INSTALLATION & OPERATION MANUAL

Network Video Recorder

NVR-6030

APPRO®

Before trying to connect or operate this product, please read this manual completely

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1. Product Features

1.1 Product Introduction

APPRO provides a 4-channel network video recorder for advanced network video monitoring. The NVR-6030 not only brings you dependable video monitoring but also is a lightweight, user-friendly, cost-effective, and easy-to-install device. The NVR-6030 is compatible with any video systems for home and office security.

The NVR-6030 has one built-in e-SATA port for storage space and supports network video backup function so that it can offer reliable video recording without data loss. The device also provides a USB port so you can quickly and smoothly back up image and sound data to the USB device. In the rear panel there's a mouse USB connector to help install the mouse so you can easily select and control the Graphic User Interface (GUI). This enables a rapid setup of the NVR. Supports the whole network protocol enabling remote viewing and remote capability.

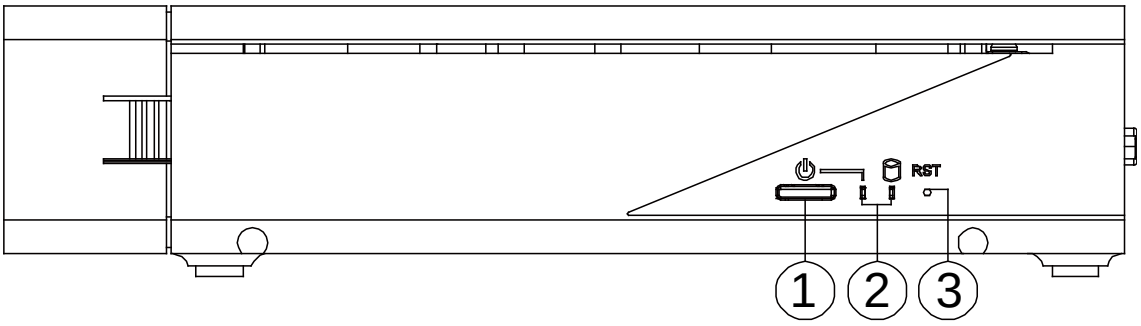
The winner of numerous certifications attesting to its excellence, this 4-channel NVR offers the most complete array of state-of-the-art specifications and functions in its field in the entire market, and at an extremely low price as well. With easy installation, flexible operations and a solidly dependable performance, it's your finest possible choice in the entire available arsenal of contemporary security surveillance.

1.2 Product Features

- Fast & easy camera setup and management. Simultaneous live view, recording and playback.
  -Supports up to 4 network cameras.
- M-JPEG & H.264 video compression.
- Audio & video recording in synchronization.
- Recording mode: continuous record or record by schedule /manual.
- Week days or daily scheduled recording.
- Continuously recording with automatic overwriting function.
- Recordings resume after the recovery of power.
- Supports PPPoE, DHCP and Static IP assignment.
- Calendar search and video preview before playback.
- Exports video clips from playback as evidence.
- Ideal for home security.

2. The Overview

2.1 The Flank Panel- Right Side



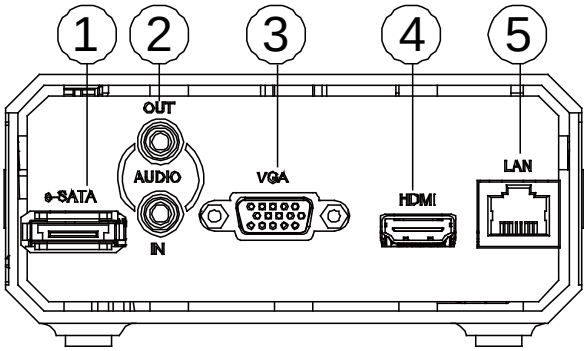
1. **Power button.**
2. **Power & Network LED Indicators:**

LED Indicative	Color	Status	Description
Power LED	Red	Solid Light	Booting/ Restart
		Light off	While connected to LAN port
Network LED	Green	Solid Light	While connected to LAN port
		Blinking	While LAN transferring data
		Light off	Not connected to LAN

3. **Reset button.**

   Use the end of a paper clip or some other similar object to press and hold the Reset button for at least 10 seconds to restore the factory default settings. If you reset the device, the device will return to factory defaults, you will lose all your settings.

2.2 The Rear Panel



1. **e-SATA:**

   The NVR supports an eSATA interface for connecting external storage devices for recording.

2. **AUDIO IN/ AUDIO OUT:**

   The audio in connector is used to connect the audio output from a camera or other devices to the NVR. The audio out connector provides the unit's audio signal to a speaker or stereo.

3. **VGA interface:**

   Connect to a VGA monitor.

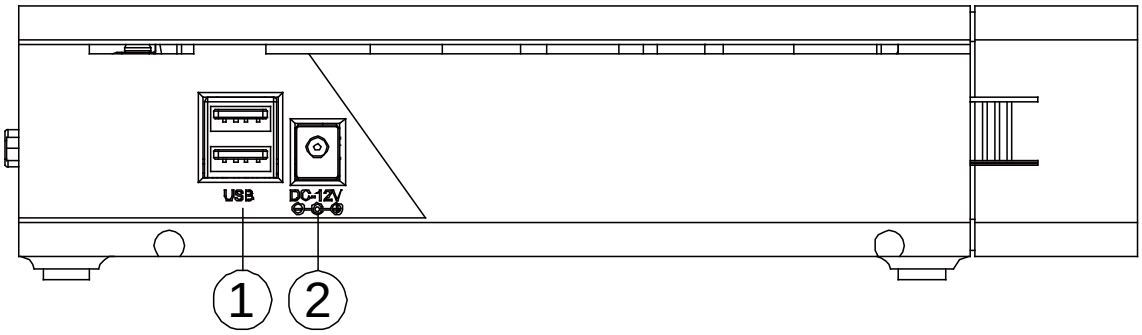
4. **HDMI interface:**

The NVR provides an HDMI interface which can be connected to an HDMI monitor.

5. **LAN (ETHERNET 10/100 Connector):**

This is a standard RJ-45 connector for 10/100 Mbps Ethernet networks.

2.3 The Flank Panel- Left Side



1. **USB 2.0 Host x2:**

Supports mouse, flash disk, or HDD with external power.

2. **DC Input:**

DC12V/ 3.0A (AC Adapter).

Note

Q: Can I use an external USB drive for recording?

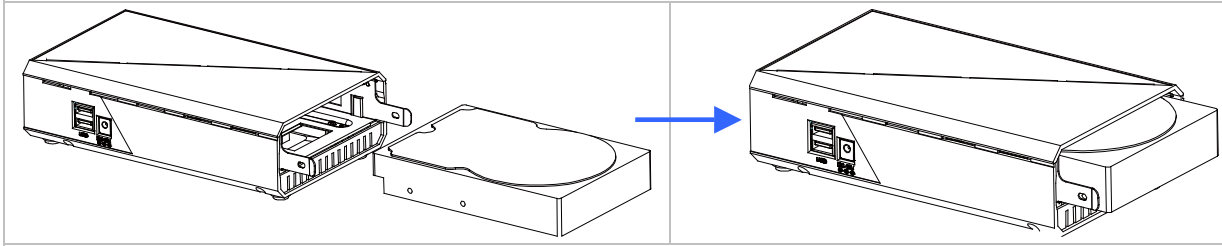
A: An external USB drive can't be used for recording, but for back up, transferring important videos out from the internal hard drive.

2.4 Hard Disk Installation

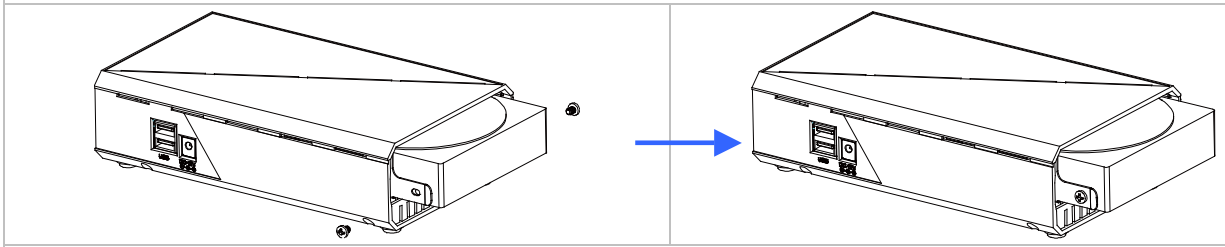
Before installing a hard disk drive (HDD), please make sure the power is disconnected from the NVR. A factory recommended HDD should be used for this installation.

Tools Required: Screwdriver.

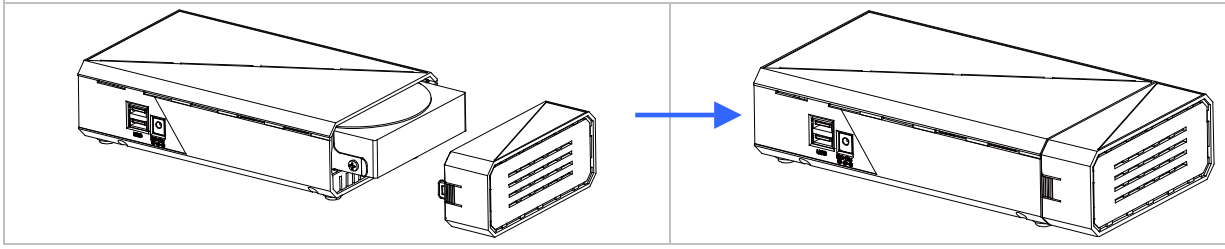
1. Remove the cover from the NVR. Then insert the hard disk along the slot until it is placed into the proper position.



2. Place the HDD on the mounting plate and fix it with 2 screws.



3. After having finished the installation, please replace the front cover.



3. Installation

Please follow the instructions below to set up the system.

3.1 Connections

1. Connect the main monitor to the Main Monitor via VGA port or HDMI connector.
2. Connect one or more cameras to the LAN.
3. Connect a mouse to the USB port at the rear panel.

3.2 Basic Operations

3.2.1 Power on

Connect the power supply then press the power button on the right side of the NVR.

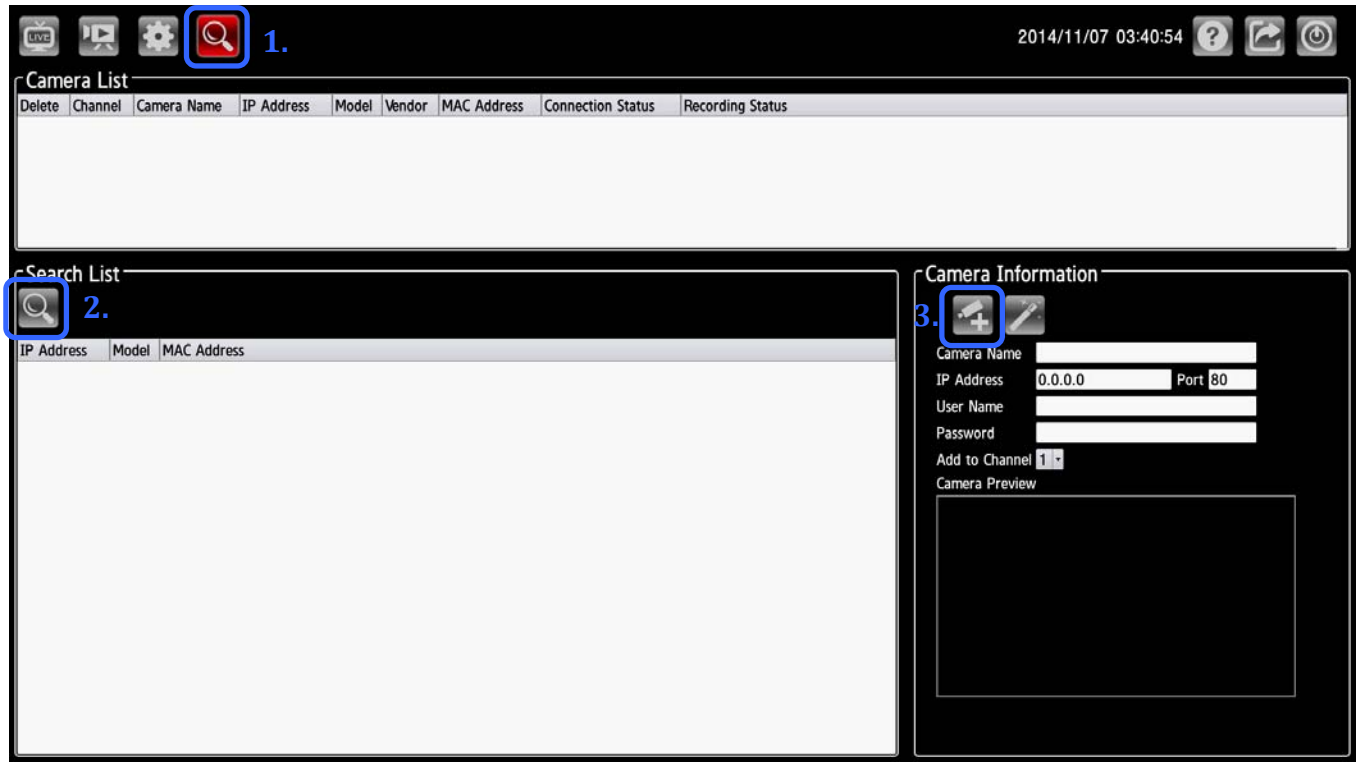
3.2.2 Login the System

After the program is started, a pop-up window will appear to verify user account. Enter the default username and password. In the Log on dialog, select 'admin' and input the default password '9999'.

3.2.3 Add a camera/ channel to the system

To add a channel to the NVR:

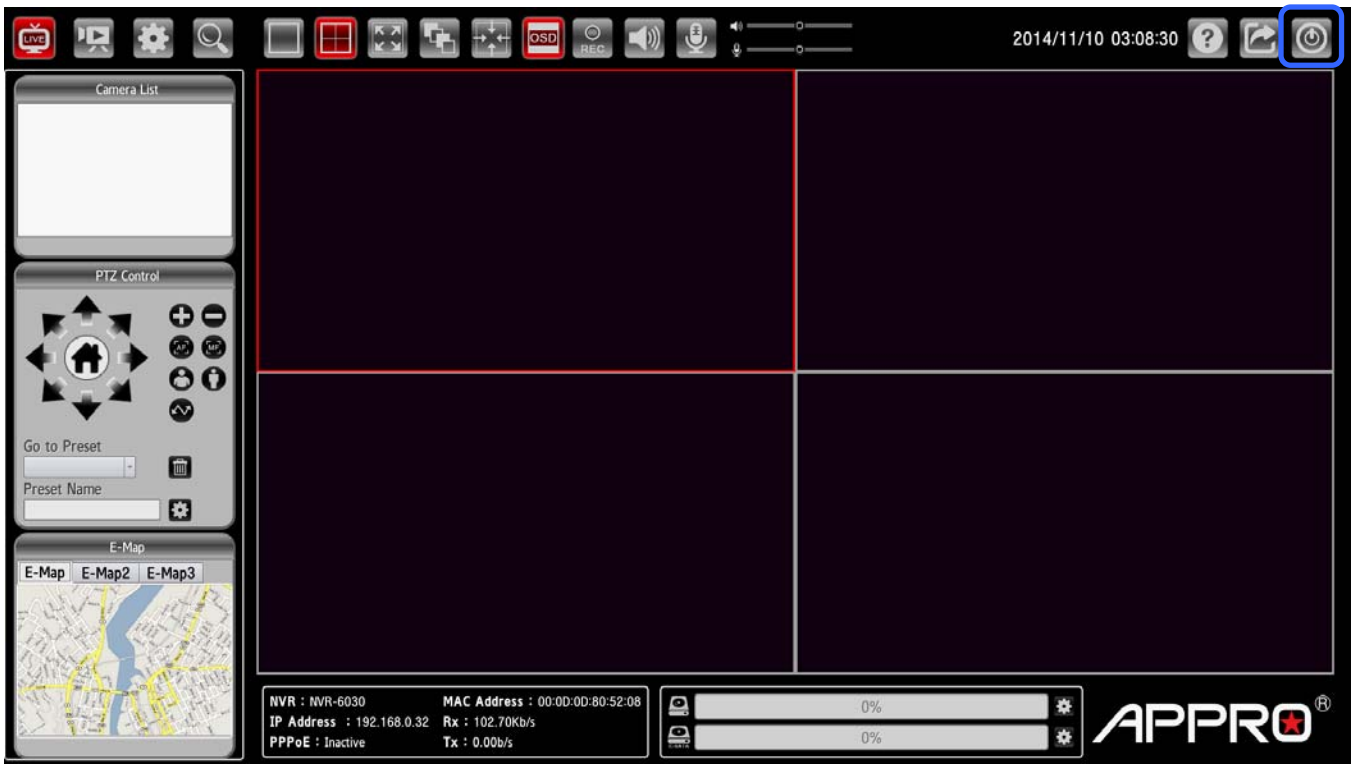
1. Click the (Search) button to enter into the Camera Search mode.
2. In the **Camera Search** mode, please click the (Search) button to discover the connection of the all-type device in the LAN. The **Search List** will display the connection of the all-type devices.
3. Fill in the camera information then click the (Add/ Update) button.



4. Repeat steps above to add other cameras to your list.

3.2.4 Power Off

Click the (Shut down) button and the system will power off.



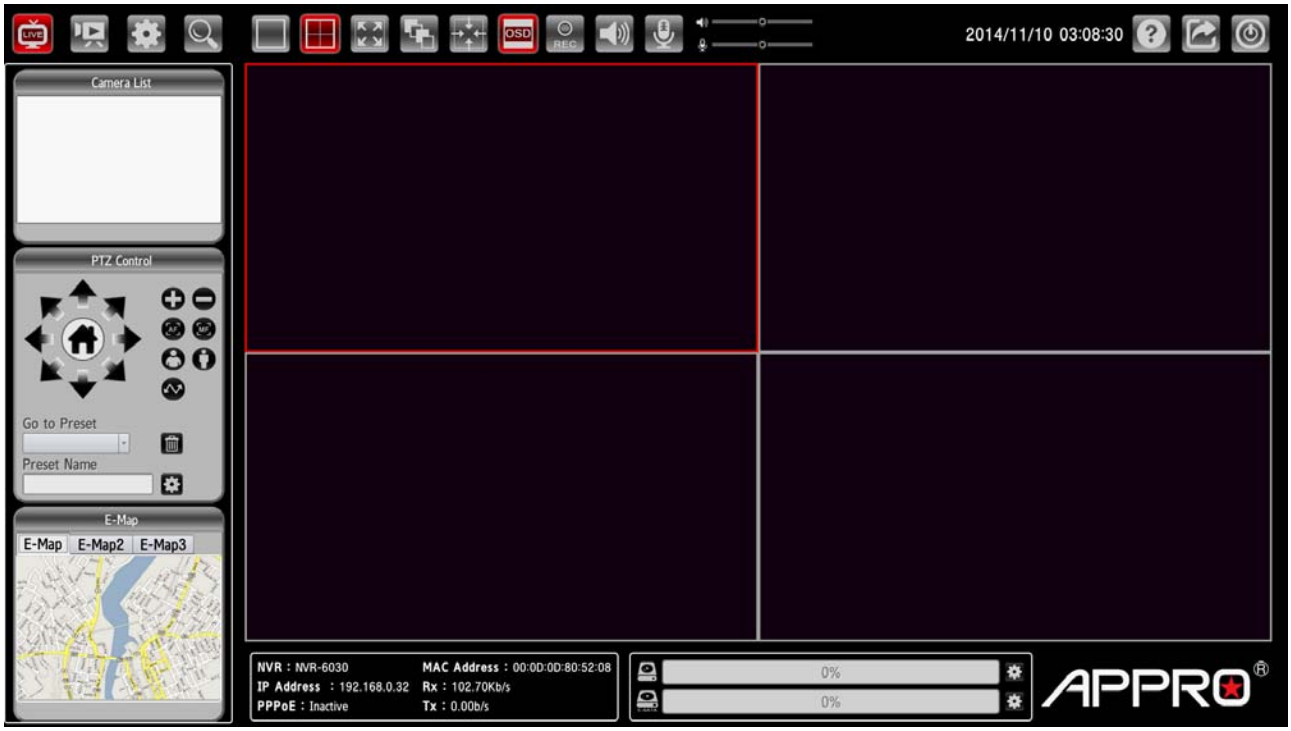
4. System Operations

This section shows you how to operate and manage the NVR.

The system provides four operation modes:

- The **Live** mode
- The **Playback** mode
- The **Setup** mode
- The **Camera Search** mode

Click the four buttons on the left hand side of the system tab to change the operation mode.

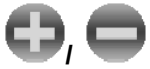


4.1 Brief Overview of the Live Mode

The Live mode is composed of the following parts:

1. The operation modes.
2. The function keys.
3. Current Date & Time.
4. The system function buttons.
5. Camera List.
6. PTZ Control Panel: the ePTZ (electronic pan/tilt/zoom) capabilities enable users to move to a target region instantly for close-up shots by simply clicking on the video feeds on the screen rather than moving the camera physically.
7. E-Map: the E-Map provides the camera position on the map.
8. System Information: the system information panel includes messages of NVR's model, IP address, PPPoE status, CPU status, and the usage of the network.
9. Hard Disks Information: the usage percentage of memory.
10. Video Display Panel.

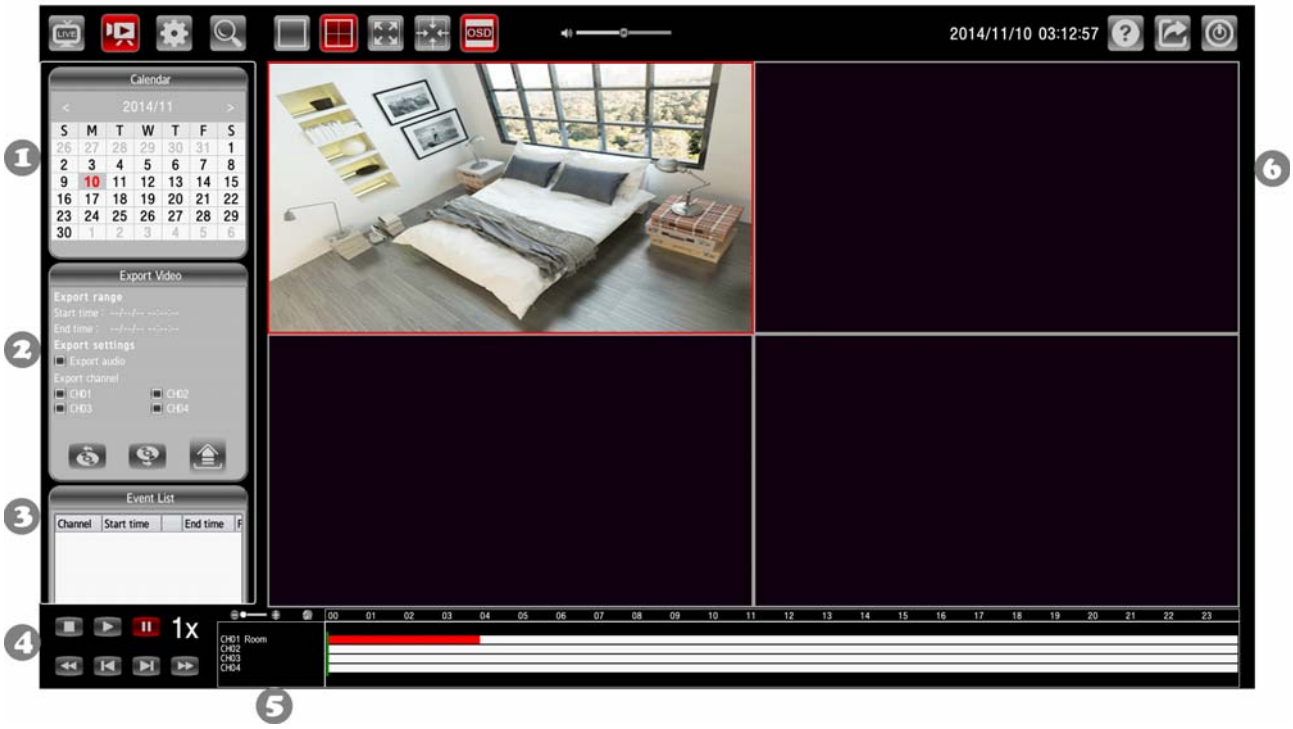
Function buttons		Description
	Live	The **Live** mode.
	Playback	The **Playback** mode.
	Setup	The **Setup** mode.
	Camera Search	The **Camera Search** mode.

Function buttons		Description
	View as 1x1	The monitor layout provides the different pattern layouts, such as 1x1 pattern (1 viewer) or 2x2 pattern (4 viewers). Drag the specific cameras from the device list and drop in the viewers.
	View as 2x2	
	Full Screen	Click the Full Screen button, and the size of the pattern will be stretched to the full screen. Double click the stretched viewer, and the system will show the 2x2 pattern. To back to the original size, please right click the mouse, and a pop-up menu appears, and then uncheck the “Full Screen” item in the pop-up menu.
	Auto Scan	Click to activate the sequence function of the NVR. (CH01→CH02→CH03→CH04, then loop back.)
	Actual Size	Exchange the original size between 4:3 and 16:9 aspect ratio.
	OSD	The OSD (on-screen display) setting can turn the display messages on / off. Every Viewer will display its connecting condition.
	Manual Record	The function allows the user to record the desired video clip manually.
	Audio	Click on the button to start/stop the audio-in function (listen/stop listening).
	Talk	Click on the button to start/stop audio out function (talk/stop talking).
	Help	The Help function is a dialog that helps the user to completely understand the functions of the NVR. Click the “Close” button to turn off the dialog.
	Log In/ Out	Click on the button to log in/ out the system. The system will go back to the welcome page with the Log In dialog.
	Shut Down	Click the button and the system will power off.
PTZ Control		
	Pan/ Tilt/ Home	The home button and the direction keys.
	**Zoom In/ Out**	Click on the buttons to control the zoom setting on the PTZ control panel.
	Focus	(Auto Focus/ Manual Focus): Click the AF/MF icon to select control focus automatically or manually.

Function buttons		Description
	Near/ Far	(Focus Near /Focus Far): Click on the buttons to control the focus setting on the PTZ control panel.
	Patrol	The patrol paths are organized by a few preset points.
	Delete Preset	Choose any one preset position and click this button to delete your choice.
	Set as Preset	Click this button to set the preset position you have entered.

4.2 Brief Overview of the Playback Mode

Click to enter to the Playback mode. The Playback mode is composed of the following parts:



1. The Calendar: This allows you to search a recorded video stored in the HDD of the device. Select the Month/ Date/ Year you wish to search. The dates marked in red color indicate there are record videos on those days.
2. The Export Video Panel.
3. The Event List Panel and the USB Information Panel..
4. The function keys.
5. The Camera List.
6. The Image Display Area: Displays images from the cameras.

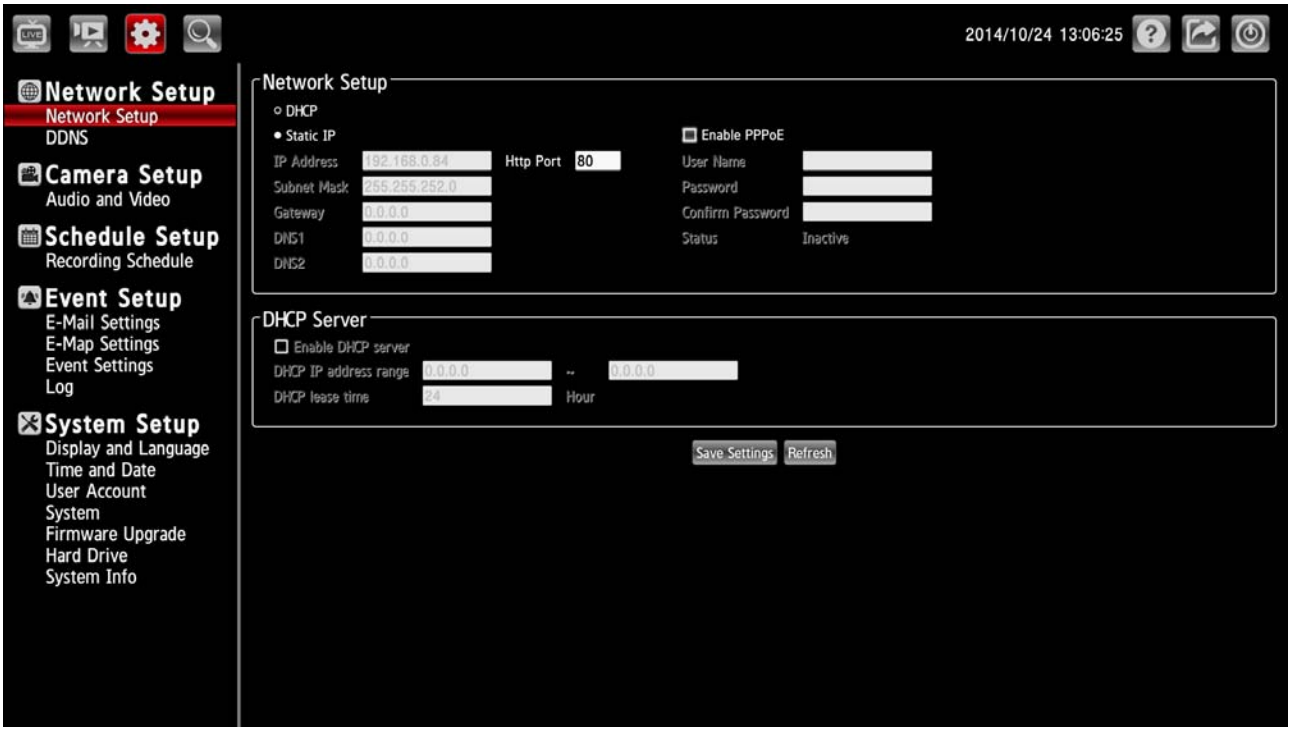
Function buttons		Description
	View as 1x1	The monitor layout provides the different pattern layouts, such as 1x1 pattern (1 viewer) or 2x2 pattern (4 viewers) Drag the specific cameras from the device list and drop in the viewers.
	View as 2x2	
	Full Screen	Click the Full Screen button, and the size of the pattern will be stretched to the full screen. Double click the stretched viewer, and the system will show the 2x2 pattern. To back to the original size, please right click the mouse, and a pop-up menu appears, and then uncheck the “Full Screen” item in the pop-up menu.
	Actual Size	Exchange the original size between 4:3 and 16:9 aspect ratio.

	OSD	The OSD (on-screen display) setting can turn the display messages on / off. Every Viewer will display its connecting condition.
	Cue In	Press the Cue In button to select where you would like the video export to begin.
	Cue Out	Click the Cue Out button where you would like to stop the export.
	Export	Remember to insert a USB flash memory into the USB port of the unit before backing up first. Once the Cue In/ Out points are selected, please click the Export icon to start.
Playback Control		
	Play	Click to play a recorded video from the play list.
	Stop	Click to stop playing back the recorded video.
	Pause	Click to pause a recorded video.
	Backward Step	Click to view images in the backward direction picture-by-picture.
	Forward Step	Click to view images in the forward direction picture-by-picture.
	Rewind	Click to play a recorded video in the reverse direction at speeds which are faster than the recorded speed.
	Speed Up	Click to play a recorded video in the forward direction at speeds which are faster than the recorded speed.

4.3 Brief Overview of the Setup Mode

Click to enter to the Setup mode. The Setup mode is composed of the following pages:

I. Network Setup – 01. Network Setup



Function buttons	Description
Static IP	Click to activate the function. When only one unit of the NVR is connected to LAN, you can freely assign an IP address for the NVR. When setting the DHCP item to off, the IP Address, Subnet Mask, Gateway and DNS may be manually edited.
DNS	(The Domain Name System) is an Internet service that translates domain names into IP addresses (e.g., 192.168.0.20). The address can be obtained from your ISP or network gateway.
Enable DHCP Server	Checkmark to activate the function. This option enables or disables the DHCP communication function. If provided with a DHCP server, the NVR can get an IP automatically by setting the DHCP item to on.
Enable PPPoE	Checkmark to activate the function. If you use the camera to connect directly to the Internet, you will need to enter the username and password, which were given to you when you set up your account (username and password) with your Internet Service Provider. If the camera is behind a router or a gateway, you do not need to configure this setting.

I. Network Setup – 02. DDNS

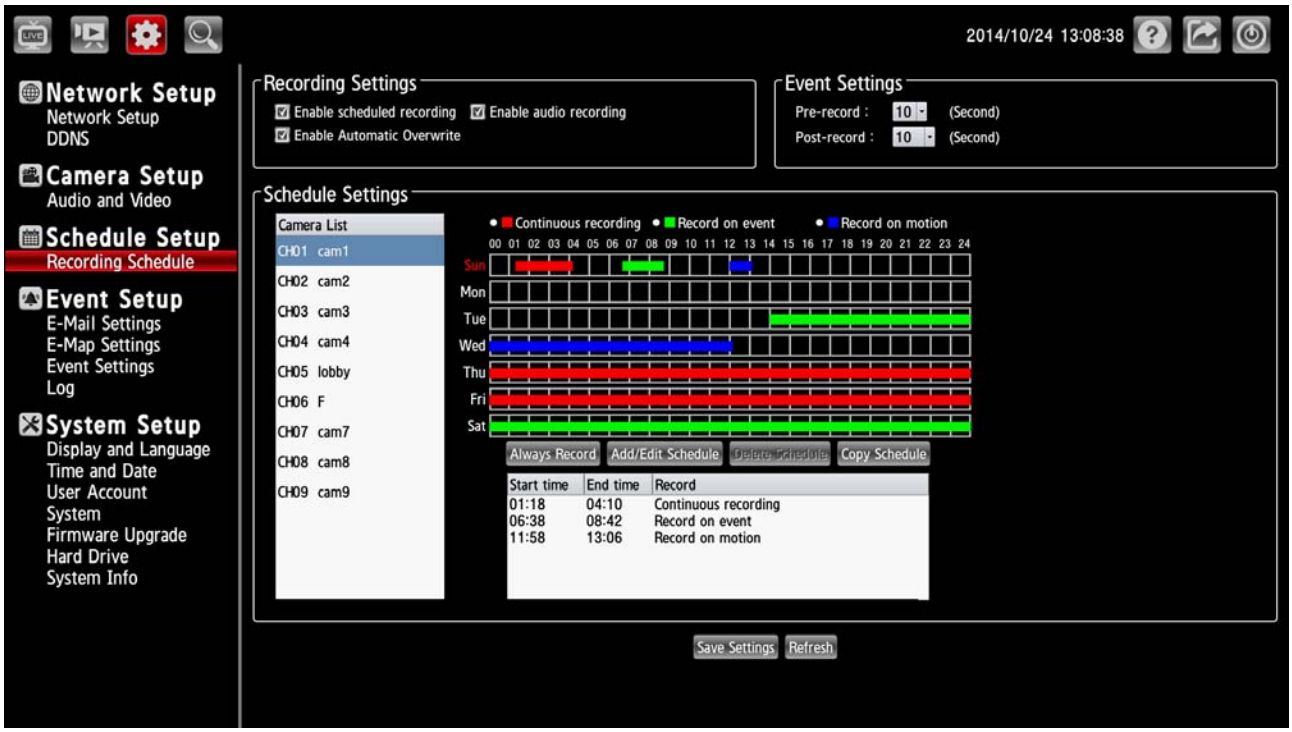
Function buttons	Description
DDNS	Click to activate or deactivate the function. The DDNS (Dynamic Domain Name Server) will hold a DNS host name and synchronize the public IP address of the modem when it has been modified. The user name and password are required when using the DDNS service.
DNS	(The Domain Name System) is an Internet service that translates domain names into IP addresses (i.e. 192.168.0.20). The address can be obtained from your ISP or network gateway.
Server Address	Select your Dynamic DNS provider from the pull down menu or enter the server address manually.
Host Name	Enter the host name of the DDNS server.
User Name	Enter your user name or e-mail used to connect to the DDNS
Password	Enter your password used to connect to the DDNS server.
Confirm Password	Enter your password again to connect to the DDNS server.
Timeout	Enter the DNS Timeout values for registering the IP address.
Status	Indicate the connection status, automatically determined by the system.

II. Camera Setup – Audio and Video

Select a camera on the Camera List for advanced settings. Click on the **Audio and Video** button to enter the Audio and video page to set the details of the cameras. Click on the **Image** button to enter the image-setting page.

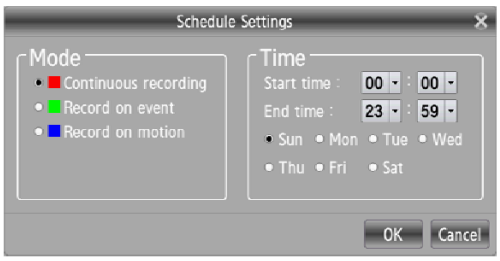
Function buttons	Description
Audio and Video	
Main/ Sub Profile	Select the Profile number from 1-2.
Video Format	Choose the video format from “MJPEG”, “MPEG4” or“H.264”.
Frame Rate	Click on the drop-down list to choose the frame rates
Resolution	This option allows the user to choose the video resolution of the live view area.
Bitrate	Selects the image quality level of H.264 images captured.
Quality	Selects the image quality level of MJPEG/ MPEG4 images captured.
Audio Format	Click to choose the audio encoding of “G.711”, “G.726” or “ACC”.
Image	
Brightness	An adjustable setting to compensate for backlit scenes.
Contrast	The measurement for color intensity/strength.
Saturation	This setting controls the strength of colors from black and white to bold colors.
Sharpness	An adjustable setting to set the clarity of detail in the images.

III. Schedule Setup – Recording Schedule

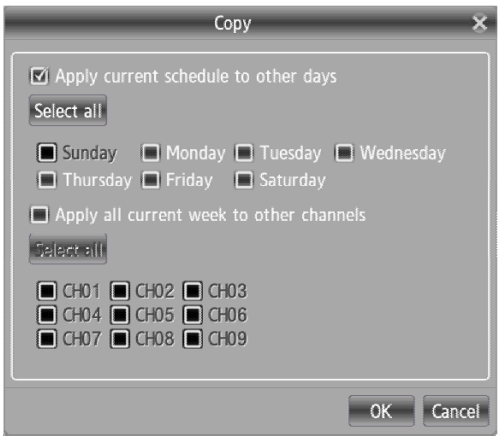


The schedule setting will help the user to setup the schedules of actions, such as recording or alarm triggering.

1. Select a camera on the Camera List for advanced schedule settings.
2. Checkmark to activate the “Enable schedule recording”, the “Enable audio recording” or the “Enable automatic overwrite” functions on the Recording Settings column.
3. The Pre-record and Post-record time control how long surveillance footage is recorded before and after motion detection is detected by a camera. Use the drop-down list to adjust these times on the Event Settings column.
4. Select the recording type.
   - Always Record: Click to start the 24x7 continuous recording of the selected camera.
   - Add/ Edit Schedule: Click to open the Schedule Settings dialog. Select the recording mode then set the time period and the weekday/ weekend. Then press OK.

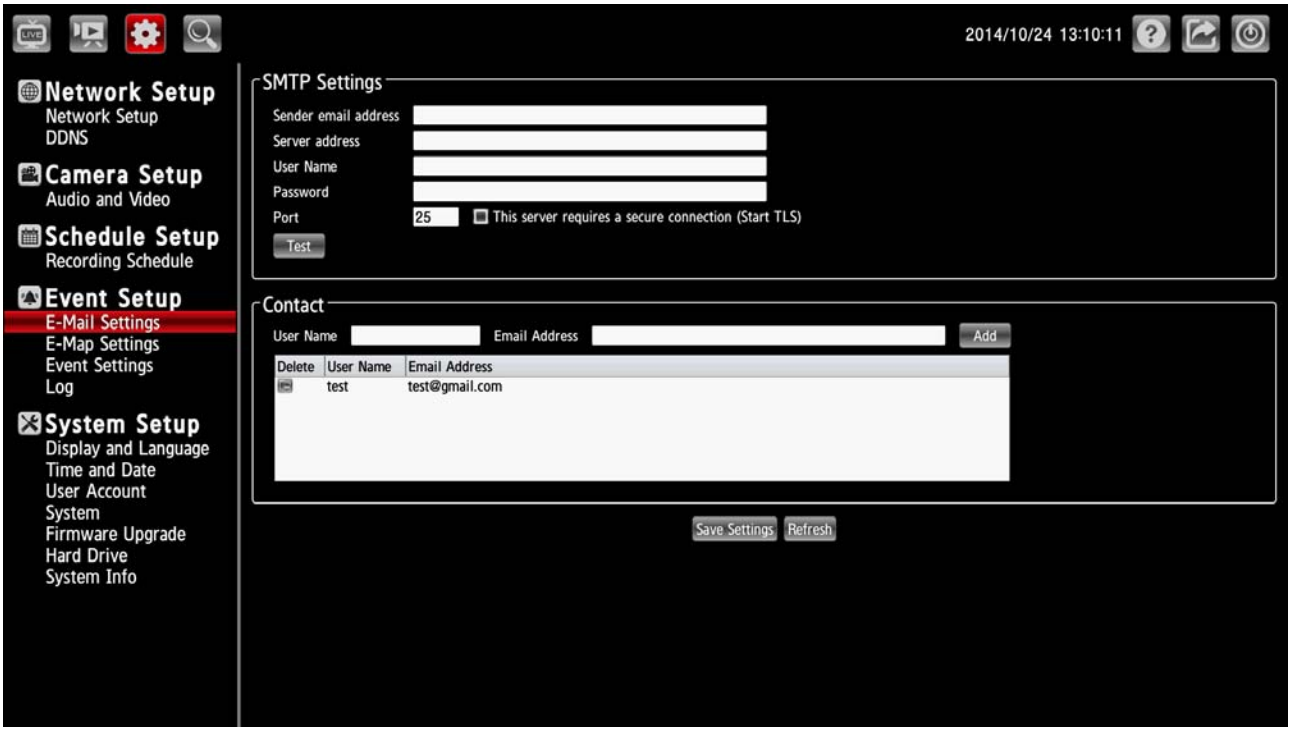


   - Delete Schedule: Select a recording schedule from the list then press the button to delete it.
   - Copy Schedule: Set to apply a current schedule to other days and channels.



5. Click Save Settings to activate the setting.

IV. Event Setup – 01. E-Mail Settings

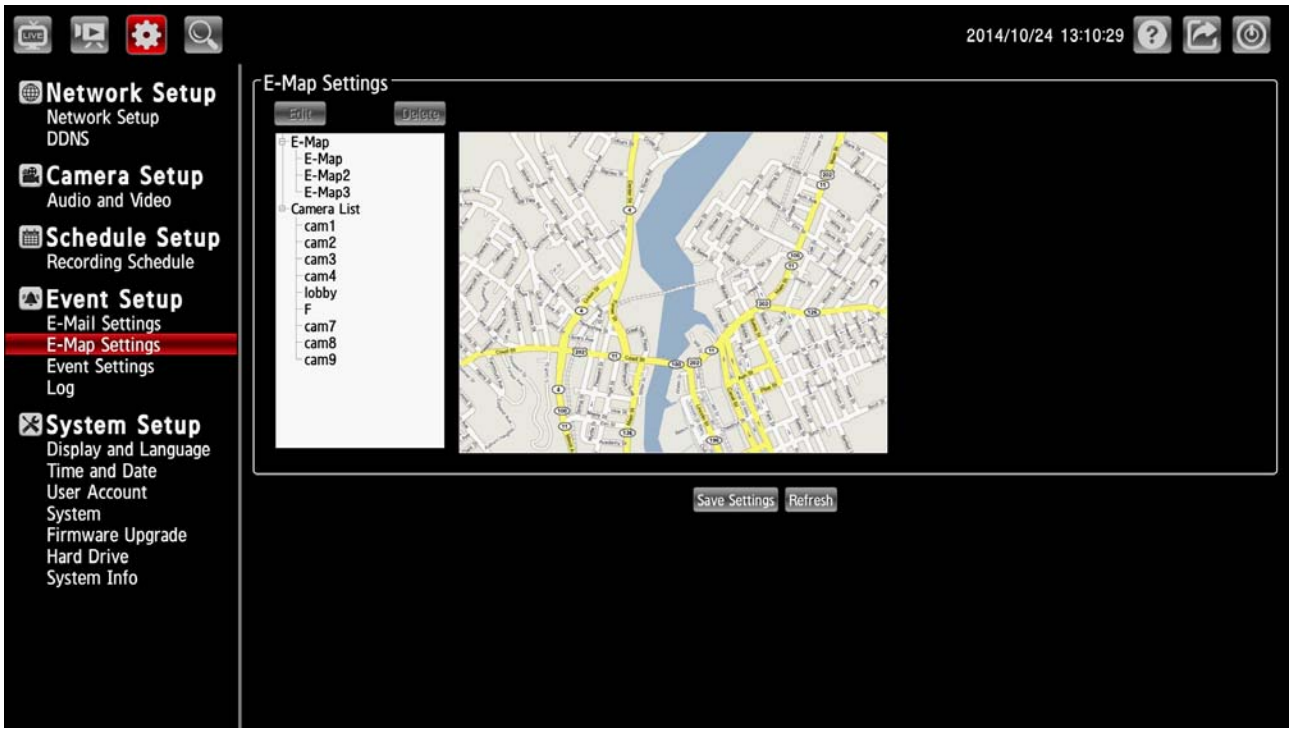


Select to send the media files via the email when a trigger is activated.

Set the details of the Email

1. Sender email address: The email address of the sender.
2. Recipient email address: The email address of the recipient.
3. Sender email address: Enter the email address of the sender.
4. Recipient email address: Enter the email address of the recipient.
5. Server address: Enter the domain or IP address of the email server.
6. User name: Enter the user name of the email account if necessary.
7. Password: Enter the password of the email account if necessary.
8. Port: The default email server port is 25. You can also manually set another port.
9. To verify if the email setting is correctly configured, click the Test button. The result will be shown in above this setting page. If successful, you will receive an email indicating the result.
10. Click Save Settings to activate the setting.

IV. Event Setup – 02. E-Map Settings

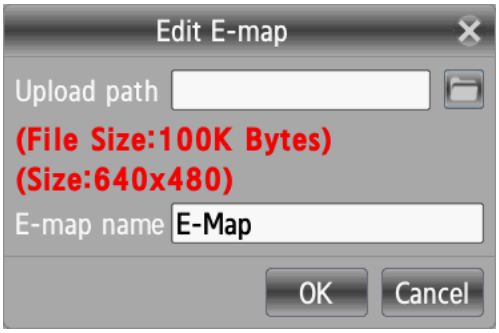


The E-map provides the camera position on the map.

Add an E-map

To add a map to the system, take the following steps:

1. Put a map into your USB storage device.
2. In the E-map Setting page, click the “Edit” button to show the “Edit E-map” dialog.

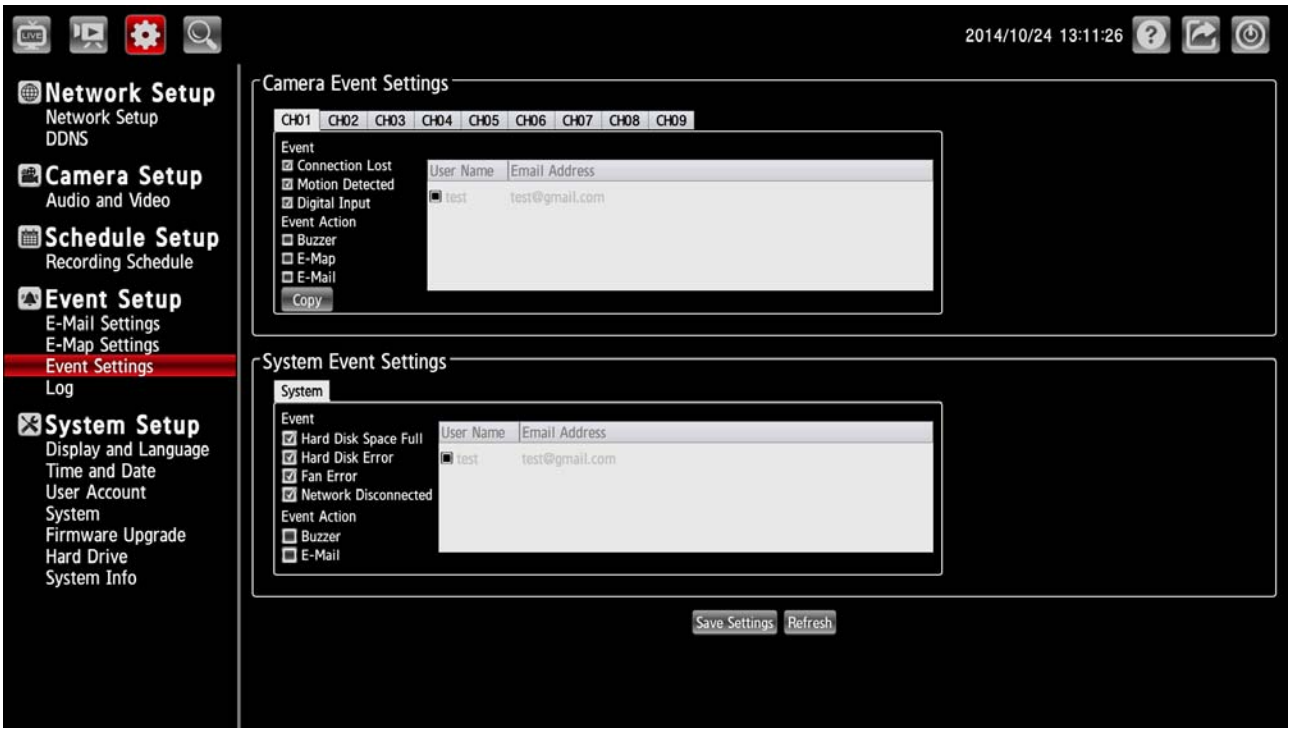


3. Insert your USB device to the NVR.
4. Input file path of the new map. Click the file clip button to show a dialog. The dialog helps the user to find the correct map file.
5. Input a new name in the “E-map name” column.
6. Click “OK”.
7. Click Save Settings to activate the setting.

Add a camera into the E-map

1. Select the preferred camera icon from the E-map viewer panel.
2. Drag the preferred icon and drop it into the viewer.
3. To drag the camera to a new location, press and hold the mouse button anywhere on the map to locate it.
4. Click Save Settings to activate the setting.

IV. Event Setup – 03. Event Settings



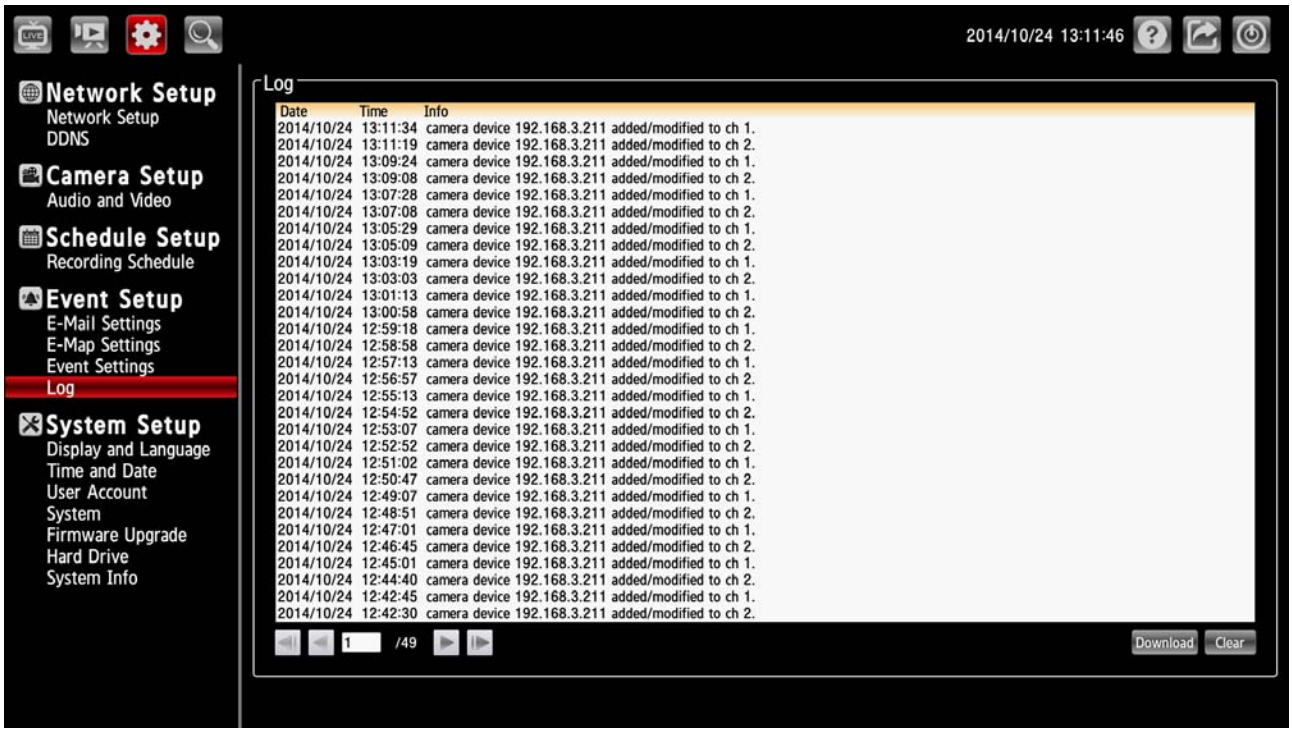
Camera Event Settings

1. Select the preferred channel from the Camera Event Settings panel.
2. Checkmark to activate the Event functions of “Connection Loss”, “Motion Detected” or “Digital Input”.
3. Checkmark to activate the Event Action options of “Buzzer”, “E-map” or “E-mail”.
4. Press Copy to make a copy of the settings to other channels.
5. Click Save Settings to activate the setting.

System Event Settings

1. Checkmark to activate the Event options of “Hard Disk Space Full”, “Hard Disk Error”, “Fan Error” or “Network Disconnected”.
2. Checkmark to activate the Event Action options of “Buzzer” or “E-mail”.
3. Click Save Settings to activate the setting.

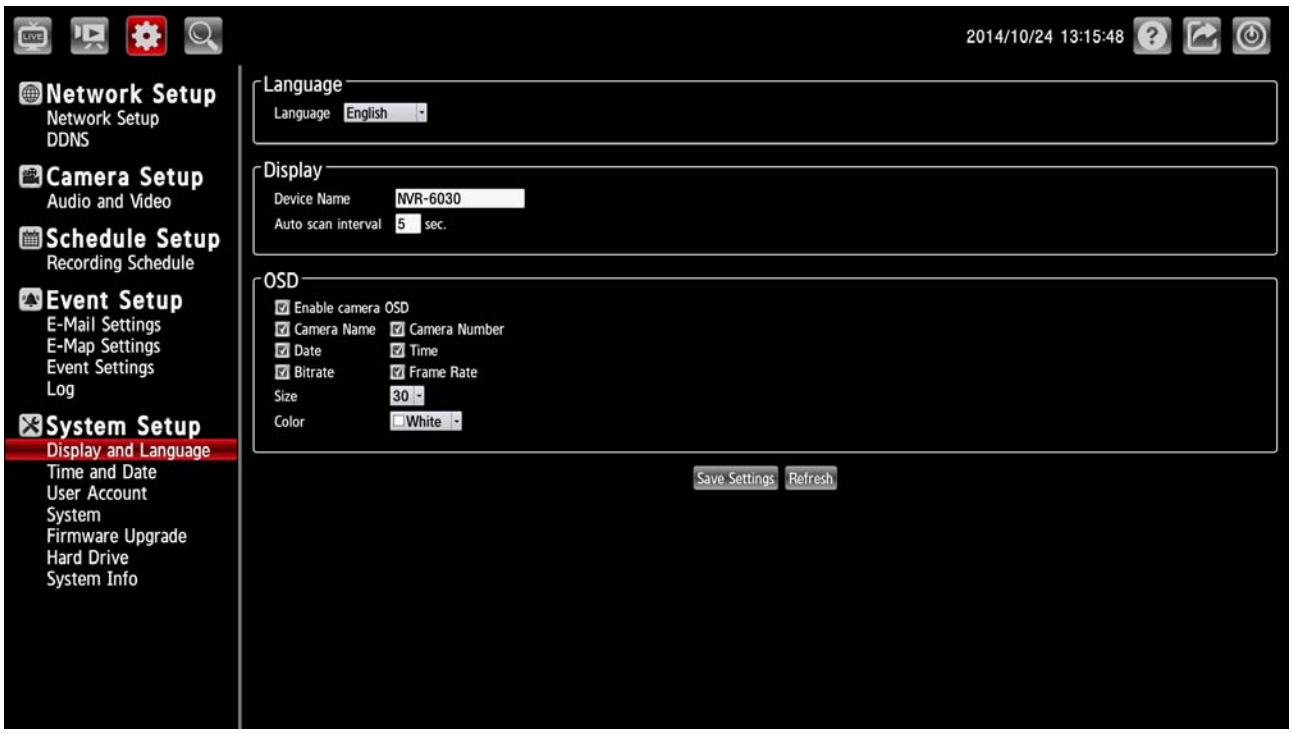
IV. Event Setup – 04. Log



This page displays the log information of your NVR.

Click on the “Clear “ to erase all of the logs. You may also download the information by clicking “Download”.

V. System Setup – 01. Display and Language



1. Click on the Language button to show the drop-down list. You have an option as to which language to use.

2. Adjust the ”Display” settings including “Device Name” and “Auto scan interval”.
3. Click to checkmark the box and activate the OSD functions. Enter the "Size" and “Color” you have chosen.
4. Click Save Settings to activate the setting.

V. System Setup – 02. Time and Date

From this section, you may automatically or manually configure, update and maintain the internal system clock for your NVR.

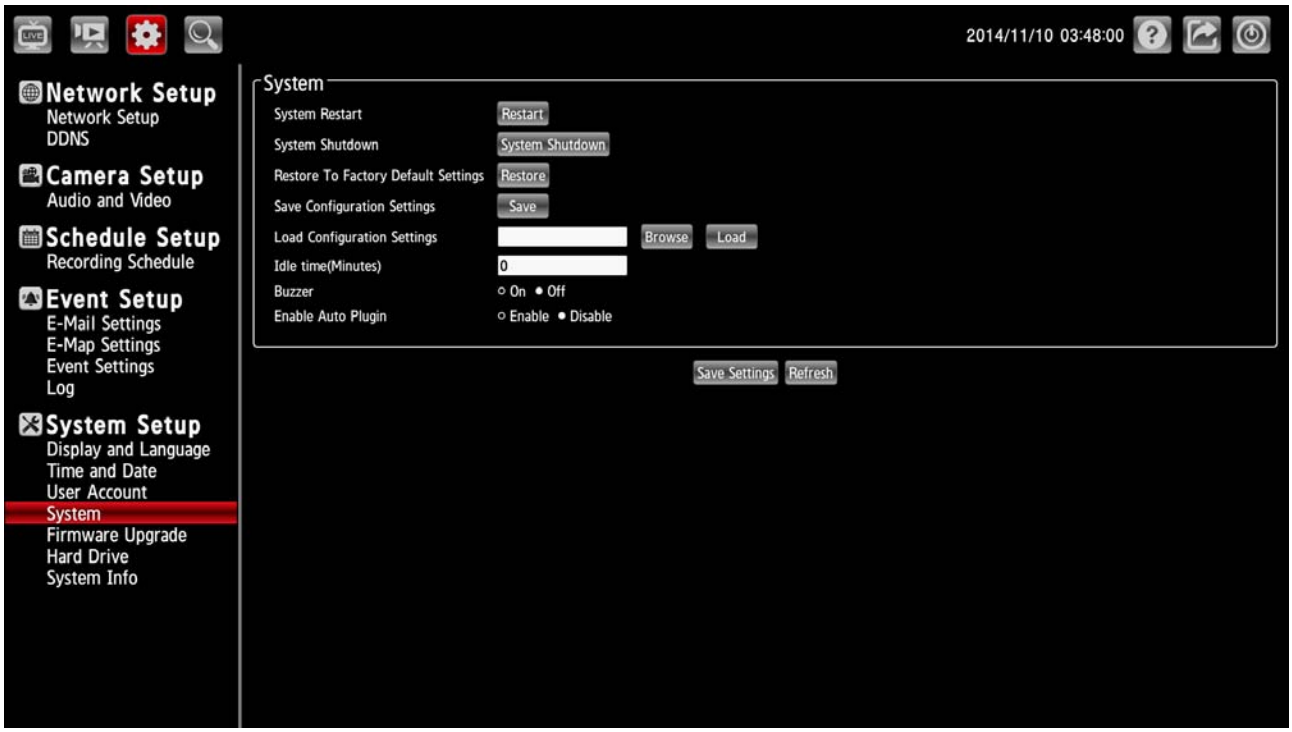
Function buttons	Description
Set the date and time manually	This option allows you to set the time and date manually.
Time Zone	Select your time zone from the drop-down menu.
Synchronize with NTP server	Enable this feature to obtain time configuration automatically from the NTP server.
NTP Server	The Network Time Protocol (NTP) synchronizes the device with an Internet time server. Choose the one that is closest to your location.
Enable Daylight Saving	Select this to enable the daylight saving time.
Auto Daylight Saving	Select this option so that your camera will configure the Daylight Saving setting automatically.
Save Settings	Click Save Settings to activate the setting.

V. System Setup – 03. User Account

You may modify the name and administrator's password of your camera, as well as add and manage the user accounts for accessing the NVR.

Function buttons	Description
User Name	Enter the user's name, which will be added or modified.
Password	Enter the new password of the user's name above.
Confirm Password	Type in the password again for verification.
User Type	Choose an authority option of the user's name from: Admin, Operator, and Viewer.
User List	The list shows the registered user(s) and the corresponding authority.
Delete	Deletes a selected user.
Add/ Modify	Click to submit the new setting to the NVR.

V. System Setup – 04. System



Please change the system setting as necessary.

Function buttons	Description
System Restart	Click on “System Restart” to reboot the device. This option will restart the camera.
System Shutdown	Click on “System Restart” to turn the device.
Restore to Factory Default Settings	Click on “Restore Factory Default Settings” to restore the factory defaults. You may browse and load the configuration file. This option will restore the pre-configured or saved settings
Save Configuration Settings	Click on “Save Configuration Settings” to save the configuration files to the local hard drive.
Load Configuration Settings	Browse and click on the “Load Configuration Settings” to load the configuration files to the local hard drive.
Idle Time (Minutes)	Change the period of idle time here. After the idle time exceeds a specified period the NVR will force the user to logout and request login authentication again for security.
Buzzer	Click to activate or deactivate the function.
Enable Auto Plug-in	Click to activate or deactivate the function.

V. System Setup – 05. Firmware Upgrade

The device firmware can be upgraded from this page. The firmware update must be saved on the external USB storage device.

Click the Browse button to search the external USB storage device for the firmware update file. Click Update to upgrade.

V. System Setup – 06. Hard Drive

The section provides users with an overview of the attached USB storage devices, and users can also format attached USB storages devices here.

NOTE:

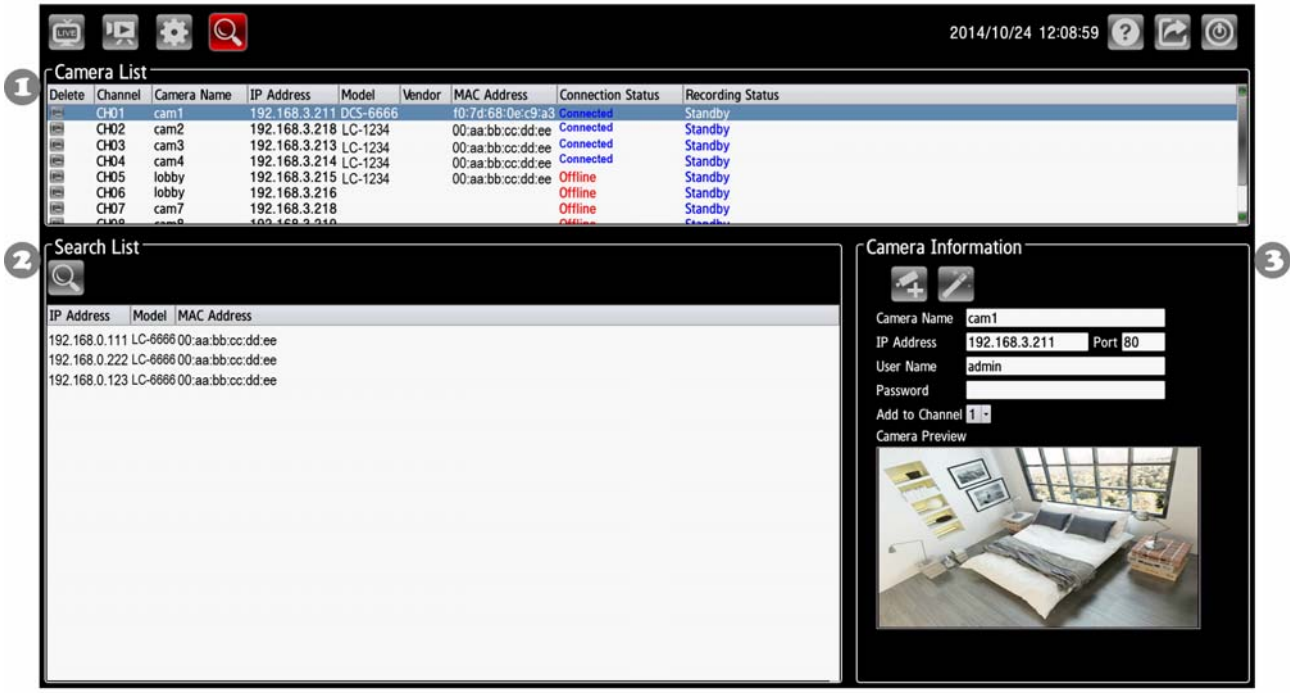
All data will be erased from the attached USB storage device after formatting.

V. System Setup – 07. System Info

This section displays the summary information of your NVR.

4.4 Brief Overview of the Camera Search Mode

Click to enter to the Camera Search mode. The Camera Search mode is composed of the following parts:



1. The Camera List Column: If the cameras are already added, they will be listed here.
2. The Camera Search Column: Click the Search button to search for cameras. The system will list all the available cameras at this moment.
3. The Camera Information Column.

Add a new camera

1. 1. Click the (Search) button to discover the connection of the all-type device in the LAN. The Search List will display the connection of the all-type devices.
2. Fill in the camera information on the Camera Information column then click the (Add/ Update) button.
3. Repeat steps above to add other cameras to your list.

Update a camera

1. Select a camera from the Camera List.
2. Fill in the new camera information on the Camera Information column then click the (Add/ Update) button.
3. Repeat steps above to modify other cameras.

Function buttons		Description
	Search	Click the Search button to search for cameras. The system will list all the available cameras at this moment.
	Add/ Update	Click to add a new camera or modify a selected camera.
	Optimize	Click to optimize the all cameras on the camera list.

5. Using a Web Brower

This section provides instructions for remotely accessing the NVR using a Web browser, such as the Microsoft Internet Explorer.

NOTE:

Your NVR must be configured with a network connection to provide this access.

5.1 Connecting to the NVR

Start your Web browser (for example, the Microsoft Internet Explorer) and then follow these steps to connect to the NVR:

1. Click on the URL entry box near the top of the Web browser window.
2. Enter the URL (address) of the NVR into the URL block, and press the Enter button to enter the login page. The default administrative User Name and Password are admin and 9999 respectively. Also, you can login with any User name and password that has accessing permission for Remote Accessing.
3. Enter the user name.
4. Fill in the password.
5. Check the Remember Password checkbox to save this password in your Windows operating system password list if necessary.
6. Click on the OK button and enter the home page of the NVR: both the user name and password must be correct.
7. Click on the Cancel button to cancel entry to the home page of this NVR.

5.2 Browsing Images from the NVR

After your PC was successfully connected to the NVR, the live images from the NVR will be displayed on the home page.

The operation of Web browser is same as in the local NVR.

6. Specifications

Model	**NVR-6030**	
	Ethernet interface controller	10/100 Base-T
	SDRAM	512Mbytes
	Flash Memory	32Mbytes
Port& Component Functions	LAN	• RJ-45 - 10/100 BaseT ports x1 • Compliant to following standards: • IEEE 802.3 compliance • IEEE 802.3u compliance • Supports Full-Duplex operations • 802.3x Flow Control support for Full-Duplex mode
	Audio	3.5mm Jack x 2 (Audio in x 1 & Audio out x 1)
	HDMI	HDMI V1.3 x 1
	VGA	VGA x 1
	USB	USB 2.0 Host x2
	Reset Button	Reset to factory default (press 10 seconds)
	Power Button (EuP)	Yes
	Power supplier	• Wall mount Switching Power Adapter • AC Input: 100~240V AC, 50~60Hz • DC Output: 12V/3.0A
	Buzzer	Buzzer x 1
Software Features	OS	Linux
	Network Service Protocols	• IPV4, ARP, TCP, UDP, ICMP • DHCP Client • NTP Client • DNS Client • DDNS Client • SMTP Client • HTTP Server • IP filtering • UPnP • HTTPS

Software Features	Network Client OS Type	• Microsoft: Windows XP, Vista, 7; 8; Mac
	User Interface	• Browser - MS-IE, Chrome, Safari, Firefox • Remote Playback & Backup
	NVR Search Utility	Yes
	HDD	• Ext 3 FAT32 / NTFS file system • Format HDD feature • Supports 6TB HDD drive
	Camera Search	• UPnP protocol • Hello Command
	Video Compression Format	• H.264 • M-JPEG
	Audio Compression Format	• G.711 • G.726 • AAC
	Video Setting	• Video resolution • Video quality • Bitrate • Frame rate • Audio enable/disable • Go to camera interface • Video profile selection
	Cameras Supports	• Supports all ONVIF IP cameras • Auto discovery function Include Megapixel and HD resolution
	Recording Performance	• First video profile– H.264, 720P@270 FPS or H.264, 1080P@135 FPS • Secondary profiles– H.264, VGA@135 FPS
	Alarm Recording	• Pre-alarm 60 sec /per channel • Post-alarm 300 sec /per channel
	Recording Mode	• Manual • Always • Schedule • Motion • Event (Alarm)
	Local Live View	• 1CH: H.264, 1080P@30FPS per channel • 4CH: H.264, 1080P@15FPS per channel or H.264, 720P@30FPS per channel
	Remote Live View	• 1CH: H.264, 1080P@30FPS per channel • 4CH: H.264, VGA@30FPS per channel

Software Features	Local/Remote Live View Control	• Live view • Preset/Go to Preset • Patrol/Auto Patrol • Focus • PTZ control • Snapshot • Full screen • Auto scan • Digital zoom (Zoom in & Zoom out) • Manual Record • Audio Enable • Adjust audio volume • Different video layout
	Local Playback	• 1CH: H.264, 1080P@30FPS per channel • 4CH: H.264, 1080P@15FPS per channel or H.264, 720P@30FPS per channel
	Remote Playback	• 1CH: H.264, 1080P@30FPS per channel • 4CH: H.264, VGA@30FPS per channel
	Local/Remote Playback Control	• Playback with • Normal • Fast forward • Fast backward • Step forward • Step backward • OSD enable/disable • Audio enable/disable • Adjust audio volume
	Auto Recycling Recording	• Auto recycling when storage disk is full
	E-Map	• Supports 3 layers e-map • Supports user upload E-Map (JPG, PNG, BMP)
	File Export	• Export video to “AVI“ file • Export Image to “JPG“ file
	Digital Watermark Tool	To prevent recorded video files/snapshots from being tampered, provide a tool for verification
	User Account	• Additional accounts can be created to allow user access to the system • And specify authorization for camera channel, PTZ, etc.
	DDNS	Supports DynDns server

Software Features	System Time	Set the system time (Input time, Synch with computer, Daylight Saving's Time)
	Auto Backup	NVR can backup recorded data to USB by daily schedule
	System Status	• Camera status • System status • HDD status
	Language Supports	• Supports English / French / Italian / Spanish / German / Traditional Chinese / Simple Chinese for Web UI • Supports multilingual for setup wizard (base on the requirement of DI/CA and EU versions)
	FW Upgrade	• Web UI (Network) • Local USB
OS Support	• Windows 2000 / Windows XP/ Windows Vista (32/64b it) / Windows 7 (32/64bit) / Windows 8 (32/64bit), Mobile Phone, Mac OS, Linux • Web browser - MS-Internet Explorer v7or above, Safari, Firefox, Chrome	
Power	• Wall-mounted switching power adapter. • AC Input: 100~240V AC, 50~60Hz • DC Output: 12V/3.0A	
Temperature Range	• Operating: 0˚ to 40˚ C (32˚ to 104˚ F). • Storage: -20˚ to 70˚ C (-4˚ to 158˚ F).	
Humidity Range	Operating: 5% to 90% RH (non-condensing)	

****Design and specifications are subject to change without notice.**

Appendix 1. –The compatible hard-disk drives

The serial ATA (SATA) interface disk drive we provide is designed for easy installation. It is not necessary to set any jumpers, terminators, or other settings on this drive for proper operation. The compatible hard-disk drives, which can be used with the unit, are shown in the tables below.

MANUFACTURER	MODEL	CAPACITY	FAMILY QUALIFICATION
WD	WD800AAJS-00PSA0	80GB	
	WD800AAJS-22PSA0	80GB	
	WD1600AAJS-00L7A0	160GB	
	WD1600BEVT-00A23T0	160GB	
	WD5002ABYS-01B1B0	500GB	
	WD1002F9YZ-09H1JL0	1000GB	
	WD10EZEX-002F5A0	1000GB	
	WD20EZRX-00D8PB0	2000GB	
	WD30EZRX-00SPEB0	3000GB	
	WD40PURX-64GVNY0	4000GB	
	WD14001FFSX-68JNUN0	4000GB	
	WD4000F9YZ-09N20L0	4000GB	WD4000F9YZ, WD3000F9YZ, WD2000F9YZ
	WD4000FYYZ01UL1B0	4000GB	WD4000FYYZ, WD3000FYYZ, WD2000FYYZ
	WD60EFRX-68MYMN0	6000GB	WD60EFRX, WD50EFRX, WD40EFRX, WD30EFRX, WD20EFRX, WD10EFRX
Seagate	ST380815AS	80GB	
	ST3160813AS	160GB	
	ST3250418AS	250GB	
	ST32508205V	250GB	
	ST3500418AS	500GB	
	ST3500418AS	500GB	
	ST1000VM002 (CTU Unit)	1000GB	
	ST1000VM002 (Pipeline HD)	1000GB	
	ST1000VX000 (Barracuda)	1000GB	
	ST1000DM003	1000GB	
	ST2000VM003 (Pipeline HD)	2000GB	
	ST2000DM001	2000GB	
	ST3000DM001	3000GB	
	ST3000VX000 (SV35)	3000GB	ST3000VX000, ST2000VX000
	ST3000VM002 (CTU Unit)	3000GB	ST3000VM002, ST2000VM003
	ST3000VN000 (NAS HDD)	3000GB	ST3000VN000, ST2000VN000
	ST4000DM000	4000GB	
	ST4000VN000 (NAS HDD)	4000GB	
	ST4000VN000 (Video 3.5 HDD)	4000GB	
	ST6000NM0024 (Enterprise Capacity 3.5 HDD v4)	6000GB	
ExcelStor	J8080S	80GB	
Toshiba	DT01ACA200	2000GB	

NOTE:

Hard-disk drives not shown on this list have not been tested by our engineering team and are not recommended for use with this product. For the latest updated list on the recommended hard disk drives, please contact your dealers or distributors.

CAUTION:

Please don't use the hard disk(s) you have employed with a particular model of the NVR (in recording and playing back data) with any other model of NVR, for you will lose the data you have stored in the hard disk(s) if you do so. You are free to use the same hard disks between NVRs belonging to a single model.

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