

Network Video Surveillance System

User Manual

※ The picture might differ according to the specification and model.

※ Contents of this user manual are protected under copyrights and computer program laws.

NVR

| | |
|-------------------------------|----------------------|
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Thank You !

Before operating the system, please read this User Manual and retain it for future reference.

WARNING

TO REDUCE FIRE OR SHOCK HAZARD,
DO NOT EXPOSE THE UNIT TO RAIN OR MOISTURE.

The installation should be made by a qualified service person
and conformed to all local codes.

Cautions

Read Before System Operation

Follow these details to prevent material damage or personal injury.

Signs of Caution and Warning



Warning: This sign indicates that the user could die or be seriously wounded if not used or installed properly.



Caution: This sign indicates that the user could be wounded or could expect property damage if not used or installed properly.



Warning: Do not expose the product to fog, rain or too much humid to decrease danger from electric shock or fire.

General Warning



Warning

1. Use the power cord, which is supplied or recommended by the supplier, or it may cause fire.
2. Do not disassemble or reassemble the product.
It may cause malfunction or fire.
3. Enquire to your vendor for repair.
It may cause electric shock or fire if the repair is not done properly.
4. Do not touch the product with wet hands.
It may cause malfunction or electric shock.
5. Product installation must be ensured to a professional for product installation, or it may cause malfunction, electric shock or fire.
6. Ground applies to video products equipped with a 3-wire grounding type plug having a third (grounding) pin.
This plug only fits into a grounding-type power outlet.
If grounding is not done, it may cause malfunction or electric shock.
7. Ground connection must not touch gas pipe, water pipe or telephone line.
If grounding is not done properly, it may cause electric shock.
8. Prevent metallic foreign substance from going inside the product.
It may cause malfunction or electric shock.
9. Do not spray insecticide or flammable spray while driving.
It may cause fire.
10. Place the system in a open place where air ventilation is guaranteed, or it may cause over-heating and seriously damage the system to be fired.
11. Prevent water from instilling inside electrical parts.
Clean with a dry towel or malfunction or electric shock could result.



Caution

1. Use the power cord, which is supplied or recommended by the supplier.
The internal fan rotates at high speed and may cause an accident.
2. Do not drop, give strong vibration, or shock to the product.
It may cause malfunction.

3. The air inhler of the front panel and air outlet of the back panel must not be blocked during installation.
The internal temperature of the product would be greater than allowable and could cause malfunction or fire.
4. Do not touch the product or the power cord when there is thunder.
It may cause electric shock.
5. Do not install the product near or on top of heating source.
The internal temperature of the product would be greater than allowable and could cause malfunction or fire.
6. Do not install the product on inclined or unstable location or where vibration could be committed.
It may cause malfunction.

Cautions about the Power



Warning

1. Must use the outlet of the grounding to connect the power cord, or it may cause fire.
2. Do not connect on the middle of power cord or use extension cord.
It may generate heat or cause fire.
3. Do not touch the power cord with wet hands.
It may cause electric shock.
4. Keep power cord dry and protect from humidity.
It may generate heat or cause fire. The power cord is not waterproof.
5. Hold the body of the plug while removing the power plug.
Do not pull the power cord. Damage to the power cord may generate heat or cause fire.
6. Check the power plug regularly.
Humidity and moderation in smoking may cause fire.
7. Remove power cord from outlet when product is not used for a long time.
It may cause short-circuit or electric shock.



Caution

1. Do not turn off the power by removal of the power plug.
To turn off the power, click the power button from the front panel.
When the system stops abnormally, the power button might not work. Click power button for 5 full seconds to turn power off.
2. Do not cut off the power artificially, or give shock or vibration to unit while the hard disk is activating.
It may cause hard disk failure or loss of data.



Remarks

- ※ Pictures and buttons are subject to be changed or modified up to different models.
- ※ Function or configuration is subject to be changed or modified without prior notice for improvement of the product.




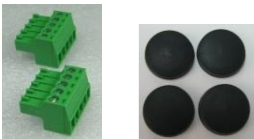
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1. Getting Started

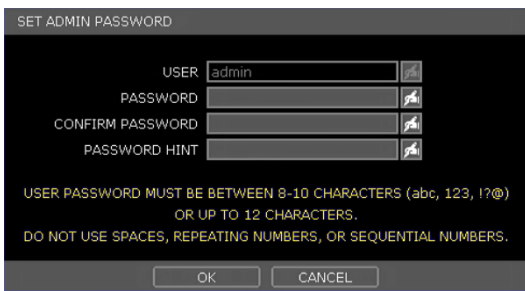
1.1 Checking Supplied Items

Make sure that you have following items supplied with your NVR. If any of these items is missing or damaged, notify your vendor immediately. Keep the packing utilities for moving or storage purposes afterwards.

| Items | Photo | Quantity |
|---|--|----------------------------|
| User Manual and Remote Software |  <p>(*) Quick Manual and CD</p> | 1 Set |
| 48V D/C for PoE Models & Power Cable. (Some models use SMPS) |  | 1 Set |
| IR Remote Control (optional) |  <p>(*) Type of controller may differ depending on the NVR model and can be replaced by USB Mouse.</p> | 1 Set |
| Terminal Block and Rubber Mount |  <p>(*) Packed goods may differ depending on the NVR model</p> | 1 Pair (2 Pieces) 1 Set |

1.2 System Startup

After connecting peripheral devices such as cameras, monitors and a mouse to the NVR, power up the NVR by connecting the adaptor to the power jack on the rear panel. The boot logo will display as shown below. Please wait until the boot process completes.



SET ADMIN PASSWORD

USER:

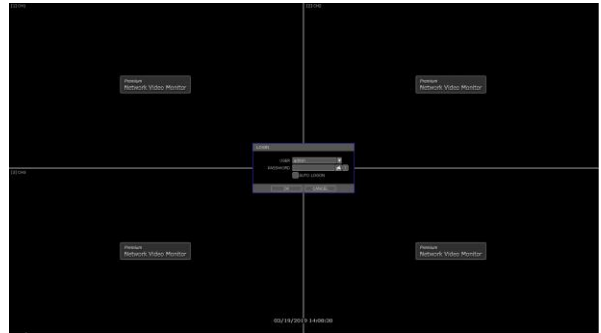
PASSWORD:

CONFIRM PASSWORD:

PASSWORD HINT:

USER PASSWORD MUST BE BETWEEN 8-10 CHARACTERS (abc, 123, !?@) OR UP TO 12 CHARACTERS.
DO NOT USE SPACES, REPEATING NUMBERS, OR SEQUENTIAL NUMBERS.

OK CANCEL




When the system is start, the password change window is displayed. User must set the password to minimum 8 characters with at least 3 combinations of upper case letters, lower case letters, numbers and special characters. Acceptable special characters are 『~ ' ! \$ ^ () _ - | { } [] ; . ? / , ' . To login, right-click anywhere on the screen and enter the username and password in the popup screen. There is only one Administrator Account configurable in the NVR. It is assigned with an unchangeable User ID marked as 'admin'. Administrator account has full access to the NVR and its configurable parameters and can also create new users and to assign rights to the new user accounts. If NVR is set as AUTO LOGIN, login process is not necessary.

- Caution**
- 1) It may take a few minutes to startup the system after turning on the power, in case the user sets the network configuration as DHCP mode but under the situation that there is no DHCP server in the network or the network is not connected.
 - 2) The mouse is included. In case you need to replace it, it is highly recommended to choose well-known major brands such as DELL, MICROSOFT, LOGITECH, or SAMSUNG.

- Note**
- 1) Do not forget the administrator's password that was set for the first time. In case the password is forgot, contact your local dealer for help.
 - 2) Refer to the "Section 4.1.2 User" for AUTO LOGIN and AUTO LOGOFF.

1.3 System Shutdown

To turn off the power, Click exit button  the tool bar and then click [SHUTDOWN] in the pop-up screen as below. Do not pull off the power by pulling the power plug.



EXIT

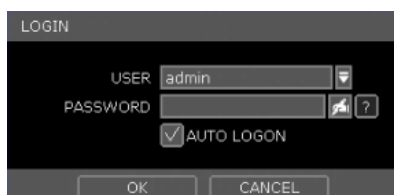
LOG OFF

REBOOT

SHUTDOWN

CLOSE

Input the password and click [OK] to shut down the system. Click [YES] to confirm shutdown.



LOGIN

USER:

PASSWORD:

☒ AUTO LOGIN

OK CANCEL



SYSTEM

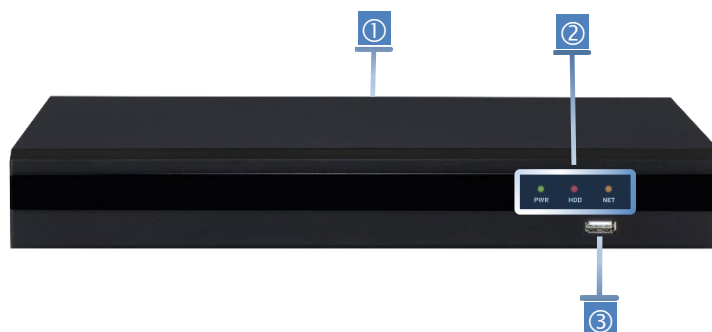
DO YOU WANT TO SHUTDOWN THE SYSTEM?

YES NO

Note User can input password by virtual keyboard, IR remote-control or front numeric buttons (if available).

1.4 System Explanation

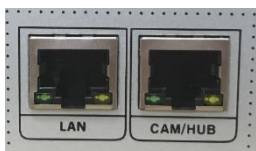
1.4.1. Front Panel



** The picture might differ according to the model

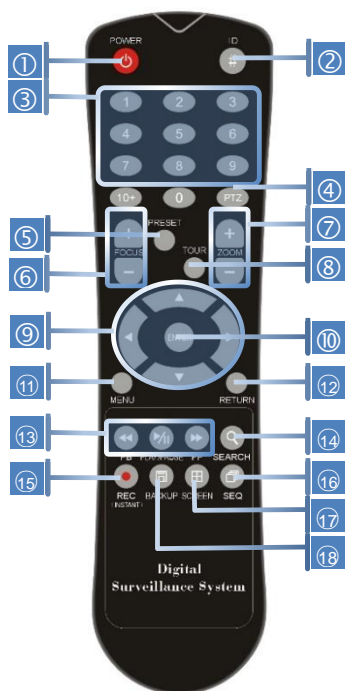
- ① Power Button (On the back side)
- ② LED Indicators : Indicates system status.(Power, HDD, Record & Network status)
- ③ USB Port : For backup, USB stick upgrade and Mouse.

1.4.2. Rear Panel



There are two LAN ports for 36Ch and 64Ch NVR.
LAN is for Router and "CAM/HUB" port is for PoE Switch for IP Cameras.

1.4.3. IR Remote Controller



- ① Power : System ON/OFF
- ② NVR ID Selection
- ③ Numeric Button : Channel selection or Password input
- ④ PTZ Button
- ⑤ Preset Button : Select Preset on PTZ mode
- ⑥ Focus Button : Focus IN/OUT on PTZ mode
- ⑦ ZOOM Button : Zoom IN/OUT on PTZ mode
- ⑧ Preset Tour : Tour ON/OFF on PTZ mode
- ⑨ Direction Button
- ⑩ Enter Button
- ⑪ Menu Button
- ⑫ Return Button
- ⑬ Playback Button on Search mode
- ⑭ Search Button
- ⑮ Emergency Recording Button
- ⑯ Auto-Sequence Button on Live mode
- ⑰ Screen Mode Button
- ⑱ Backup Button

Note User can control multiple NVRs with one IR Remote Control.
In order to control multiple NVRs, each NVR has different Remote ID.
(The initial ID is set as "0".)

Note How to setup the ID # in IR Remote Controller

- 1) Keep pressing ID selection button (②) for about 5 seconds.
- 2) Set the ID number by pressing numeric button on IR Remote Controller.
ID number is available from 000 up to 255.
- 3) You have to press numeric button as three-digit number format.
For example, press "000" for 0, "023" for 23, "234" for 234.

1.4.4. Tool Bar in Live Mode

In live view, move the mouse cursor to the bottom of the screen to show the menu bar.



Menu Button



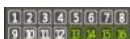
Click on the menu button to access the NVR's main menu screen. See "4. Setting" for details.

Display Mode

Select the display split mode from the available options. Select 1CH, 4CH, 6CH, 8CH, 9CH, 10CH, 13CH, 16CH, 25CH, 36CH or 64CH mode.

Sequence

Start/stop the sequence mode in live mode. Sequence is disabled if all channels are displayed.

Channel

Switch to single channel view of a specific channel by pressing the corresponding number.

Emergency Recording

The system records all channels with full frame rate at the maximum resolution regardless of recording setting. To stop emergency recording, click the same icon again.

Backup

Backup recorded video to an external device. See "4.6 Backup" for details.

Playback

Switch to playback mode. See "3.7 Playback Recorded Image" for details.

Search

Open the search options screen. See "3.8 Search Recorded Image" for details.

Exit Button

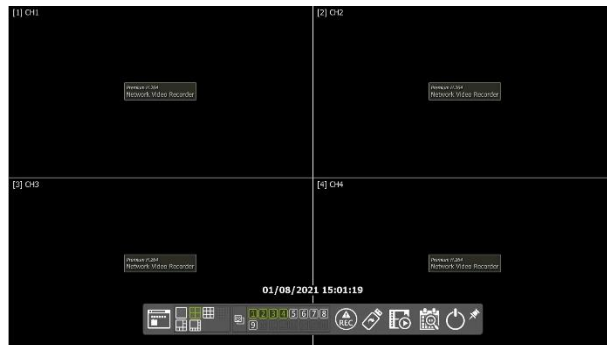
Exit the NVR with three different options: Log Off, Reboot and Shutdown.

Pin Button

When selected, the NVR's menu bar will be displayed on the screen permanently, regardless of the mouse position.

1.4.5. Tool Bar in Playback Mode

In Playback view, move the mouse cursor to the bottom of the screen to show the menu bar.



Channel

Indicates the currently selected channel.

Intelligent Search Bar

Shows recording status for the selected channel from 00:00 to 24:00. A white-vertical line indicates the time currently displayed. Moving the white-vertical line will update the video. (Please refer to "4.4.2 Schedule" for details on colors.)

Previous/Next Date Search

User can move to the previous date or the next date to search.

Playback Control Button



: Reverse Playback speed control. (x99 / x64 / x32 / x16 / x8 / x4 / x2).



: Move backward by one frame



: Stop button



: Play button



: Move forward by one frame



: Playback speed control. (x2 / x4 / x8 / x16 / x32 / x64 / x99)



: Shows current playback speed

Screen Display Mode

Select the display split mode from the available options. Select 1CH, 4CH, 6CH, 8CH, 9CH, 10CH, 13CH, 16CH, 25CH, 36CH or 64CH mode.

Backup

Backup recorded video to an external device. See "4.6 backup" for details.

Playback

Switch to playback mode. See "3.7 Playback Recorded Image" for details.

Search

Open the search options screen. See "3.88 Search Recorded Image" for details.


Exit

Close playback mode and move to live mode.

Pin

When selected, the NVR's menu bar will be displayed on the screen permanently, regardless of the mouse's position.

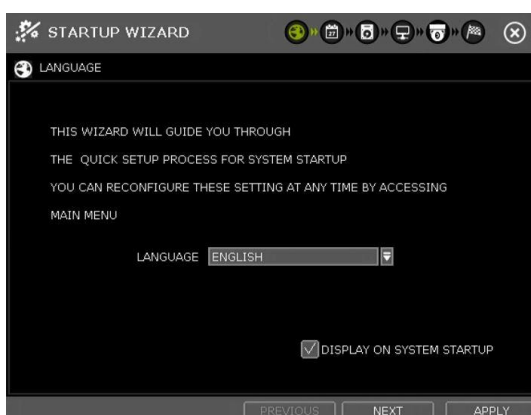
2. Startup Wizard

When the NVR is launched for the first time, the STARTUP WIZARD will appear. This wizard helps you setup the NVR's most basic settings for proper functioning. You can access the Startup Wizard screen at any time by clicking the Startup Wizard [] button in setting "MENU>SYSTEM>SETTINGS" menu. (See "4.1.5 SETTINGS").

2.1 Language

Select the language according to the country or user's preference.

If "DISPLAY ON SYSTEM STARTUP" is selected, Startup Wizard will pop up every time the system is started.



2.2 Date/Time

Select the NVR's date and time format, select the Time Zone, enable or disable daylight savings and sync the NVR with an NTP server or manually enter the date and time. You can also select to sync the NVR with an NTP server, which will automatically sync your NVR's date and time settings.



2.2.1. TIME SYNC MODE

There are three types of time sync mode.

- **Server Mode**

The operating NVR is set as a Time Sync Server, which can synchronize the time clock of another NVR(s) connected over the same network environment.

- **Client Mode**

Input the IP address of a designated NVR or Remote Software P/C (CMS) as a Time Sync Server in "SYNC SERVER". The NVR's time clock will be synchronized with the server by interval time set in "TIME SYNC CYCLE".

- **NTP Mode**

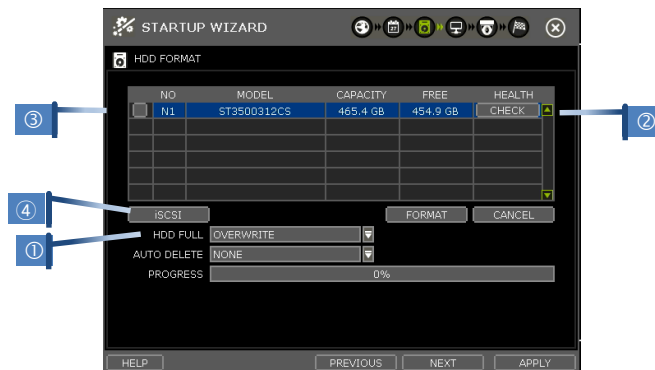
"pool.ntp.org" is the recommended NTP Server. To activate, set the TIME ZONE of your local area and then click [SYNC NOW].

- **GPS Mode**

The NVR's time clock will be synchronized with USB type GPS device.

2.3 HDD FORMAT

We recommend that user should format HDD before using it.



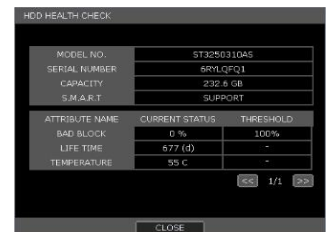
HDD FULL (①)

Select "Overwrite" or "Stop recording" when HDD is full.

- **Overwrite** : NVR deletes oldest data and record new data.
- **Stop record** : NVR stops recording.

HDD CHECK (②)

Click (CHECK) next to each HDD to view full information of each HDD such as model name, serial no, capacity, bad sector ratio, life time (used time) and temperature.



HDD FORMAT (③)

Check the box next to the HDDs you wish to format and press the "FORMAT" button. If system resources are occupied such as network connection during format process, the format process may fail. It is recommended to reboot the system to release system resources and then try to format again.



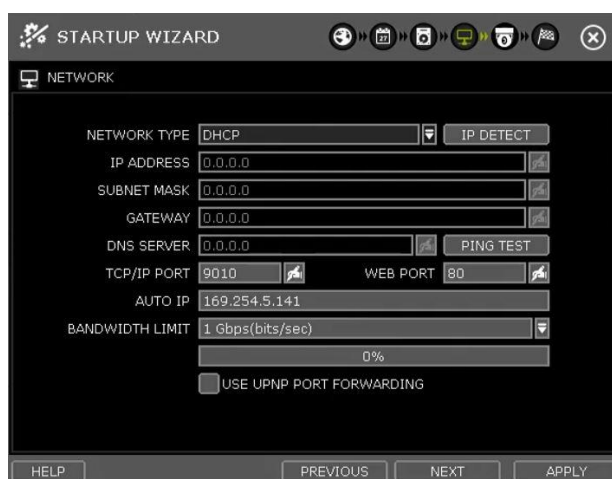
- Note**
- 1) It may take a few minutes to format HDD.
 - 2) When the format is done, all data in the HDD will be deleted.
 - 3) The system always reserves some space in each built-in HDD to effectively utilize archiving memory.

iSCSI HDD Support (④)

iSCSI HDD can be used via Network connection

2.4 Network

Setup the NVR's network settings for remote connection.



NETWORK TYPE

Select either STATIC IP or DHCP for dynamic IP.

If DHCP is selected, the NVR will automatically configure the network settings according to the current network requirements. If DHCP is selected, click 'IP DETECT' button to detect automatically all the network settings.

If Static IP is selected, manually enter all necessary network settings. For proper configuration, it is recommended to assign the NVR a DHCP address and let it auto discover all the proper network settings, and then change the Network Type back to Static IP and save the changes.

IP ADDRESS

Displays the NVR's IP address. If DHCP is selected, the IP address will automatically adjust to match the network's requirements. You can also manually change the IP address as needed.

SUBNET MASK

Subnet Mask address classifies the subnet that the system belongs to. For more information, please consult your network administrator or your internet provider.

GATEWAY

This is the IP address of the router or gateway server. It is required when connecting to the

NVR through the external router over the internet (from another network). For more information, consult your network administrator or your internet provider.

DNS SERVER

Enter the IP address of the Domain Name Server. You should input the DNS Server information in order to use DDNS, E-mail notifications and NTP Server. For more information, please consult your network administrator or your internet provider.

TCP/IP PORT

Input the port number to use when connecting to the NVR locally or remotely. Default is 9010. If your ISP blocks the port # 9010, you need to input another valid port number (ex, 9020).

WEB PORT

Input the port number to use when connecting from the Web Browser. Default is 80. If your ISP blocks the port # 80, you need to input another valid web port number (ex, 8080).

AUTO IP

Displays the system IP which is assigned through Auto-IP, automatically.

BANDWIDTH LIMIT

Depending on the setting made by user, the system can control the data volume transmitted over network ranging from 25 kbps up to 1Gbps. This function is effective especially under narrow bandwidth network condition or when user wants to limit "network bandwidth occupied by video transmission" to a certain level. Default is 100 Mbps

UPnP (Universal Plug and Play)

UPnP supports "auto port forward function (NAT TRAVERSAL)" even if the user does not set port forward in the router. It may not be supported in some routers and some network conditions.

Input necessary information based on your network environment.

- **NETWORK TYPE** : Select STATIC IP (in case of fixed IP)
- **IP ADDRESS** : Assign a local IP # to NVR (ex, 192.168.0.164)
- **SUBNET MASK** : Input subnet mask of your LAN (ex, 255.255.255.0)
- **GATEWAY** : Input gateway of your LAN (ex, 192.168.0.1)
- **DNS SERVER** : Input IP # of your DNS server
You must input this IP # for internet connection. Please contact your ISP to get this IP#. You can input "8.8.8.8" in case you do not know this IP#.
- **TCP/IP PORT** : Default is 9010.
If your ISP blocks the port # 9010, you need to input another valid port number. (ex, 9020)
- **WEB PORT** : Default is 80
If your ISP blocks the port # 80, you need to input another valid web port number. (ex, 8080)
- **BANDWIDTH LIMIT** : Default is 100 Mbps.
Select bandwidth limit you want to set in consideration of network condition.

Note The maximum number of simultaneous connection is 15 users.

Note For the other network settings, such as DDNS, Notification, Mobile Push & P2P Cloud, please refer to the "4.5 Network".

2.5 CAMERA MANAGEMENT

The Camera Management menu allows you to search, register and manage your IP cameras. See "3.2 Camera Registration" for more information.



Auto Configuration (①)

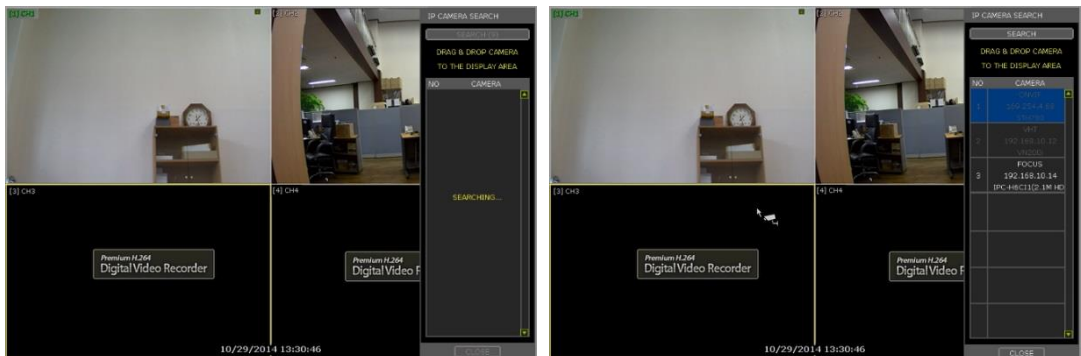
The NVR will scan the network for all supported cameras and automatically register them to the available channels. Select the recording mode to apply to all registered cameras and press [START]. The NVR will search all cameras under the same network (Router) and register them in order, automatically.

In case where there are multiple NVRs on the network, it is recommended to use the Drag & Drop or advanced configuration options to avoid a camera being connected to multiple NVRs.

Drag & Drop Configuration (②)

The Drag & Drop Configuration scans the network for supported cameras, displaying the results in a table from which you can drag cameras to the viewing channel to assign them to channels.

- ① Click [START] button to search camera.



- ② Select a camera and while clicking on the camera, drag it to a channel to assign it.
- ③ Click [APPLY] button to finish the process.

Advanced Configuration (③)


Search the network for cameras and manually configure and register them to the NVR.

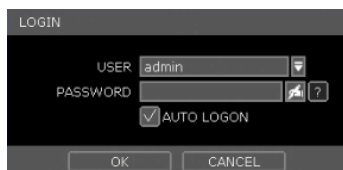
2.6 Finish

When the Setup Wizard is completed, click "FINISH" to close the wizard and go to the live view screen.


3. Operation

3.1 User Log-in

Input USER and PASSWORD after turning on the system. If users forget the password, click the  icon to check password hint.



-
- Note**
- 1) LOGIN window will be permanently displayed until a user logs in with the right ID and password.
 - 2) If NVR is set as AUTO LOGIN, login process is not necessary. See "4.1.2 User" for more information.
-

Note The  key in the virtual keyboard includes common words, such as Admin, root, http://, rtsp://, www., .com, .net, .org etc.

3.2 Camera Registration

The NVR can connect to any ONVIF® IP cameras over the network. If the cameras are connected to the PoE switch in the back of the NVR, the cameras will also receive power and transmit data to and from the NVR.

Note **Minimization of repetitive job for registration**
User doesn't require ID & Password once the same camera is already registered. But, some models requires ID & Password, if it has different ID & Password by user's setup.

3.2.1. PoE Camera Connection

PoE cameras are automatically connected when the camera is plugged to the PoE port. Channels assigned to cameras connected to the NVR's PoE switch will display the channel title in green.

Cameras connected to the NVR's PoE switch must be set to 'DHCP' before connecting to the NVR.

For cameras that support 'Auto IP', the NVR will automatically control its IP settings.

Note If PoE camera is connected to the PoE channel while another camera is being assigned to that channel, the previously assigned camera moves to another channel and the PoE camera will be assigned to that channel.

Note **Zero-Configuration**
It is the Link-Local IP address assignment method through Auto-IP and it is for assigning IP, automatically, when the DHCP is not available or supported. The device that adopts this technology selects 169.254.xxx.xxx, in general, and assign the IP address after checking the availability of the selected IP address

3.2.2. Camera Connection through Network



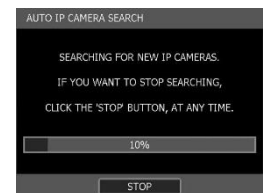
The NVR supports three ways to search and register cameras to the NVR. The AUTO CONFIGURATION option allows the NVR to scan the network and automatically register the first cameras it finds to the available channels.

The DRAG & DROP CONFIGURATION option scans the network for supported cameras, displaying the results in a table from which you can drag cameras to the viewing channel to assign them to channels.

For advanced settings and manually adding cameras, select ADVANCE CONFIGURATION

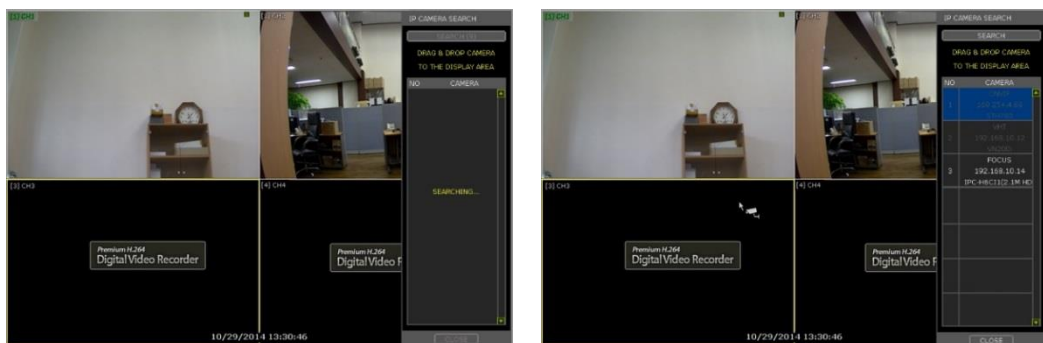
3.2.2.1. AUTO CONFIGURATION


- ① Select a recording mode for the cameras. This recording option will be applied to all cameras registered to the NVR.
- ② Click [START]. The NVR will search all cameras under the same network (Router) and register them in order, automatically.



3.2.2.2. DRAG&DROP CONFIGURATION

- ① Click [START] button to search camera. The NVR will search the network for cameras and display all results in the table on the right.



- ② Select camera in the list and drag and drop it to the channel want to assign to the camera. (While it is moving, mouse pointer is changed to )
- ③ Click [APPLY] button to finish the process.

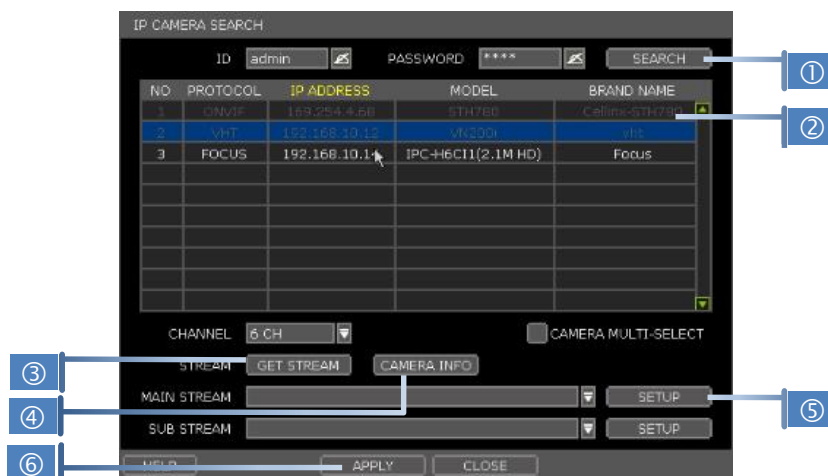
3.2.2.3. ADVANCE CONFIGURATION

The Advanced Configuration menu allows you to search for cameras with advanced configuration options, manage assigned cameras and manually add cameras using individual URLs.

- ① Click [SEARCH] button to search all cameras on the network.

Some cameras which support 'Auto IP(or Zero Configuration)' can be searched even it has the different IP address range from the NVR.

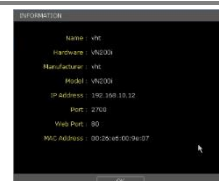
- ② Select a camera from the list and click [GET STREAM] to read the streams of the camera.



- ③ When [GET STREAM] button is selected, the NVR will assign a channel number to the selected camera. Use can also select a specific channel number from the drop-down options.
- ④ [CAMERA INFO] shows the camera's basic information such as model name, IP address, Port number, Mac address in detail.

Note Information

User can check the detail of the camera such as model name, IP address, Port number, Mac address and so on.



- ⑤ [SETUP] allows user to control the camera's setting such as Resolution/Frame/Bitrate/Image Quality etc.
- ⑥ Click [APPLY] to register the selected camera to the NVR.

3.2.2.4. Multi Select

1. Check the box next to [CAMERA MULTI SELECT] to select multiple cameras from the search results. Selected cameras will be highlighted in green.



2. Once all search results are displayed, user can sort the table by the different columns such as protocol, IP Address, Hardware and Name, by clicking each property tabs. The selected property will be highlighted in yellow.
3. Check the box next to [CAMERA MULTI SELECT] to select multiple cameras from the search results. Selected cameras will be highlighted in green.
4. When [APPLY] button is clicked, cameras will be registered one by one starting from the top. Cameras that are already registered will be shown as unselected.

Note During the registration process of Camera Multi Select, if there is a camera which has a different IP range or requires ID & Password, the process is paused and the NVR will request the required information.

3.2.2.5. MANUALLY ADD CAMERAS

If a user wants to connect to an IP camera in a different network, the cameras can be added manually using the [ADD CAMERAS MANUALLY] button.


- ① Click [ADD CAMERAS MANUALLY] to open the camera property window.

The screenshot shows the 'ADD NEW IP CAMERA MANUALLY' window. It contains the following fields and controls:

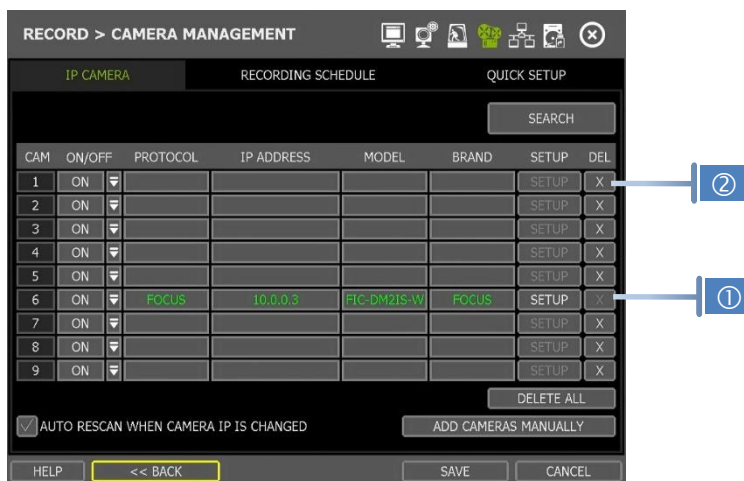
- ID:** Text field with 'admin' entered.
- PASSWORD:** Password field with '****' entered.
- CHANNEL:** Dropdown menu showing '1 CH'.
- PROTOCOL:** Dropdown menu showing 'ONVIF'.
- MODEL:** Text field.
- BRAND NAME:** Text field.
- WEB PORT:** Text field.
- IP ADDRESS:** Text field.
- TCP/IP PORT:** Text field.
- RTSP MAIN URL:** Text field with 'rtsp://' entered.
- RTSP SUB URL:** Text field with 'rtsp://' entered.
- ONVIF URL:** Text field with 'http://' entered.
- STREAM:** Section with 'GET STREAM' and 'CAMERA INFO' buttons.
- MAIN STREAM:** Dropdown menu.
- SUB STREAM:** Dropdown menu.
- Buttons:** 'HELP', 'APPLY', and 'CLOSE' at the bottom.

Numbered callouts point to the following elements:

- ② Points to the CHANNEL dropdown.
- ③ Points to the PROTOCOL dropdown.
- ④ Points to the IP ADDRESS, TCP/IP PORT, RTSP MAIN URL, RTSP SUB URL, and ONVIF URL fields.
- ⑤ Points to the APPLY button.

- ② Select channel number to register.
- ③ Select protocol (ONVIF, RTSP, FOCUS and VHT) of the camera. Registration is available with one of the following. – IP Address, RTSP URL or ONVIF URL
- ④ Input necessary information with  button and click [GET STREAM] button to get stream information
- ⑤ Click [APPLY] button to register camera.

3.3 Deleting Cameras



Go to [ADVANCED CONFIGURATION] in Camera Menu (Menu > Record > Camera).

① Non-PoE Camera

Delete (X) button is always activated. Click X of the camera to delete it from the NVR's channels.

② PoE Camera

PoE camera cannot be deleted while connected to the NVR's PoE switch.

In order to delete a PoE camera, unplug the camera from the NVR and click X button when it is activated.

3.4 Camera Setup

User can change setup of the registered camera.

3.4.1. Setup for Each Camera

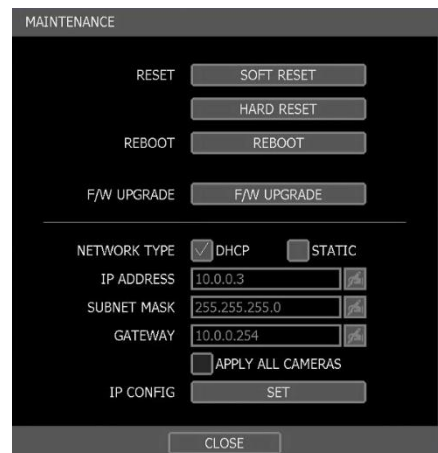
Click [ADVANCED] in Camera Management menu ("Menu > Record").

Go to setup mode by clicking the [SETUP] button next to a desired camera.

You can also access the camera's setup menu by right-clicking anywhere on the screen during live view and selecting [CAMERA SETUP].



- ① Click [GET STREAM] button and get current camera status.
- ② Click [SETUP] button to change resolution, frame rate, image quality etc.
 - **RESOLUTION:** Select the rescaling resolution from the available drop-down options.
 - **FRAMES PER SECOND:** Set the stream's frames per second speed from 0 to 30.
 - **BITRATE:** The maximum bitrate that camera use for image transmission.
 - **QUALITY:** Image quality for recording. The higher the quality, the larger the recording file size will be.
 - **GOP:** Group of pictures. The interval of I-Frame.
 - **H.264 I-REFERENCE:** Recording frame interval out of transmitted frames. (ex. x2 means records one frame out of two frames) If it is not used, NVR records all transmitted frames. (Check your camera's manual to make sure it supports this setting)
- ③ Current Streaming conditions – This will display the camera's recording mode and FPS in real-time.
 - **FRAMES PER SECOND:** It shows the current transmission frame.
 - **REC.:** It shows the stream that NVR records for the camera.
- ④ MAINTENANCE: User can camera reset, reboot, firmware upgrade and setup to use live buffering function on NVR.
 - 1) Reset
 - Soft Reset: Reset camera settings except basic network settings like IP address, subnet and gateway or DHCP settings.
 - Hard Reset: Reset all camera settings (factory reset).
 - 2) Reboot: Reboot the camera.
 - 3) Schedule Reboot: Set the schedule to reboot the camera.
 - 4) F/W Upgrade: Upgrade the camera firmware.
 - 5) Network setting: Set the camera network settings. After setting network information, click 'SET' button to apply.



Note I-REFERENCE

Differently from DVR, NVR records all data which come from IP camera. That is, frame rate of live display should be the same as that of recording.

However, if user uses IP camera that supports I-REFERENCE, user can make it different. That is, user can monitor live display with full frame and record it with lower frame.

- If user sets 'H.264 I-Reference' as "4X", it means that 1 frame out of 4 frames is recorded.
- If user sets 'H.264 I-Reference' as "2X", it means that 1 frame out of 2 frames is recorded.
- It is also related to the setting of frame rate and GOP(Group of Picture).

Ex 1) FPS: 30, GOP: 30, I-Reference: 4X → recording frame will be about 7.5fps

Ex 2) FPS: 15, GOP: 30, I-Reference: 4X → recording frame will be about 3.7fps

- It is useful for extending recording period without dropping of live monitoring frame rate.

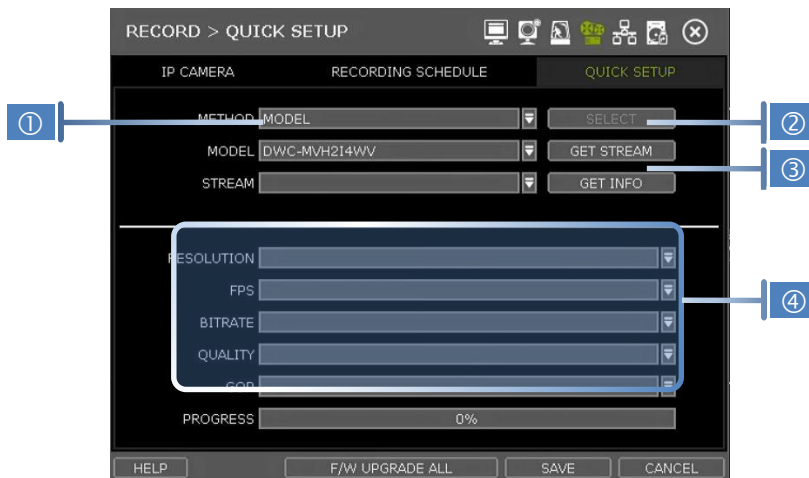
Note Encryption Option

If the camera supports encryption option, selection button is shown(※).

When you select this option, the image from the camera can be seen through the NVR only.

3.4.2. Quick Setup

User can setup multiple cameras with the same recording at once.



- ① Select model to setup. All cameras with the same model name will be selected.
- ② Click [GET STREAM] button and get the current stream information.
- ③ Click [Get INFO] button and check current setup for the cameras.
- ④ Change setup and click [SAVE].
- ⑤ "CAMERAS ARE SUCCESSFULLY APPLIED" message will appear when the process is completed.
- ⑥ If cameras are the same model, user can all camera firmware upgrade at once by 'F/W UPGRADE ALL'

3.4.3. Change channel

User can change channel by drag & drop from the live display screen.

Select a camera by clicking on it and dragging it to its new channel. During the dragging, the


mouse pointer is changed to . In case of a PoE camera, channel title will be shown as in the example below..



In Live mode, user can check the status of PoE cameras by selecting [PoE STATUS] menu in the pop up menu window.

3.5 Live Display Mode

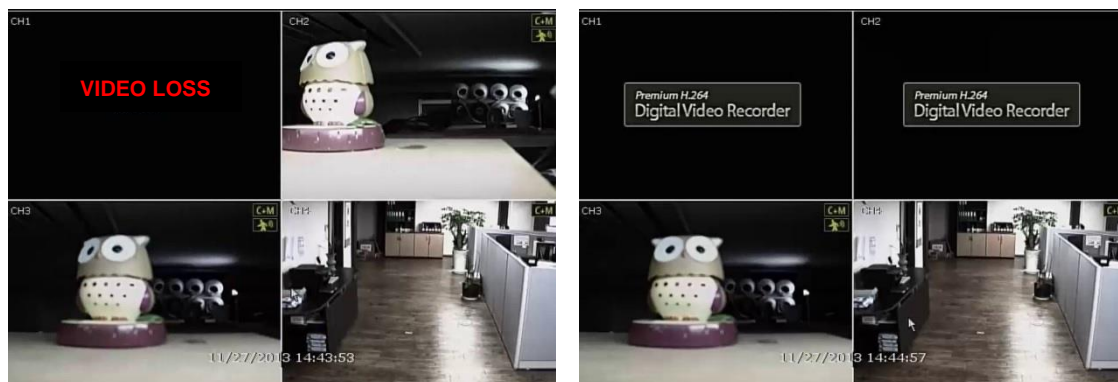
3.5.1. Channel Selection

Live image can be seen by easy button operation after power-up. The images can be seen in 1, 4, 9 and 16 screen splits (some split options may not be available according to the NVR's number of channels). Whenever the up/down arrow button on the front panel or IR remote controller is pressed, and whenever the screen display mode button () on the tool bar is clicked, the screen will change to display the next channel or sequence of channels.

To switch from a multi-channel view to a single camera, click on the selected channel. To return to previous screen mode, click of the left mouse button again.

“VIDEO LOSS” is shown on the display screen when no camera is connected or disconnects suddenly. When a camera is disconnected, a warning sound shall be generated depending on the system setting.

Admin users can set different level of authorization for each user, granting them specific access to specific channels. If a certain user is not authorized to view a channel, no image is shown on the display screen as below.



3.5.2. Icons

In live mode, icons will appear on the screen to notify of the system mode or status.

| Icon shown at the right-upper corner on each channel screen | | Icon shown at the right-bottom corner on full screen | |
|---|---|---|-----------------------------------|
| | Continuous Recording | | No HDD detected. |
| | Motion Detection Recording | | Emergency Recording is in use. |
| | Sensor Activating Recording | | PTZ is enabled. |
| | Continuous + Motion Alarm Recording | | Warning for exceeding temperature |
| | Continuous + Sensor Activated Recording | | Sequence mode is enabled. |
| | Motion Detection + Sensor Activated Recording | | Digital zoom is enabled. |
| | Emergency Recording | | |
| | Sensor Activated | | |
| | Motion Detected | | |
| | Audio Channel | | |
| | PTZ Camera | | |
| | POS | | |

Note If you cannot find any recording icon in the right corner of screen, then the system is not recording. Check the recording schedule or camera in the main setup menu.

3.5.3. Pop-up Menu

User can click the right button of the mouse to pop up sub-menu as below. If user want to control a specific channel, put the mouse cursor on that channel and then click the right button.

DISPLAY MODE

User can change screen display mode from the available split options.

CHANGE NEXT CH

View the next channel or next group of cameras in the current split mode.

SEQUENCE

When "SEQUENCE" is selected,  icon will appear on the right-bottom corner of the screen. Display screen will be sequentially changed.

Digital-ZOOM


- Digital Zoom is available in single channel view only. When "ZOOM" is selected,  icon will appear on the right-button corner of the screen and digital zoom control is available.
- To zoom-in, drag the mouse's cursor on the desired area to create a zoom square. You can also control zoom-in & zoom-out by mouse scrolling the mouse's wheel up and down. Once the image is zoomed-in, user can move the zoom area by clicking on the edge of the square and dragging it.
- To exit from the zoom mode, click the right and select "ZOOM EXIT" in the menu.

IMAGE ADJUST

View the adjust camera image menu (Please refer to "4.2.1 Camera"). User can adjust image such as brightness, contrast, color etc. The available options depend on the camera's ONVIF integration. See the camera's manual for more information

PTZ

Enable PTZ mode. (Please refer to "3.6 PTZ Operation" for detail.) The available PTZ options depend on the camera's ONVIF integration. See the camera's manual for more information

CAMERA SETUP

It goes to the menu to setup camera (Please refer "3.4.1 Setup for each camera"). User can setup resolution, frame and so on.

FREEZE

Freeze the current live view. System clock (date/time information) will continue running at the bottom of the screen. Select "FREEZE" again to resume the live view.

ADD BOOK MARK

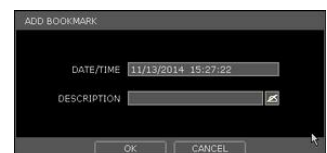
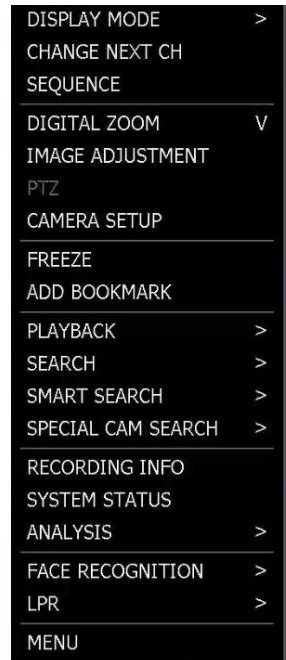
Add bookmark with description on the currently displayed image. When the bookmark menu appears, enter a description and click OK to save.

PLAYBACK

Select a specific prior time (10sec. / 15sec. / 30sec. / 60sec. / 2min. / 3min. / 5min.) to instantly switch to playback mode.

SEARCH

Search recorded video using the Calendar, Date/Time, First Data, Last Data, System Log, Event Log, Transaction Verification and Bookmark options. (Please refer to "3.8. Search Recorded Image" for details.)



SMART SEARCH

Search recorded video at split screen mode by time & minutes' unit. Thumbnail Search or Multi Time Search mode is supported.

SPECIAL CAM SEARCH

Search special cam such as elevator, video analytics, smart event, object detection, people counting and thermal event.

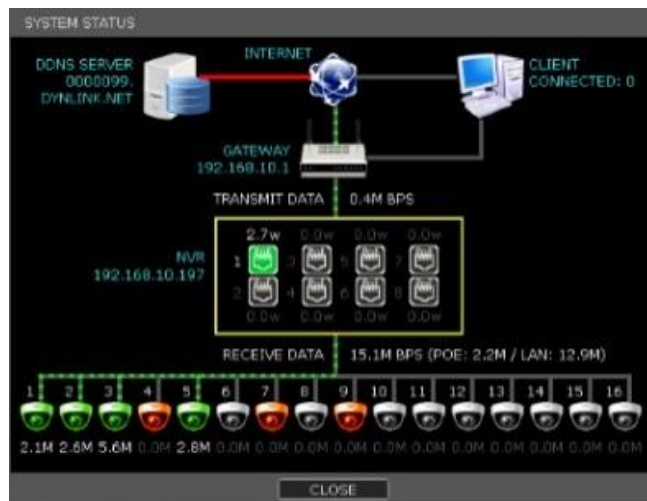
RECORDING INFO

Check the recording status of the NVR, such as Recording Period, Daily Recording Size (Average), Recording Days and Remaining Recording Days.



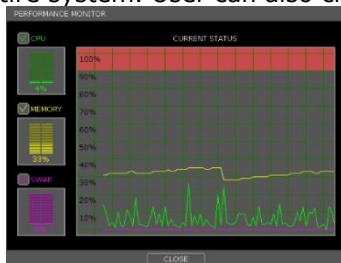
SYSTEM STATUS

See the system status, including information on the network condition, number of clients currently connected to the NVR, PoE camera connection etc. A green line means the connection is live and working.



ANALYSIS

Check the system performance, conditions and network conditions for each channel and the entire system. User can also check the status of PoE Cameras.



[Performance monitor]



[Network monitor]



[POE Monitoring]

FACE RECOGNITION

Setup face recognition function. Add/edit face information, setup alarm function and face recognition option and search face log.

LPR

Setup license plate manager and alarm and search LPR log.

MENU

Open the main menu setup screen.

3.6 PTZ Operation

In order to operate a PTZ camera, the channel which is connected to a PTZ camera should be in full screen mode. To activate PTZ control, right-clicking and selecting "PTZ" in the pop-up menu as below. When in the PTZ mode, **PTZ** will appear on the right-button corner of the screen.



PTZ Control

In PTZ mode, user can control PTZ camera using the USB mouse. While pressing the left button, drag the mouse cursor up/down or left/rightward to move the camera's pan/tilt position. The further away from the center the mouse's cursor moves, the faster the PTZ camera will move.

To move the camera to a preset position, click the preset position number in the bottom of the screen to move the camera accordingly. The presets must be set prior to selection.



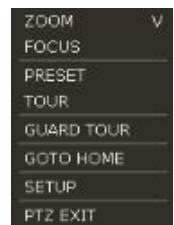
Note Full PTZ functions are available by using the USB mouse, IR remote control, or keyboard controller. Availability of functions depends on the camera's ONVIF integration. Consult the camera's manual for more information.

ZOOM/FOCUS

Move zoom-in/out by rolling the wheel of mouse up/down. If mode is changed to "Focus", the camera's focus can be controlled by rolling the wheel of mouse.

PRESET

When the preset menu pops-up, select the preset number and click "Enter" to move to the corresponding preset position. Maximum Preset number supported is 255.



TOUR

Enable the TOUR function. When 'TOUR' is on, the camera will move to preset positions in order. To turn the tour off, right-click on the screen and select 'Tour'.



GUARD TOUR

When enabled, the camera will automatically switch positions according to the sequence of presets set in the GUARD TOUR settings. See "4.2.3 PTZ" for more information.

Caution User can set interval for each preset position. Some presets might be skipped in case the camera cannot mechanically move or control focus within the interval time.

GOTO HOME

Camera moves to the original position that is memorized in the PTZ device.

SETUP

Go to PTZ setup menu (Please refer to "4.2.3. PTZ").

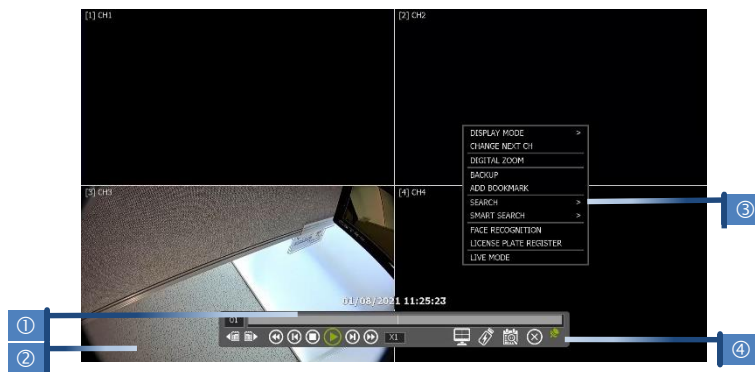
PTZ EXIT

Close PTZ control mode.

3.7 Playback Recorded Images

To playback recorded image, press the Play button on the front panel, IR remote controller or playback icon (🔍) in the menu bar. When the NVR transitions to playback mode, it will automatically playback the latest recording image.

Note Jog/Shuttle in the front panel will not be available depending on the NVR model.



Date/Time(①)

Shows date & time of the image that is being displayed.

Tool Bar (②)

Contains playback control, recorded data check, screen mode etc. (See "1.4.4. Tool Bar on Playback Mode" for more information.)

Pop-up Menu (③)

- ◆ Display mode: Change display mode (1, 4, 9, 16 screen mode)
- ◆ Change next ch: View the next channel or next group of cameras in the current split mode
- ◆ Digital zoom: Enable or disable digital zoom (available in single channel view).
- ◆ Backup: Open the backup window.
- ◆ Add Bookmark: Add a bookmark to the current image.
- ◆ Search: Search recorded data by various conditions (Please refer to "3.9 Search Recorded Image" for detail.)
- ◆ Smart Search: Search recorded video at split screen mode by time & minutes' unit.
- ◆ Face Recognition: Search face recognition data.
- ◆ License Plate Register: Register the license plate number.
- ◆ Live Mode: Go to live mode.


Exit Playback Mode (④)

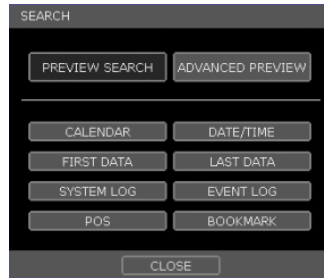
Clicking the Exit icon (🔍) in the menu bar will return you to the live view.

3.8 Search Recorded Image

Search recorded image by date and time, first and last data, events, bookmarks etc.

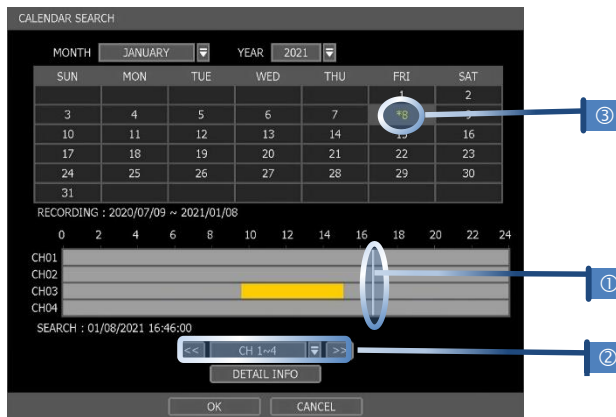
Note To enter the search options menu:

- ① In Playback mode, right-click to enter the popup menu and select the search menu.
- ② In Live mode, press the Search button  in the tool bar at the bottom of the screen.
- ③ Press the [SEARCH] button in front panel.



3.8.1. Calendar Search

To search data for a specific date and time, select the date and time.



Move the white-vertical line (①) to the time you want to search.

The colors of the time bar represent the different recording modes. See "4.4.2 Schedule" for more information. The time bar displays four channels at a time. To check the next 4 channels, press the group button on the bottom of the window (②).

"*" mark on dates (③) indicate days with recorded video available.

3.8.2. Search Date/Time

Enter the desired date and time in the calendar screen.

Use the arrow button or mouse to move to each day/month/year and time category for selecting second / minute / hour / month / year.

Days with recorded data will be highlighted in red and "*" next to them.

DATE/TIME SEARCH

MONTH **MARCH** YEAR **2019**

| SUN | MON | TUE | WED | THU | FRI | SAT |
|-----|-----|-----|-----|-----|-----|-----|
| | | | | | 1 | 2 |
| 3 | 4 | 5 | *6 | *7 | *8 | *9 |
| *10 | *11 | *12 | *13 | *14 | *15 | *16 |
| *17 | *18 | *19 | *20 | 21 | 22 | 23 |
| 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| 31 | | | | | | |

TIME (HOUR/MIN/SEC) **15** : **23** : **28**

OK CANCEL

3.8.3. First Data

Go to the first screen of the recorded image. This is the oldest image recorded.

3.8.4. Last Data

Go to the last screen of the recorded image. This is the latest image recorded.

3.8.5. System Log

Find particular system log information such as System, Setup or network events.

SYSTEM LOG

03/19/2019 ~ 03/20/2019 SEARCH

☒ ALL ☒ SYSTEM ☒ SETUP ☒ NETWORK

DATE 03/19/2019 1/1 < >

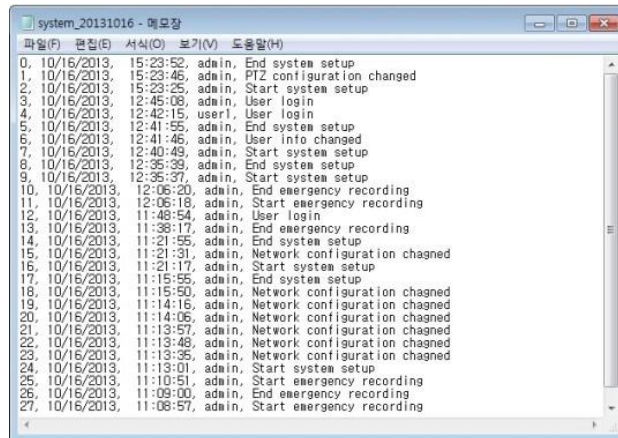
| NO | TIME | USER | EVENT |
|----|----------|-------|---------------------|
| 1 | 16:25:47 | admin | End system setup |
| 2 | 16:23:37 | admin | Start system setup |
| 3 | 16:23:34 | admin | End system setup |
| 4 | 16:23:33 | admin | Start system setup |
| 5 | 16:17:15 | admin | End system setup |
| 6 | 14:56:59 | admin | System time changed |
| 7 | 14:33:06 | admin | Start system setup |
| 8 | 14:13:19 | admin | User login |
| 9 | 14:07:51 | admin | User logout |
| 10 | 14:07:44 | admin | User login |

End system setup

SCAN EXPORT

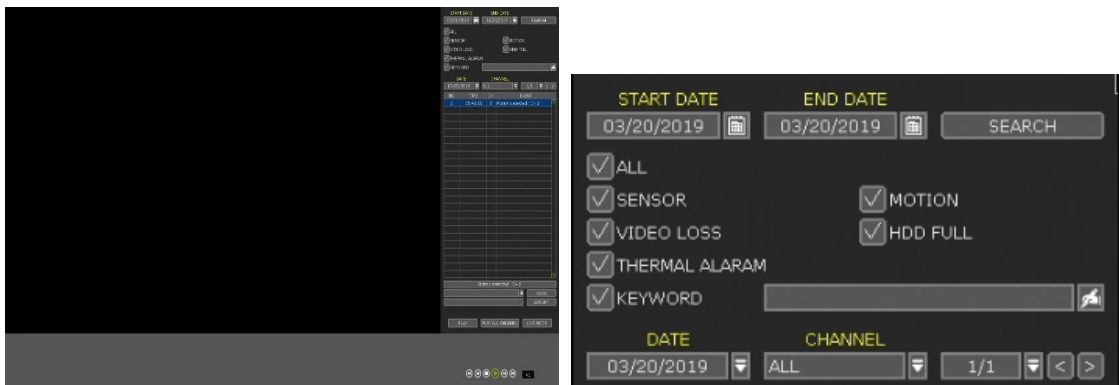
CLOSE

- ① Select date to search.
- ② Select log type to search. User can search individual events or all at once.
- ③ Click [SEARCH] to show the search results in the list.
- ④ Click [EXPORT] to copy the list to an external device such as USB memory stick as ".txt" file.
- ⑤ Once export is completed, user can find a date folder created in USB memory stick. There is "system.log" file stored in the date folder.



3.8.6. Event Log

Find particular events such as sensor activation, motion detection, video loss, HDD full or Thermal alarm. And events are searched by keyword.



- ① Select date to search.
- ② Select log type to search. User can search individual events or all at once.
- ③ Click [SEARCH] to show the search results in the list.
- ④ Click [EXPORT] to copy the list to an external device such as USB memory stick as ".txt" file.

Note In case the Alarm does not activate even though the alarm input setting had been done, check the alarm connection port of the product's rear panel.

Note 20 numbers of log record will be shown on one page of the [System Log] and [Event Log] window. User can click the arrow button (◀ ▶) to search the log records on another page.

3.8.7. DISK LOG

Search the event of HDD disk and click 'export' to copy the list to an external device such as USB flash drive as ".txt" file.



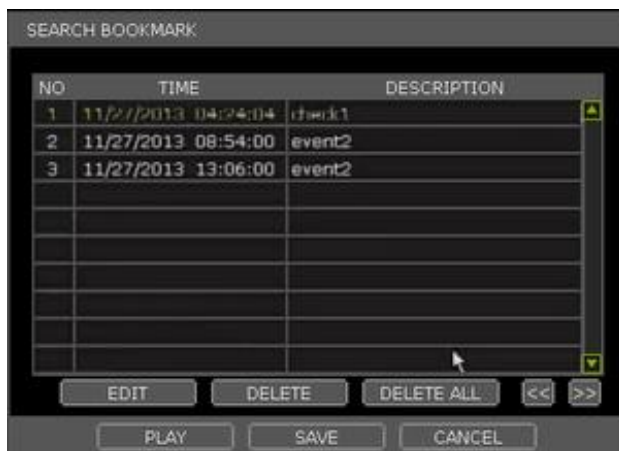
3.8.8. POS

Input the search information (channel #, date, time & keyword) and then click [SEARCH] to view search results. Enter a keyword to filter the results. Click [PLAY] to go to playback video and POS data.



3.8.9. BOOKMARK

Bookmark search allows you to can check, modify and delete bookmarks. Select a bookmark from the search results list and [PLAY] to display the correspondent video image.



3.9 Smart Search

User can search recorded video at split screen mode by time or minute's unit. Smart Search supports two different modes – Thumbnail Search & Multi-Time Search.

3.9.1. Preview Search

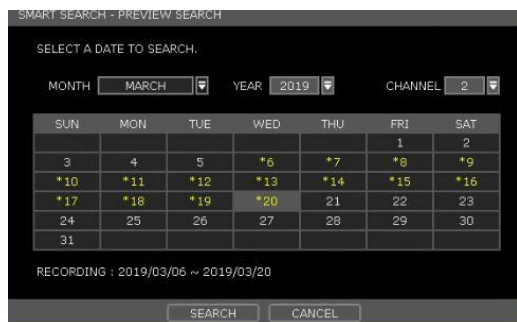
When the date is selected, NVR displays 24 screen images (1 hour unit) of the channel on that day.

And when the specific time (screen image) is selected and click Minute button (or double click the image), NVR displays 60 screen images (1 minute unit) on that hour.

User can easily & quickly search the event with this thumbnail search function and playback the recorded image of that moment.

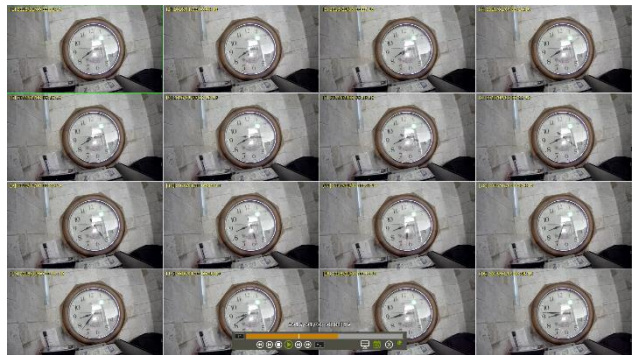
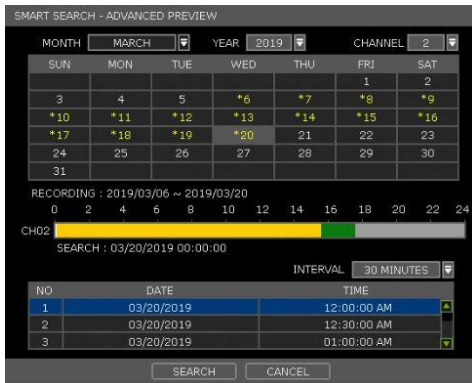
The number of thumbnail image and the size of each image can be increased/decreased and the maximum no. is 196(14 x 14) – it depends on the resolution.

In the thumbnail search mode, user can change search date and display unit (time/minute) and go to playback mode directly.



3.9.1. Advanced Preview Search

When the date is selected and interval is set, NVR playback the recorded image of the selected channel with the selected interval on the multiple screen mode, simultaneously. The interval can be set from 1 minute to 1 day.



3.10 Special Camera Search

User can search special camera and events such as Elevator, Video Analytics, Smart Event, Object Detection People Counting and Thermal event.


ELEVATOR
VIDEO ANALYTICS
SMART EVENT
OBJECT DETECTION
PEOPLE COUNTING
THERMAL EVENT

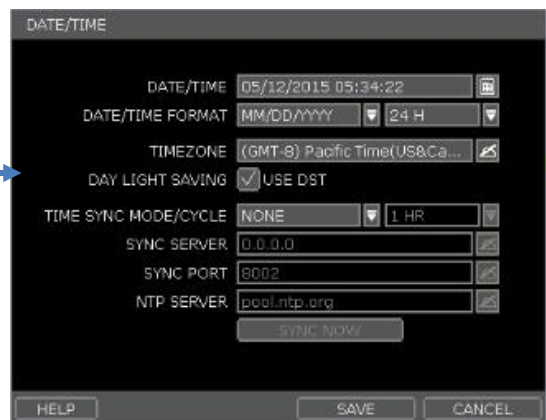
3.11 DST Setting and Image Playback

DST starts at 2:00AM local time on 2nd Sunday of March, and ends at 2:00AM DST on 1st Sunday of November.

During DST (Daylight Saving Time), the NVR's clock needs to be adjusted according to regional time zone. The NVR's time will shift one hour after the DST settings start, and the NVR will restore the time clock back to normal after DST ends.

3.11.1. DST Setting

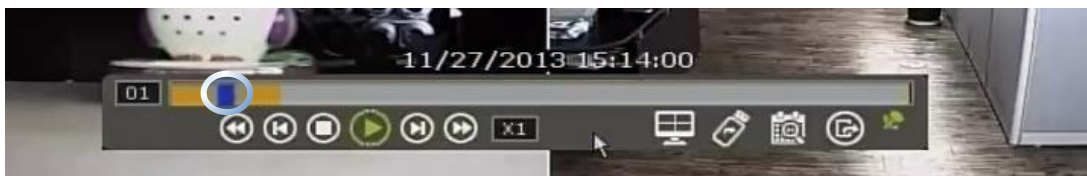
To enable DST setting on the NVR, go to SYSTEM > INFORMATION and click "DATE/TIME" . Select "USE DST" to apply DST time change. (Select the proper Time Zone that allows DST setting in order to activate DST)



3.11.2. DST Image Playback

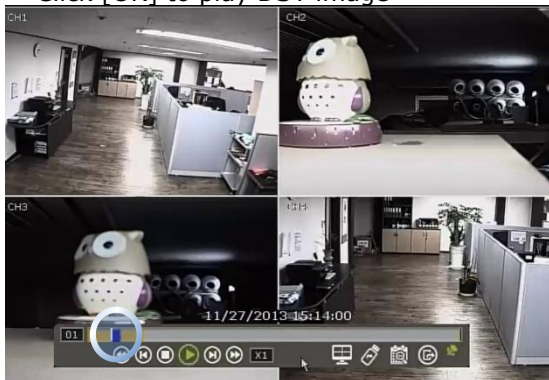
When there is an hour of overlapped data due to DST, the overlapping hour will be indicated in

Blue in the Intelli-Search Bar during playback.



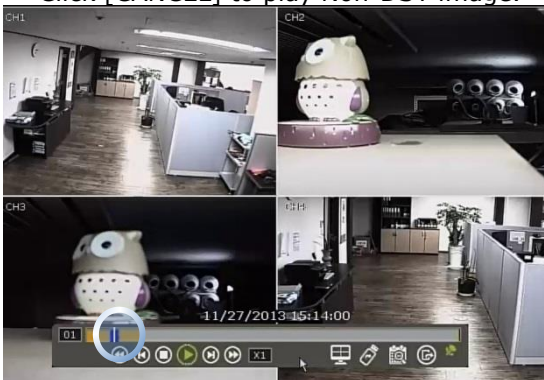
To playback data from the overlapped hour, select a time in the intelli-search bar. A "Data Selection" message will appear. Select whether to play DST data or Non-DST data.

Click [OK] to play DST image



["DST" image is displayed]

Click [CANCEL] to play Non-DST image.




["Non-DST" image is displayed]

4. Setting

General setting structure consists of "System", "Device", "Event", "Record", "Network" and "Backup". Each Setup menu consists of sub-menus and additional categories.



| Main Classification | Sub Classification |
|---------------------|--------------------|
| SYSTEM | INFORMATION |
| | USER |
| | DISPLAY |
| | HDD |
| | SETTINGS |
| DEVICE | CAMERA |
| | AUDIO |
| | PTZ |
| | POS |
| | KEYBOARD |
| ALARM | SENSOR |
| | CAMERA ALARM |
| | EXTRA ALARM |
| RECORD | CAMERA MANAGEMENT |
| | RECORDING SCHEDULE |
| | QUICK SETUP |
| NETWORK | NETWORK |
| | DDNS |
| | NOTIFICATION |
| | MOBILE NOTIFY |
| | P2P CLOUD |
| BACKUP | BACKUP |

To access the setup menu, click the  button in the menu bar or right-click anywhere on the screen and select Setup Menu

4.1 System

4.1.1. Information

SITE NAME

Enter a site name to differentiate the NVR from other sites.

KEYBOARD ID

Setup SITE ID to match the ID settings of a keyboard controller. Keyboard model and BUAD RATE must be setup in "MENU > DEVICE > KEYBOARD" (See "4.2.5 Keyboard").

REMOTE ID

User must setup REMOTE ID to match with the ID setting of IR remote controller, if user wants to use it to control NVR.

DATE/TIME

Using the available options, manually adjust the date and time, select the display mode for the time and the date, and select the appropriate time zone. If applicable, check the 'USE DST' box.

There are three types of time sync mode.

- ♦ Server Mode

The operating NVR is set as a Time Sync Server, which can synchronize the time other NVR(s) connected over the same network.

- ♦ Client Mode

Input the IP address of a designated NVR or Remote Software P/C (CMS) as a Time Sync Server in "SYNC SERVER". The NVR's time clock will be synchronized with the server by interval time set in "TIME SYNC CYCLE".

- ♦ NTP Mode

"pool.ntp.org" is the recommended NTP Server. To activate, set the TIME ZONE of your local area and then click [SYNC NOW].

For DST setting, please refer to "3.10.1 DST Time Setting."

- GPS Mode

The NVR's time clock will be synchronized with USB type GPS device.

Note "HELP" button can help you understand how to setup several important settings. For example, if you need help about how to set Date/TIME, click "HELP" button at the right bottom of the menu.

LANGUAGE

Select the display language from the available options.

VERSION

View the NVR's current firmware version and update to a newer version via USB Memory Stick/FTP server.

Caution **Do not click CANCEL during firmware upgrade. It may cause serious damage on the system!!!**

Setting may be changed to factory default. It is recommended to check the setting and operating condition of the NVR after firmware upgrade.

How to upgrade system firmware by using USB memory stick :

1. Insert a USB drive with the firmware file formatted by FAT/FAT32 in any USB port of the NVR (compatible with USB 2.0)
2. Select 'USB' from the Method drop down options and press the [Scan] button.
3. Once the system detects the USB drive, it will display the firmware file under 'CURRENT VER' and the 'NEW VER'.
4. Click [START] to begin the upgrade process.

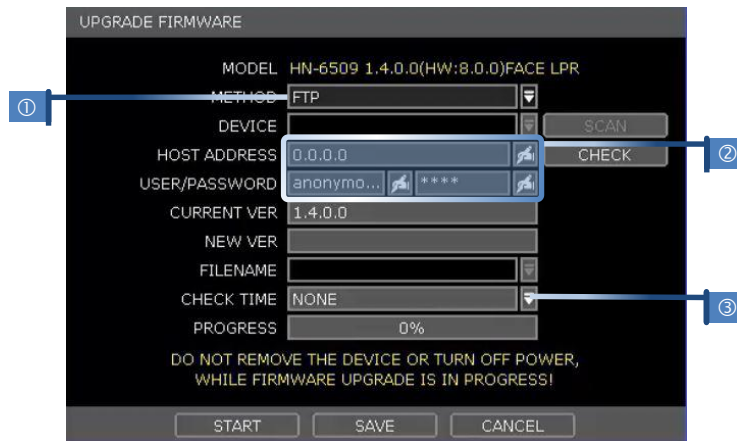
(*) It is not allowed to use the partitioned USB memory.

Upgrading system using Digital Watchdog's Automatic Firmware Upgrade via FTP server:

- ① Select FTP in the drop-down options under 'Method'.
- ② Default FTP information operated by manufacturer (Host address, username and

password) is shown as below. User must have prior consultation with the manufacturer if he wants to operate his own FTP server.

- ③ Enter the Check Time. The system will automatically check the FTP server for a newer firmware every day at set hour.



- ④ Click [OK] button to proceed automatic firmware upgrade. After completed, the system will reboot.
- ⑤ Click [Check] to allow the NVR to connect to the FTP server and check the latest Firmware version. If a new firmware is available, the NVR will ask you whether you want to upgrade it or not.
- ⑥ Click [OK] to confirm and click [START] to start upgrading.

VIDEO SIGNAL

Check the right video signal (NTSC or PAL). This setting should match the [NTSC/PAL] Selection Switch located on the rear panel. When the switch is shifted, the system must be restarted. Video images might heavily shake and blink if NTSC/PAL is not properly set.

IP ADDRESS

Shows the NVR's current IP Address. It can be set at 'MENU>NETWORK>NETWORK'.

AUTO IP

Shows AUTO IP Address of the NVR.

MAC ADDRESS

Shows the unique identity number for the NVR.

SYSTEM MONITOR

Shows the current status of the system.

PERFORMANCE MONITOR

Shows the current status of CPU, Memory and Record.

KEY PAD BEEP

User can turn on or off the beeping sound of key pad.

4.1.2. USER

The ADMIN user (default password is 1234) has full authority for system setting and can change the system password or add/delete users and assign different permission level to them.

Note Maximum number of users including administrator is 16.

User Management

Admin user can control authorization for each function. This authorization is applied when the user connect to the NVR from the remote software as well.

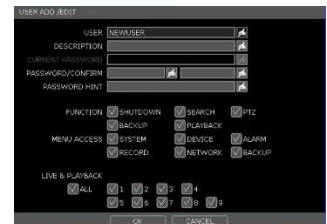


① Add User

To add new user, click [ADD]. In the new setup window, set new user's ID, description, and password. Select which functions and menu options the user will have access to by checking the box next to the corresponding functions.

In Live and Playback mode, only the selected channels are visible to the user.

To change the setting, select user and click [Edit].

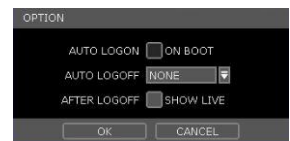


② Delete User


Select user in the list by highlighting their name and click [Delete].

③ Option

- If Auto Logon "On Boot" is enabled the NVR will not request ID and password after power up.
- If "Auto Logoff" is enabled, the NVR will log off the current user after the set time of inactivity.
- If 'After Logoff' - 'Show Live' option is enabled, the DVR will show live screen after log off.



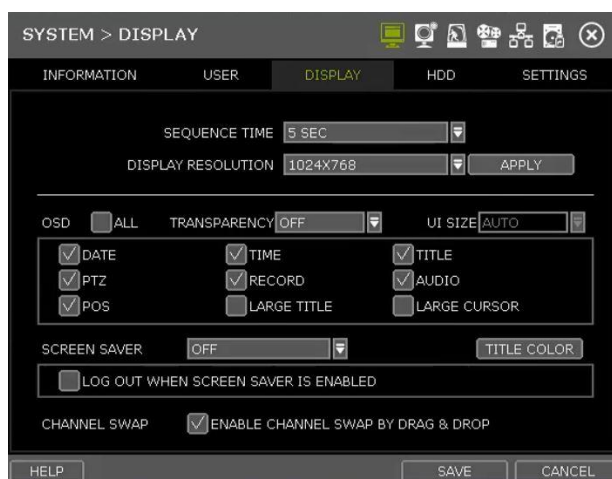
Example : How to set a user with "Live Monitoring Only"

- 1) Add a new user name, description and password.
- 2) Disable all options in [FUNCTION] and [MENU ACCESS].
- 3) In [LIVE & PLAYBACK], select channel(s) for live monitoring, and click [OK].
- 4) Click [SAVE].
- 5) To verify this limited function, log-off through Exit icon  and login as the user set above. User can receive the live images. However, when user clicks playback button or select any other function, warning message of "No Permission for this function." will pop up.



4.1.3. DISPLAY

Can set sequence dwell time, Display Resolution, OSD display options and spot-out channel & dwell time as below picture.



SEQUENCE

Set the dwell time for sequential channel display.

DISPLAY RESOLUTION

The system supports following kinds of resolutions: 800x600, 1024x768, 1280x1024 and 1920x1080. Set the proper resolution in accordance with the monitor resolution.

OSD

Select what information will appear over the display by checking the corresponding boxes. And set transparency of OSD.

TRANSPARENCY

Set the transparency of screen. (OFF~50%)

UI SIZE

Set UI size of the screen (Auto/X1/X2). It can be set more than 1920x1080 display resolution.

SCREEN SAVER

The Screen Saver features protects the screen and data of the NVR by turning off after a set time of inactivity. Set the screen saver's waiting time for when the monitor will automatically turn off. Set in between 1 minute and 180minutes. If applicable, select to log off the current user when the screen saver is on.

Title Color

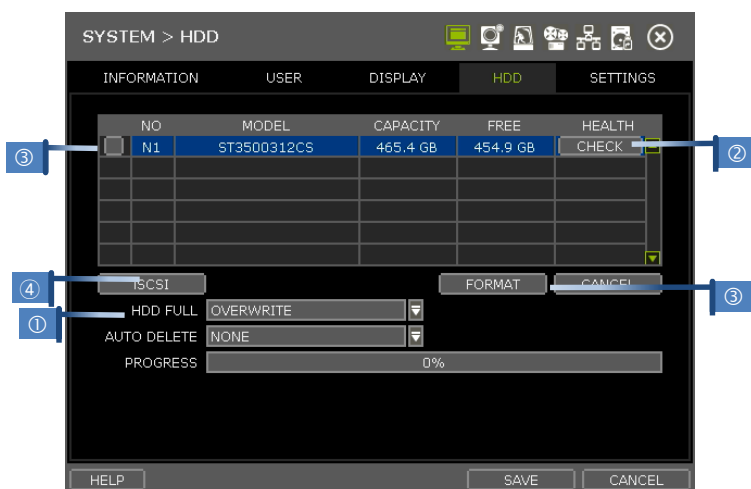
Set the color of title.



CHANNEL SWAP

Check for swapping the channel by drag and drop.

4.1.4. HDD



HDD FULL (①)

When an HDD is full, select whether to “Overwrite” or “Stop record”.

- Overwrite : NVR deletes the oldest data and record new data.
- Stop record : NVR stops recording.

HDD CHECK (②)

Click [CHECK] next to each HDD to open the health check window. See full information for each HDD such as model name, serial no, capacity, bad sector ratio, life time (used time) and temperature.



Caution WARNING MESSAGE

To achieve high-level system stability, warning message of high temperature will be popped up when temperature inside the system exceeds optimum range. This problem may be driven from malfunction of ventilation fans. Inspect if the cooling fan is properly working, or temperature around the system is properly kept.

HDD FORMAT (③)

When the new HDD is installed or there seems to be a problem on the HDD, formatting the HDD is recommended.

If system resources are occupied such as during a network connection while the HDD format is in process, the formatting may fail. Reboot the system to release system resources and then try to format again.

Select the HDD to format by checking the check box next to the HDD name and pressing the format button.



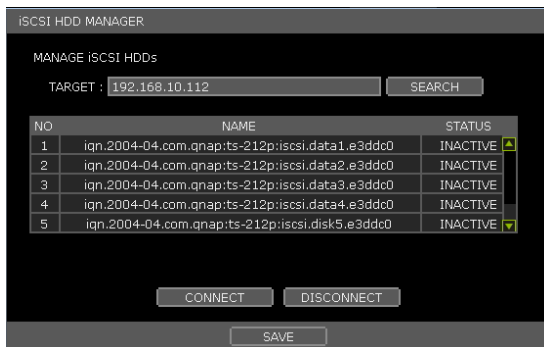
- Note**
- 1) It may take a few minutes to format HDD.
 - 2) When the format is done, all data in the HDD will be deleted.
 - 3) The system always reserves some space in each built-in HDD to effectively utilize archiving memory.

iSCSI HDD Support(④)

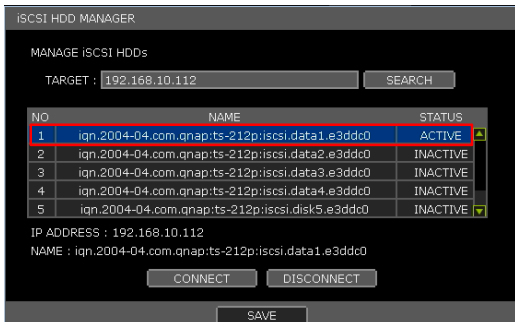
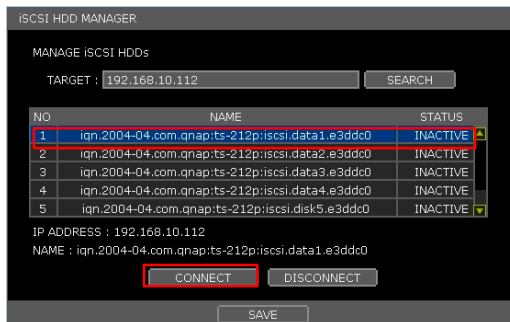
iSCSI external HDD can be added via Network.

*iSCSI Setup

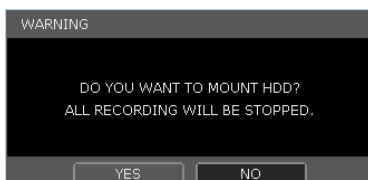
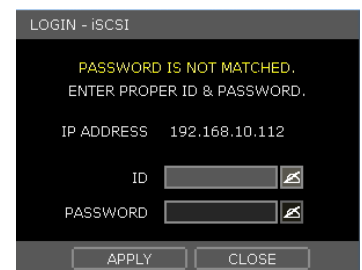
① iSCSI HDD Manage



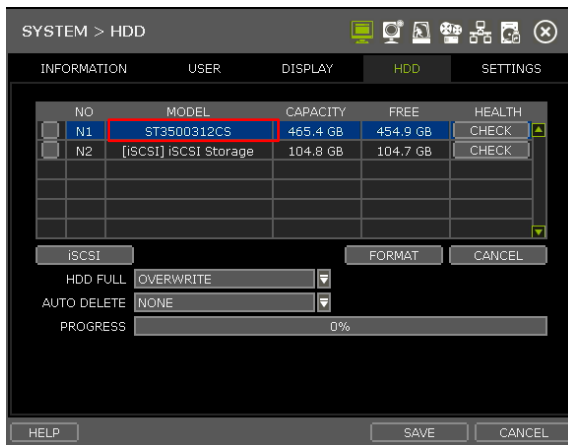
- ② Search iSCSI's IP address.
- ③ Select single or multiple HDD to connect and click [CONNECT].



- ④ When the HDD is connected, status will be changed into "Active".
(If the HDD is protected by ID & Password, correct ID & Password should be inputted.)
- ⑤ After checking the status and click [SAVE]. Then the following message will be shown. While the system register iSCSI HDD, recording is being stopped.



- ⑥ Once iSCSI HDD is registered, it can be used like local HDD.
iSCSI HDD shows [iSCSI] in front of model name.



Note iSCSI (Internet Small Computer System Interface) is the IP based storage networking standard which connects data storage device in computing circumstance. iSCSI is used for managing storage device located in long distance area because it transmits SCSI command through IP network and makes data transmission easily. iSCSI supports data storage and recovery regardless of the location.

4.1.5. SETTINGS



PRODUCT REGISTRATION

STARTUP User can register their information on the server. It make you speed up when user need technical support.

STARTUP WIZARD

Manually start the startup wizard.

FACTORY DEFAULT

Reset the system back to its factory default configuration. Once the factory default is done, all the configurations will be deleted and the system setting will return to its original factory default. Recorded video will not be deleted.

EXPORT/IMPORT

Copy the system configuration values from this NVR to save for your records or copy to another NVR.

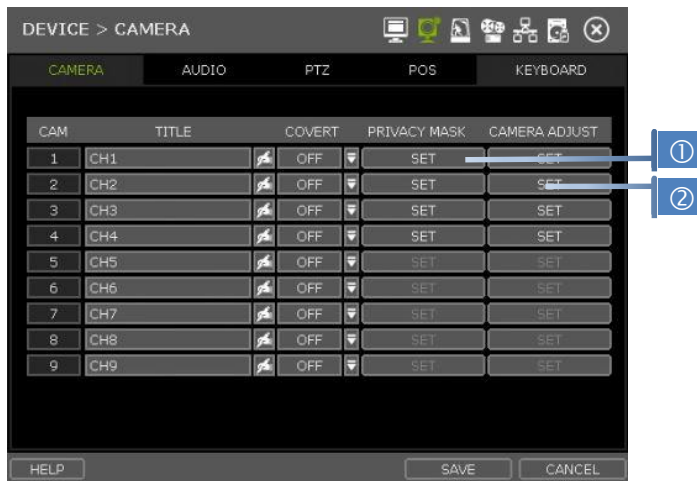
- Export: Copy the settings of this system to a USB memory device.
- Import: apply settings from another NVR via CD/DVD/USB memory device.

During the import process, make sure that the F/W version of the sourced NVR is the same as the target NVR's.

4.2 DEVICE

4.2.1. CAMERA

Set each camera's title, covert channel settings, privacy masks and general camera adjustments



Note To be able to setup these functions from the NVR, the settings must be integrated by OnVIF. If the camera is OnVIF but the settings were not integrated via OnVIF, you will have to setup the camera's settings from the camera's menu.

TITLE

Designate a name for each channel. The name will appear both in the NVR and remote software.

COVERT

"Covert," also called 'hidden camera', hides camera display and playback as if there were no camera recording. Covert settings apply to both Live and Playback view in both the NVR and remote software.

PRIVACY MASK(⓪)

Hide specific areas in the camera's Field of View (FoV) in live and playback mode. Please check that your camera supports this feature.

1. Click [SET] to get into the setup mode.
2. Using the popup menu on the bottom right, select where to place the privacy mask, assign a color and index number to it. Click 'Save' to save the changes and 'Exit' to return to the main setup page.



CAMERA ADJUST(②)

Set the camera's brightness, contrast, color etc.

1. Click [SET] in the 'CAMERA ADJUST' section to get into the setup screen.



2. Adjust the applicable options using the drop-down menu options.
3. Click 'Save' to save the changes.
4. Switch to the next channel using the arrow buttons (< >).
5. Changes will apply to the camera's view automatically.
6. [Apply All] makes all channels have the same value.
7. Click [EXIT] to exit.

4.2.2. AUDIO

Select an audio input and output during live display and match it to a specific channel. The number of audio channel may differ depending on NVR model. User can hear audio sound under both live display and playback mode depending on the system setting.

When user check 'USE 2-WAY AUDIO', user can use 2-way audio function.

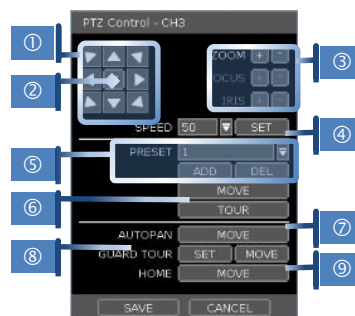


4.2.3. PTZ

Full control of PTZ camera is available in this menu. Please refer to "3.6 PTZ Operation" for more information on operating a PTZ camera.

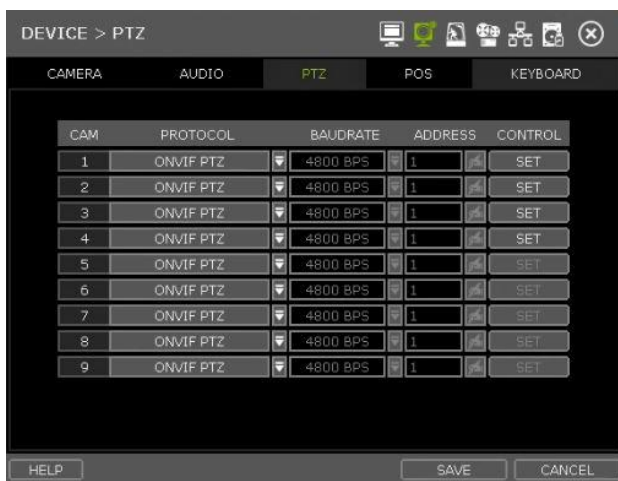
Check the below items for proper P/T/Z operation.

- If the camera is connected to the NVR via ONVIF protocol, make sure ONVIF PTZ is selected in the Protocol field.
- If the camera is connected via RS-485 cables, make sure of serial communication with the PTZ camera through RS-485 port are setup properly. The Protocol, baudrate and cameras address set in the NVR must match the ones set in the camera's setting.



Procedure How to setup PTZ camera with Pelco-D protocol (example)

- 1) Make sure of serial communication with the PTZ camera through RS-485 port.
- 2) Select "Pelco-D" in the protocol list, and set address.
- 3) Click "Save" button to confirm this configuration.



PROTOCOL

Select the proper protocol of the connected PTZ camera. This field does not apply if the camera is connected to the NVR over the network via the OnVIF protocol.

BAUD RATE

Select the baud rate level from 2,400bps up to 57,600bps. This field does not apply if the camera is connected to the NVR over the network via the OnVIF protocol.





ADDRESS

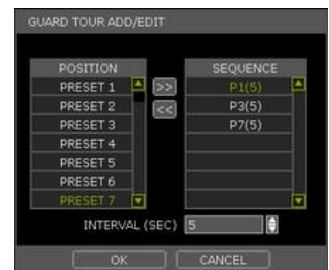
Set the P/T/Z driver address of the connected camera. It should be the same as that of the PTZ. This field does not apply if the camera is connected to the NVR over the network via the OnVIF protocol.

CONTROL(* The functions depends on the camera's model and supported features)

When the [SET] button is clicked, OSD menu of the PTZ camera will appear on the monitor. Set the PTZ's speed, preset, tour, auto pan etc.

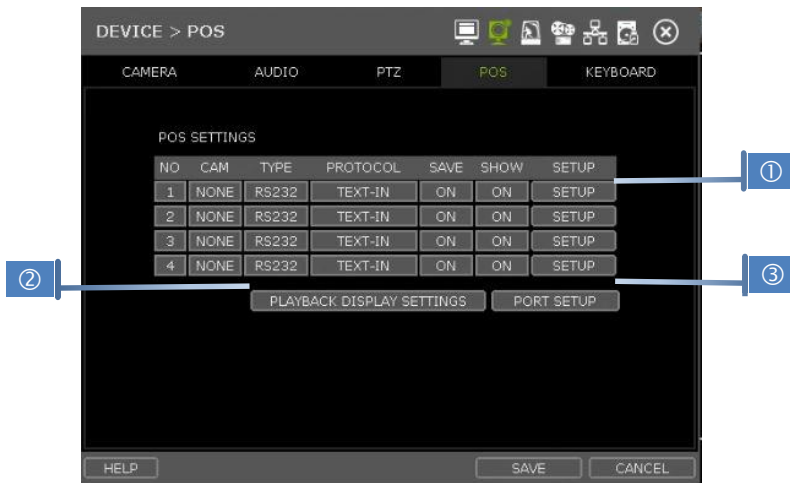
- ① Direction buttons: move camera up/down & left/right.
- ② M (depends on PTZ model): Show/hide the camera's OSD menu on the NVR monitor. Use the directional arrows (①) to navigate the menu options.
- ③ ZOOM/FOCUS/IRIS: Control IN (+)/OUT (-) for each functions (Depending on camera's model and supported features).

- ④ **Speed:** Change the PTZ speed (0~100). This sets the speed in which the camera will move when controlled from the NVR using the virtual joystick. Save the changes by clicking [SET].
- ⑤ **Preset**
- ◆ **ADD:** Move the camera's position and zoom to the desired position. Select the preset number using the  button. Press [ADD] to save the new preset. (The system supports preset the number of preset from 1 to 255.)
 - ◆ **DEL:** Delete the preset currently selected.
 - ◆ **Move:** Enter a present number and press [Move] to move the camera to the preset position of that number.
- ⑥ **TOUR:** Set the camera to move between preset positions in order. The camera will keep running the tour until it manually is disabled.
- ⑦ **AUT-OPAN:** Set the camera to move 360 ° in one direction. The camera will keep running the auto-pan until it manually is disabled.
- ⑧ **GUARDTOUR:** Set the camera to move between selected presets in a set order and interval. The camera will keep running the guard tour until it is manually disabled.
- ◆ **Set:** Set the Interval (Sec) and select the preset position. Add to Sequence by clicking  button. The preset will appear in the Sequence column indicating the preset number and the set interval time.
 - ◆ **Delete:** To delete a preset position from the sequence, select the preset in the Sequence column and click  button.
- ⑨ **HOME:** Set the camera to move to an original position memorized by the camera. In case the PTZ is directly connected to the rear panel of NVR, AUX control button () is shown. User can control additional settings such as Power, Light, Wiper and Pump, etc.



4.2.4. POS

POS equipment can be connected to NVR through RS-232 port or LAN.



NO

Port Number of the Serial Mux. ex) NO1 = COM1, NO4 = COM4.

CAM

Assign a camera to the POS device

TYPE

Connection type between NVR and Transaction Verification device.

PROTOCOL

Communication protocol between NVR and Transaction Verification device.

SAVE

Enable or disable the NVR to display the transaction data.

SHOW

Display the POS data or not

SETUP (①)

Go to the setup screen.

- POS SETTINGS

- NO : ID# of POS device
- CAMERA : Select the camera to assign to the Transaction Verification device.
- TYPE : Select COM (RS-232) or TCP/IP (LAN)
- POS IP : Input the IP address of the POS device when it is connected through the network.
- PROTOCOL : Communication protocol between NVR and the POS device
 - ① TEXT-IN: Receive ASCII character
 - ② SNVR-POS: Manufacturer's own protocol
 - ❖ Please contact your POS dealer for information.
- START CHARACTER: Input the assigned character to start display and save. If there is no input, the system will display and save all data without classification per transaction.
- END CHARACTER: Input the assigned character to terminate display and save. It must have **START CHARACTER** to work correctly.
- LINE BREAK: Set the line change character. (It should be 16 digits HEX Value.)



- ① [CRLF] / [CR] / [LF]: The character that is generally used in ASCII-type POS. (Please contact POS manufacturer for the detail.)
- ② [Custom]: It can be used except the above general character. Only number (0~9) and alphabet (A ~ F) can be used and even numbers should be input.
ex) Hexadecimal: 0x0D 0x0A → 0D0A

♦ SAVE : Save the POS data.

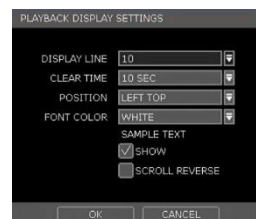
- LIVE DISPLAY SETTINGS

- ♦ DISPLAY LINE : Set the number of line to be displayed on the screen.
- ♦ CLEAR TIME : Set the time period to display text on the screen. Data will be deleted from the screen if no new data is entered after the set time. If it is set as "0", the data will not be deleted (If there is Start Character and the character is input, current data will be deleted regardless of the Clear Time setting)
- ♦ POSITION : Designate the display position of POS data.
- ♦ FONT COLOR : Select the font color which will be displayed on the screen. It will be displayed with the color that is shown on "SAMPLE TEXT"
- ♦ SHOW : Select to display POS data in the live mode.
- ♦ SCROOLL REVERSE : Select to change the direction of scrolling. If it is selected, you can scroll from the bottom to top, the latest data is displayed on the top.

PLAYBACK DISPLAY SETTINGS (②)

Open setup screen for playback mode

- ♦ DISPLAY LINE : Set the number of lines to display on the screen.
- ♦ CLEAR TIME : Set the time period to display text on the screen. Data will be deleted from the screen if no new data is entered after the set time. If it is set as "0", the data will not be deleted (If there is Start Character and the character is input, current data will be deleted regardless of the Clear Time setting).
- ♦ POSITION : Designate the display position of POS data.
- ♦ FONT COLOR : Select the font color which will be displayed on the screen. It will be displayed with the color that is shown on "SAMPLE TEXT".
- ♦ SHOW : Select to display POS data in the playback mode.
- ♦ SCROOLL REVERSE : Select to change the direction of scrolling. If it is selected, you can scroll from the bottom to top, the latest data is displayed on the top.



PORT SETUP (③)

Open setup screen for communication port

- ♦ TYPE : Setup the type of communication port.
 - SERIAL : It is for 1-to-1 connection between NVR and POS device without Serial Mux.
 - MUX : It is for 1-to-Multi connection between NVR and POS device
- ♦ BAUDRATE : Set BAUDRATE according to the connected POS device.
- ♦ PARITY : Set PARITY according to the POS device.
- ♦ DATABIT : Set DATABIT according to the POS device.
- ♦ STOPBIT : Set STOPBIT according to the POS device.
- ♦ TCP/IP PORT : Set the TCP/IP Port number.



4.2.5. KEYBOARD

When an external keyboard is used, select the model and corresponding baud rate from the drop-down options. The baudrate must match the one set in the keyboard itself. Make sure the Keyboard ID in the SYSTEM> INFORMATIO setup page matched the one set in the keyboard. When user want to use USB type keyboard, check 'USE USB KEYBOARD'.

4.3 Alarm

4.3.1. SENSOR

User can install multiple sensors on the system to get the pre & post alarm recording and intensive recording function as well.

| NO | ON/OFF | CAM | RELAY | PRESET | DWELL | PRE-ALARM | TYPE |
|----|--------|-----|-------|--------|-------|-----------|------|
| 1 | ON | 1 | 0 | 0 | 3 SEC | 1 SEC | N/O |
| 2 | ON | 2 | 0 | 0 | 3 SEC | 1 SEC | N/O |
| 3 | ON | 3 | 0 | 0 | 3 SEC | 1 SEC | N/O |
| 4 | ON | 4 | 0 | 0 | 3 SEC | 1 SEC | N/O |

ON/OFF

Turn on or turn off the sensor

CAM

Select the associated camera.

RELAY

Select the associated alarm output.

Caution Relay contact can stand up to 24V/1A. In case that it is connected to the external circuit which is over 24V/1A, it can cause a problem on the system.

PRESET

Set a PTZ camera to move to a preset position when the sensor is triggered.

DWELL (Post Alarm)

Set the recoding period from when the sensor is activated. During this period, the selected camera will record according to the record setting. The recording stops and alarm output is turned off when the set period is completed.

PRE-ALARM

Set recording period in seconds just before a sensor is activated. Input up to 5 seconds. The pre-alarm recording mode is always "continuous" at the recording speed that user sets in the "Record" menu.

TYPE

Select the sensor type as N/O (Normal Open) or N/C (Normal Close). The circuit of an N/O sensor type is usually open, and the activation of the sensor occurs at the time of close, and N/C type works the reverse way.

Note Check the setting of the sensor type (N/O or N/C). It is recommended to use "Dry Contact Type" while "Wet Contact Type" may cause damage to the system.

NOTIFY

User can select how to be alerted upon sensor is activated or motion is triggered by pressing "NOTIFY" button. The system will generate buzzer sound in the selection of buzzer and/or make pop-up screen of the camera in the selection of camera pop-up.

Note When "Camera pop-up" is enabled, in a multi-screen mode, the system will switch to single channel mode automatically when the alarm is triggered.

4.3.2. CAMERA ALARM

Setup the NVR to start recording when motion is detected. The system can also trigger an alarm signal via the selected sensor-out channel.

| CAM | ON/OFF | RELAY | DWELL | PRE-ALARM | MOTION AREA |
|-----|--------|-------|-------|-----------|-------------|
| 1 | ON | 0 | 3 SEC | 1 SEC | SET |
| 2 | ON | 0 | 3 SEC | 1 SEC | SET |
| 3 | ON | 0 | 3 SEC | 1 SEC | SET |
| 4 | ON | 0 | 3 SEC | 1 SEC | SET |
| 5 | ON | 0 | 3 SEC | 1 SEC | SET |
| 6 | ON | 0 | 3 SEC | 1 SEC | SET |
| 7 | ON | 0 | 3 SEC | 1 SEC | SET |
| 8 | ON | 0 | 3 SEC | 1 SEC | SET |
| 9 | ON | 0 | 3 SEC | 1 SEC | SET |

NOTIFY COPY SETTING
EVENT MONITOR

* IF YOU DO NOT USE RELAY BOX, YOU CAN USE ONLY THE OUTPUT OF THE DEVICE.

HELP SAVE CANCEL

RELAY

Select related output.

Caution Relay contact can bear up to 24V 1A other devices. If it is connected to the power more than 24V 1A, the system may have problem with it.

DWELL

Set sensor operation time in between 1 and 15 seconds.

PRE-ALARM

Set recording period in seconds just before motion is detected. Input up to 5 seconds. The pre-alarm recording mode is always "continuous" at the recording speed that user sets in the "Record" menu.

MOTION AREA

Set the camera's motion area and sensitivity. The area can be selected by clicking on a specific block or dragging the mouse's cursor across the screen to select multiple blocks. Areas where motion detection is activated will appear with a green border line. Unselected areas will be shown with grey border.

Click [SET] in the 'MOTION AREA' section to set area.

Select the motion detection area and click [SAVE] (①) and then [EXIT] (③) to save the changes.

Clicking on [SELECT ALL] (②) will enable motion detection in the entire camera's FoV.



Note Motion detection area and sensitivity should be set, properly, in consideration of the actual motion happened in the site.

NOTIFY

User can select how to be alerted upon camera alarm is activated or motion is triggered by pressing "NOTIFY" button. The system will generate buzzer sound in the selection of buzzer and/or make pop-up screen of the camera in the selection of camera pop-up.

COPY SETTING

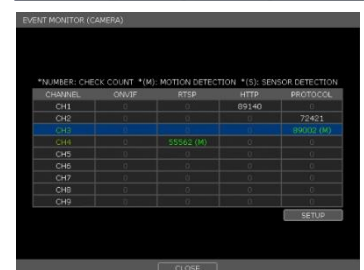
To apply the settings to all cameras connected to the NVR, click on the Copy Settings button:

- ① Select the channel to get the setting from
- ② Select the property(s) to copy.
- ③ Select the target channel(s) to apply the setting.
- ④ Click [OK] to apply the setting to all the other selected channel(s).



EVENT MONITOR

User can check the number of motion and sensor detection. And user can access to camera setup via 'setup' button on the below.



4.3.3. Extra Alarm

Setup alarms for additional NVR abnormalities such as SMART HDD check, VIDEO LOSS, RECORDING FAILURE and DISK FULL.

ALARM > EXTRA ALARM

SENSOR CAMERA ALARM **EXTRA ALARM** EMERGENCY BELL RELAY

| ALARM | ON/OFF | RELAY | DWELL | NOTIFY |
|---------------|--------|-------|-------|--------|
| S.M.A.R.T | ON | 0 | 3 SEC | NOTIFY |
| VIDEO LOSS | ON | 0 | 3 SEC | NOTIFY |
| DISK ERROR | ON | 0 | - | NOTIFY |
| POWER FAILURE | OFF | | | |

| ALARM | ON/OFF | USAGE | OUT | DWELL | NOTIFY |
|-----------|--------|-------|-----|-------|--------|
| DISK FULL | ON | 100% | 0 | 3 SEC | NOTIFY |

* DISK FULL ALARM ONLY WORKS IF HDD FULL OPTION IS 'STOP RECORDING' IN 'SYSTEM > HDD' SETTING PAGE.

* IF YOU DO NOT USE RELAY BOX, YOU CAN USE ONLY THE OUTPUT OF THE DEVICE.

HELP SAVE CANCEL

S.M.A.R.T.

Trigger an alarm signal when HDD is about to be out of operation. Please refer to "4.1.4 HDD" to check the HDD status.

VIDEO LOSS

Trigger an alarm signal when a camera signal is disconnected.

DISK ERROR

Trigger an alarm signal when the system does not record images due to an error in HDD.

POWER FAILURE

Trigger an alarm signal when the power does not work normally.

DISK FULL

Trigger an alarm signal when the HDD is occupied with a certain percentage of its capacity. If user set HDD FULL as STOP RECORDING and the HDD is occupied with the certain percentage set here, NVR stops recording and alarm trigger.

Note Extra alarm will appear in the event log only when it is set as "ON".

Note S.M.A.R.T(Self-Monitoring Analysis and Reporting Technology) is the technology that is developed by HDD manufacturers. In some cases, S.M.A.R.T may not detect the abnormal operation of the HDD. It is recommended to do HDD health check in the HDD menu regularly.

4.3.4. EMERGENCY BELL

User can connect emergency bell device with NVR. Set the protocol, IP address, send port and receive port of the emergency bell.

ALARM > EMERGENCY BELL

SENSOR CAMERA ALARM EXTRA ALARM **EMERGENCY BELL** RELAY

PROTOCOL : ☒ JUNGKWANG ☐ EZVILLE ☐ TWOWINS ☐ DIGITALPA

IP ADDRESS :

SEND PORT : 9011

RECEIVE PORT : 9020

| CH | REGION | ZONE | ADDRESS |
|----|--------|------|---------|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

DWELL TIME : 3 SEC

4.3.5. RELAY

Set to click 'USE THE RELAY BOX' when user use Relay Box.

ALARM > RELAY

SENSOR CAMERA ALARM EXTRA ALARM EMERGENCY BELL **RELAY**

☐ USE THE RELAY BOX

PLEASE CHECK ONLY WHEN USING RELAY BOX.

4.4 RECORD

4.4.1. CAMERA MANAGEMENT

User can register/delete/setup cameras by letting the NVR scan and register cameras automatically or manually search and add cameras.

RECORD > CAMERA MANAGEMENT

IP CAMERA RECORDING SCHEDULE QUICK SETUP

AUTO CONFIGURATION

SELECT A RECORDING MODE AND PRESS [START] BUTTON.

CONTINUOUS

DRAG & DROP CONFIGURATION

FIND AND CONFIGURE ALL CAMERAS AND LAYOUT MANUALLY

HELP << ADVANCED SAVE CANCEL

RECORD > CAMERA MANAGEMENT

IP CAMERA RECORDING SCHEDULE QUICK SETUP

| CAM | ON/OFF | PROTOCOL | IP ADDRESS | MODEL | BRAND | SETUP | DEL |
|-----|--------|----------|------------|-------------|-------|-------|-----|
| 1 | ON | | | | | SETUP | X |
| 2 | ON | | | | | SETUP | X |
| 3 | ON | | | | | SETUP | X |
| 4 | ON | | | | | SETUP | X |
| 5 | ON | | | | | SETUP | X |
| 6 | ON | FOCUS | 10.0.0.3 | FJC-DH2IS-W | FOCUS | SETUP | X |
| 7 | ON | | | | | SETUP | X |
| 8 | ON | | | | | SETUP | X |
| 9 | ON | | | | | SETUP | X |

☒ AUTO RESCAN WHEN CAMERA IP IS CHANGED

HELP << BACK SAVE CANCEL

ON/OFF

Record On or Off

PROTOCOL

Type of protocol (ONVIF, VHT, FOCUS, RTSP, etc.).

IP ADDRESS

Shown the IP Address of camera

MODEL

Shown the Model name of camera

NAME

Name of camera (Some cameras can be modified)

SETUP

Set the camera (Please refer to "3.4 Camera Setup").

DEL

Delete the camera (Please refer to "3.3. Deleting Camera").

Channel Group (①)

Up to 8 channels are shown in one screen. To move to another channel group, click the channel group button to move.

DELETE PAGE (②)

It deletes cameras in the current page (Please refer to "3.3. Deleting Camera".)

DELETE ALL (③)

It deletes all cameras. (Please refer to "3.3. Deleting Camera").

CAMERA REGISTRATION (④, ⑤, ⑥, ⑦)

User can register camera by various ways such as AUTO CONFIGURATION, DRAG & DROP CONFIGURATION and ADVANCED CONFIGURATION. (Please refer to "3.2. Camera Registration").

4.4.2. RECORDING SCHEDULE

Set recording schedule for each camera. Select the camera to set schedule, or "All". Recording can be set by each hour from 00 through 23 a day, for all days of the week. You can also setup a special recording mode for holidays.

NO COLOR (Off)

No recording. Even though user set recording frames in the "CAMERA" setup menu, the system will not record anything if user sets "OFF" in the schedule table.

YELLOW COLOR (Continuous Recording)

Record all the time as set in the "CAMERA" settings.

GREEN COLOR (Motion-Detection Recording)

The system records only when motion is detected.

If "EVNET > MOTION ALARM" is disabled, then the system will record when motion is detected but motion alarm will not be activated.

ORANGE COLOR (Sensor-Activated Recording)

The system records only when a sensor is triggered as set in "EVNET > SENSOR" menu.

If "EVNET > SENSOR" is disabled, then the system will record when a sensor is triggered but sensor alarm will not be activated.

SKY BLUE COLOR (Continuous + Motion Detection Recording)

The system records continuously as set by "RECORD > CAMERA" menu.

When motion is detected according to the settings in "EVENT > MOTION ALARM", the NVR will switch recording mode to motion configuration. Also will notify "motion event" message to Remote Software over the network.

If set "OFF" in "EVENT > MOTION ALARM" menu and set this mode in "SCHEDULE", then will record continuous and motion alarm is not activated even motion is detected.

BROWN COLOR (Continuous + Sensor-Activated Recording)

Record all the time by "continuous" as set by "RECORD > CAMERA" menu.

But will switch recording mode to sensor configuration as made by "EVNET > SENSOR" menu if a sensor is triggered. Also will notify "sensor event" message to Remote Software over the network.

If set "OFF" in "EVNET > SENSOR" and set this mode in "SCHEDULE", then will record continuous and sensor alarm is not activated even though a sensor is triggered.

PURPLE COLOR (Motion Detection + Sensor-Activated Recording)

The system records only when motion is detected AND when a sensor is triggered at the same

time. If both "EVNET > SENSOR" and "EVENT > MOTION ALARM" are disabled, then the system will record when a sensor is triggered and motion is detected but neither sensor nor motion detection alarms will be activated.

Note In case the recording schedule is set by "CONT + MOT" or "MOT + SENS", the system records by continuous or motion detection mode in normal operation. However, when motion occurs in motion area or alarm is activated, then recording mode will switch to recording as set by "MOTION ALARM" or "SENSOR" of "EVENT" menu.

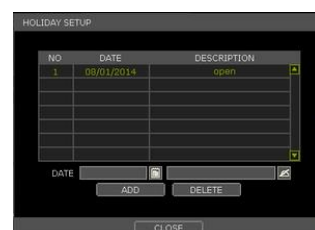
Note Dark Blue Color

The data recorded during DST (Daylight Saving Time) will be indicated in Dark Blue color in Intelli-Search Bar on playback mode.

HOLIDAY SETUP

Setup specific days as "holidays" in HOLIDAY SETUP to assign special recording schedule for those days. The system supports up to 32 holidays.

Press [DATE] button (📅) write a description, and press[ADD] to list up holiday.



Note Instant Recording (Emergency Recording)

In the case of emergency, user enables Instant Record by pressing the panic recording button in the menu bar. The system will instantly start recording all the channels with full frame rate at the maximum resolution regardless of recording mode setting. **E-REC** will appear in live mode and red-colored bar is shown in the time search bar for video recorded by instant recording.

RECORD 1FPS CONTINUOUS WITH 'CONT+' MODE.

Check the box to set continuous recording to 1FPS when selecting "continuous + xx" modes.

LIMIT EMERGENCY RECORDING TIME

Set a limit to how long the system will record in emergency recording mode. Select from 30sec/60sec/90sec/2min/5min/10min

4.4.3. QUICK SETUP

User can setup multiple cameras with the same model at once.



- ① Select model to setup. All cameras with the same model name will be selected
- ② Click [GET STREAM] button and get the current stream information.
- ③ Click [Get INFO] button and check current setup for the cameras.
- ④ Change setup and click [SAVE].
- ⑤ "CAMERAS ARE SUCCESSFULLY APPLIED" message will appear when the process is completed.

4.5 NETWORK

NVR can be connected to the network or internet through either fixed IP or dynamic IP by proper setting of the NVR and router.

4.5.1. NETWORK

NETWORK TYPE

Select either STATIC IP or DHCP for dynamic IP.

If DHCP is selected, the NVR will automatically configure the network settings according to the current network requirements. If DHCP is selected, click 'IP DETECT' button to detect automatically all the network settings.

If Static IP is selected, manually enter all necessary network settings. For proper configuration, it is recommended to assign the NVR a DHCP address and let it auto discover all the proper network settings, and then change the Network Type back to Static IP and save the changes.

IP ADDRESS

Displays the NVR's IP address. If DHCP is selected, the IP address will automatically adjust to match the network's requirements. You can also manually change the IP address as needed.

SUBNET MASK

Subnet Mask address classifies the subnet that the system belongs to. For more information, please consult your network administrator or your internet provider.

GATEWAY

This is the IP address of the router or gateway server. It is required when connecting to the NVR through the external router over the internet (from another network). For more information, consult your network administrator or your internet provider.

DNS SERVER

Enter the IP address of the Domain Name Server. You should input the DNS Server information in order to use DDNS, E-mail notifications and NTP Server. For more information, please consult your network administrator or your internet provider. If it is hard to know the correct information, user can input "8.8.8.8". For more information, please consult your network

administrator or your internet provider.

TCP/IP PORT

Input the port number to use when connecting to the NVR locally or remotely. Default is 9010. If your ISP blocks the port # 9010, you need to input another valid port number (ex, 9020).

WEB PORT

Input the port number to use when connecting from the Web Browser. Default is 80. If your ISP blocks the port # 80, you need to input another valid web port number (ex, 8080).

Auto IP

Displays the system IP which is assigned through Auto-IP, automatically

BANDWIDTH LIMIT

Depending on the setting made by user, the system can control the data volume transmitted over network ranging from 25 kbps up to 1Gbps. This function is effective especially under narrow bandwidth network condition or when user wants to limit "network bandwidth occupied by video transmission" to a certain level. Default is 100 Mbps.

UPnP (Universal Plug and Play)

UPnP supports "auto port forward function (NAT TRAVERSAL)" even if the user does not set port forward in the router. It may not be supported in some routers and some network conditions.

Input necessary information based on your network environment.

- NETWORK TYPE : Select STATIC IP (in case of fixed IP)
- IP ADDRESS : Assign a local IP # to NVR (ex, 192.168.0.164)
- SUBNET MASK : Input subnet mask of your LAN (ex, 255.255.255.0)
- GATEWAY : Input gateway of your LAN (ex, 192.168.0.1)
- DNS SERVER : Input IP # of your DNS server. You must input this IP # for internet connection. Please contact your ISP to get this IP#. You can input "8.8.8.8" in case you do not know this IP#.
- TCP/IP PORT : Default is 9010.
If your ISP blocks the port # 9010, you need to input another valid port number. (ex, 9020)
- WEB PORT : Default is 80
If your ISP blocks the port # 80, you need to input another valid web port number. (ex, 8080)
- BANDWIDTH LIMIT : Default is 100 Mbps.
Select bandwidth limit you want to set in consideration of network condition.

Note The maximum number of simultaneous connection is 15 users.

POE SETTING

① SETUP

Manually setup the IP address and subnet mask for the PoE cameras connected directly to the NVR

② STATUS

Check the status of PoE cameras connected to the NVR and reset all PoE camera as needed.

The screenshot shows a 'POE SETUP' window with the following fields and values:

- MAC ADDRESS: 90:DA:6A:04:9F:60
- ☒ AUTO IP: 169.254.5.142
- GATEWAY: 10.0.0.254
- SUBNET MASK: 255.255.255.0
- Buttons: APPLY, CLOSE

POE STATUS

| POE PORT # | PLUG IN | POE TYPE | POWER | ASSIGNED |
|------------|---------|---------------|----------|----------|
| POE-LAN1 | O | NORMAL (AUTO) | 2.0 watt | CH 1 |
| POE-LAN2 | X | NORMAL (AUTO) | 0.0 watt | CH 2 |
| POE-LAN3 | X | NORMAL (AUTO) | 0.0 watt | CH 3 |
| POE-LAN4 | X | NORMAL (AUTO) | 0.0 watt | CH 4 |
| | | | | |
| | | | | |
| | | | | |

POE TYPE:

4.5.2. DDNS

Use either a public DDNS server or the DDNS server operated by NVR maker (dynlink.net) to connect through dynamic IP.

DDNS SERVER

FOCUS H&S offers free and reliable DDNS service support. This allows you to assign the NVR a URL address rather than a long complicated IP Address.

Tick on "Use DDNS" check box. The default is [DYNLINK.NET] and user can select [DYNDNS.COM] by using drop-down list. "dynlink.net" is the fixed domain name of DDNS server operated by NVR maker while "dyndns.com" is one of public DDNS servers.

NETWORK > DDNS

NETWORK DDNS NOTIFICATION MOBILE NOTIFY P2P CLOUD

☒ USE DDNS

DDNS SERVER:

TCP/IP PORT:

HOST NAME:

USER ID:

PASSWORD:

CONFIRM PASSWORD:

☒ USE DEVICE IP MAPPING

☒ USE EXTERNAL IP

MAC ADDRESS:

Note "HELP" button will help you understand how to setup several important settings. For example, if you need help about how to set DDNS, click "HELP" button at the right bottom of the menu)

Input necessary information based on your network environment. And then click [SAVE] button.

- Enable Use DDNS box
- DDNS SERVER : Select DYNLINK.NET
- TCP/IP PORT : Default is 80.
- DOMAIN NAME : Assign a domain name for your NVR (ex, NVROFFICE). If the same domain name is assigned, the message will pop up when you click [SAVE]

IP MAPPING and EXTERNAL IP

If you are using IP Mapping and Port Forwarding (e.g. using router for internet connection), enable both [Use Device IP Mapping] and [Use External IP] for proper connection.

SETTING AT THE REMOTE S/W (UVMS)

In the menu of [Option > Setting], input DDNS Address and Port number.
Address of DDNS SERVER is "dynlink.net" and Port is "80".

In the menu of [Site Registration], click ADD button register the NVR with DDNS domain name.
It is very important to put "Mac address + dynlink.net" or "Domain Name + dynlink.net" in IP Address (or URL) as below.

- Ex.) 1. If Mac address is "00:1C:84:01:00:02" → input as "001c84010002.dynlink.net"
2. If domain name is "NVROFFICE" → input as "nvroffice.dynlink.net"

SETTING AT M/S I/E

User can type mac address + dynlink.net.

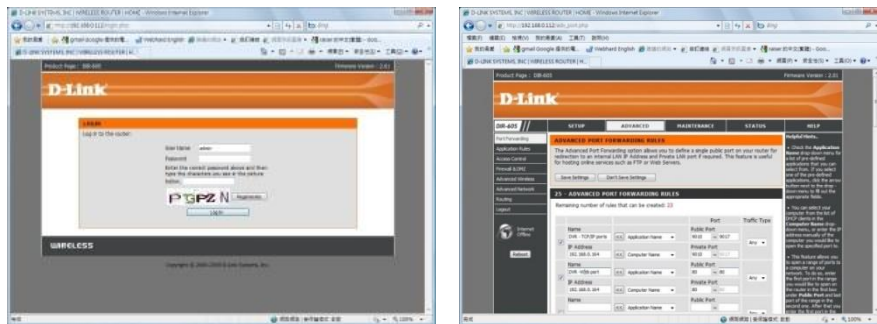
In case of using sub domain name, user can type domain name + dynlink.net

- Ex) 1. If Mac address is "00:1C:84:01:00:02" → input as "http://001c84010002.dynlink.net"
2. If domain name is "DVROFFICE" → input as "http:// DVROFFICE.dynlink.net"

ROUTER SETTING (PORT FORWARDING)

If you want to use router for network connection, you are required to do Port Forwarding in your router (both static IP and dynamic IP). The procedure described below is just one of the examples for your reference and the captured figures may differ depending on the model of the router. Please refer to the manual of your router for details.

- 1) Login to your router through M/S IE browser.
- 2) Go to the menu of [ADVANCED > Port Forwarding].



- 3) Do necessary Port Forwarding as below. (TCP Port & Web Port))

- For TCP/IP Port of NVR

If you use 9010 for TCP/IP Port (mentioned as above), then you have to forward Port # 9010 to NVR local LAN IP.

| | | | | |
|-------------------------------------|-----------------------------|---------------------|-----------------------------|-----|
| <input checked="" type="checkbox"/> | Name DVR - data port | << Application Name | Public Port 9010 ~ 9010 | Any |
| | IP Address 192.168.0.164 | << Computer Name | Private Port 9010 ~ 9010 | |

- ❖ If you change NVR TCP/IP Port to 9020, then you have to open and do Port Forwarding for 9020.

- For Mobile Port of NVR

If you use 9011 for Web Port (mentioned as above), then you have to forward port #9011 to NVR local LAN IP.

| | | | | |
|-------------------------------------|-----------------------------|---------------------|-----------------------------|-----|
| <input checked="" type="checkbox"/> | Name DVR - mobile port | << Application Name | Public Port 9011 ~ 9011 | Any |
| | IP Address 192.168.0.164 | << Computer Name | Private Port 9011 ~ 9011 | |

- ❖ If you change NVR TCP/IP Port to 9021, then you have to open and do Port Forwarding for

9021.

- For Web Port of NVR

If you use 80 for Web Port (mentioned as above), then you have to forward port #80 to NVR local LAN IP.

| | | | | |
|-------------------------------------|----------------|------------------------|--------------|-----|
| <input checked="" type="checkbox"/> | Name | << Application Name >> | Public Port | Any |
| | DVR - web port | | 80 ~ 80 | |
| <input checked="" type="checkbox"/> | IP Address | << Computer Name >> | Private Port | |
| | 192.168.0.164 | | 80 ~ 80 | |

❖ If you change NVR TCP/IP Port to 8080, then you have to open and do Port Forwarding for 8080.

NVR needs several ports to be opened for remote image transmission, configuration, time synchronization and etc. Please refer to below port list to make sure that those ports are not blocked by firewall or other network setting.

| Protocol | Port | Usage | Remark | Editable | Location |
|------------|-------------|---------------------------------------|---|------------|---------------------------------|
| TCP | 9010 | NVR Data Port (for Remote S/W) | TCP Port | Yes | Network > Network |
| TCP | 8002 | NVR Time Sync Service | Need port forward at remote P/C network | Yes | System Info > Date/Time Setting |
| TCP | 8003 | Event Notify Socket | Need port forward at remote P/C network | Yes | Network > Notification |
| TCP | 80 | Web Service | | Yes | Network > Network |
| TCP | 80 | DDNS Server | | Select | Network > DDNS |
| TCP | 123 | NTP Server | | Fixed | Network > Network |

4.5.3. NOTIFICATION

REMOTE NOTIFY

The system can send an alarm message to the IP address of a Remote Software P/C. Select REMOTE NOTIFY to use this function and set IP address & events.

ADD / EDIT / DELETE



- IP ADDRESS : Input the IP address of the Remote Software PC which will receive events notification.
- PORT : Input Port number which is set at the Remote Software PC. Default is 8003.
- EVENT : Select events to be notified. When "ALL" is selected, all of the events will be notified.

Note

Set remote pop-up in Remote S/W (CMS) upon alarm trigger in NVR. In order for Remote Software user to receive an instant pop-up video over network from NVR, NVR user has to tick "SENSOR" or "MOTION ALARM" in above menu. "SENSOR" means the alarm triggered by physical alarm, while "MOTION ALARM" means the alarm triggered by motion detection.

E-MAIL NOTIFY

The system can send a notification to an e-mail address. Select E-MAIL NOTIFY to use this function and set e-mail address & events.

ADD / EDIT / DELETE



- E-MAIL : Input e-mail address which will receive events notification.
- EVENT : Select events to be notified. When "ALL" is selected, all of the events will be notified.
- VIDEO CLIP ATTACHMENT : Select type of file to be attached.

SENDER Setting (SMTP)

Need to set sender to send e-mail notification.

- SMTP : Input SMTP server address.
- PORT : Input the Port number that will be used for e-mail sending.
- USER : Input the user of the sending account.
- PASSWORD : Input password of the sending account.
- FROM : Input sender's e-mail address.
- E-MAIL TEST : Check if the settings were entered correctly. The NVR will send an e-mail and inform you of the result.
 - 1) It may take long depending on the SMTP server's response time.
 - 2) In some cases, SMTP server does not send e-mail if the e-mail is received.
- Use SSL AUTHENTICATION: In case the SMTP server requires SSL authentication (e.g. Gmail, Yahoo mail, etc.), select this option.

Note

Configuration first priority is always on "RECORD > SCHEDULE" menu. Thus, the system will not email alarm message upon motion alarm or sensor even though the check-box of above event selection is checked. To receive motion and sensor e-mail notifications, set the "SCHEDULE > RECORD", "EVENT > MOTION ALARM" and "EVENT > SENSOR" accordingly.

For example, If user sets just "Continuous" only in "RECORD > SCHEUDLE" and tick "All" check-box of "REMOTE NOTIFY", then the system will not make email notification. In this case, user has to set "CONT + MOT", "MOTION", "SENSOR", or "CON + SENS" in SCHEDULE, and set "MOTION"/"SENSOR" in EVENT to enable Email Notification properly.

4.5.4. Mobile Push

The system can send an event notification to the mobile device registered in the NVR. The mobile app 'MV3000' must be installed in your smart phone device prior to registration. Select [USE MOBILE NOTIFY] to use this function and select event to notify.

In the mobile app, add your NVR using the IP address or DDNS by clicking the + sign on the top right side of the app.

Once the site has been added to the device list on the app, highlight the NVR in the list and press the Setup button on the bottom right side of the app. Make sure 'Use Push Check' is enabled.

The mobile device's ID will appear in the Mobile Notify table in the NVR.

NETWORK > MOBILE NOTIFY

NETWORK DDNS NOTIFICATION **MOBILE NOTIFY** P2P CLOUD

☒ USE MOBILE NOTIFY

| NO | NAME | DEVICE ID |
|----|------|-----------|
| | | |
| | | |
| | | |
| | | |
| | | |

DELETE DELETE ALL

EVENT ☐ ALL ☐ SENSOR ☐ VIDEO LOSS ☐ MOTION ALARM ☐ S.M.A.R.T

INTERVAL 1 MIN

HELP SAVE CANCEL

- Note**
1. Mobile Push Notification function is available with iPhone, iPad & Android devices.
 2. Registration for Mobile Push Notification is available when it is set at the mobile device.
 3. Deletion of the list will be available when you click [Delete] button in the NVR menu or when you select disable Push Notify function in the mobile device.
 4. Maximum number of mobile device is 50.

DELETE

When the mobile device is registered to the NVR correctly, it shows in the list.

Device ID is a unique ID of the mobile device.

If you want to delete it, select the device and click [Delete] button. Then, push notification setup in the mobile device will be disabled.

- Note**
1. Push Notification function only works when the NVR & mobile device has network connection to internet.
 2. For the detail, please refer to MV3000 manual.

4.5.5. P2P Cloud

The system supports QR reading and ezP2P™ cloud server.

P2P Setup by QR code

When the PoP Use is selected, P2P service is being used.

NETWORK > P2P CLOUD

NETWORK DDNS NOTIFICATION MOBILE NOTIFY **P2P CLOUD**

☐ **USE P2P** (MAC ADDRESS: 90D3644C49EC)

P2P LOGIN ID: 5K679KCYEM17A2P5111A CHECK: 7527

☐ REGISTER EZP2P.COM

E-MAIL:

PASSWORD:

PROGRESS: 100%

YOU ARE RECOMMENDED TO REGISTER AT EZP2P CLOUD SERVER (WWW.EZP2P.COM) BEFORE USING.

STATUS : **P2P SERVICE WAS STOPPED.**

HELP SAVE CANCEL

QR code menu (P2P service is not in use)

NETWORK > P2P CLOUD

NETWORK DDNS NOTIFICATION MOBILE NOTIFY **P2P CLOUD**

☒ **USE P2P** (MAC ADDRESS: 90D3644C49EC)

P2P LOGIN ID: 5K679KCYEM17A2P5111A CHECK: 7527

☐ REGISTER EZP2P.COM

E-MAIL:

PASSWORD:

PROGRESS: 100%

YOU ARE RECOMMENDED TO REGISTER AT EZP2P CLOUD SERVER (WWW.EZP2P.COM) BEFORE USING.

STATUS : **P2P SERVICE WAS STARTED.**

HELP SAVE CANCEL

QR code menu (P2P service is in use)

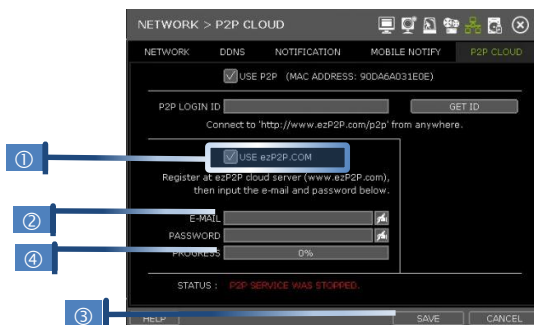
When user scan QR code with his mobile application (MV3000), he can easily register the system and monitor it.

Note About ezP2P Cloud Service...
ezP2P™ Cloud Service is a cloud-based video management system without any complicated network setting. Just login to ezP2P™ Cloud Server (www.ezp2p.com) with your own account and enjoy thumbnail preview and instant live monitoring.

In order to use this function, register the User ID & password in the ezP2P™ Cloud Service site (www.ezp2p.com)



- ① Select [USE P2P CLOUD]
- ② Input E-MAIL & PASSWORD which were registered in the ezP2P™ Cloud Server site.



- ③ Click [Save] to start communication with ezP2P Cloud Server.
- ④ Process is shown at (④).

Go to the **ezP2™ Cloud Service** site (www.ezp2p.com) and login. The registered site list with snapshot image & detail information will be shown.



Caution P2P Cloud function may not be available, if;

- 1) Router doesn't support UPnP function or UPnP function is OFF.
- 2) Firewall is set in the network.
(Port no. 50,000 or higher need to be opened.)
- 3) The network condition doesn't support it due to the other issues.
Consult your network administrator or your internet service provider.

Note ezLink™ is the function that allows users can easily connect to the NVR from the Web Browser in the save network using the NVR's MAC address only.
To use this feature, type the NVR's MAC address to the search bar in the web browser as follow : [http://\[Mac Address\].ezp2p.net](http://[Mac Address].ezp2p.net)

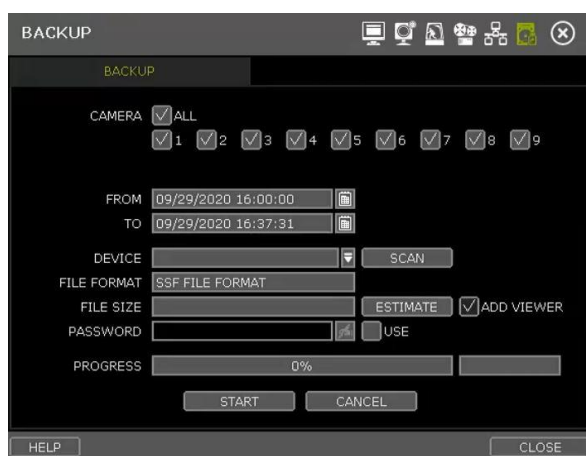
For example, if the Mac address is "00:1C:84:01:00:02", then user can input the address as "001c84010002.ezp2p.net".

4.6 BACKUP

4.6.1. Manual Backup

User can easily archive video while viewing the video playback.

1. In live mode, click the [BACKUP] icon in the menu bar to open the backup menu.
2. In playback mode, press the [QUICK BACKUP] icon in the menu bar. Pressing it once will indicate the start time for the backup file. Click the icon again to indicate the end time for the backup clip. The backup menu screen will appear.



3. Connect an appropriate USB memory device and press [SCAN] to recognize it before starting the Backup process.
4. Adjust the following options as needed:
 - a. Select the channels to be included in the backup file.
 - b. Adjust the start and end time of the backup file.
 - c. Select to include the Backup Viewer with the archived file.
 - d. Press the 'Estimate' button to see the expected size of the backup file.
 - e. Check the box next to [ADD VIEWER] to add the backup player to the backup file. The backup player allows to play the video clip without installing any programs.
 - f. Edit the file name and add a protection password if needed.
 - g. Press 'Start' to start the backup process. A progress bar will appear on the screen

Note It is recommended to use built-in CD/DVD burner or well-known major brand of USB thumb drives formatted by FAT/FAT32 for proper backup.

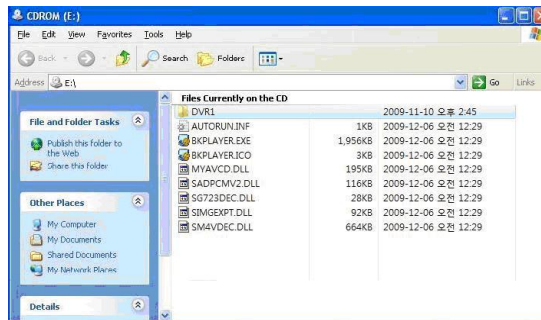
- 1) The system does not detect external HDD due to different format type.
- 2) It is not allowed to use the partitioned and/or password-encoded USB memory.

Note "HELP" button will help you understand how to setup several important settings. For example, if you need help about how to set Backup, click "HELP" button at the right bottom of the menu)

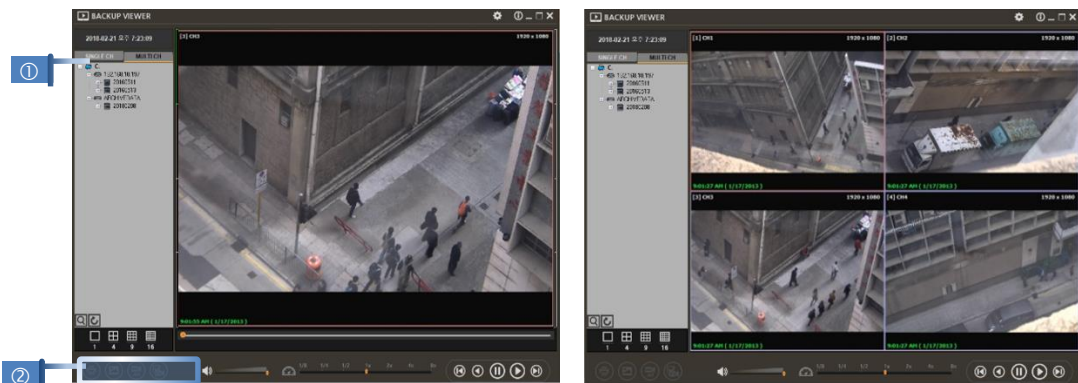
4.6.2. Backup Video Retrieve

If [ADD VIEWER] is selected, the backup image can be reviewed in a PC with no need for additional installation. Once the backup device (USB, CD/DVD.) is connected to a PC, the files will appear in the USB's folder.

To play recorded data, double click the "MultiBackupPlayer.exe" file. In the backup player, open the video data file (SSF format) you wish to playback in the date folder



To playback a single channel, click [SINGLE CH] tab(①) and select a SSF file to playback and drag it to the viewing area. To playback multiple channels, click [MULTI CH] tab(②) and 'Search' to open folder that keeps SSF file.



You can print, export an image, and zoom by using the icons(②) at the bottom-left of the player window.

Option MENU

Various settings are available in OPTION window of the backup player software.

- **Use DirectDraw**

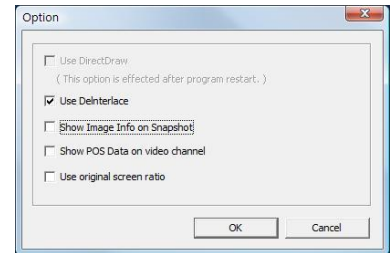
There are some PCs that do not support "Direct Draw". In this case, user can uncheck the DirectDraw checkbox in the "Option" menu.

- **Show Image Info on Snapshot**

Image information will be added as text overlay when exporting an image.

- **Show POS Data on video channel**

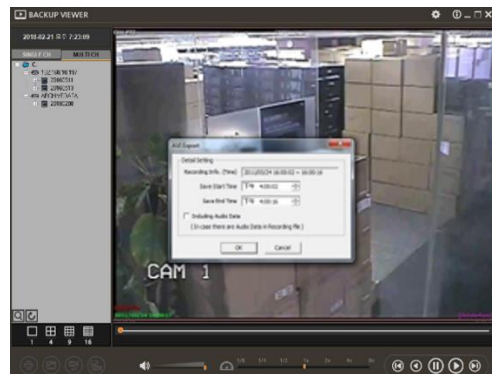
POS data that has been backed up can be displayed during playback.



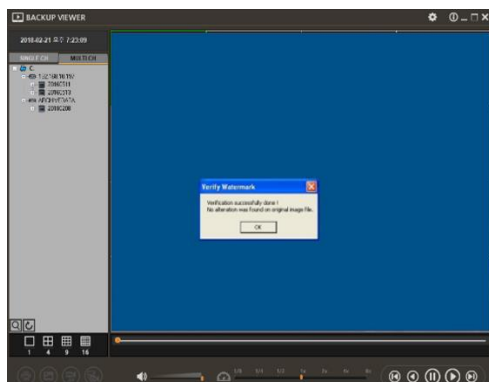
WATERMARK Verification on AVI File

Convert the backup file to an AVI file to play the file in ordinary media players.

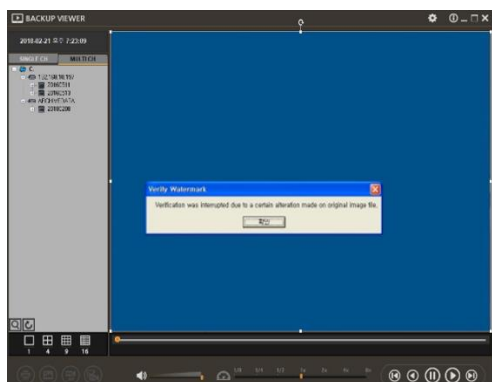
- 1) Playback the SSF file in Single CH mode, click [Pause].
- 2) Click [AVI Convert]
- 3) Define the start and end time.



When the AVI file is played back in the Backup Player, verify whether the file has been altered or not by pressing [Watermark] button (). If the file has been altered, a popup message will appear



No alteration was found



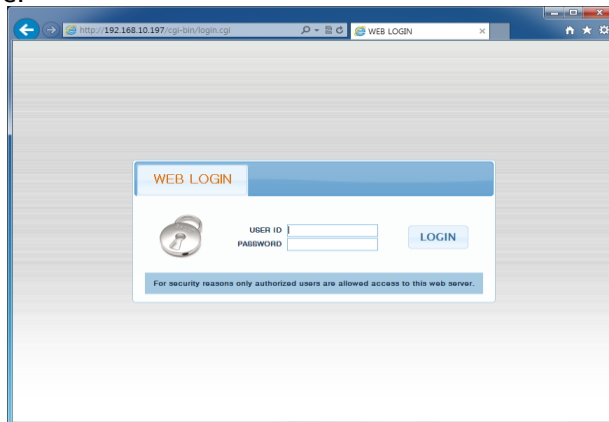
AVI video clip has been altered

5. Web Surveillance through M/S IE

The system has a built-in web server by itself. This allows you to access the system by ordinary web-browser via network for live monitoring, playback or remote configuration without installing any additional software.

5.1 Web Login

In an Internet Explorer page, type the NVR's IP Address or DDNS address in the address bar. When the login page appears, enter the user ID and password. Default user ID and password are "admin" and "1234". Once you are connected to the NVR, you will be prompted to download and install Active-X file.



Active-X Installation

1. If the P/C doesn't have Active-X installed, installation guide message will appear automatically.
2. Click [install] and follow the installation wizard to complete the Active-X installation.



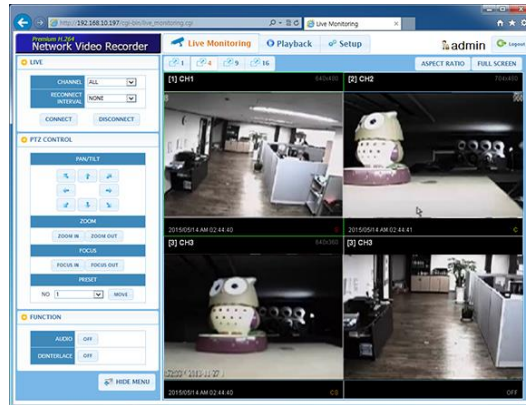
3. To avoid download restrictions for the Active X file, make sure that Active X controls are enabled in the web browser's security settings. Go to "Tools > Internet Options > Security > Internet > Custom Level" and enable all Active-X controls and plug-in.



4. Failing to install the Active X files properly may result in no video showing from the NVR.

5.2 Web Monitoring

Once the Active X files are properly installed, the live view from the NVR will appear on the web page automatically. User can select other menus such as PLAYBACK and SETUP, or LOGOUT.



LIVE

User can select which channels to view in live mode, set the reconnection time interval in case of connection loss, and connect or disconnect all channels.

PTZ CONTROL

User can control Pan/Tilt, Zoom In/Out, Focus In/Out and Preset buttons to control PTZ cameras connected to the NVR.

FUNCTION

Enable or disable audio in from the camera.

Enabled or disable interlace function to improve image quality.

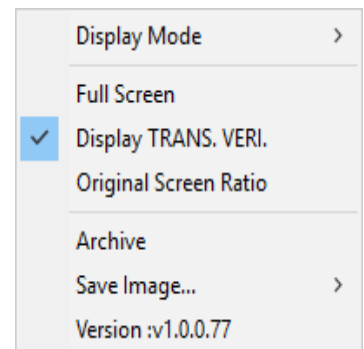
HIDE MENU/SHOW MENU

To hide the menu bar, press the "HIDE MENU" button. To view the menu bar again, press the "SHOW MENU" button.

POP-UP MENU

Right-click to open additional options:

- Display Mode: Change the current split view option from 1x, 4x, 9x, or 16x options.
- Full Screen: View current split view in full screen view. Right-click anywhere on the screen to exit full screen view.
- Display POS: Show POS text.
- Original Screen Ratio: View the cameras in their original aspect ratio.
- Archive: Backup a clip to your PC. Click the screen once to start the backup. Select the directory where you want the files to be stored. Click the Archive option again to end the backup process. A popup screen will ask you to save the archive or not.
- Save Image: Choose the image type to save. (JPG or BMP)



ASPECT RATIO

Manually select the size ratio of the image either original ratio or monitor ratio.

FULL SCREEN

User can change view to full screen. Right-click on the screen to exit full screen mode.

5.3 Web Playback

To remotely playback video from the NVR, click "PLAY" on the top of the window.

PLAYBACK TIME

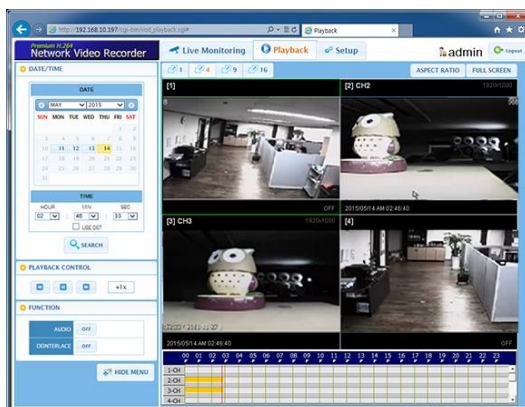
Select the date and time and click "GO" to view video from the selected time.

PLAYBACK ICON

Use the Fast Forward, Rewind and Play/ Pause buttons to control the playback video.

PLAY DST

Check this box to play overlapped images during DST (Daylight Saving Time) period. For details, please refer to Section "3.7.DST Setting and Image Playback" menu



INTELLI-SEARCH BAR

Move the red-vertical line to the time that user wants to search. The colors of the time bar indicate the different recording modes. Refer to "4.3.2" for more information.

5.4 Setup

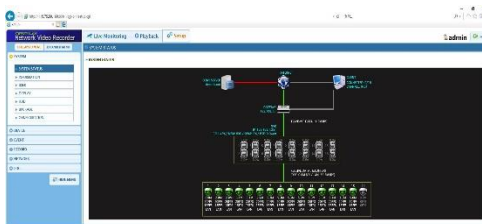
[Menu of Setup]

| Main Classification | Sub Classification |
|---------------------|--------------------|
| SYSTEM | INFORMATION |
| | USER |
| | DISPLAY |
| | HDD |
| | UPGRADE |
| | CONFIGURATION |
| DEVICE | CAMERA |
| | AUDIO |
| | KEYBOARD |
| EVENT | SENSOR |
| | CAMERA ALARM |
| | EXTRA ALARM |
| RECORD | CAMERA MANAGEMENT |
| | REGISTRATION |
| | SCHEDULE |

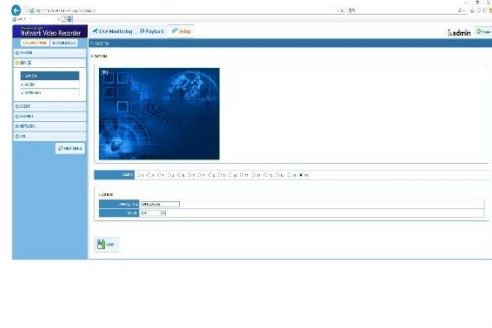
| | |
|---------|--------------|
| NETWORK | NETWORK |
| | DDNS |
| | NOTIFICATION |
| LOG | SYSTEM LOG |
| | EVENT LOG |
| | ELEVATOR LOG |
| | Analysis |

After log in with the right ID and password, user can make various configuration in Web Setup window as below. This Web Setup is only available to “admin” account.

[System]



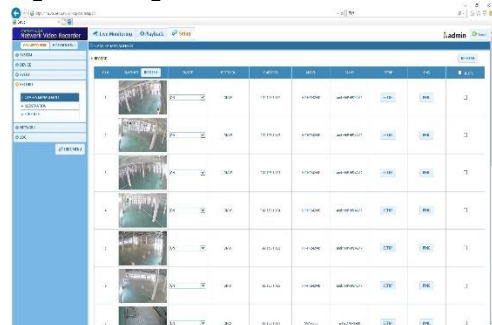
[Device]



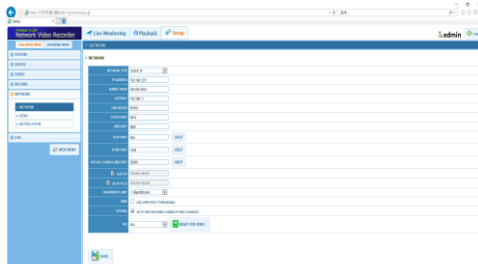
[Event]



[Record]



[Network]



[Log]



Note This NVR system has its own built-in web server. Therefore, this web CGI screen is directly supported from the built-in web server of NVR regardless of Internet connection.

Note <**System Reboot**> enables user to reboot the system without any change of the setup. User can use this function when the network is disconnected due to abnormal operation of the system and try to reconnect. IP number assigned to the system may be changed in case of DHCP mode.

6. Q & A

1. NVR doesn't record images in sensor mode and/or motion mode.

- 1) It records images only when there is an event for the corresponding mode.
- 2) Check that the settings are correct at the menus : [Event > Sensor], [Event > Motion Alarm], and [Record > Schedule].

2. There is a HDD installed but "No HDD" icon() is still shown on the screen.

- 1) Check the cable connection of the HDD again.
- 2) If you can see the HDD list at [System > HDD] but the capacity indicates "0", the HDD requires format.

3. There is nothing displayed on the HDMI / VGA monitor though electric power is supplied to the NVR.

- 1) Check if the power is supplied properly. You should be able to hear the noise from the fan and HDD operation.
- 2) Check the HDMI / VGA cable connection with the NVR. Remove all the cable connections, except for the monitor cable, and then apply power to the NVR again.
- 3) In case that the display screen is stopped at logo screen, please contact Digital Watchdog's technical support for additional information.

4. Is it necessary to open the port when using DDNS?

Yes, it is. DDNS is the function that lets remote connections acknowledge the changed address of the NVR (dynamic IP provided by ISP) or to allow connection to the NVR by domain (domain.dynlink.net) without memorizing IP.

5. Remote software connection to the NVR works fine but WEB connection doesn't work.

- 1) Some ISP blocks port number 80. Please try again after changing WEB port. (8080 is recommended.)
- 2) Check whether port 80 is opened or not.

6. Image is not shown after login at WEB monitoring

TCP Base port should be opened. Default of TCP base port is 9010.

7. Image on the remote software has suddenly disappeared after displaying for a short time.

- 1) Some ISP restricts upload data/traffic volume. Please contact your ISP.
- 2) Upload traffic restriction can be easily checked with the following steps.
 - > Turn off the power of your Modem & Router.
 - > After 60seconds, turn on the power of your Modem first and then Router.
 - > After reconnection, if it is disconnected again after a shot time (in a similar period later), it means that the ISP restricts upload traffic.

8. Backup or firmware upgrade through USB memory stick cannot be made though it is detected by the NVR.

- 1) USB memory stick should be formatted by FAT or FAT 32.
- 2) It is not allowed to use a partitioned or password-encoded USB memory.

9. Time sync through NTP server doesn't work.

NTP server requires DNS server address. Check if DNS server address is correct at the [Network] setup page.

10. E-mail transmission doesn't work in using E-mail notify function.

- 1) E-mail notify function works based on SMTP service.
- 2) Check if the sending mail address is correct and if the mail server supports SMTP service.
- 3) If you are using an SMTP service which is based on TLS authentication (including SSL) such as Gmail and yahoo mail, enable [Use SSL Authentication] at the [Notification] setup page.
- 4) SMTP service is provided based on DNS. Check if DNS server address is correct at the [Network] setup page