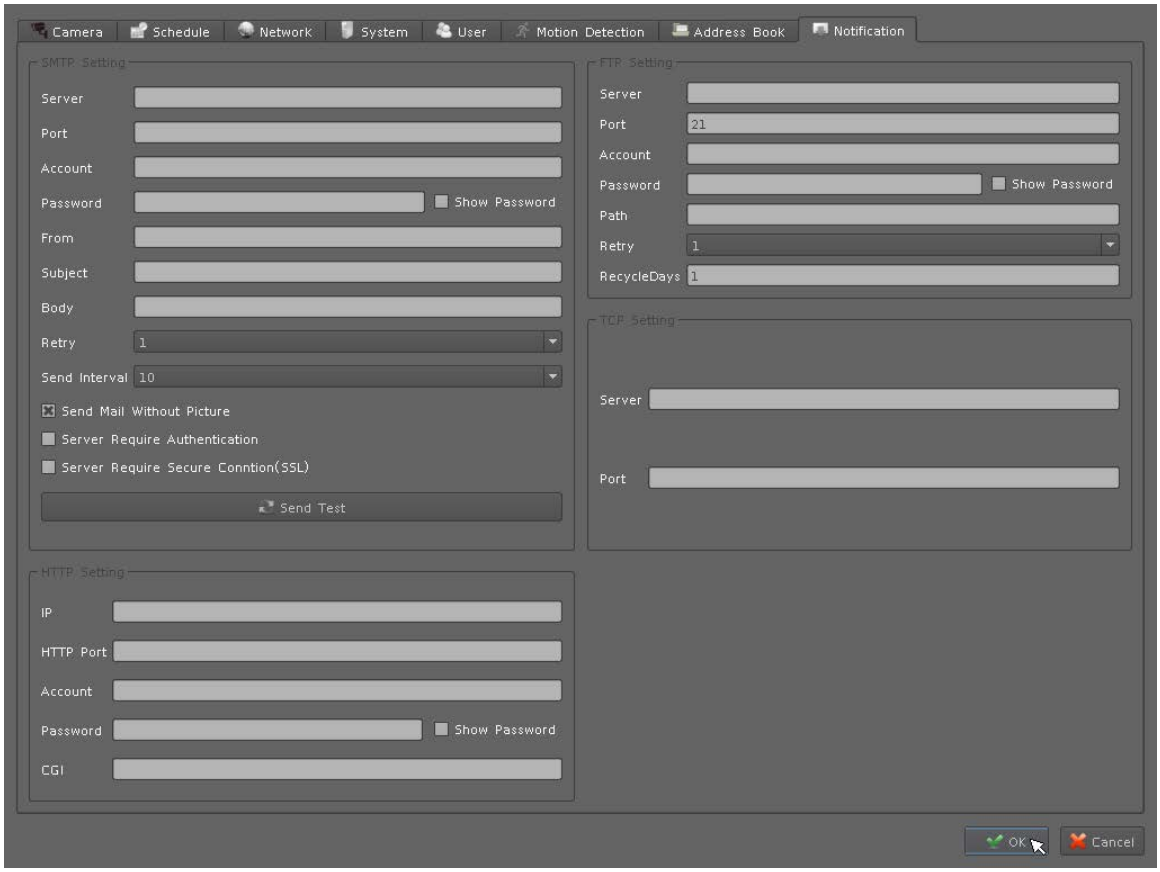
Add e-mail and other information to address book for sending e-mail alert.



Key-in the personal e-mail account information and then click on “Add” to add the information

to the address book; you may also click on “Update” to change the information or “Delete” to remove the account from the list.

5.8 Notification Setting



You may set up the notification to receive e-mails, send file to FTP server or HTTP CGI when the event is triggered.

SMTP Settings

SMTP Server	SMTP sever IP or domain name.
SMTP Port	SMTP service port number
User Name	Login SMTP server user ID
Password	Login SMTP server Password
From	E-mail sender’s name
Subject	Mail’s subject
Body	Mail’s body content
Retry	Retry the number of times when mail fails to send out

Send Interval	Set the interval of each time when mail is sent out
Send without picture	Do not attach picture with notification mail
Server Required Authentication	The e-mail server needs Authentication
Server Required Secure Connection	The e-mail server needs SSL connection
Send Test Button	Send out a test mail to check whether Server information is correct or not

HTTP Setting

HTTP IP	HTTP server's IP or domain name
HTTP Port	HTTP server's service port
HTTP User Name	Login HTTP server's user account
HTTP Password	Login HTTP server's password
HTTP CGI	HTTP server receive notification CGI path

FTP Setting

FTP Server	FTP server IP or domain name
FTP Port	FTP server service port
User Name	Login FTP server account
Password	Login FTP server password
Path	Upload picture or video path
Retry	Retry the number of times when upload fails
Recycle Days	Keep uploading failed picture or video in days

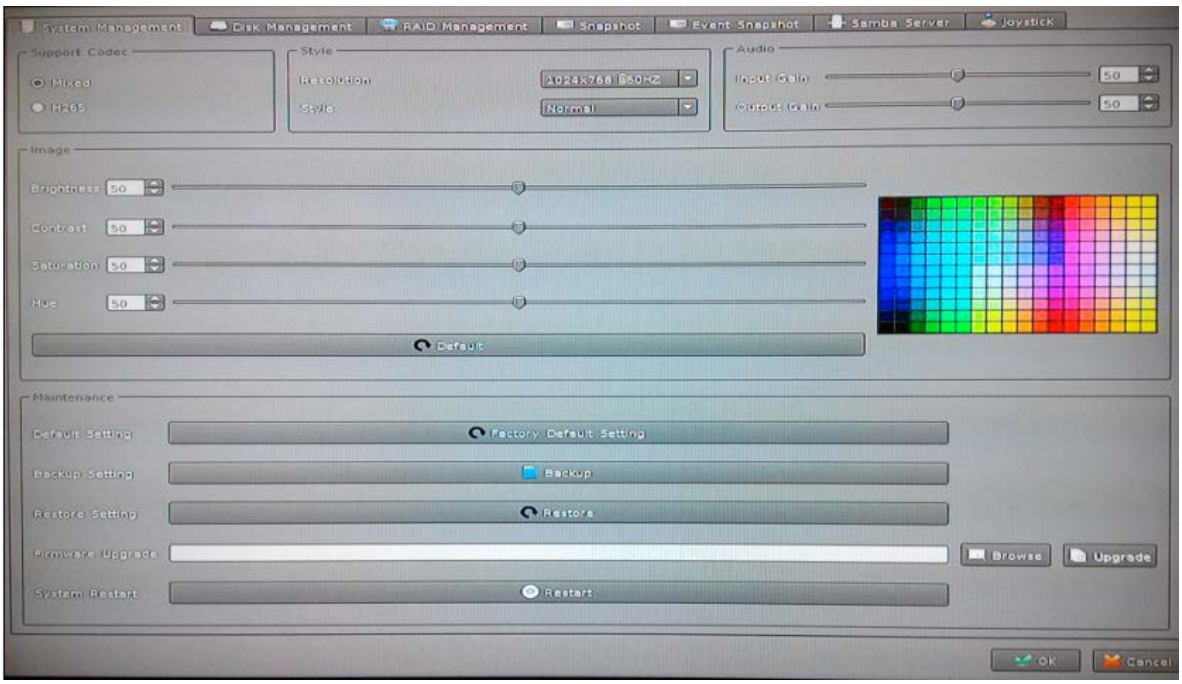
TCP Setting

TCP Server	TCP server IP or domain name.
TCP Port	TCP service port number.

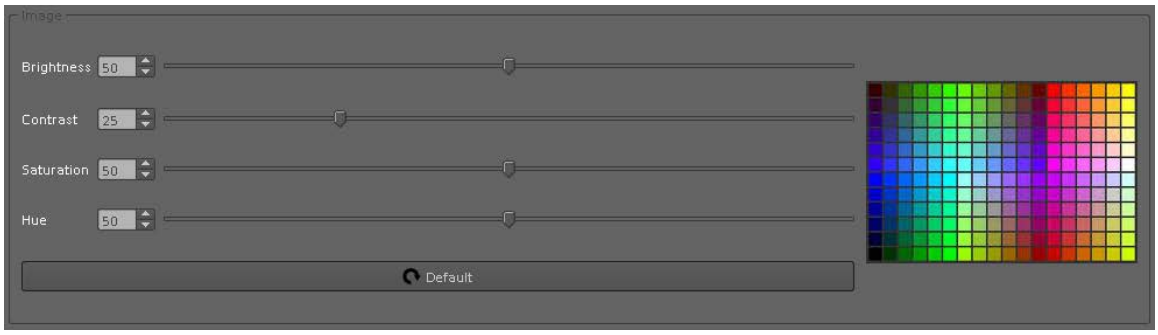
Chapter 6. System Management

The system management is for you to set up the NVR for video image, return to default, firmware upgrade, event, and storage management. Click setup button and select “System Management” from pop-up menu to approach System setting dialog.

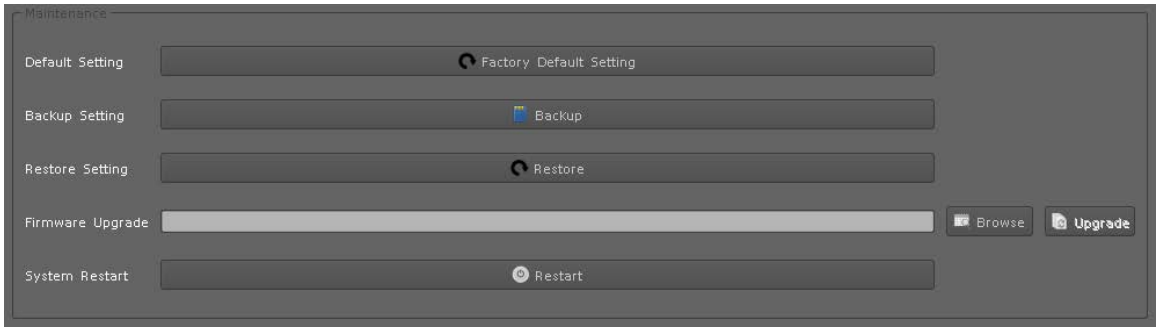
6.1 System Management



Support Codec	The NVR provides Mixed and H.265 mode. Mixed indicates the NVR is able to connect H.265 camera and H.264 camera at the same time. The supporting maximum channel is up to 32. H.265 indicates the NVR is able to connect H.265 camera only but supporting maximum channel is up to 36.
Resolution	Change monitor current display resolution and then confirm change result; the system will recover old resolution after 15 seconds.
Style	You may change the interface to **Simple / Normal / Professional / Advance** mode.
Image	Adjust monitor Brightness, Contrast, Saturation, Sharpness, and Hue value to get better display quality.



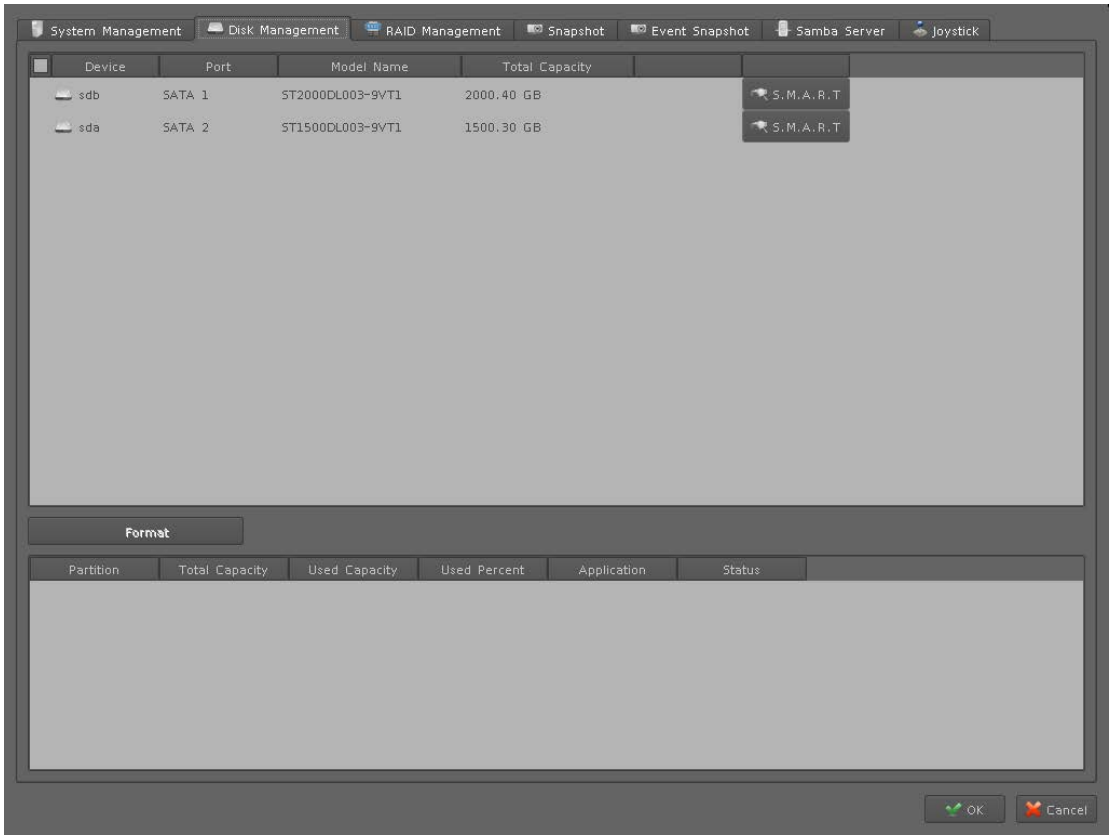
Maintenance



Default Setting	Reset all settings to factory default value.
Backup Setting	Export backup setting file to removable storage device.
Restore Setting	Restore a backup setting file from removable storage device.
Firmware Upgrade	Select a firmware file from removable storage device and then click “Firmware Upgrade” button to begin updating firmware job.
System Restart	Restart NVR system.
Audio	Adjust audio input or output gain value for better audio quality.

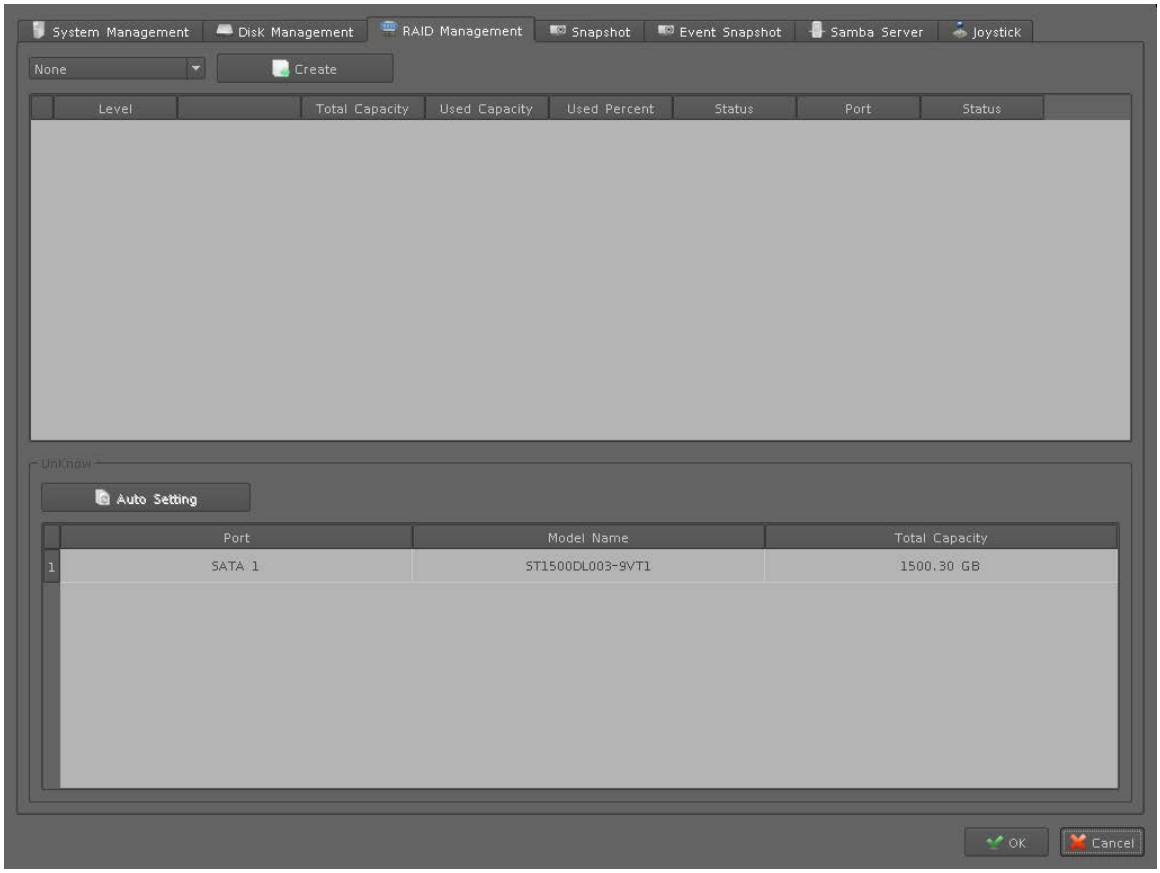
6.2 Disk Management

The NVR supports up to eight 6TB HDDs installed in the system. You may also manage all USB storage devices on this page.



Device List	Display all devices detected on NVR and their information.
Mount / Un-mount Button	Mount or un-mount USB stick.
S.M.A.R.T Button	Display the Hard Disk S.M.A.R.T status.
Format Button	Select storage devices with check box, and click “Partition” button. The system will remove all data and partitions on selected device and create a new partition.
Partition List	Display all partitions of selected device and their information. Clicking “Format” button will format selected partition to “ext4” format; all data will be lost.

6.3 RAID Management

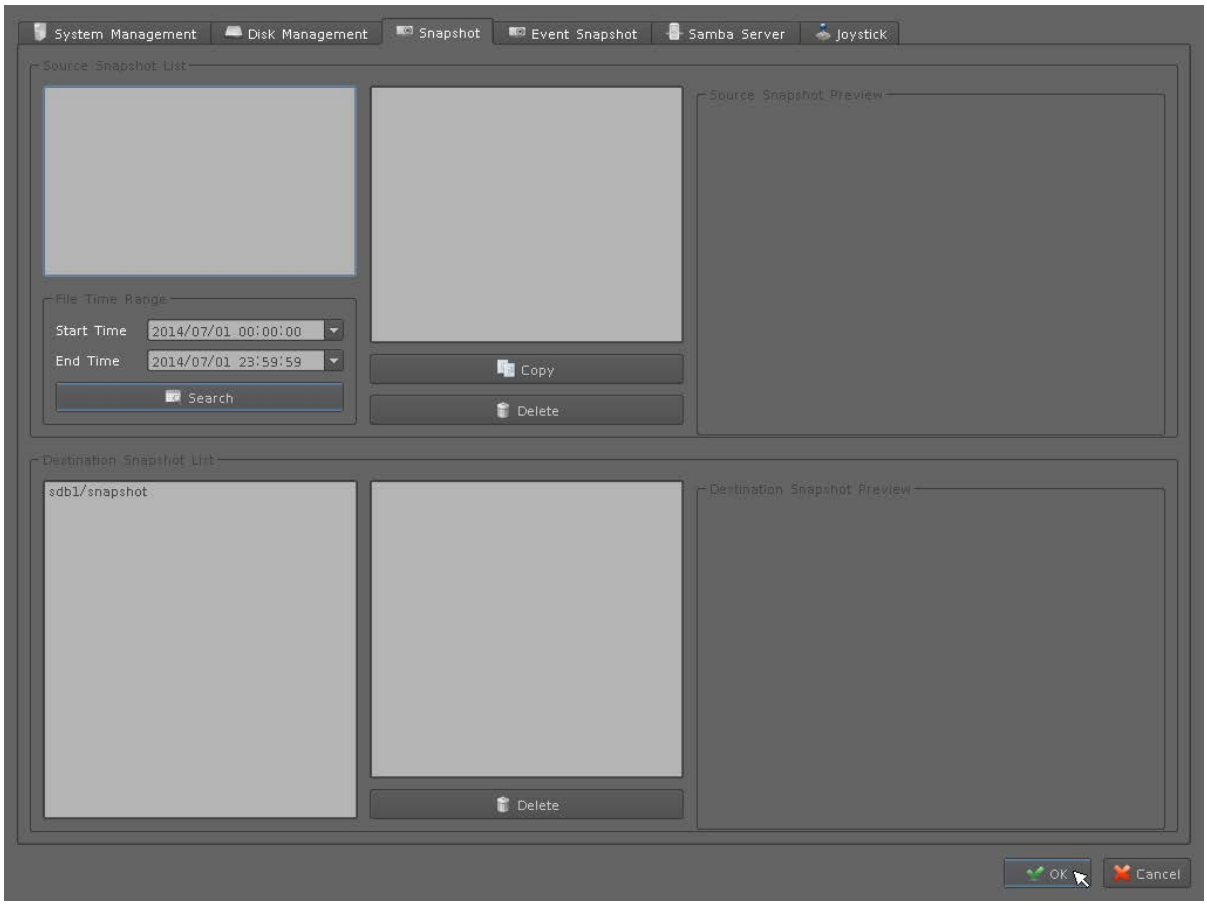


None	Clear all RAID configurations.
RAID 0	The best performance of storage read/write process.
RAID 1	Mirror mode, all data will be back up each other by the smallest storage size.
RAID 5	RAID 5 is RAID configuration which uses disk striping of parity.
Format	When RAID is created, you have to format it for recording.

Note	If you add new disks into the NVR after creating RAID, these disks will be displayed here. You could click “Auto Setting” button to add these disks to RAID for spare disk.

6.4 Snapshot

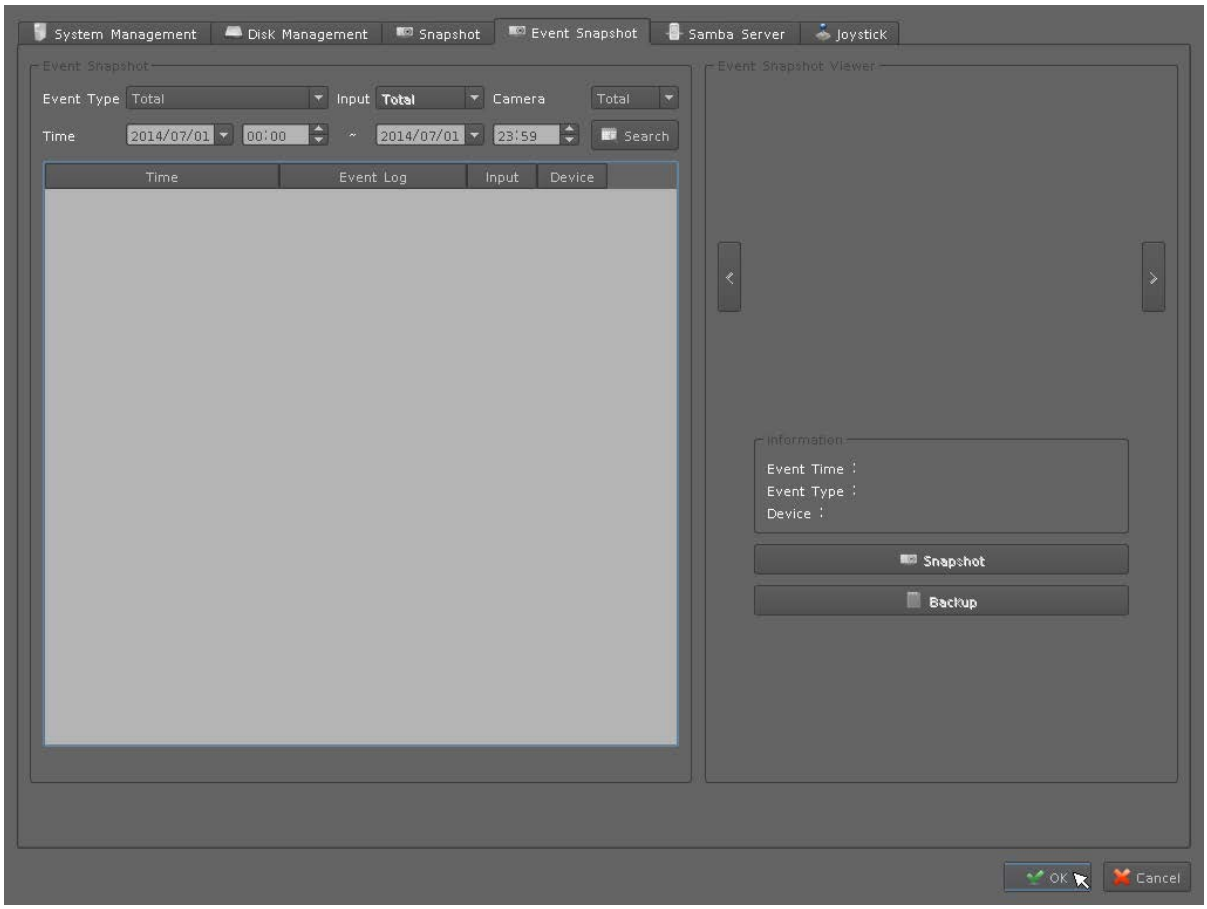
You may save your video snapshot and save them to the HDD or any removable USB device.



Source Snapshot List:	
Search snapshot image	1. Select a hard disk path 2. Select a time period 3. Click “search” button 4. The search result will display in the list box. 5. Select a snapshot file name; the snapshot image will display on the right of window
Copy	Clicking “Copy” button will copy selected snapshot file to removable device.
Delete	Clicking “Delete” button will delete selected snapshot file.
Destination Snapshot List:	
	1. Select a removable device path 2. System will show snapshot file’s name of selected folder

	3. Select a snapshot file name; the snapshot image will display on the right of window
Delete	Clicking “Delete” button will delete selected snapshot file.

6.5 Event Snapshot



Event Snapshot:

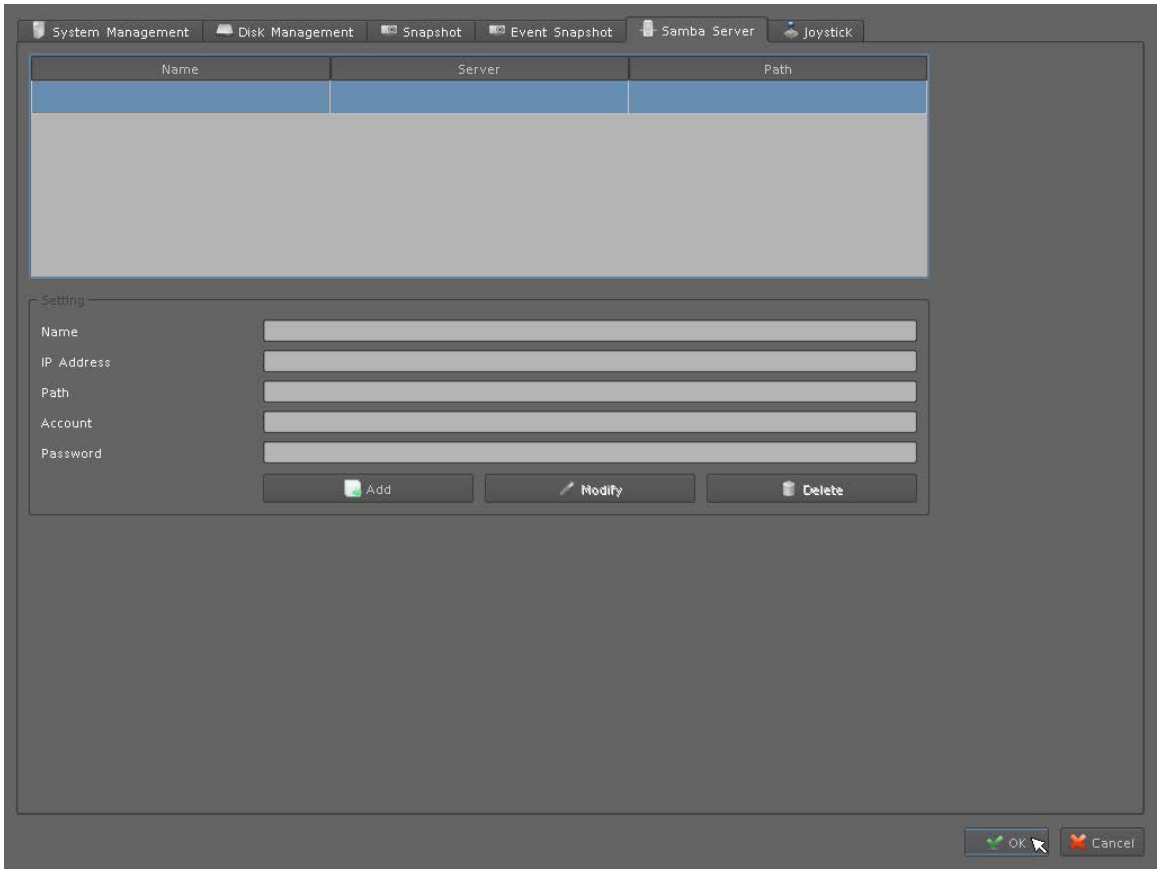
Event Type	Select trigger snapshot event type.
Input	Select DI input port number.
Device	Select the snapshot device ID.
Time	Select search time period.
Search	To search event snapshot based on the condition you set above.

Result Table:

Time	Event Time.

Event Type	Triggered Event Type.
Input	Event DI port number, if not DI event will fill -1.
Device	Event triggered device ID.
Snapshot Viewer	Select an event from search result table and click the “Play” button. The snapshot video will display on the right of window.
Next Frame	Click “>”button for next frame.
Pre Frame	Click “<”button for pre-frame.
Information	Display snapshot video information.
Snapshot Button	Click “Snapshot” button and save snapshots to removable device.
Backup Button	Clicking “Backup” button will back up this event video to removable device.

6.6 Samba Server

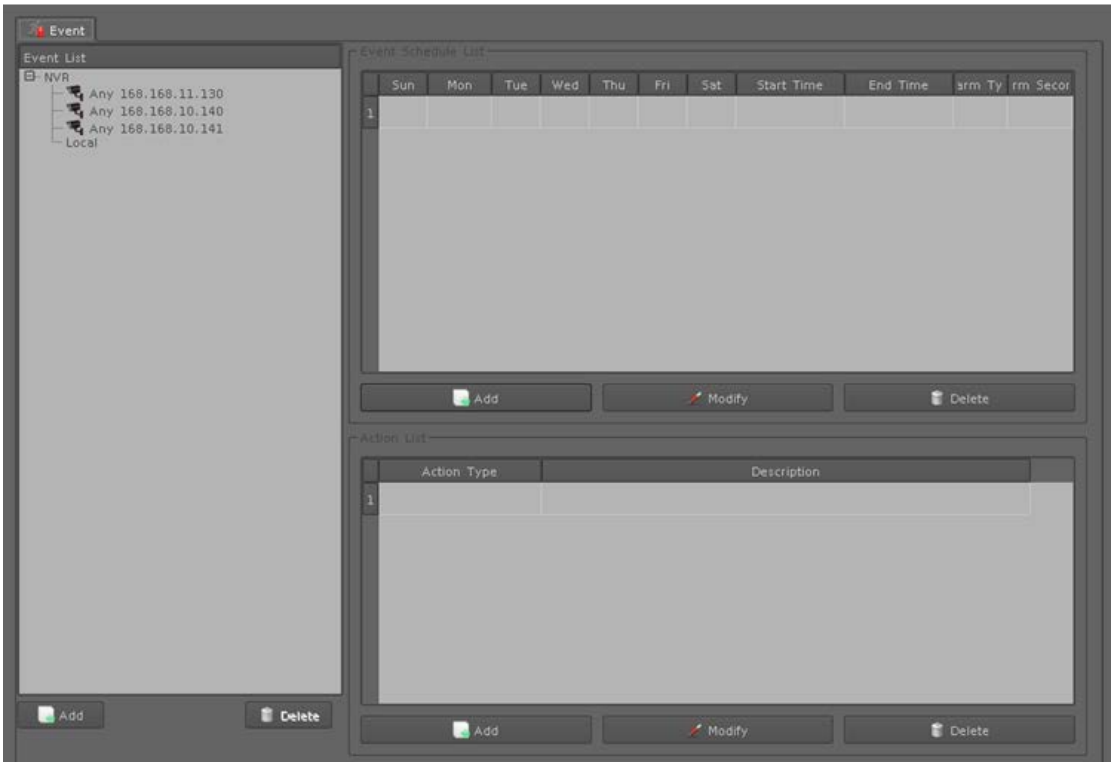


Name	Key-in Samba server name to identify server.
IP Address	Samba server IP address.
Path	Key-in Samba server recording path.

Account	Login Samba server account.
Password	Login Samba server password.
Add Button	Key-in all Samba server information and then Click “Add” button to add to samba server list.
Modify Button	Select a Samba server from list and then modify server’s information. When the modify job is done, click the “Modify” button to save.
Delete Button	Select a Samba server in the list and then click “Delete” Button to remove it from list.

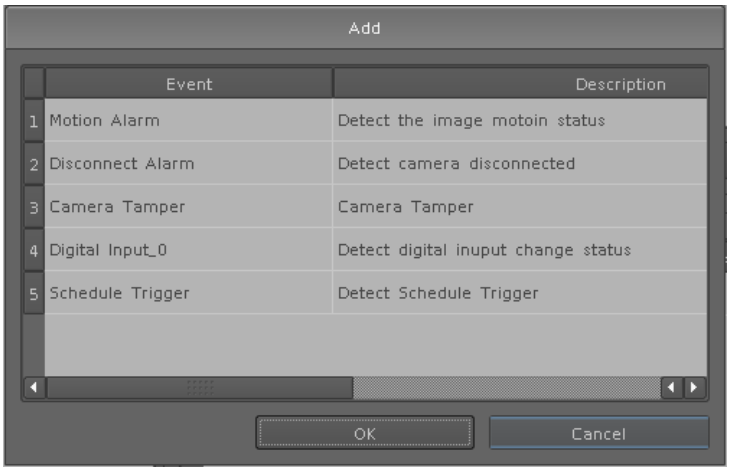
Chapter 7. Event Setting

You may define each event alarm on a different day and actions for each camera or NVR system. Please refer to the operating instructions below.



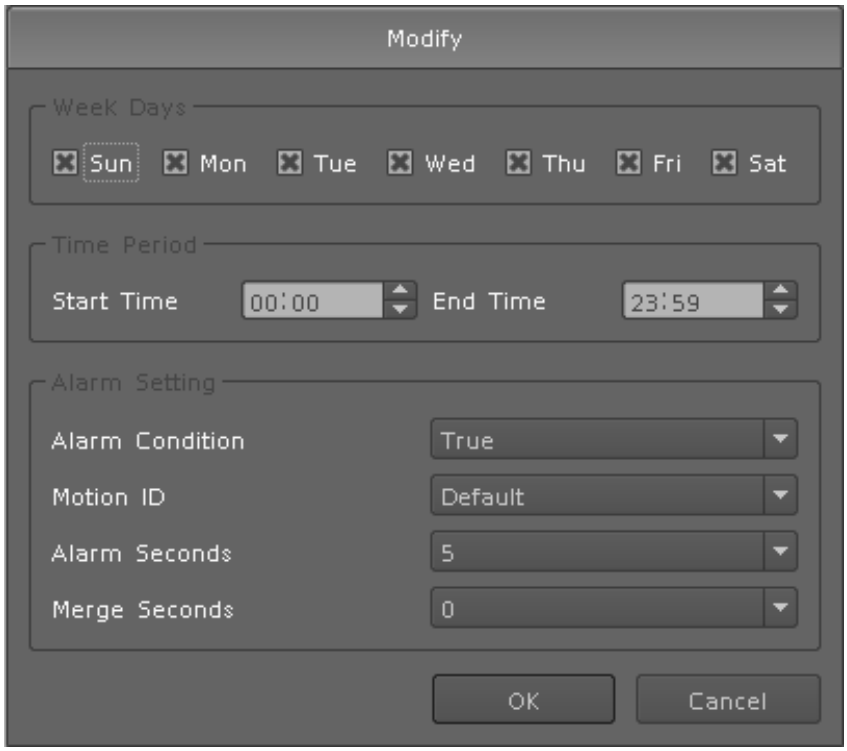
7.1 Adding a New Event

1. Select a camera or local from tree list
2. Click “Add” button in the device list below.
3. Select an event from table.



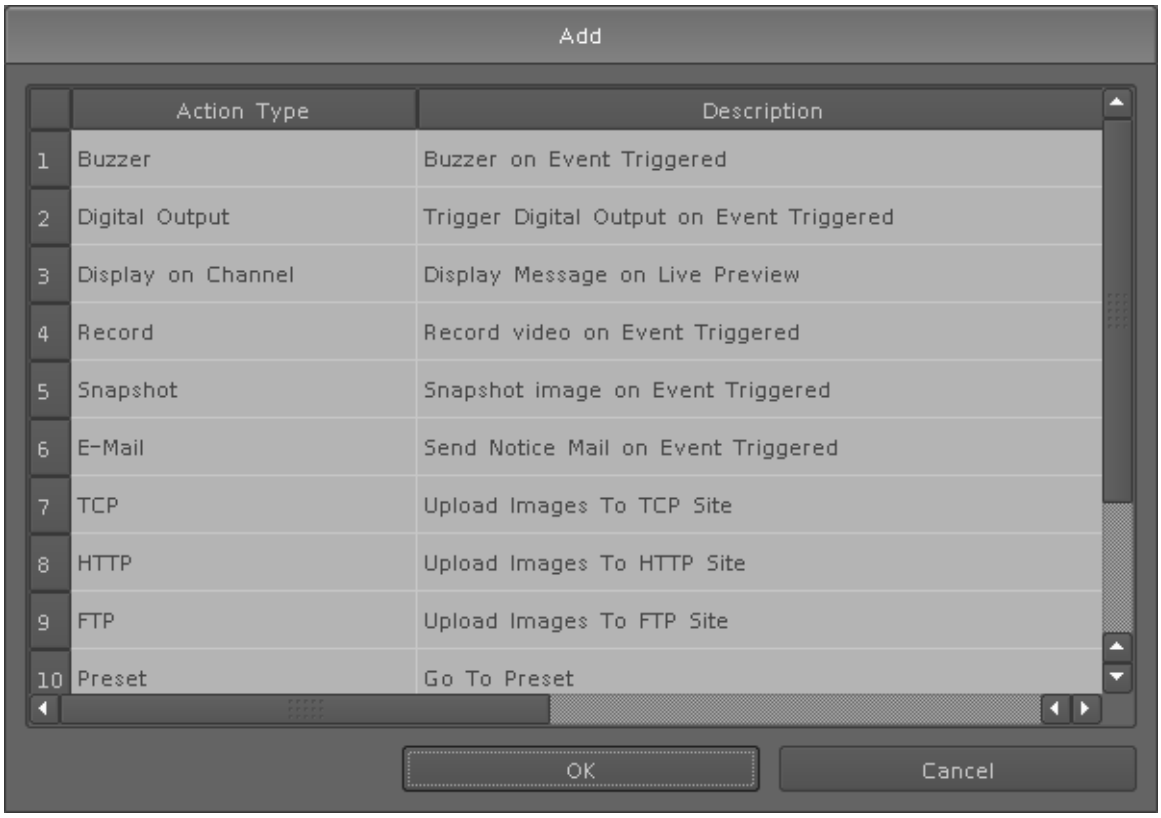
Motion Alarm	Camera's motion detection. Please set the camera motion first.
Disconnect Alarm	Lost camera connection.
Digital Input_0 ~ Digital Input_4	Detected input.
Schedule Trigger	Triggered by schedule setting.
Camera Tamper	Depend on camera's capability.
Audio Detection	Depend on camera's capability.
HDD Error Alarm	Failed recording or HDD error will send event alarm.
Face Detection	Alarmed by face detection and you must configure face detection function in the camera first.
Object Detection	Alarmed by object movement and you must configure object detection function in the camera first.
Cross Line	Alarmed by detected object which crosses the line and you must configure cross line function in the camera first.

4. Click "Add" button in the Event Schedule List below.
5. Selecting event will detect weekdays and the time of each day.
6. Set up alarm detail parameter.



Weekdays	Select weekdays for event notification.
Time Period	Select time period for event notification.
Alarm Setting	**Alarm Condition:** For Motion event, true means alarm triggered by motion; false means alarm triggered by no motion. For DI event, true means alarm triggered by DI in open status; false means alarm triggered by DI in close status. For Schedule trigger, true means alarm is triggered during scheduled period; false means alarm triggered when not in scheduled period. **Alarm seconds:** Define the alarm time period when the event is triggered. **Merge seconds:** Set for merging the same two alarms between setting seconds.

7. Click “Add” button in the Action list below.
8. Select an action when event is triggered and system will execute it.



7.2 Modifying Existing Event Schedule or Output Action

Modify Event Schedule:

1. Select an event from event list.
2. Select a schedule from event schedule list.
3. Click “Modify” button.
4. Modify setting values from schedule setting dialog.
5. Click “OK” button when the modification is done.

Modify Output Action:

1. Select an event from event list.
2. Select a schedule from event schedule list.
3. Select an action from “Action List”.
4. Click “Modify” button.
5. Modify setting values from each Action setting dialog.
6. Click “OK” button to close dialog.

7.3 Deleting Existing Event Schedule or Output Action

Delete Event:

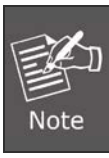
1. Select an Event from “Event List”.
2. Click “Delete” button in the “Event List” below.

Delete Event Schedule:

1. Select an event from “Event List”.
2. Select an event schedule from “Event Schedule List”.
3. Click “Delete” button in the “Event Schedule List” below.

Delete Action:

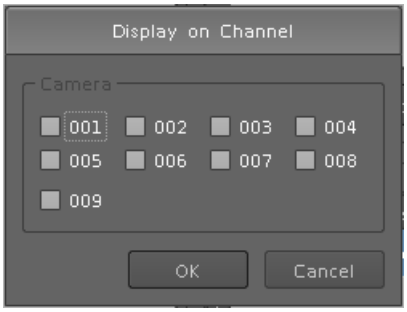
1. Select an event from “Event List”.
2. Select an event schedule from “Event Schedule List”.
3. Select an Action from “Action List”.
4. Click “Delete” button in the “Action List” below.

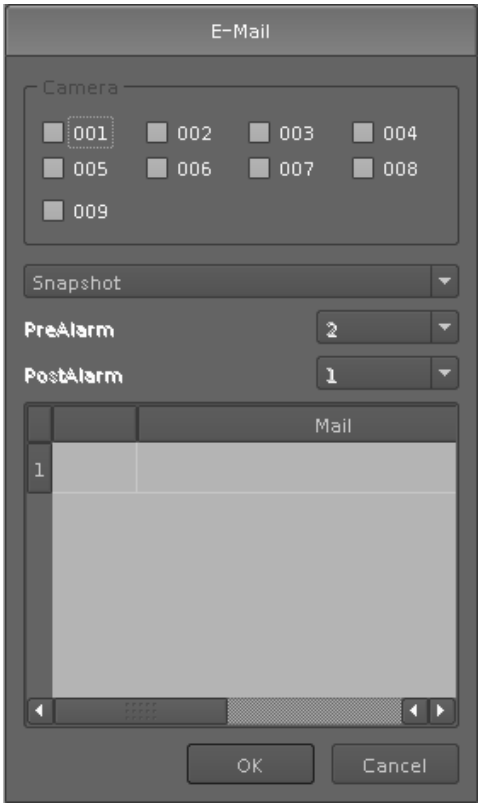


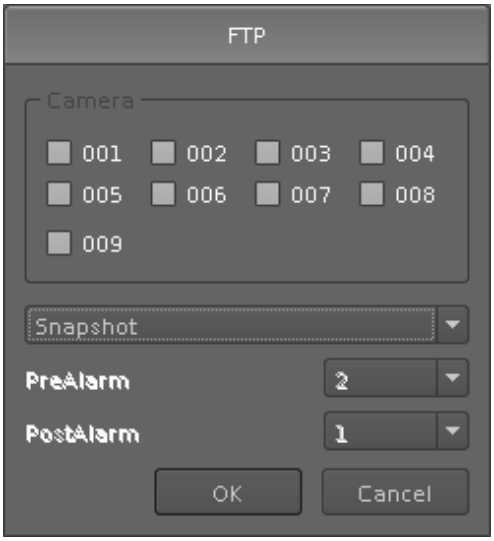
When Add/Modify/Delete is done, you must click “OK” button and then leave the Event Setting page, otherwise all setting values will be rolled back.

7.4 Event Action Type

Buzzer	Buzzer works after event is triggered.
Digital Output	Select a device to change DO status after event is triggered. Set output to “True”, DO will change to “Close” status when alarm is triggered. Set output to “False”; DO will change to “Open” status when alarm is triggered.

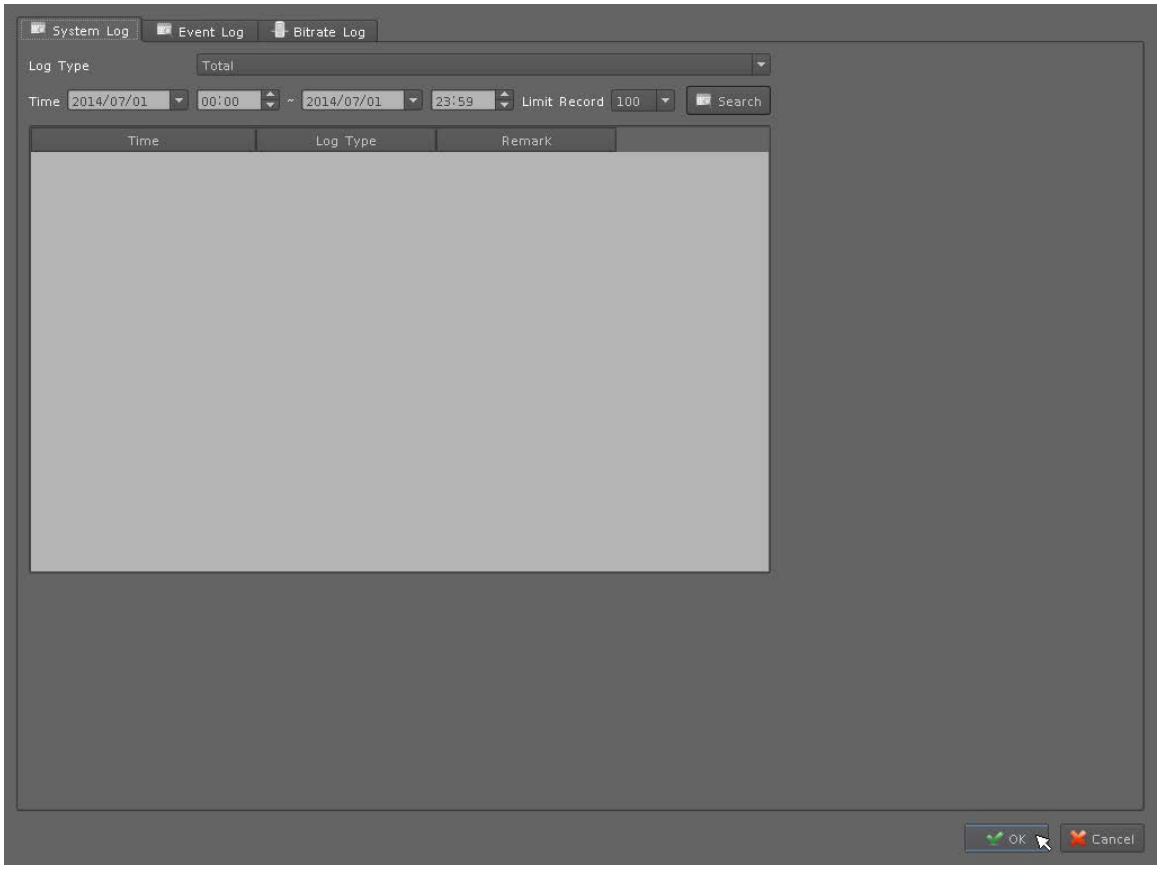
	
Display on Channel	When event is triggered, system will display OSD string on selected channels. 
Record	When event is triggered, system will force selected channels record. Note 1. System must switch to “Schedule Monitoring” when event is triggered. 2. The selected channels must set to “Recording schedule” when event is triggered.

Snapshot	System will snapshot images with selected channels, and save snapshots to event snapshot folder automatically. You could search them on “Event Snapshot” page under “System Management”.
E-mail	1. Select channels for snapshot or record a file when event is triggered. 2. Select Snapshot or Record a period video file. 3. Set up Pre-Alarm seconds and Post-Alarm seconds for record file. 4. Select users to send notification e-mail when event is triggered. 
TCP	Send notification of TCP sockets to TCP server when event is triggered.
HTTP	Send notification to HTTP server when event is triggered.
FTP	1. Select channels for snapshot or record a file when event is triggered. 2. Select Snapshot or record a video file in a specified time. 3. Set up Pre-Alarm seconds and Post-Alarm seconds for recording. The system will upload file to FTP server when event is triggered.

	
Navigation	Go to camera's preset position.
Popup	Switch live division to specific group division.

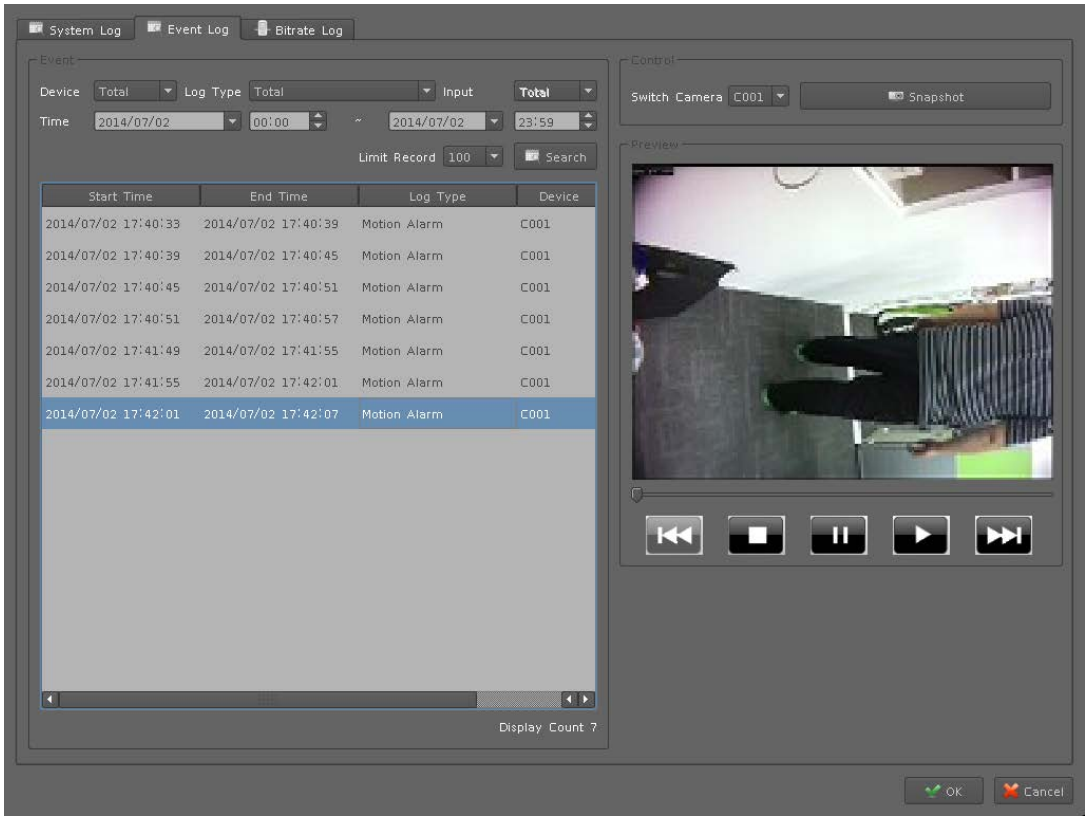
Chapter 8. Log Viewer

8.1 System Log



Log Type	Select a log type to filter data.
Time	Set up search logs in time period.
Limit Record	Set up maximum number records of search result.
Search	Click “Search” button to start search; the search result will display in the table below.

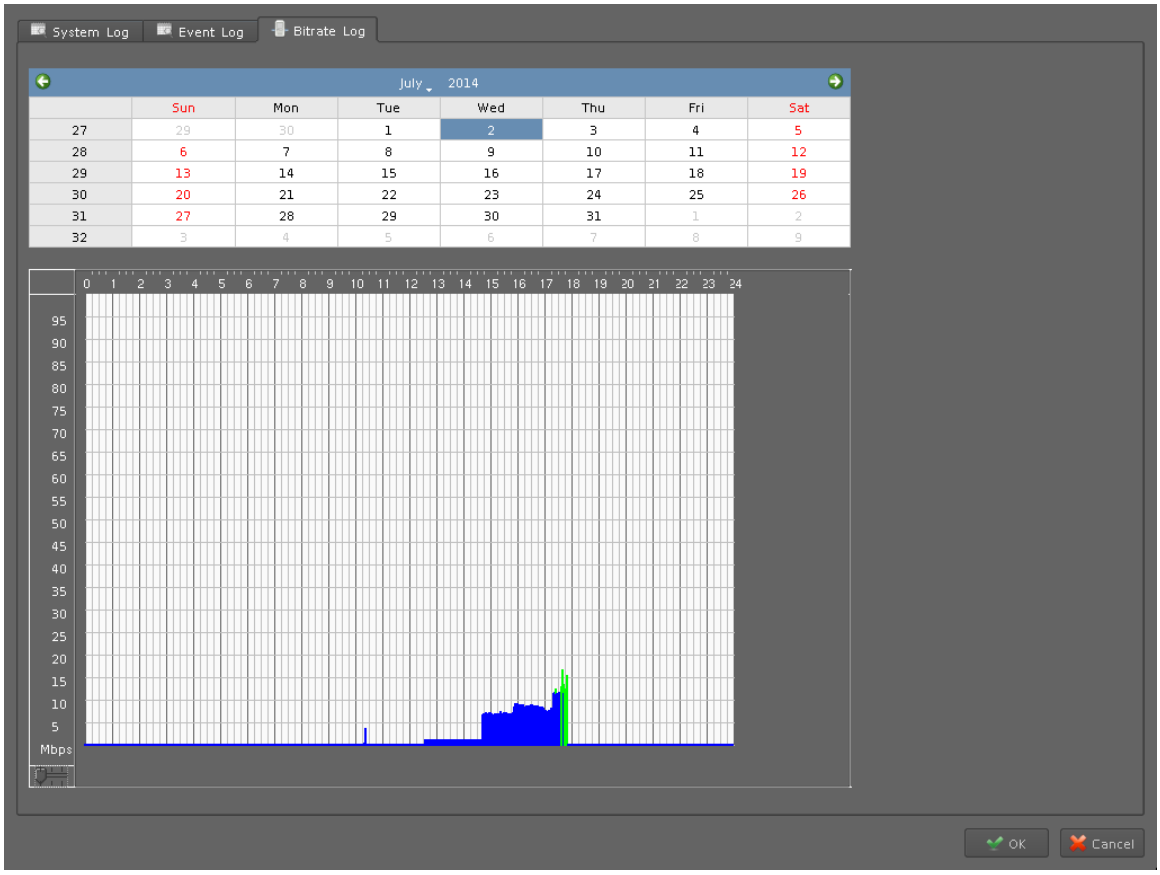
8.2 Event Log



Device	Select a Device for search filter.
Log Type	Select a log type to filter data.
Input	Set up DI input port search filter; only works on search DI event.
Time	Set up search logs in time periods.
Limit Record	Set up maximum number records of search result.
Search	Click “Search” button to start search; the search result will display in the table below.
Preview Event Images	Select an event log from log table. Event image will display in the window. You could click the play control buttons to preview event images.
Change Display Channel	Select another camera ID from combo box. System will display selected channel image in event time.
Snapshot	Insert USB dongle into the NVR first and click the Snapshot button to save it.

8.3 Bitrate Log

You may search bitrate for selected time period; it will show a different color of bitrate data as seen below.

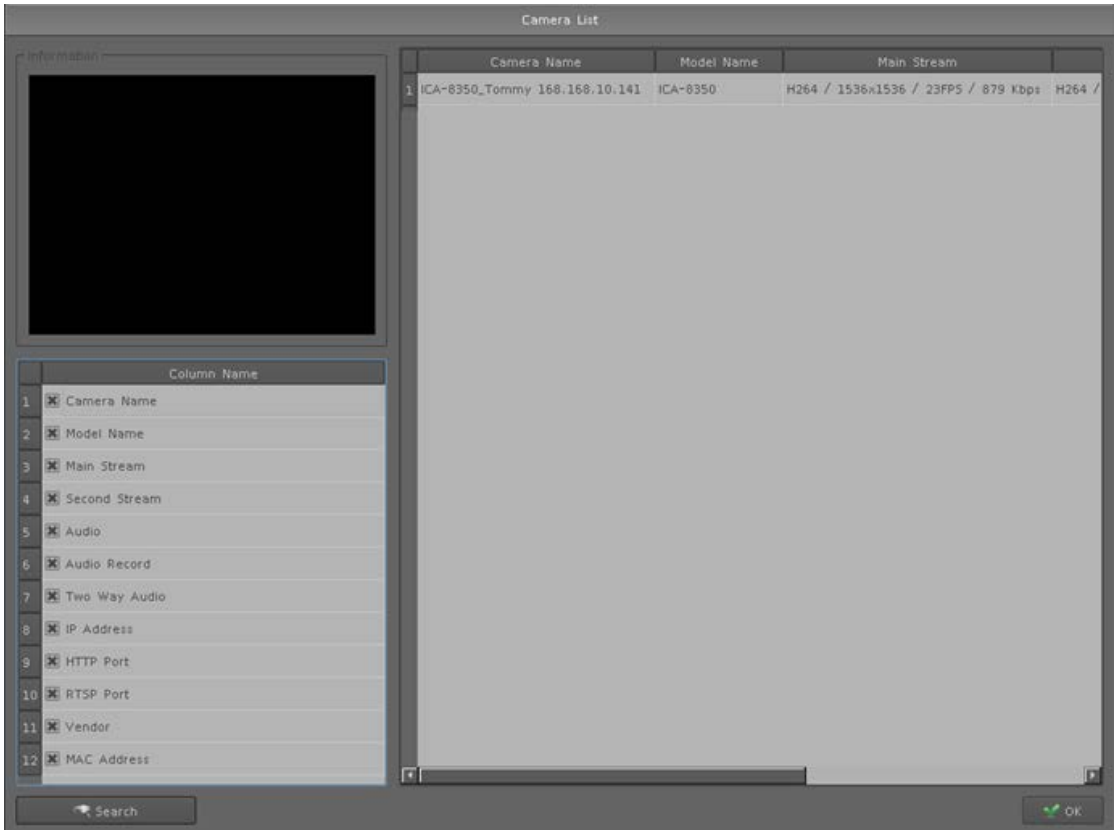


Select a date	Click on the calendar with blue background days.
Bit-rate table	System will display the bit-rate log in the table.
Blue	Bit-rate is very low.
Green	Bit-rate is fine.
Yellow	Bit-rate is a bit high.
Orange	Bit-rate is very high.
Red	Bit-rate is over limit.

Chapter 9. Camera List

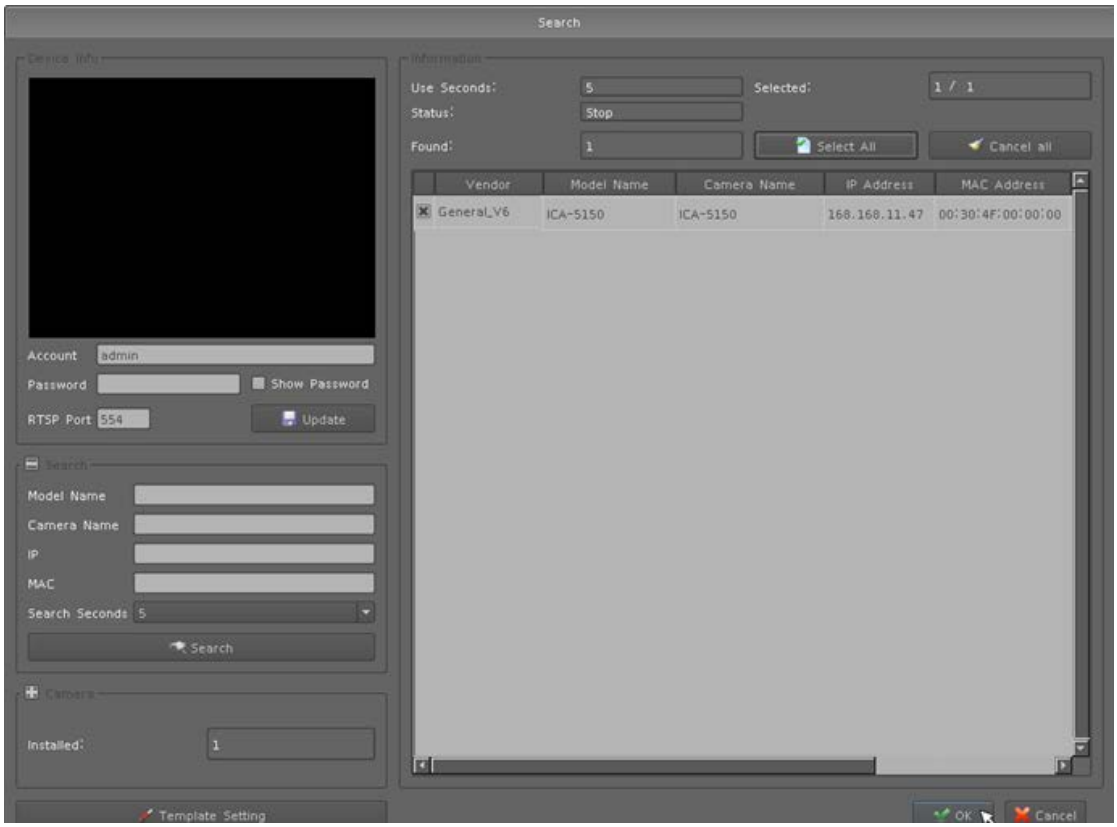
The Camera List page provides camera name, model name, main stream, second stream, audio, audio record, two-way audio, IP address, HTTP port, RTSP port, vendor and MAC address information; you can check/uncheck several columns on left side to show what you want to see.

When you select a camera on right side, information area will show the live image.

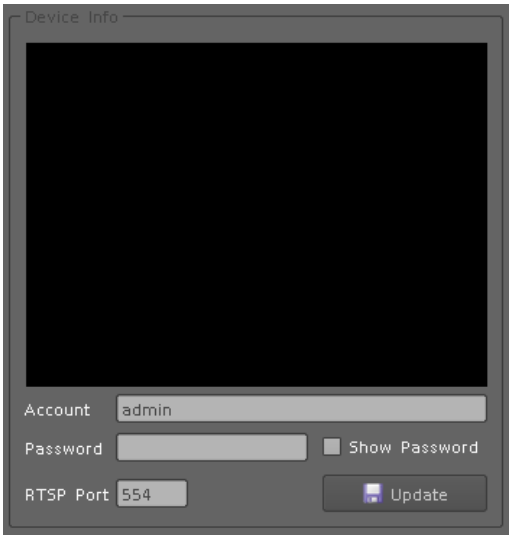
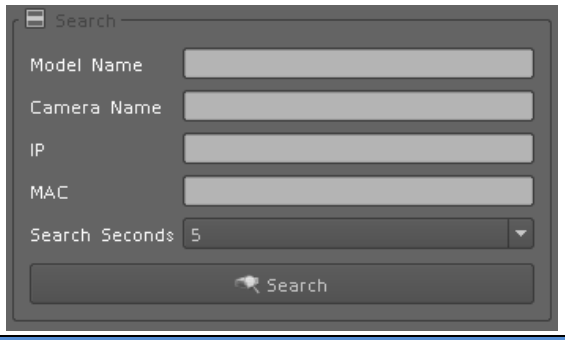


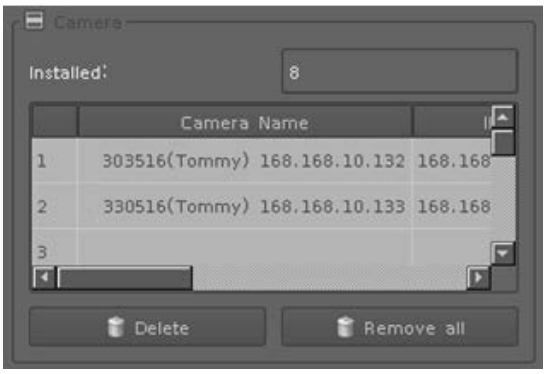
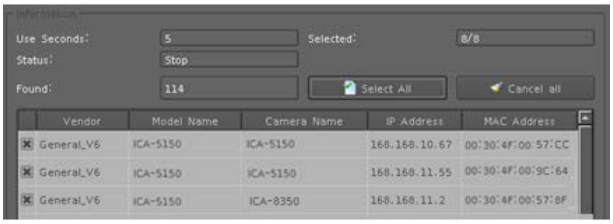
9.1 Search

You can search other camera via “Search” button and leave this page by clicking “OK” button.



Device Info	
Account	Set up the default login user account of camera.
Password	Set up the default login password of camera.
Show Password	Show the password without encryption.
RTSP Port	Set up RTSP port of camera; the default RTSP port is 554.
Update	Update account, password or RTSP port if it has been changed.

	
Search	
Mode Name	Key in search filter with model name.
Camera Name	Key in search filter with camera name.
IP	Key in search filter with IP address.
MAC	Key in search filter with MAC address.
Search Seconds	Select seconds between 5 and 60 to search.
Search	Begin to search 
Camera	
Installed	Show the number of installed cameras.
Delete	Delete the camera that selected.
Remove All	Delete all installed cameras.

	
Information	
Use Seconds	Display the period time of search.
Status	Display the action status of search.
Found	Show the camera's count which is found.
Selected	Select cameras to install.
Select All	Select maximum camera that the machine can install.
Cancel All	Unselect all cameras. 

Chapter 10. Setup Wizard

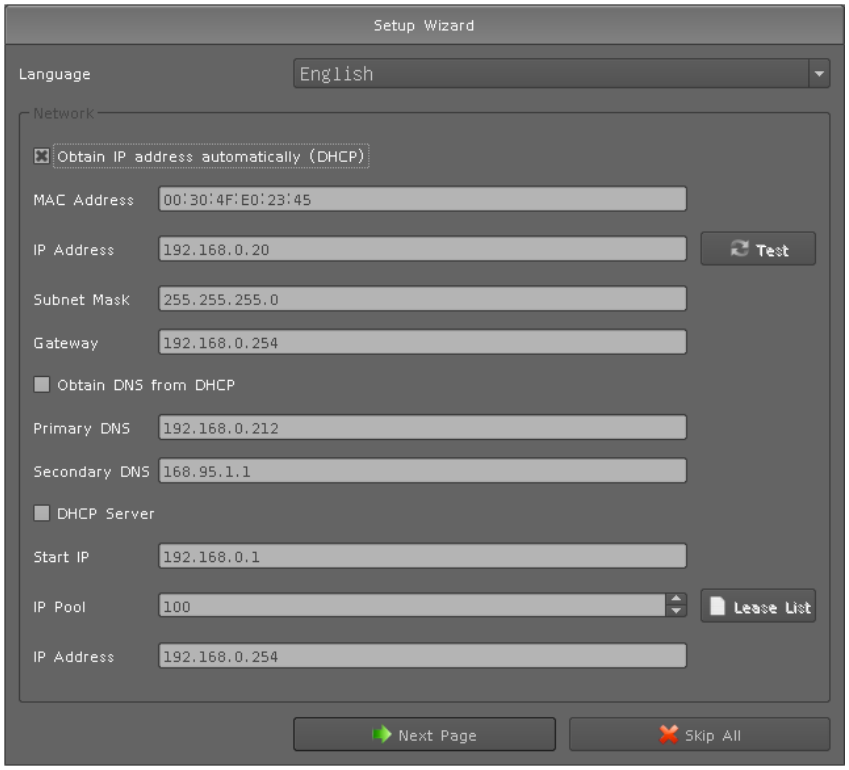
10.1 System Configuration

1. Install hard disks and make sure SATA cable and power cable are connected properly between main board and hard disks.

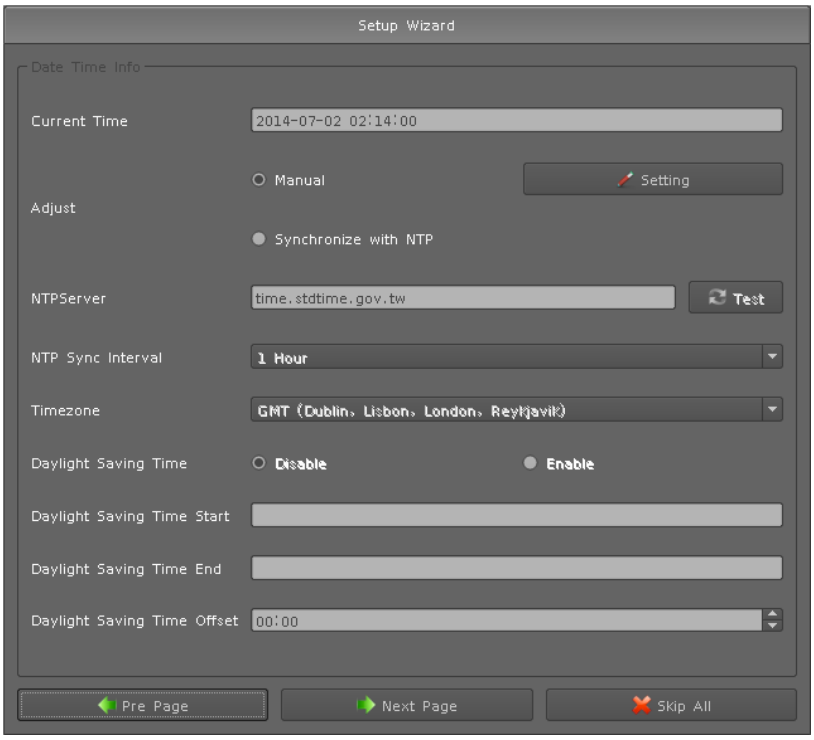
2. 

Turn on the NVR's power switch and wait until the boot process of system is finished.

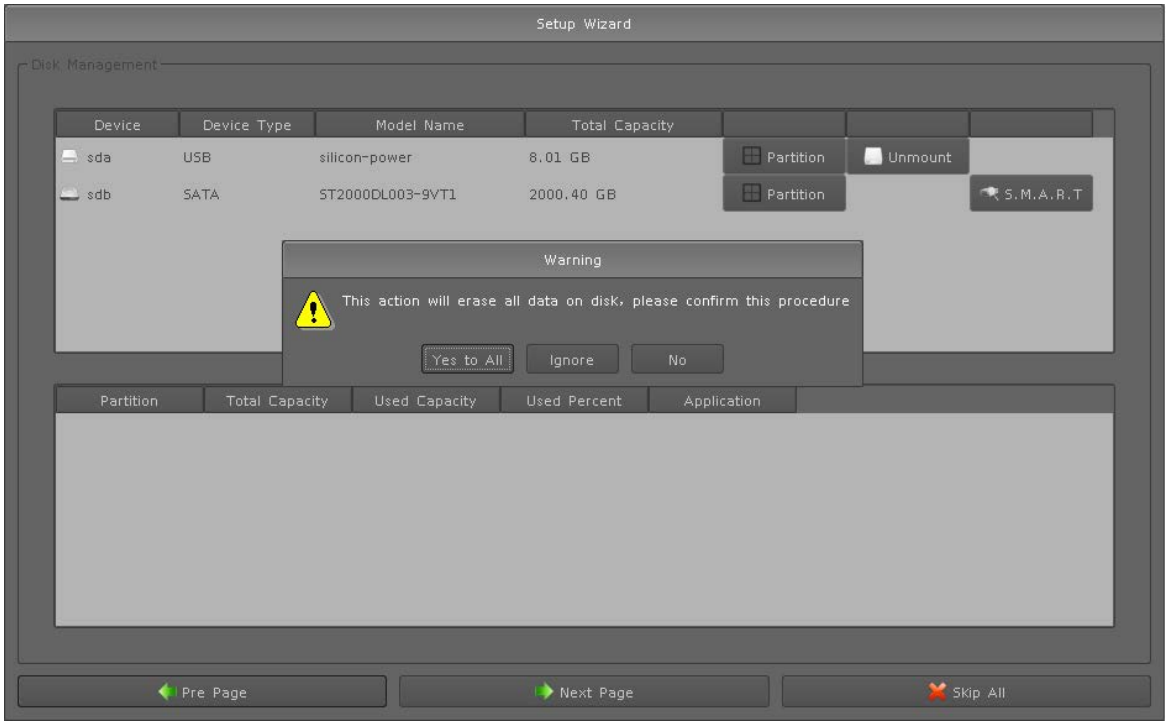
3. The setup wizard will start automatically when the NVR is powered on for the first time. Please configure language, network and then click "Next Page".



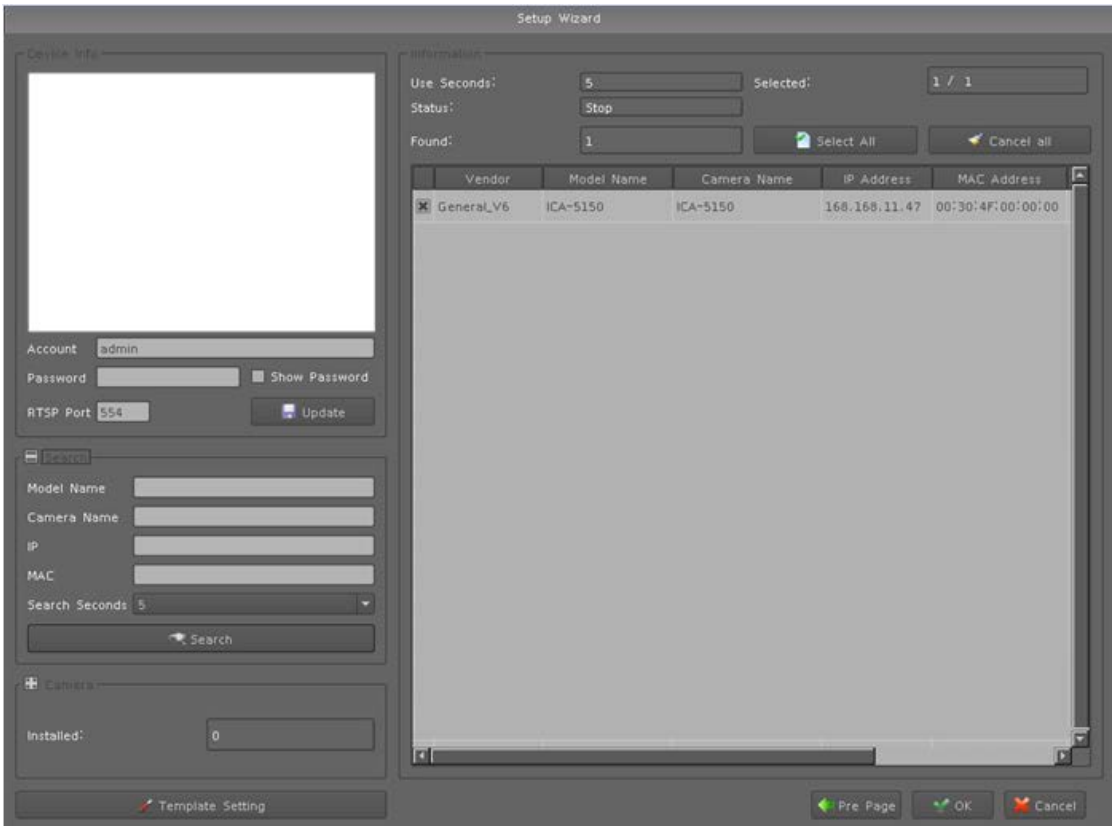
4. Configure current time by manual or synchronization with NVR server. Select time zone and daylight saving time and then click “Next Page”.



5. Select installed hard disks and format it.



6. Search, add or remove cameras from camera list.



7. After setup wizard is finished, the NVR will ask the first login. The default login user name and password are both “admin”.

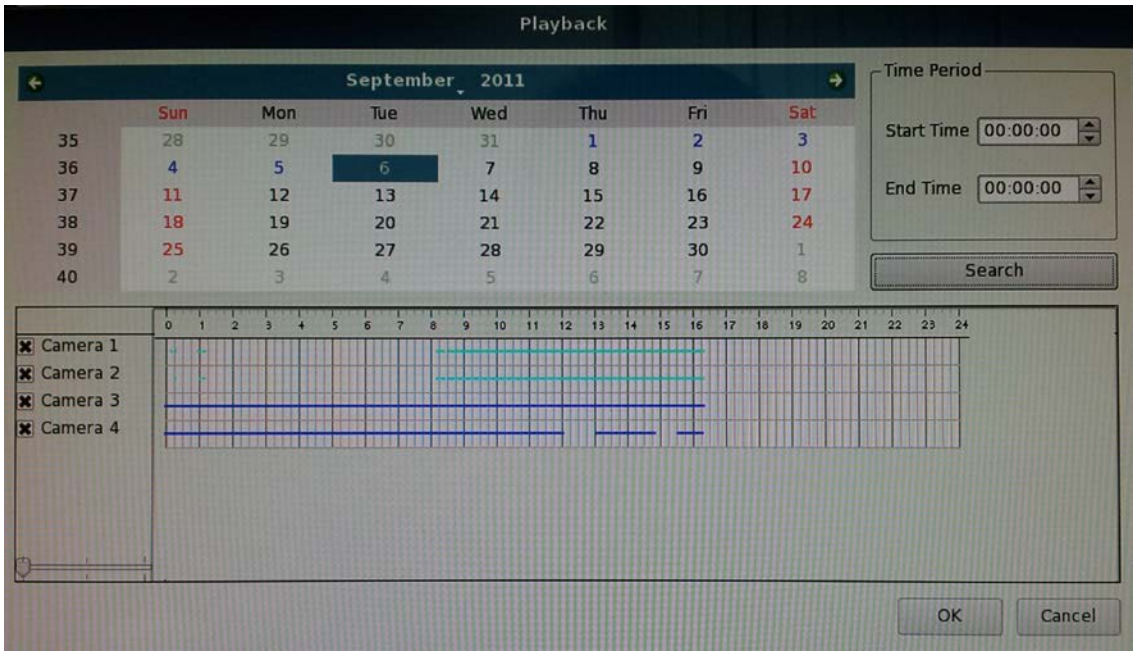
Chapter 11. Playback

You may search and play back the recorded video files with selectable time period and is also able to convert the video into AVI or back up the video files.

11.1 Search Recorded Video Files

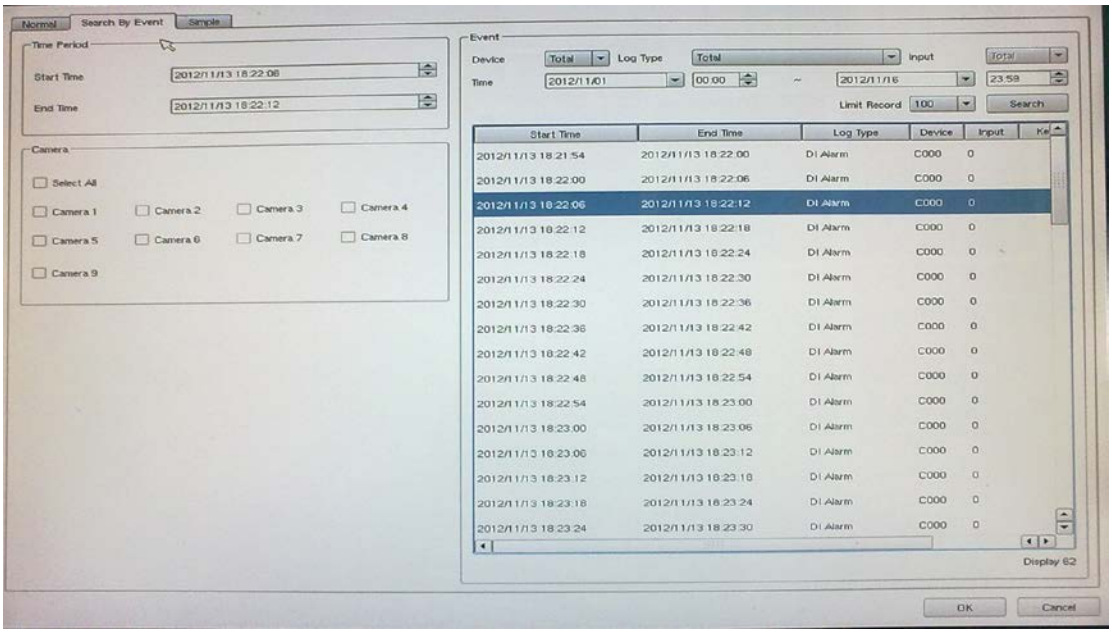
Click  button to approach search dialog.

Normal Search:



1. **Select playback date:** If there is record history data, system will set calendar's day to blue to identify which days has recorded files.
2. **Begin search:** Click "Search" button to start search record file in selected date and system will draw search result in the grid.
3. **Select playback camera and time period:** Select cameras from list, and drag on search result or edit start / end time from date-time picker control to define playback period.
4. **Begin playback:** Confirm playback camera and period and then click "OK" button to begin playback.

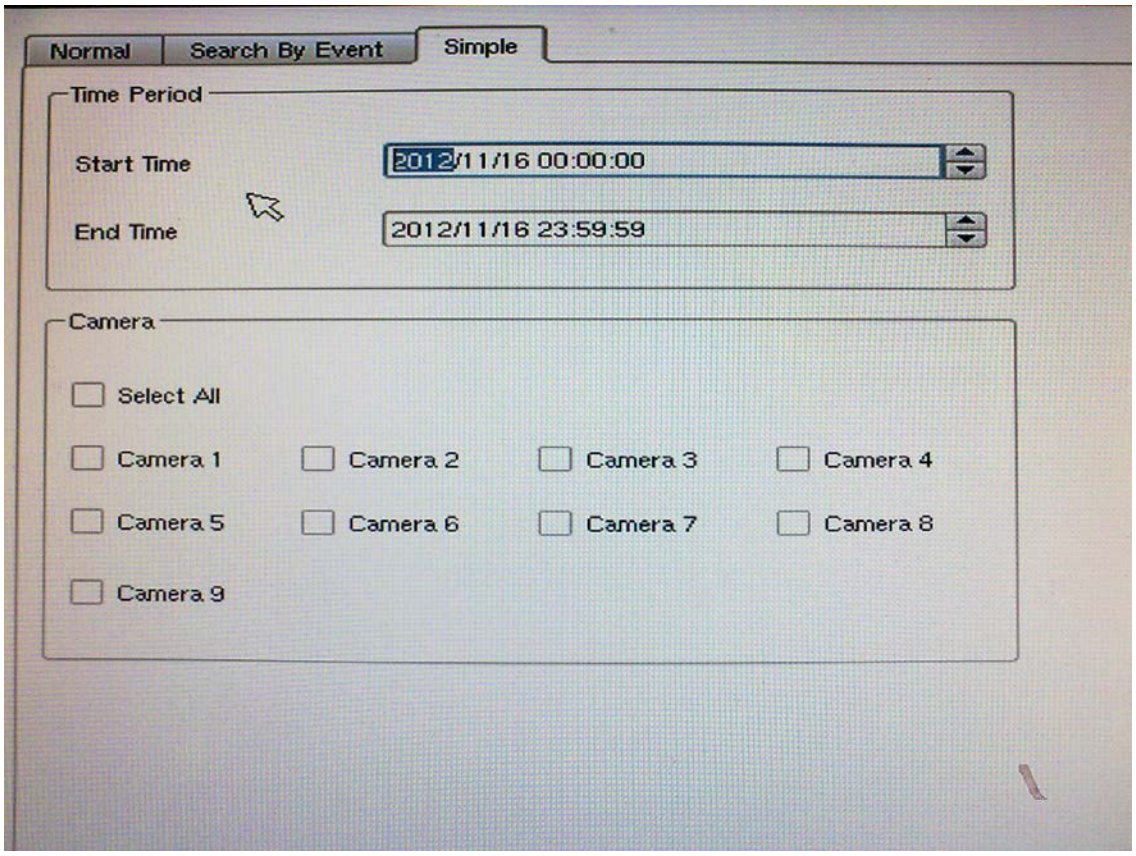
Search by Event:



Input search filter first by clicking the “Search” button; the search result will display on the list as shown above. Select a log that you need to play back. System will fill the event period automatically, and select which cameras you need to play back together.

Click the “OK” button when the search is done.

Simple Search:



Select playback period from date controls directly and select which cameras will play back. Click the “OK” button when the search is done.

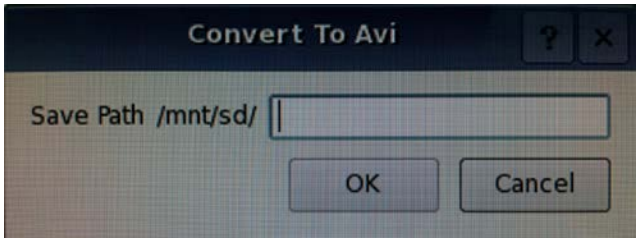
11.2 Playback Control Buttons

Parameter	Description
	Play video forward
	Pause playing video
	Stop playing video
	Play video backward
	Seek to previous frame when in pause mode

	Seek to next frame when in pause mode
	Close playback and return to live view
	Change of playback speed
	Adjust playback audio volume
	Select play audio way as shown below 1. Mute: Mute sound output 2. Live Audio: Play live focus channel sound 3. Playback Audio: Play playback sound
	Switch display mode to full screen and right-click mouse to return to normal mode
	Take a snapshot to hard disk

11.3 Converting into AVI File

1. Click  button to open search dialog.
2. Select convert camera(s) and time period for converting
3. Select converted files destination folder and then click “OK”.



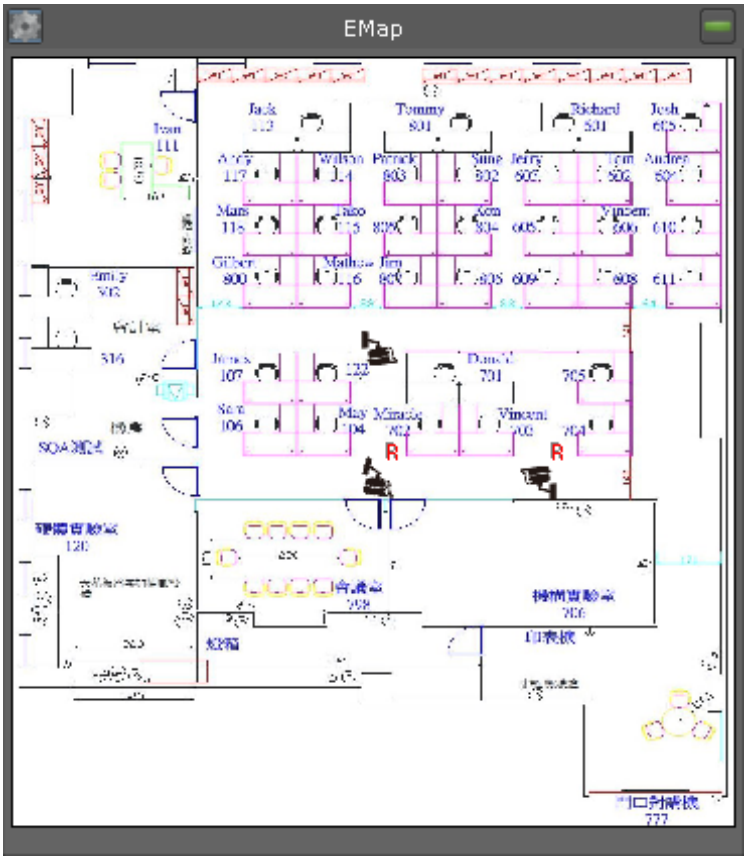
11.4 Backup Video File

1. Click  button to approach backup dialog.
2. Select backup camera(s) and time period for backup.
3. Select backup files destination folder and then click “OK”.

Chapter 12. E-map

Switch to “**Professional**” or “**Advance**” style and add E-map to primary or secondary toolbox. Add image and camera to E-map; E-map could display camera’s position and record status. Double-click on camera icon and live preview division will switch to selected camera.

E-map Setting: Click “Setup” button on left-up corner to launch E-map setting dialog.



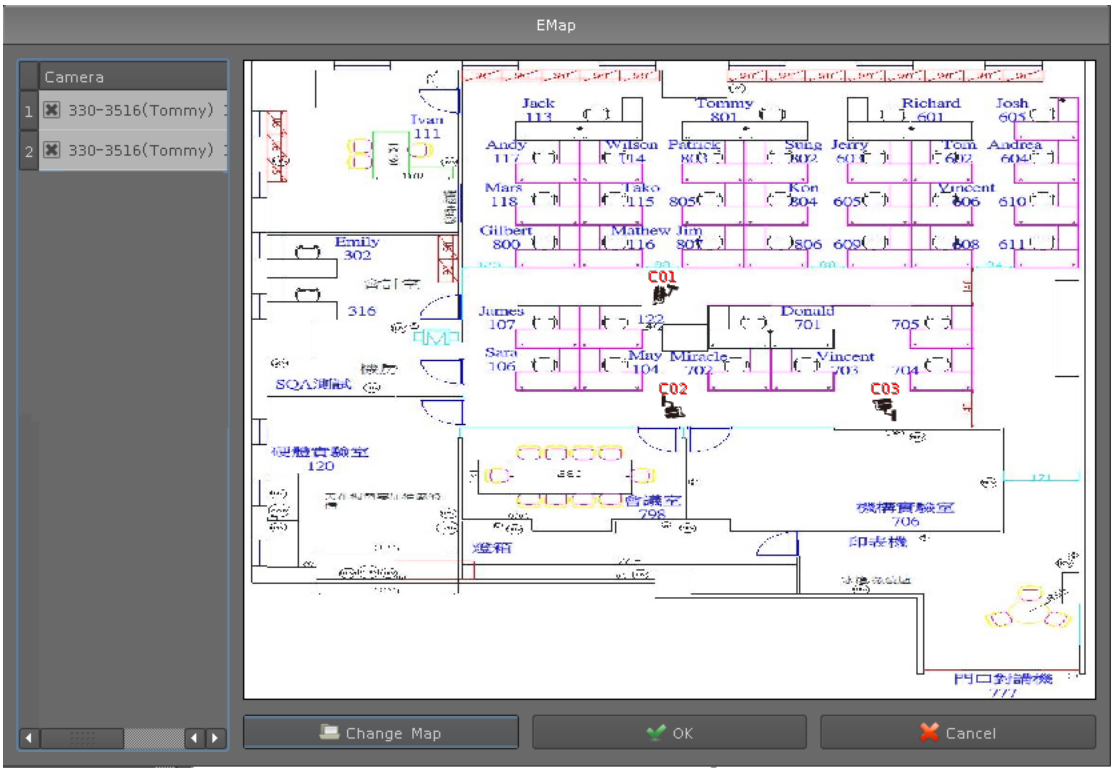
Change Map: Click “Change Map” and select a map image from removable device.

Add Camera: Enable camera’s check box and camera will display on left-top corner. Drag camera to the current position on map.

Remove Camera: Disable camera’s check box.

Rotate Camera: Right-click mouse button on camera icon.

Switch Live Preview: Double-click on camera icon.


EMap
Camera
1 330-3516(Tommy)
2 330-3516(Tommy)
Change Map
OK
Cancel

Chapter 13. Web Remote Management

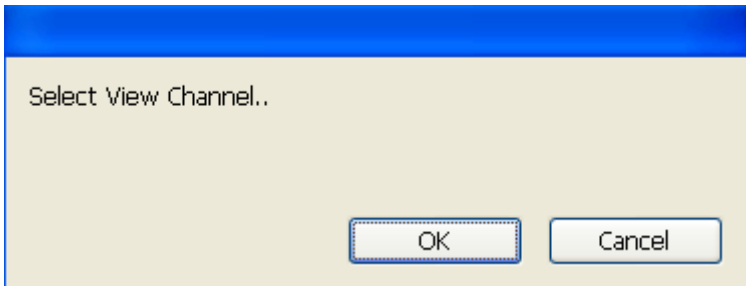
The NVR is able to be viewed from Internet Explorer when the network is available. You can have live view or playback, and most of the functions are the same as the NVR system.

13.1 Connection to NVR

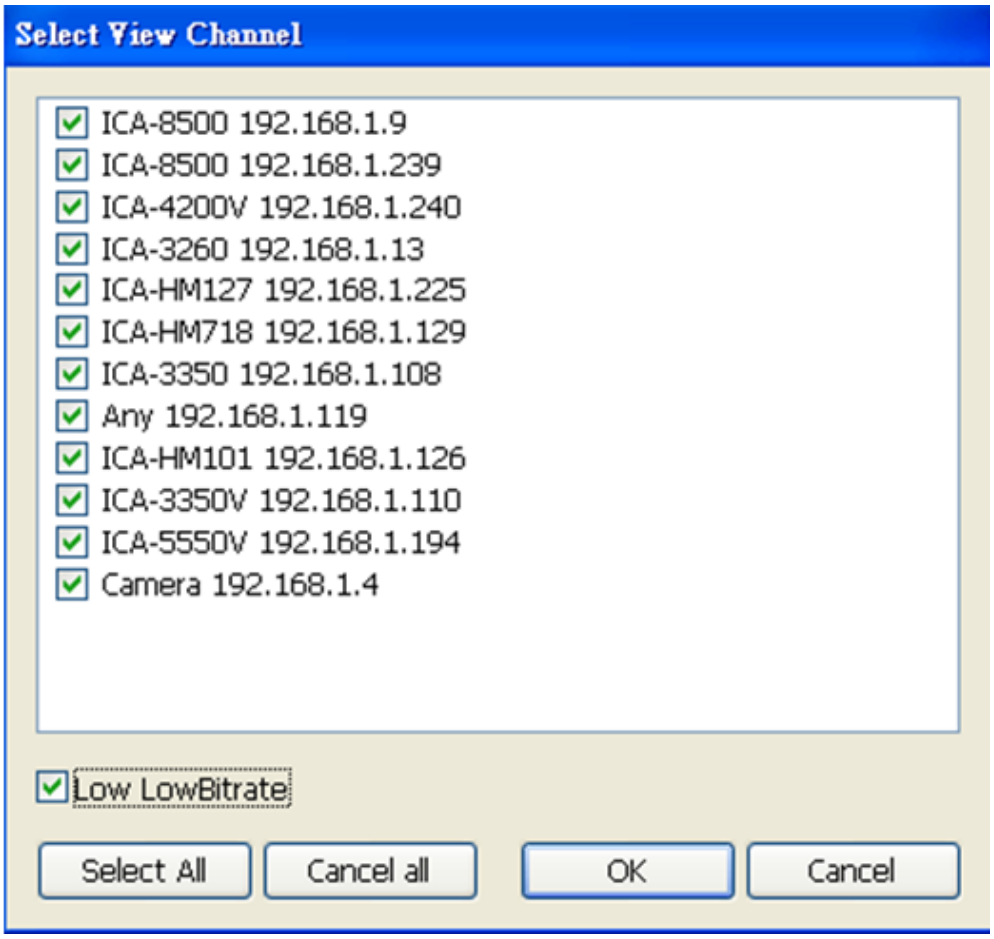
For the first-time connection, you need to install the ActiveX control if it appears on your web page as shown below.

After installing the ActiveX component, login the system on pop-up window.

Please login your username and password and then you will see the “Select View Channel” window as shown below.



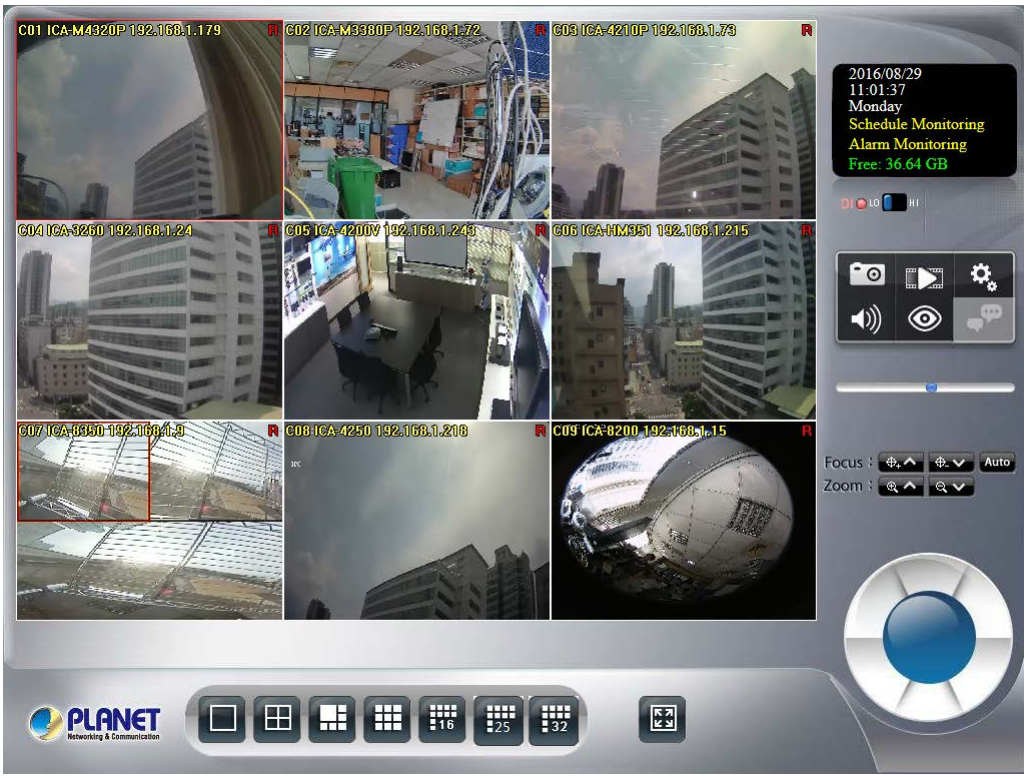
You may select channel(s) you would like to view on your computer. Please also check the “Low Bitrate” to reduce the bandwidth consumption on IE.



Click on “OK” to see the live view.

13.2 Live View on Internet Explorer

The picture below is the live view on IE, which is exactly the same as NVR system.



13.3 System Information

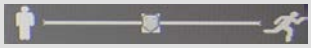
13.4 Screen Division

	Switch to 1 division

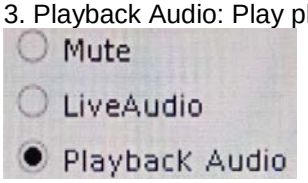
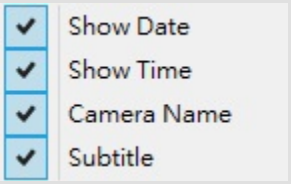
	Switch to 4 division
	Switch to 9 division
	Switch to 16 division
	Switch to Full screen and right-click mouse to cancel Full Screen.
	Logout / firmware version display

13.5 Sub-screen Functions

 Popup Menu	Right-click mouse to select an option from the popup menu.
Show Live Camera	You may select any connected camera to display on selected channel
Remove Camera Display	You may remove the camera from selected channel
Digital Zoom	You must enable this function to zoom the selected camera on the Web
Snapshot	Take a snapshot of selected channel
Full Screen	Make full screen of selected channel
Restore Division Default	Restore to default division when you finish full screen view
	Click it for **System setting / System Management / Event Setting/ Log Viewer**
 Playback	Click it to go to “Playback” page

 Snapshot	Click it to take a snapshot to the HDD; you can manage snapshots on the “snapshot” page of system management
 Audio Volume Control	Click it to switch between normal and mute
 Schedule Monitoring	Click it to enable or disable schedule monitoring; the recording will be stopped if it is disabled
 Two-way Audio	Click it to start or stop two-way audio of selected channel
 PTZ Control	Move PTZ camera direction by clicking direction buttons
 PTZ Control Home	Click it to make camera return to home position
	Move the thumb to control speed
 Tour	Select a tour setting from combo box and click “go” button to start tour; click “Stop” button to stop tour
 Preset	Select a preset position from combo box and camera will move to preset position after clicking
 IRIS	Adjust camera’s IRIS setting, or set it to auto
 Focus	Adjust camera’s focus setting, or set it to auto
 Zoom	Zoom-in or zoom-out focus
 PAN	Start camera auto pan or stop

13.6 Playback on Internet Explorer

	Click it to go to “Playback” page
	Play video forward
	Pause playing video
	Stop playing video
	Play video backward
	Seek to previous frame when in pause mode
	Seek to next frame when in pause mode
	Close playback and return to live view
	Change of playback speed
	Adjust playback audio volume
	Convert into AVI; please see chapter 9.3 for information
	Select play audio way as shown below 1. Mute: Mute sound output 2. Live Audio: Play live focus channel sound 3. Playback Audio: Play playback sound. 
	To select which information you would like to show as seen below 
	Search recorded video files; please see chapter 9.1 for information
	Take a snapshot to hard disk
	Back up video files; please see chapter 9.4 for information