USER MANUAL

VMAX ip G4™
Complete IP Video Solutions

9-channel NVR	12-channel NVR	16-channel NVR
DW-VG494P	DW-VG4128P	DW-VG41616P
DW-VG492T4P	DW-VG4122T8P	DW-VG4162T16P
DW-VG494T4P	DW-VG4124T8P	DW-VG4164T16P
DW-VG496T4P	DW-VG4126T8P	DW-VG4166T16P
DW-VG498T4P	DW-VG4128T8P	DW-VG4168T16P
DW-VG4910T4P	DW-VG41210T8P	DW-VG41610T16P
DW-VG49124P	DW-VG41212T8P	DW-VG41612T16P
DW-VG4916T4P	DW-VG41216T8P	DW-VG41616T16P
		DW-VG41620T16P
		DW-VG41632T16P

When logging into the NVR for the first time, you will be prompted to set up a new password. The password must be between 8 and 12 characters long, with a combination of at least one (1) uppercase letter, lowercase letter, a number, and a special character.

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

Rev: 02/26

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 expect property damage if not used or installed properly.

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

General Warning

Warning

1. Use the power cord, which is supplied or recommended by the supplier, or it may cause a fire.
2. Do not disassemble or reassemble the product. It may cause a malfunction or fire.
3. Enquire with your vendor about the 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 a malfunction or electric shock.
5. Product installation must be ensured by a professional, 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 a malfunction or electric shock.
7. Ground connection must not touch gas or water pipes or telephone lines. If grounding is not done properly, it may cause an electric shock.
8. Prevent metallic foreign substances from going inside the product. It may cause a malfunction or electric shock.
9. Do not spray insecticide or flammable spray while driving. It may cause a fire.
10. Place the system in an open place where air ventilation is guaranteed, or it may overheat and cause considerable damage to the system.
11. Prevent water from entering electrical parts. Clean with a dry towel or malfunction to avoid electric shock during cleaning.

Caution

1. Use the power cord that 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 the product. It may cause a malfunction.
3. The air intake in the front panel and the air vent in the back panel must not be blocked during installation.
The product's internal temperature would exceed the allowable limit, potentially causing a malfunction or a fire.
4. Do not touch the product or the power cord when there is thunder. It may cause an electric shock.
5. Do not install the product near or on top of the heating source. The product's internal temperature would exceed the allowable limit, potentially causing a malfunction or a fire.
6. Do not install the product in an inclined or unstable location or where vibration could be caused. It may cause a malfunction.

Cautions about the Power

Warning

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

Caution

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

Remarks

※ Pictures, buttons, functions, or configurations are subject to change or modification across different models.

Table of Contents

1. Getting Started

1.1 Checking Supplied Items

Make sure the following items are included with your NVR. If any of these items are missing or damaged, notify your vendor immediately. Keep the packing utilities for moving or storage purposes afterward.

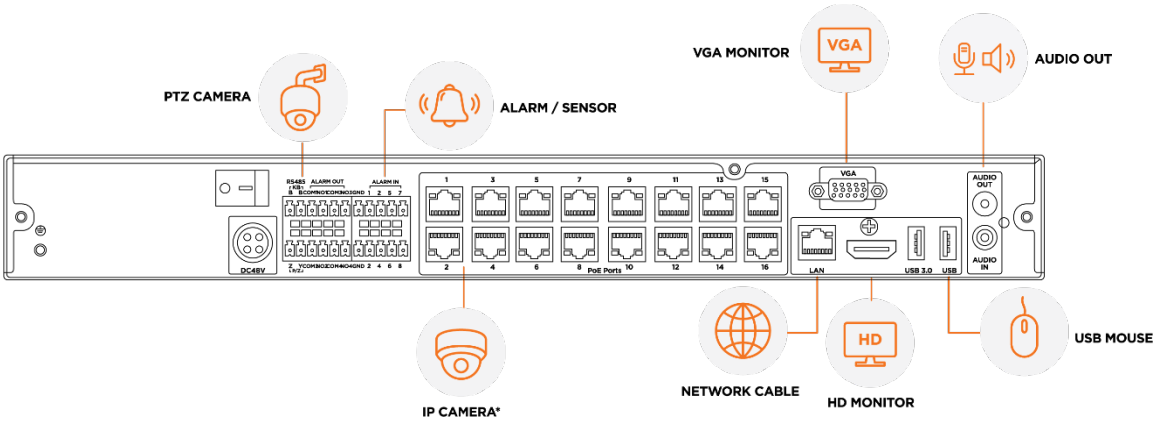
Items	Photo	Quantity
Quick setup guide and download instruction card		1
DW-VG49 and DW-VG412 : 48V D/C and power cable DW-VG416 : 54V D/C and power cable		1
USB mouse		1

Note	USB keyboard input is not supported. Connect a USB mouse to use the virtual keyboard and interact with the NVR interface.

1.2 System Startup

1.2.1. Connect External Devices

Follow the diagram below to connect all necessary external devices to your NVR. Please note that the number of available ports may vary by model. See the product's specifications at the end of this manual for more information.



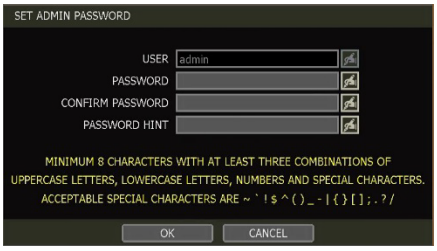
To prevent the NVR from overheating, do not operate it in an area that exceeds the maximum recommended ambient temperature of 104°F (40°C). To prevent airflow restriction, allow at least 3 inches (7.6 cm) of clearance around the ventilation openings.

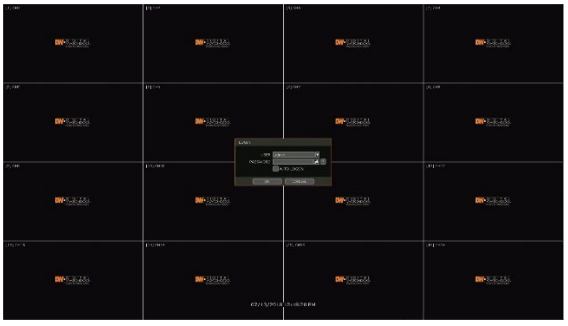
* Back panel ports and location may differ according to the model. The model shown in the diagram above is the 16CH DW-VG416xT16P NVR.

** The audio input port in the NVR is turned off by default and will need to be configured in the NVR audio settings. For audio recording, use an IP camera with audio-input support or an external microphone.

1.2.2. System Startup

After connecting peripheral devices such as cameras, monitors, and a mouse to the NVR, power up the NVR by connecting the DC48V adaptor/power cable to the power jack on the rear panel. The boot logo will be displayed. Please wait until the boot process is complete.





When the system is starting, the Set Admin Password window is displayed. When you log in to your unit for the first time, you will be asked to set up a new password. The password must be between 8 and 12 characters long, with a combination of at least one (1) each uppercase letter, lowercase letter, a number, and a special character. Acceptable special characters are 『~ ‘ ! $ ^ ( ) _ - | { } [ ] ; . ? /』.
To log in, right-click anywhere on the screen, then enter your username and password in the pop-up screen. There is only one Administrator Account configurable in the NVR. It is assigned with an unchangeable User ID marked as 'admin'. The administrator account has full access to the NVR and its

configurable parameters, and can also create new users and assign rights to those accounts.
If the NVR is set to AUTO LOGIN, you will not need to enter the login every time you start the unit.

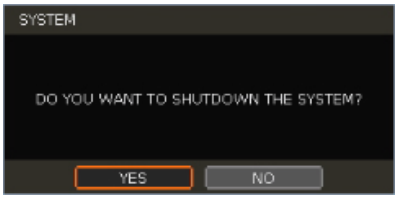
Caution	1) It may take a few minutes to start up the system after turning on the power when the user sets the network configuration to DHCP mode, but there is no DHCP server on the network, or the network is not connected. 2) The mouse is included. When replacing it, it is highly recommended to choose a well-known major brand such as DELL, MICROSOFT, LOGITECH, or SAMSUNG.

Note	1) Do not forget the administrator's password that was set for the first time. If you have forgotten your password, contact your local dealer for help. 2) Refer to "Section 4.1.2 User" for AUTO LOGIN and AUTO LOGOFF settings.

1.3 System Shutdown

To shut down the NVR, click the exit button [] on the Toolbar at the bottom of the screen, then click [SHUTDOWN] in the pop-up screen as shown below. To avoid potential electrical damage, do not disconnect power to the NVR by unplugging the power cord while the NVR is in operation.

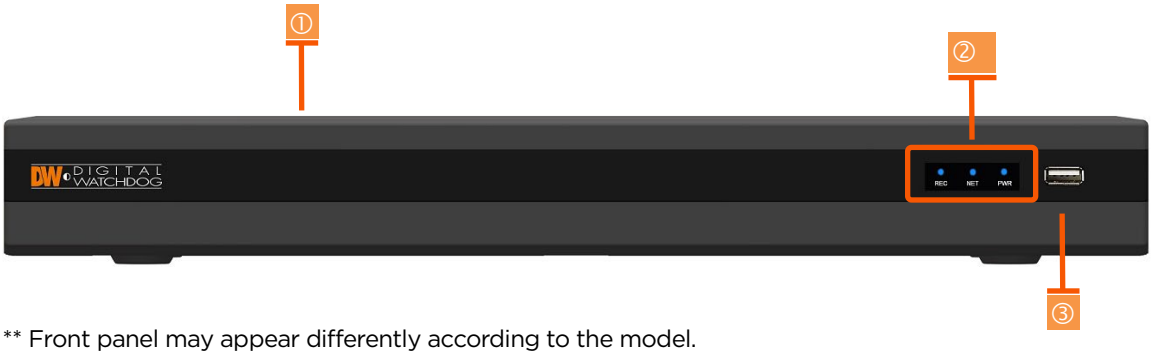
When prompted to SHUTDOWN, enter the administrator password and click [OK] to shut down the system. Click [YES] to confirm shutdown.



Note	Users can input passwords by using a mouse and the virtual keyboard.

1.4 System Explanation

1.4.1. Front Panel

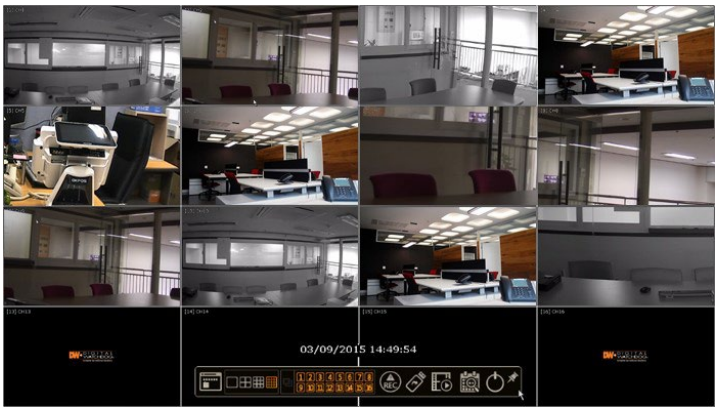


** Front panel may appear differently according to the model.

1. Power switch (located on the back panel)
2. LED indicator: indicates system status for power, recording activity and network status.
3. USB port: for backup and upgrade.

1.4.2. The Toolbar in Live Mode

In Live View, move the mouse cursor to the bottom of the screen to show the menu bar.



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

Display Mode 
Select the preferred display mode from 1CH, 4CH, 9CH, or 16CH split screen mode options.

Sequence 
Start or stop sequencing mode in Live Mode to cycle the camera displays in the viewing layout. The sequence is disabled if all channels are displayed.

Channel 
Switch to a single-channel view of a specific channel by selecting the corresponding channel number.

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

Backup 
Backup recorded video to an external device. See “4.6 Export” for details.

Playback 
Switch to Playback Mode. See “3.7 Playback Recorded Image” for details.

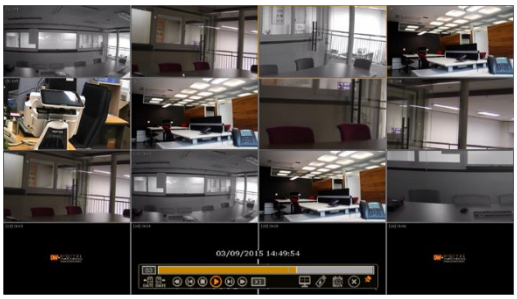
Search 
Open the search options screen. See “3.8 Search Recorded Image” for details.

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

Pin 
When selected, the NVR’s menu bar remains on-screen permanently.

1.4.3. The Toolbar in Playback Mode

In the 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 while seeking.

Previous/Next Date Search 

Users can move to the previous date or the next date to search through recorded footage.

Playback Controls

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

 : Move backward one frame

 : Stop button

 : Play button

 : Move forward one frame

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

 : Current playback speed

Screen Display Mode 

Select the preferred display mode from 1CH, 4CH, 9CH, or 16CH split screen mode options.

Backup 

Backup recorded video to an external device. See “4.6 Export” for details.

Playback 

Switch to Playback Mode. See “3.7 Playback Recorded Image” for details.

Exit 

Close Playback Mode and move to Live Mode.

Pin 

When selected, the NVR’s menu bar remains on the viewing screen, regardless of the mouse’s position. Deactivate the Pin to undo this setting.

2. Startup Wizard

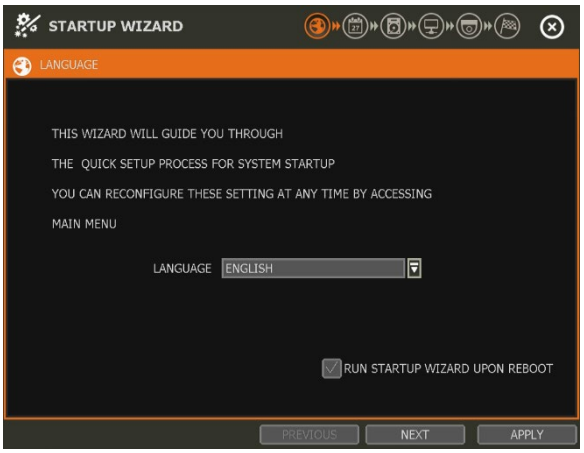
When the NVR is launched for the first time, the STARTUP WIZARD will appear. This wizard helps you set up the NVR's most basic settings for proper functioning. You can access the Startup Wizard screen at any time by clicking the Startup Wizard [START] button in the "MENU>SYSTEM>SETTINGS" menu. (See "4.1.5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

Note	Only the ADMIN user can access the startup wizard.

2.1 Language

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

If "RUN STARTUP WIZARD UPON REBOOT" is selected, the Startup Wizard will pop up every time the system is started.

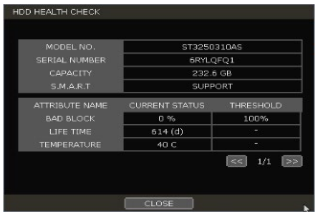


2.2 Date/Time

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

TIME SYNC MODE

There are four types of time sync modes:



- **Server Mode:** The operating NVR is set as a Time Sync Server, which can synchronize the time settings of other NVRs connected to it on the same network.
- **Client Mode:** Enter the IP address of a designated NVR or a PC running Remote Software (C3 CMS) that serves as a Time Sync Server in "SYNC SERVER". The NVR's time clock will be synchronized with the designated server by updating at regular time intervals as set in the "TIME SYNC CYCLE" setting.
- **NTP Server Mode:** "pool.ntp.org" is the recommended NTP Server. To activate, set the TIME ZONE of your local area, then click [SYNC NOW].
- **GPS Mode:** Connect a USB-type GPS device and click [SYNC NOW]

2.3 HDD Format

Digital Watchdog's NVRs ship with pre-installed HDDs, formatted and ready to use. There is no need to format the HDDs out of the box.

Note	If you have purchased an NVR without local storage, you will need to format the HDDs after installing them in the NVR.

HDD FULL

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

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

HDD CHECK

Click the (/) next to each HDD to view full information for each HDD, including model name, serial number, capacity, bad-sector ratio, lifetime (used time), and temperature.

HDD FORMAT

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

AUTO DELETE

Set the period when the HDD will automatically delete all recorded data. Select from None (default) up to 366 days.

Note

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

2.4 Network

Configure the NVR's network settings for remote access.

NETWORK TYPE

Select either STATIC IP or DHCP for a dynamic IP. For proper configuration, it is recommended to assign the NVR a DHCP address, let it auto-discover the network settings, then change the Network Type to Static IP and save the changes.

- **DHCP:** The NVR automatically configures network settings based on current network requirements. If DHCP is selected, click the 'IP DETECT' button to automatically detect all network settings.
- **STATIC IP:** manually enter all necessary network settings. While set to STATIC, the network settings will not change when prompted by the connected DHCP router or DHCP network device.

IP ADDRESS

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

SUBNET MASK
The subnet mask address classifies the subnet 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. Enter the DNS Server information to use DDNS, Email Notifications, and an NTP Server. For more information, please consult your network administrator or your Internet provider.

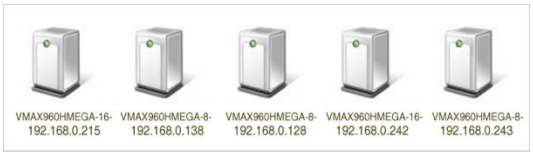
TCP/IP PORT
(Default – Port 9010) Enter the network port number used when connecting to the NVR locally or remotely. If your ISP blocks Port 9010, you may either port forward the blocked port or use a different valid port (e.g., 9020). If multiple NVRs are connected to the same local network, it is recommended to assign each NVR to a different TCP/IP Port.

WEB PORT
(Default – Port 80) Input the port number to use when connecting with a Web Browser. If your ISP blocks Port 80, you may either port forward the blocked port or switch to a different valid web port (e.g., 8080). If multiple NVRs are connected to the same local network, it is recommended to assign each NVR to a different Web Port.

AUTO IP
Displays the system IP address assigned by Auto-IP.

BANDWIDTH LIMIT
(Default – 100 Mbps) Depending on the user's settings, the system can control the data volume transmitted over a network from 25 kbps to 1 Gbps. This function is effective when operating under narrow-bandwidth network conditions or when the user wants to limit the "network bandwidth occupied by video transmission" to a specific level.

USE UPnP (Universal Plug and Play)
UPnP (Universal Plug and Play) Port Forwarding: If a UPnP-supported router is connected, the NVR will automatically forward ports after communicating with it, eliminating the need for complex port forwarding configuration at the router.



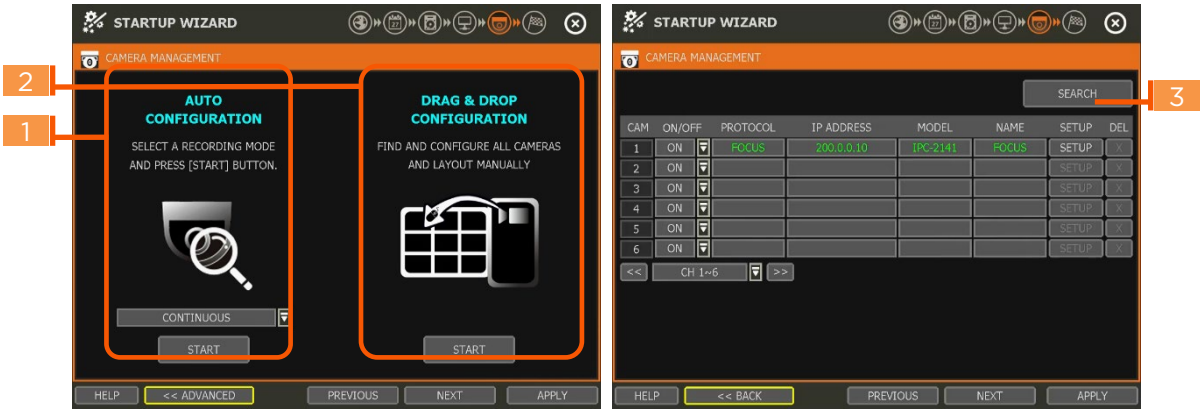
Once the PC has discovered the NVR using Network Discovery, double-click on the icon to open the NVR's web client. Enter the User ID and Password used to log in to the NVR, then click 'Connect'.

Note

1. The maximum number of simultaneous remote connections is 15 users.
2. For the other network settings, such as DDNS, Notification, Mobile Push & PathFinder, please refer to the "4.5 Network".

2.5 Camera Management

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



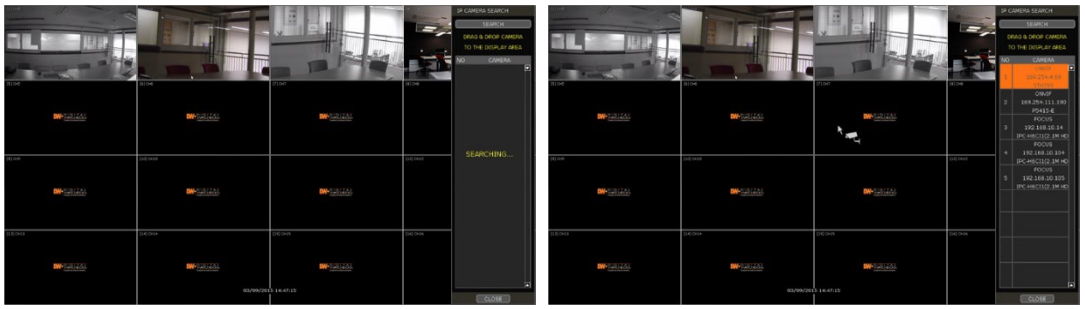
Auto-Configuration (1)

The NVR will scan the network for all supported cameras and automatically register them to available channels. Select the recording mode to apply to all registered cameras and press [START]. The NVR will automatically search for all cameras on the same network (Router) and register them in order.
When multiple NVRs are on the network, it is recommended to use Drag & Drop or advanced configuration options to prevent a camera from being connected to multiple NVRs.

Drag & Drop Configuration (2)

The Drag & Drop Configuration scans the network for supported cameras. It displays the results in a table, from which you can manually drag and drop cameras into the viewing channels to assign them to specific channels.

1. Click the [START] button to search for the camera.



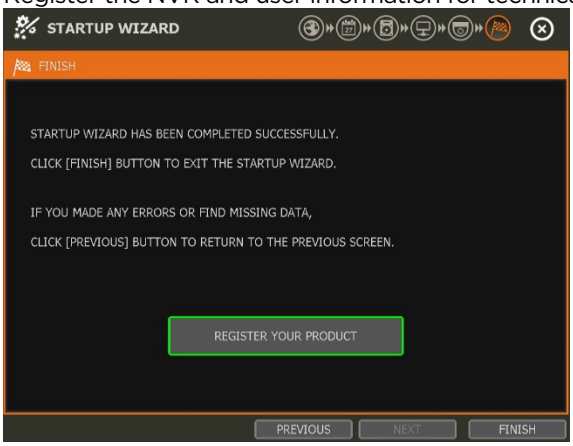
2. Select a camera, then click it and drag it to a channel to assign it to that channel.
3. Click the [APPLY] button to finish the process.

Advanced Configuration (3)

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

2.6 Product Registration and Finish

Register the NVR and user information for technical support and maintenance.

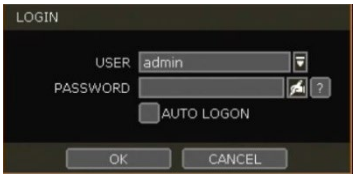


When the setup wizard is completed, click “FINISH” to close and go to the live viewing screen.

3. Operation

3.1 User Log-in

Input the USER and PASSWORD credentials to log in after turning on the system. If a user forgets their password, they may click the ? icon to check the password hint.



Note 1) The login window will remain displayed until a user logs in with the correct USER and Password.
2) If NVR is set to use AUTO LOGIN, the login process will not be prompted whenever the system is powered on. See "Section 4.1.2 User" for more information.

Note The ... key on the virtual keyboard includes commonly used 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 at the back of the NVR, they will also receive power and send data to and from the NVR.

Note As part of the NVR's cybersecurity settings, the VMAX IP G4 will automatically assign a password to new DW IP cameras added with a blank password. If a camera is added to the NVR for the first time without its password being set via the IP Finder™, the NVR will automatically assign it a new password. If the camera then needs to be connected to another NVR or system, users will need to reset the camera's settings.

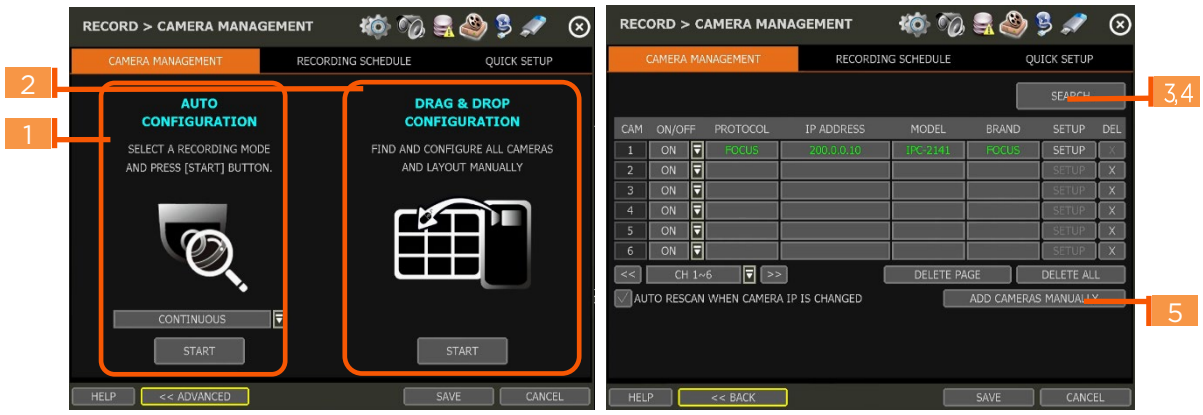
3.2.1. PoE Camera Connection

PoE cameras automatically connect when plugged into a PoE port. Channels assigned to cameras connected directly 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 being connected to the NVR. For cameras that support 'Auto IP', the NVR will automatically control its IP settings.

Note If a PoE camera is connected to a PoE channel that already has a virtually assigned camera, the virtually assigned camera will be moved to another channel, and the PoE camera will be assigned to that channel.

Note Zero-Configuration uses Link-Local IP address assignment via Auto-IP, automatically assigning IP addresses when DHCP is unavailable or unsupported. The device that uses this technology selects an IP address in the 169.254.xxx.xxx range and assigns it after checking its availability.

3.2.2. Camera Connection through the Network



The NVR supports three methods for searching for and registering cameras on the local network (not directly connected via PoE) to the NVR.

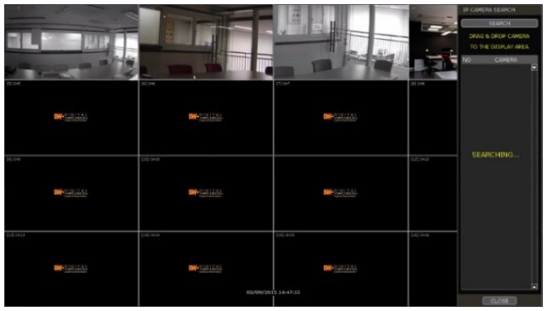
- **Auto Configuration:** allows the NVR to scan the network and automatically register the first cameras it finds to the available channels.
- **Drag & Drop Configuration:** scans the network for supported cameras and displays the results, from which you can drag cameras to the viewing channel to assign them to channels.
- **Advanced Search:** settings and manually adding cameras, select SEARCH.

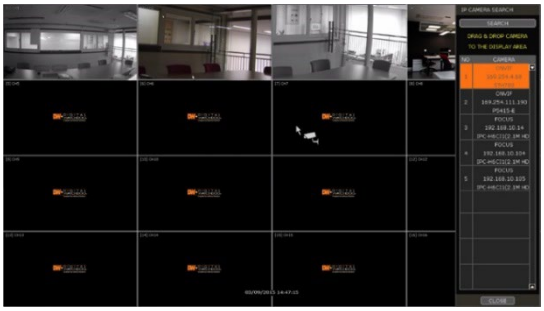
3.2.2.1. Auto Configuration

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 (subnet) and automatically register them in the order that they are discovered.

3.2.2.2. Drag and Drop Configuration

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



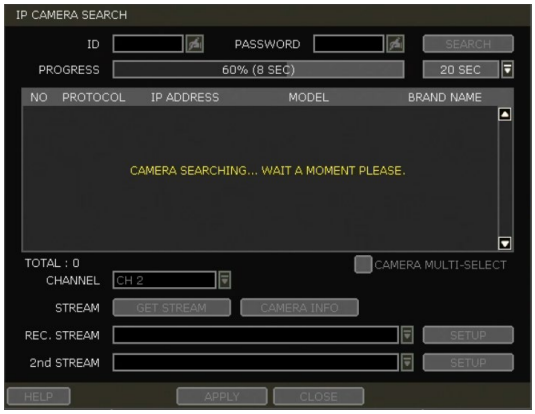


2. Select the camera from the list, then drag and drop it into the channel you want to assign it to. (While moving, the mouse pointer is changed to .)
3. Click [APPLY] to save all changes.

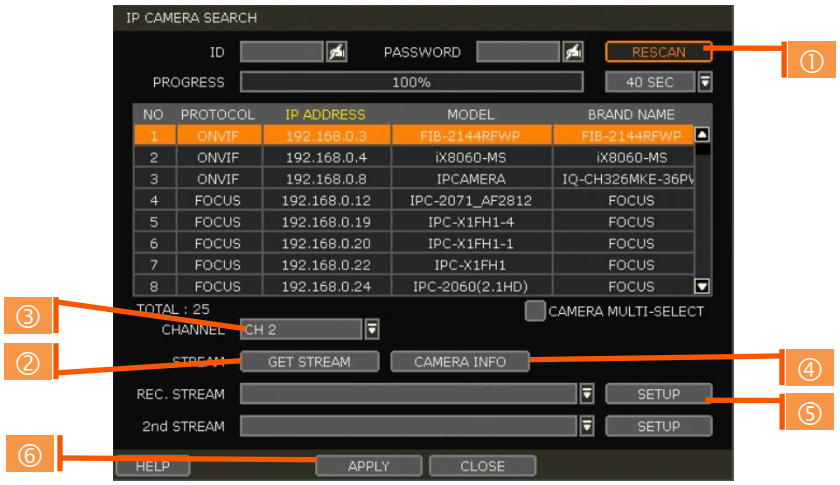
3.2.2.3. Advanced Search

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] to automatically search for all cameras on the network.



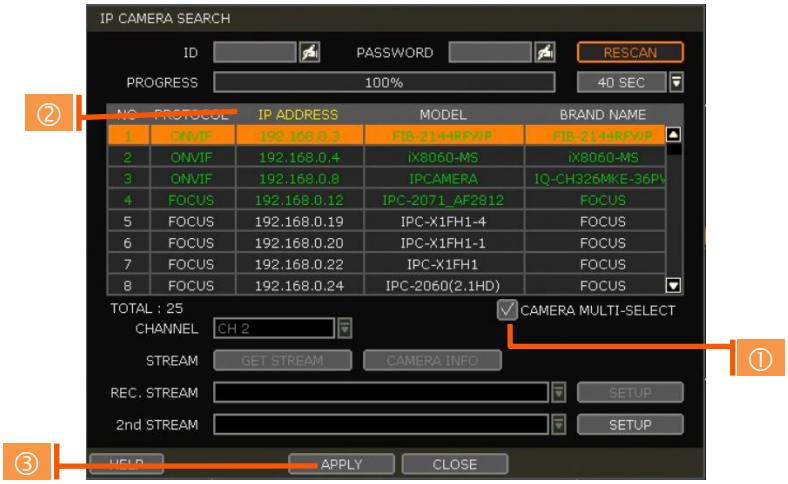
2. Select a camera from the list, then click [GET STREAM] to read the camera's streams.



3. When [GET STREAM] is selected, the NVR will assign a channel number to the selected camera. Users can also select a specific channel number from the drop-down options.
4. [CAMERA INFO] displays the camera's basic information, including model name, IP address, Port number, and MAC address.
5. [SETUP] allows users to control the camera's settings, such as Resolution, Frame Rate, Bitrate, and Image Quality.
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.



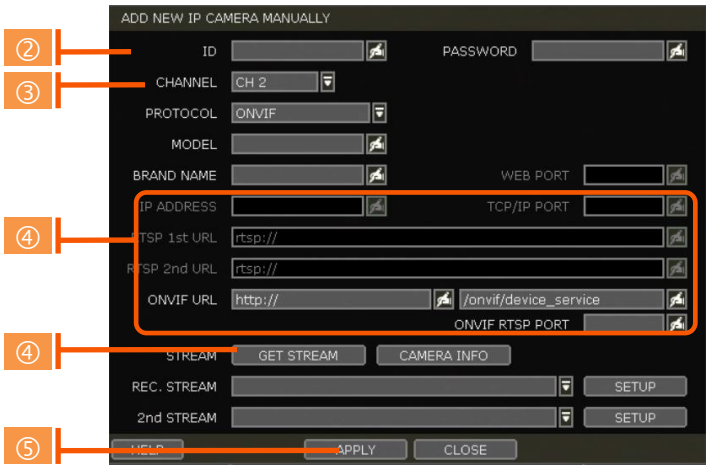
2. Once all search results are displayed, the user can sort the table by different columns, such as protocol, IP Address, Hardware, and Name, by clicking each property tab. The selected property will be highlighted in yellow.
3. Check the box next to [CAMERA MULTI SELECT] to select multiple cameras from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

Note During the Camera Multi-Select registration process, if a camera has a different IP range or requires an 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.



2. Select the channel number to register.
3. Select the camera's protocol (ONVIF or RTSP). Registration is available with one of the following. – IP Address, RTSP URL, or ONVIF URL
4. Enter the required information using the edit button, then click [GET STREAM] to retrieve stream information.
5. Click the [APPLY] button to register the camera.

3.3 Deleting Cameras

To delete a camera, go to Advanced Configuration by clicking [ADVANCED] in Camera Management (Menu > Record).

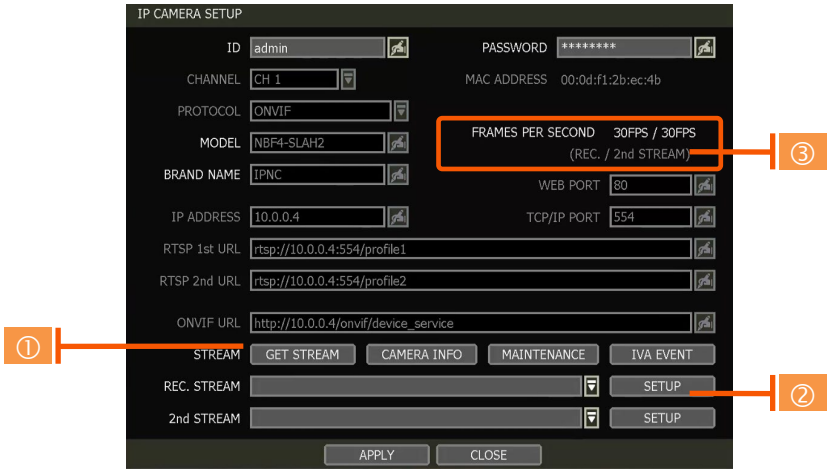
1. Non-PoE Camera - Delete ( ) button is always activated. Click on the camera to delete it from the NVR's channels.
2. PoE Camera - PoE cameras cannot be deleted while connected to the NVR's PoE switch. To delete a PoE camera, unplug it from the NVR and press the / button while it is activated.

3.4 Camera Setup

Users can change the stream setup of registered cameras.

3.4.1. Set up for Each Camera

Go to Advanced Configuration by clicking [ADVANCED] in Camera Management (Menu > Record).
Go to setup mode by clicking the [SETUP] button next to the desired camera.
You can also access the camera's setup menu by right-clicking on a camera channel during live viewing and selecting [CAMERA SETUP].



1. Click the [GET STREAM] button and get the current camera streaming status.
2. Click the [SETUP] button to change resolution, frame rate, image quality, etc.
   - **RESOLUTION:** Select the rescoring 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 the camera can 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.

3. Current Streaming conditions – This will display the camera's recording mode and FPS in real time.
   - **FRAMES PER SECOND:** Shows the current transmission frame.
   - **REC.:** Displays the stream recorded by the NVR for the camera.

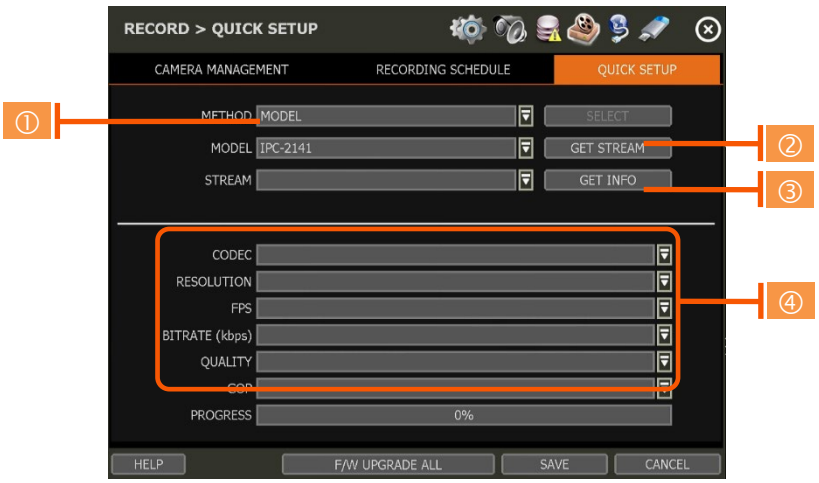
Note **CCIP™ Encryption Option**

CCIP™ (Closed Circuit Internet Protocol) System Encryption Protects Your Surveillance System from Out-of-Network Attacks.
Digital Watchdog's CCIP feature encrypts the RTSP stream using the TLS cryptographic protocol, providing end-to-end security. CCIP encryption works by the VMAX IP G4 system sending a request to the camera to encrypt the stream. The camera then encrypts its RTSP stream a second time, in addition to requiring a user ID and password for authentication. The result is a secure, encrypted RTSP stream that can be read-only from the requesting VMAX IP G4 NVR.

If you are using a Digital Watchdog camera that supports the CCIP encryption option, check the button on the camera's setup page as shown (※).
When enabled, images from the camera will be displayed only in the current NVR.

3.4.2. Quick Setup

Users can set up multiple cameras with the same recording settings simultaneously.



1. Select the model or camera multi-select for Quick Setup. When selecting 'Model' for the Method, all cameras with that model name will be selected.
2. When selecting 'Camera multi-select', the user can select which cameras to set. If you set the desired cameras to 'ON', the user can configure the selected cameras' settings.
3. Click the [GET STREAM] button and get the current stream information.
4. Click the [Get INFO] button and check the current setup for the cameras.
5. Change the setup and click [SAVE].
6. "CAMERAS ARE SUCCESSFULLY APPLIED" message will appear when the process has been completed.

3.4.3. Change Channel

ADMIN users can reassign camera channels by dragging & dropping cameras in the live display screen.

Select a camera by clicking and dragging it to its new channel. While dragging a camera, the mouse pointer changes to a/symbol. For a PoE camera, the connected PoE port number and the currently assigned channel will be displayed as shown in the example below.

In Live Mode, users can check the status of PoE cameras by selecting the [PoE STATUS] menu.

Note Only the ADMIN user can change the channel allocation.

3.5 Live Display Mode

3.5.1. Channel Selection

Live camera images will be displayed after the NVR powers on. The images can be displayed in 1, 4, 9, or 16 split-screen layouts (some layouts may not be available depending on the NVR's maximum number of channels). Whenever the screen display mode button ( ) on the Toolbar is clicked, the screen will change to display the next channel or sequence of channels.

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

A "VIDEO LOSS" message will appear on the screen when no camera is connected or when a camera is suddenly disconnected. When a camera is disconnected, a warning sound will be emitted, depending on the system's event alarm settings.

Admin users can set various levels of authorization for each user to grant or exclude viewing access to specific channels. If a user is not authorized to view a channel, the channel's image will be unavailable on the viewing screen, and the DW logo will appear in its place, as shown in the example below.

3.5.2. Icons

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

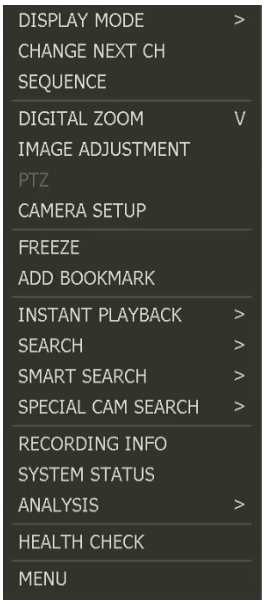
The icons shown in the right-upper corner of each channel screen		The icons shown at the bottom-right corner in full-screen mode	
C	Continuous Recording	NO HDD	No HDD detected
M	Motion Detection Recording	E-REC	Emergency Recording is in use.
S	Sensor-Activated Recording	PTZ	PTZ is enabled
C+M	Continuous + Motion Alarm Recording	CHECK FAN	Warning for exceeding the temperature
C+S	Continuous + Sensor Activated Recording	SEQ	Sequence Mode is enabled.
M+S	Motion Detection + Sensor-Activated Recording	ZOOM	Digital Zoom is enabled.
C	Emergency Recording		
	Sensor Activated		
	Motion Detected		

	Audio Channel		
	PTZ Camera		
	Transaction Verification		

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

3.5.3. Pop-up Menu

Users can right-click to display the pop-up menu. If the user wants to control a specific channel, hover the mouse cursor over the desired channel, then right-click.



DISPLAY MODE

Change the screen display mode to one of the available split-screen options.

CHANGE NEXT CH

Cycle to the next channel or next group of cameras in the current split-screen mode.

SEQUENCE

When “SEQUENCE” is selected, SEQ an icon will appear in the bottom-right corner of the screen. The display screen will sequentially cycle through the registered cameras.

DIGITAL ZOOM

- Digital Zoom is available only in single-channel view. When “ZOOM” is selected, ZOOM will appear in the right-hand corner of the screen, and digital zoom control is available.
- To zoom in, click and drag the mouse over the desired area to create a zoom area. You can also zoom in or zoom out by scrolling the mouse wheel. The user can move the zoom area by clicking on the edge of the square and dragging it.
- To exit from Zoom mode, right-click and select “ZOOM EXIT’ on the menu.

IMAGE ADJUSTMENT

View the adjusted camera image menu (Please refer to “4.2.1 Camera”). Users can adjust images' brightness, contrast, color, and more. The available options depend on the camera’s ONVIF integration. See the camera’s manual for more information.

PTZ

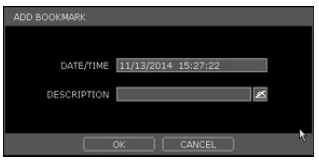
Activate PTZ control mode. (Please refer to “3.6 PTZ Operation” for details.) The available PTZ options vary depending on the camera’s ONVIF integration and PTZ capabilities. See the camera’s manual for more information.

CAMERA SETUP

View the setup camera menu. (Please refer to “3.4.1 Setup for each camera”)
Users can set resolution, frame rate, etc. The available options depend on the camera’s ONVIF integration. See the camera’s manual for more information.

FREEZE

Pause the current live view. The system clock (date/time information) will continue to run at the bottom of the screen, and the system will continue to record normally. Select “FREEZE” again to resume the live view.



ADD BOOKMARK

Add a bookmark with a description of the currently displayed image. Enter a description and click OK to save.

INSTANT PLAYBACK

Select from the time options (1 second to 5 minutes) to instantly switch to Playback Mode.

SEARCH

Search recorded video using the calendar, date/time, first and last data, system log, event log, transaction verification and bookmarks. (Please refer to “3.8. Search Recorded Image” for details.)

SMART SEARCH

Search recorded video in preview search or advanced preview search modes. See 3.9 Smart Search for more information.

SPECIAL CAM SEARCH

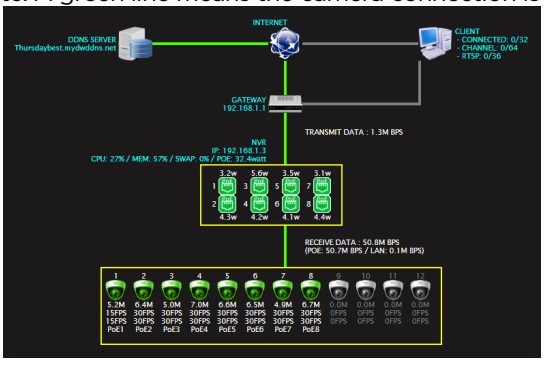
Search for a special camera log for video analytics. (See 3.10 Special Cam Search for more information.)

RECORDING INFO

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

SYSTEM STATUS

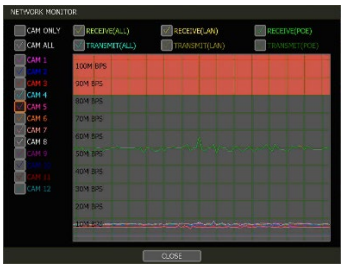
See the system status, network condition, the number of clients currently connected to the NVR, PoE camera connection, etc. A green line means the camera connection is live and working.



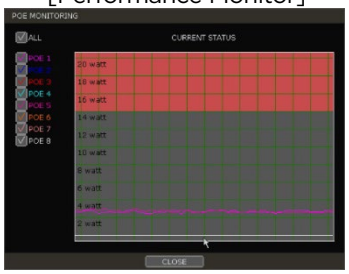
ANALYSIS

Check the system's performance, general conditions and network conditions for each channel or the entire system. You may also check the status of cameras connected directly to the NVR's PoE switch and event status.

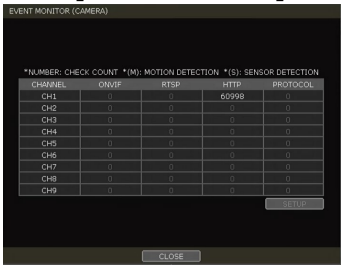
[Performance Monitor]



[Network Monitor]



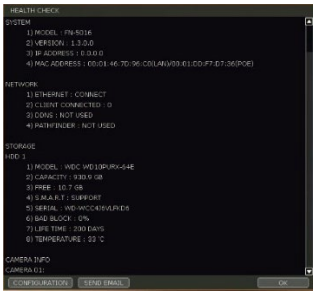
[POE Monitor]

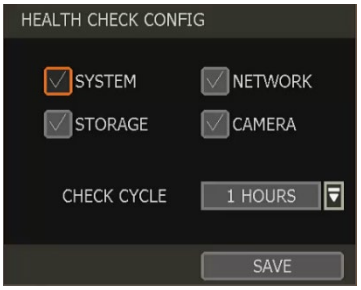


[Event Monitor]

HEALTH CHECK

Display the NVR's system, network, camera, and HDD information as text. Select which information to display in health checks, and set the check cycle interval to determine how frequently the checks occur.





MENU

Open the main menu setup screen.

3.6 PTZ Operation

To operate a PTZ camera, the channel connected to it should be in full-screen mode. To activate PTZ control, right-click and select “PTZ” in the pop-up menu. When in PTZ mode, PTZ will appear in the top-right corner of the screen.

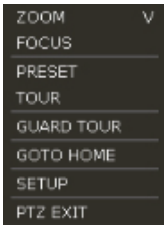
PTZ Control

In PTZ mode, the user can control the PTZ camera using the USB mouse. While pressing the left button, drag the mouse cursor up/down or left/right to move the camera’s pan/tilt position. The farther the mouse’s cursor moves from the center, the faster the PTZ camera will move.
To move the camera to a preset position, click the preset position number at the bottom of the screen. The presets must be set before selection.

Note Full PTZ functionality is available using the USB mouse or keyboard controller. The availability of functions depends on the camera’s ONVIF integration. Consult the camera’s manual for more information.

ZOOM/FOCUS

If the mode is set to “Zoom”, zoom in/out by rolling the mouse wheel.
If the mode is set to “Focus”, the camera’s focus can be controlled by rolling the mouse wheel.



PRESET

When the preset menu pops up, select the preset number and click “Enter” to move to the corresponding preset position. The maximum supported Preset number 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 preset sequence in the GUARD TOUR settings. (See “4.2.3 PTZ” for more information.)

Caution Users can set an interval for each preset position. Some presets might be skipped when a camera cannot mechanically move or cannot control focus within the interval.

GOTO HOME

The camera moves to the original home position that is saved in the PTZ camera’s settings.

SETUP
Go to the PTZ setup menu (Please refer to “4.2.3. PTZ”).

PTZ EXIT
Close PTZ control mode.

3.7 Playback Recorded Images

To playback a recorded image, click the Playback icon ( ) in the menu bar. When the NVR transitions to Playback Mode, it will automatically play back the latest recording.

Date/Time (1)
Shows the date & time of the image that is being displayed.

Toolbar (2)
Contains playback controls, recorded data check, screen mode, etc. (See “1.3.4. Toolbar in Playback Mode” for more information.)

Pop-up Menu (3)

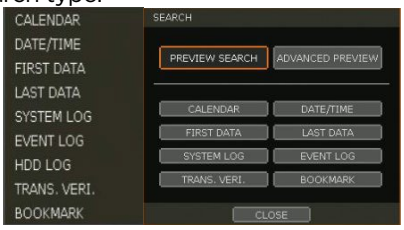
- **Display Mode:** Change display mode (1, 4, 9, 16 screen mode)
- **Change Next CH:** Change to the next playback channel.
- **Digital zoom:** Enable or disable digital zoom (available in single-channel view).
- **Backup:** Open the backup window.
- **Add Bookmark:** Add a bookmark to the current image.
- Search: Search recorded data by various conditions (Please refer to “3.8 Search Recorded Image” for details.)
- **Smart Search:** Search recorded data with Preview search and advanced preview search. (Please refer to “3.9 Smart Search” for details)
- **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 Video

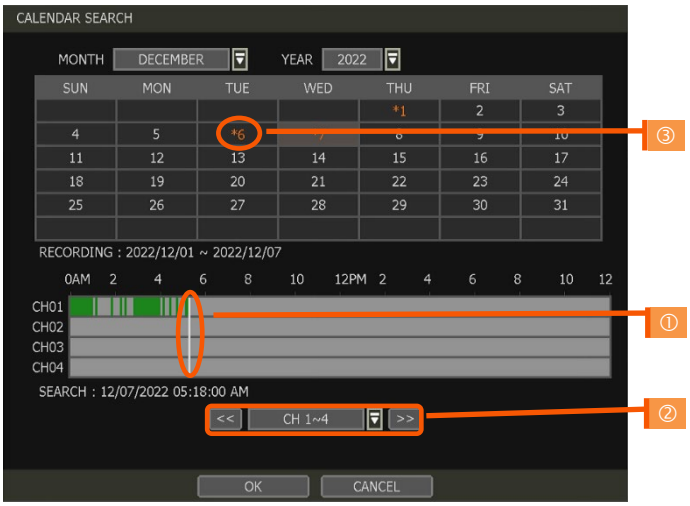
Search recorded video by date and time, first and last data, events, bookmarks, etc.
To enter the search options menu:

1. In Playback Mode, right-click to enter the pop-up menu and select the search menu.
2. In Live Mode, press the Search button in the Toolbar at the bottom of the screen.
3. Select the preferred search type.



3.8.1. Calendar Search

To search for data for a specific date and time, use Calendar Search to select the date and time of the footage.
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” for more information.
The time bar displays four channels at a time. To check the next 4 channels, change the group at the bottom of the window (②).
The asterisk “*” mark on dates (③) indicates days with recorded videos available.



3.8.2. Search Date/Time

Enter the desired date and time on the calendar screen.
Select the desired date from the calendar, then use the drop-down to choose the day/month/year and time category for the search.
Days with recorded data will be highlighted in orange with an asterisk (*) next to them.

3.8.3. First Data

Go to the first screen of the archived recorded video. This is the oldest recorded video. First Data will be overwritten as the NVR records depending on the HDD settings. (For more information, see Section 4.1.4 HDD.)

3.8.4. Last Data

Go to the last screen of the recorded video. This is the most recent video recorded.

3.8.5. System Log

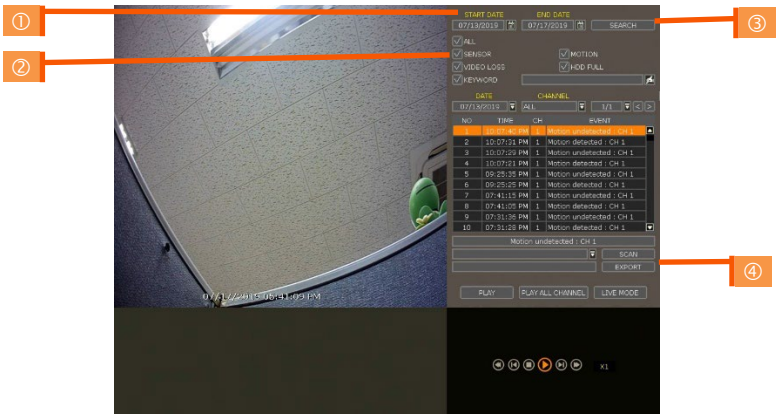
Find system log information such as System, Setup, or network events.

1. Select a date to search.
2. Select the log type to search. Users can search for 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 a USB flash drive as a “.csv” file. Once the export is complete, the user can find a folder labeled with the site name. A

"system.log" file with the exported log can be found in the site name folder.

3.8.6. Event Log

Find events such as sensor activation, motion detection, video loss, HDD full, or keyword.



1. Select a date to search.
2. Select the log type to search. Users can search for 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 a USB flash drive as a ".csv" file.

Note Up to 50 recorded events will be shown per page. Click the arrow buttons ( ) to search the log records on another page.

3.8.7. HDD Log

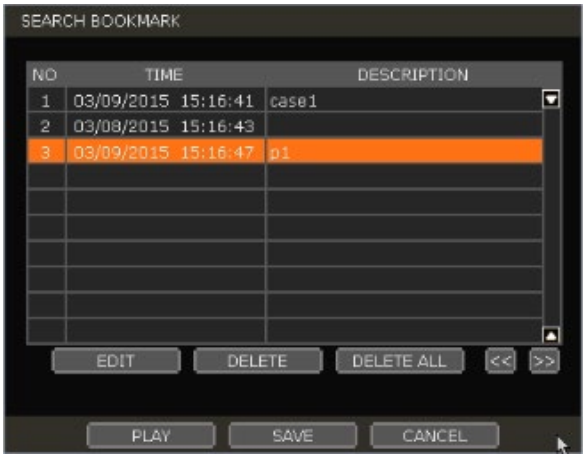
Users can search for HDD logs, such as mount failures and record failures.
If there is no problem with the HDD, there is no log.
Click [EXPORT] to copy the list to an external device such as a USB flash drive as a ".csv" file.

3.8.8. **Transaction Verification**

Search text from a Transaction Verification™ integration, such as a POS device. 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 the playback video and transaction data.

3.8.9. **Bookmark**

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



3.9 Smart Search

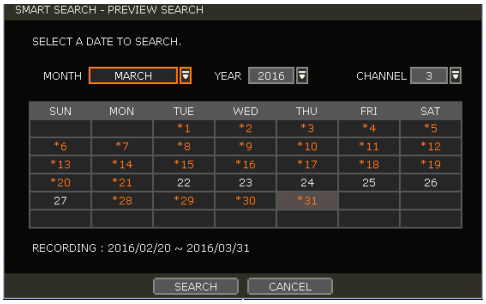
Users can search for recorded video in split-screen mode by the hour or the minute.
Smart Search supports two different modes – Preview Search and Advanced Preview Search.

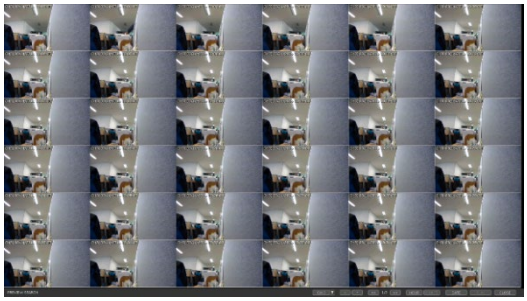
3.9.1. Preview Search

Preview search breaks down a day's worth of recorded video for a camera into 12 still images, one for each hour. You can then "zoom" into the hour to display images for each minute.
To use this search:

1. Right-click on the selected channel and go to Smart Search > Preview Search
2. Select the date you wish to search for. Days with recorded video will appear in orange.
3. Click Search. The NVR will display 24 preview images (1-hour unit) of the channel on that day.
4. Double-click on a specific image or press the minute button to display 60 screen images (1-minute unit) by the minute.

Users can easily search for substantial amounts of video for specific events with this preview search, allowing playback of the recorded image of that moment.
The number of thumbnail images and the size of each image can be increased/decreased, with a maximum of 196 (14 x 14), depending on the resolution.
In preview search mode, the user can change the search date and the display unit (time/minute), and go directly to Playback Mode by selecting a preview image.

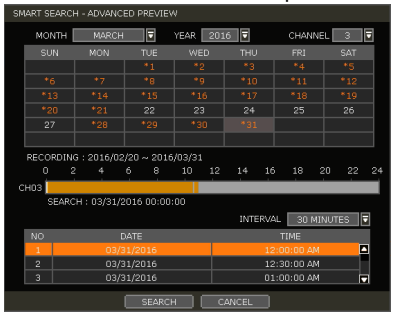


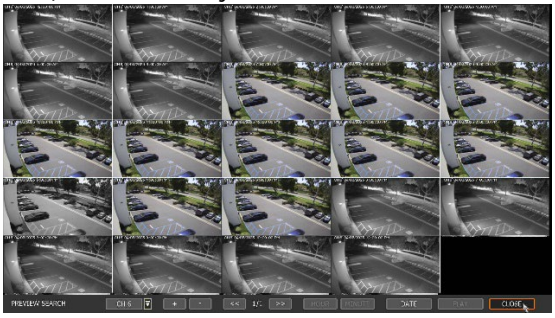


3.9.2. Advanced Preview Search

Advanced Preview Search lets you search a camera's data across multiple days to detect abnormalities or events at a specific time of day. To use the Advanced Preview Search:

1. Right-click the selected channel, then select Smart Search > Advanced Preview Search.
2. Select the start and end dates you wish to search for. Days with recorded video will appear in orange.
3. Select the time interval you wish to search for. The interval can be set from 1 minute to 1 day. Once the interval is selected, set the search time. For example, if 1 day is selected, select the time of the day you want to search (e.g., every day at 5 PM).
4. Press Search. The NVR will play back the recorded image of the selected channel at the selected interval in multiple-screen mode, simultaneously.



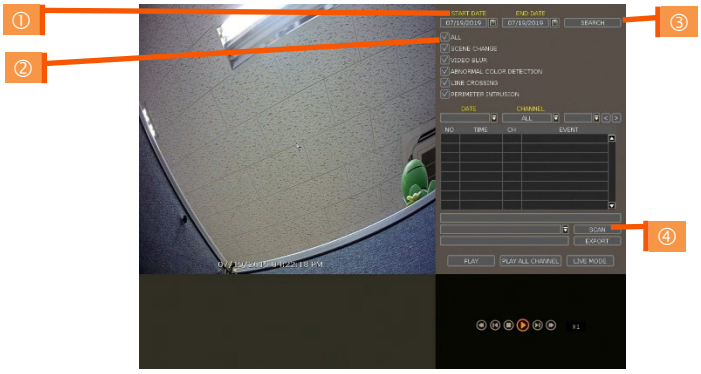


3.10 Special Camera Search

3.10.1. Video Analytics

Search video analytics log for events such as object removal, scene change, video blur, video case, line crossing, intrusion, crowd density, people intrusion, people counting and face detection.

Note	To view the special camera search, users must be in single-channel view mode, and the camera must support video analytics.



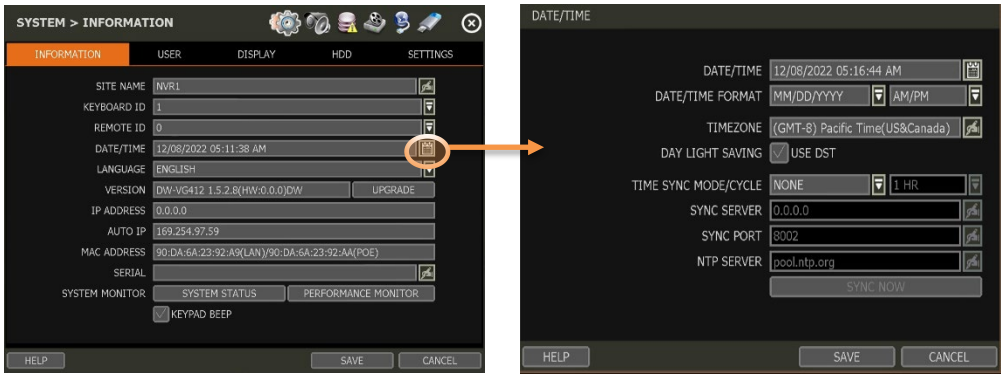
1. Select a date to search.
2. Select the log type to search. Search individual events or all events.
3. Click [SEARCH] to show the search results in the list.
4. Click [EXPORT] to copy the list to an external device such as a USB flash drive as a “.csv” file.

3.11 DST Setting and Image Playback

Daylight Saving Time (DST) starts at 2:00 AM local time on the 2nd Sunday of March and ends at 2:00 AM DST on the 1st Sunday of November. During DST, the NVR's clock will be adjusted according to the regional time zone. The NVR's time will shift by 1 hour when DST starts and restore the time clock to normal after DST ends.

3.11.1. DST Setting

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



3.11.2. DST Image Playback

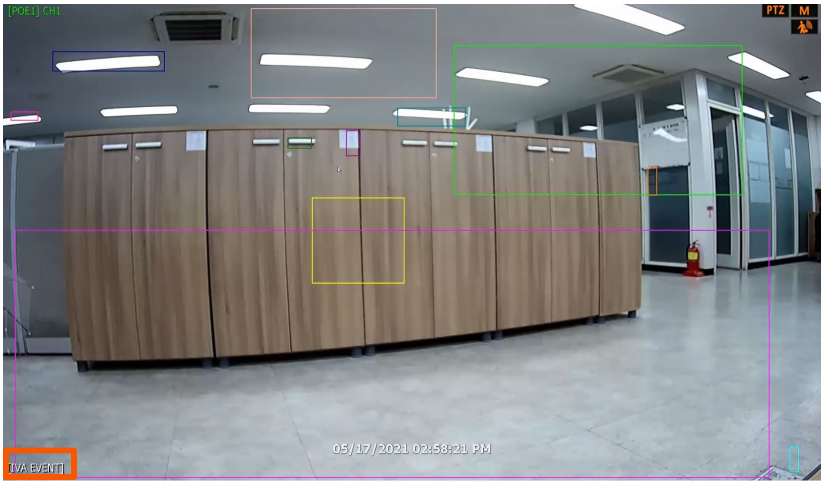
When there is overlapped data due to DST, the overlapping hour will appear blue in the search bar during playback.

To play back 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.

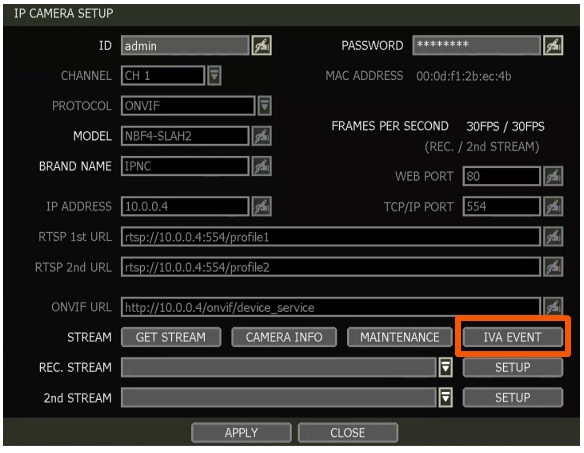
3.12 MEGApix® IVA™ Analytics

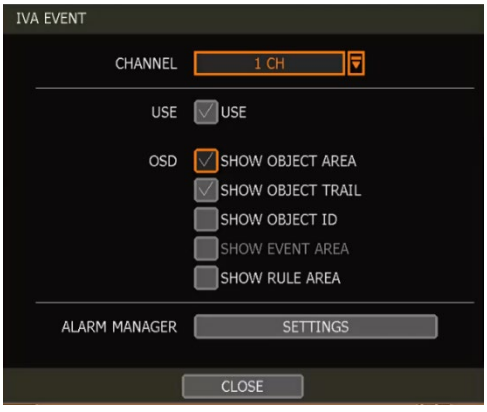
3.12.1. IVA Settings

When a MEGApix IVA IP camera is connected to the NVR, the system will display [IVA EVENT] at the bottom of the screen. The camera's preview will include the existing rules' zones, and when an IVA event occurs, an event notification icon will appear in the top-right corner of the camera's display. (*IVA rules can be created and managed from the camera's Web Client, accessible through a web browser. To create, edit or delete IVA rules, please refer to the IVA camera user manual.)



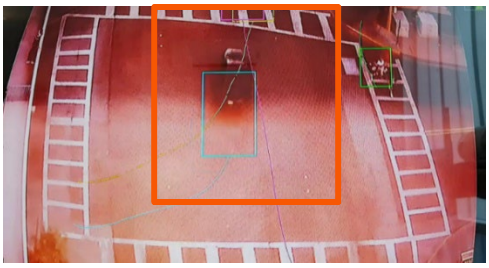
MEGApix IVA camera settings are enabled in [IP CAMERA SETUP] - [IVA EVENT]. Click the IVA EVENT button to enable the camera as a MEGApix IVA camera, then select the appropriate OSD settings.





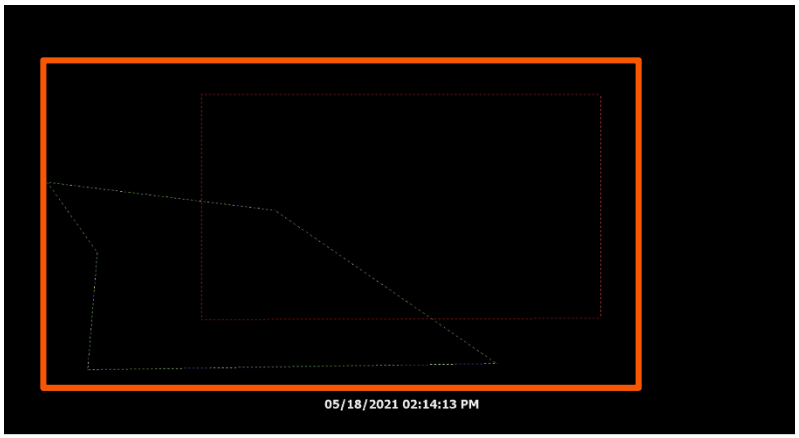
- **SHOW OBJECT AREA:** This shows the area of a detected object.
  NOTE: To enable the SHOW EVENT AREA, this option must be disabled.

- **SHOW OBJECT TRAIL:** This shows the trail when a detected object is moving.



- **SHOW OBJECTED ID:** This shows the ID of a detected object.

- **SHOW EVENT AREA:** When checked, the event area is displayed only when an event occurs. To use this option, SHOW OBJECT AREA must be disabled.
- **SHOW RULE AREA:** This shows the 'RULE' area. (Refer to the camera's manual for the RULE setting.)



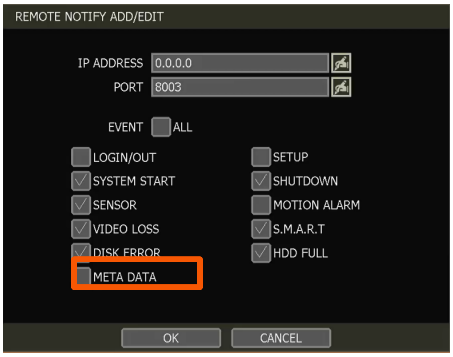
3.12.2. ALARM MANAGER

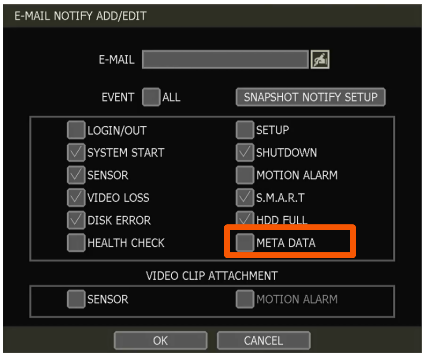
Set an IVA EVENT ALARM

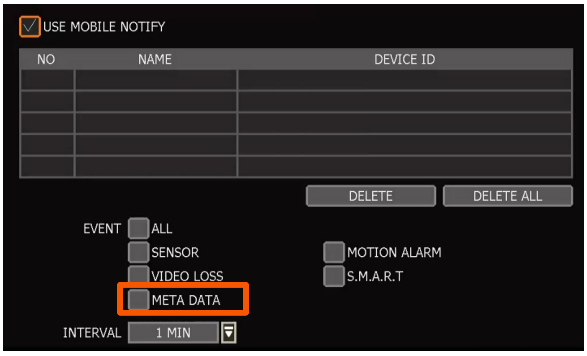
If the user checks 'USE', the settings window opens, allowing the user to set an event alarm name, type, and notification type (pop-up, buzzer, relay, etc.).

- **Name:** Create a name for the IVA event alarm.
- **Type:** Select the alarm event type. The alarm type is directly related to the IVA-triggered analytic type.
- **CH:** Enable 'CH' and select the channel of the camera.
- **Popup/Buzzer/Relay:** Select how the NVR will respond when the alert is triggered.
  - Popup: A pop-up window will display.
  - Buzzer: An alert tone will emit from the NVR.
  - Relay: An external relay (RS-485 connection) will trigger.
- **Notify:** Select the notification type to send. (See Section 4.5.3 Notification for more information.)

※ To set REMOTE / EMAIL / MOBILE NOTIFY, the user must check 'META DATA'.



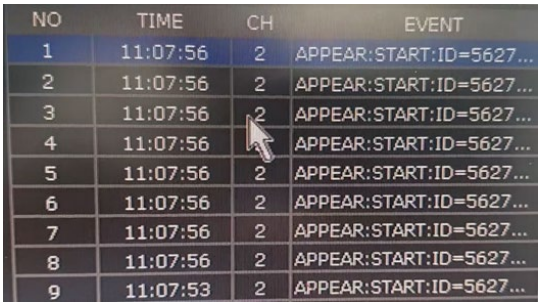




3.12.3. **MEGApix IVA EVENT SEARCH**

To search for IVA analytics events, go to the pop-up menu > SPECIAL CAM SEARCH > IVA EVENT. Select IVA EVENT from the drop-down list options. Use the date and type filters to narrow down search results.

Double-click the event in the event results list to view the associated video.



4.NVR Settings Menu

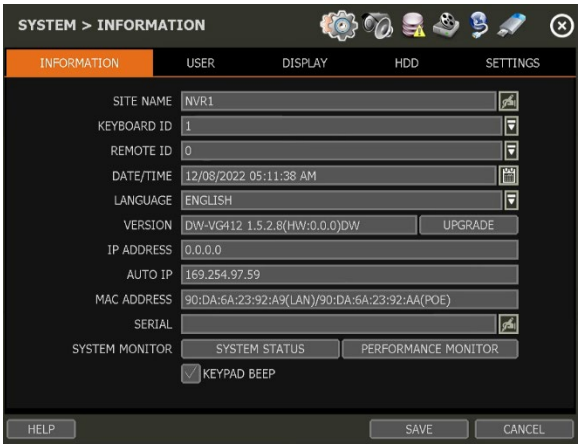
The general setting structure consists of “System”, “Device”, “Event”, “Record”, “Network” and “Backup”. Each Setup menu consists of sub-menus and additional categories.

To access the setup menu, click the  button in the menu bar or right-click anywhere and select the “Menu”.

Main Classification	Sub Classification
SYSTEM	INFORMATION
	USER
	DISPLAY
	HDD
	SETTINGS
DEVICE	CAMERA
	AUDIO
	PTZ
	TRANS. VERI.
	KEYBOARD
ALARM	SENSOR
	CAMERA ALARM
	EXTRA ALARM
RECORD	CAMERA MANAGEMENT
	RECORDING SCHEDULE
	QUICK SETUP
NETWORK	NETWORK
	DDNS
	NOTIFICATION
	MOBILE NOTIFY
	PATHFINDER
EXPORT	EXPORT

4.1 System

4.1.1. Information



SITE NAME

Enter a site name to differentiate the NVR from other sites if there is more than one NVR present.

KEYBOARD ID

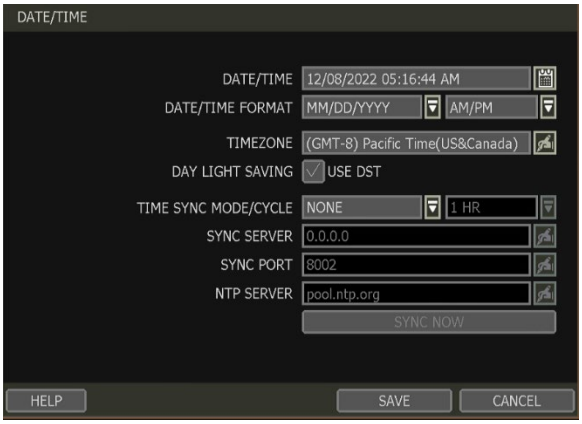
Set the SITE ID to match the keyboard controller's ID settings. The keyboard model and BUAD RATE must be set up in “MENU > DEVICE > KEYBOARD” (See “4.2.5 Keyboard”).

REMOTE ID

Not supported

DATE/TIME

Using the available options, the administrator can manually adjust the system date and time, select the date and time formats, and select the appropriate time zone. If applicable, check the ‘USE DST’ box to use daylight savings time.



There are three types of time sync modes.

- **Server Mode:** The operating NVR is set as a Time Sync Server, which can synchronize the time settings of other NVRs connected to it on the same network.
- **Client Mode:** Enter the IP address of a designated NVR or a PC running Remote Software (C3 CMS) that serves as a Time Sync Server in “SYNC SERVER”. The NVR’s time clock will be

synchronized with the designated server by updating at regular time intervals as set in the "TIME SYNC CYCLE" setting.

- **NTP Server Mode:** "pool.ntp.org" is the recommended NTP Server. To activate, set the TIME ZONE of your local area, then click [SYNC NOW].
- **GPS Mode:** Connect a USB-type GPS device and click [SYNC NOW]

For the DST settings, please refer to "3.11 DST Time Setting".

LANGUAGE

Select the system's display language.

VERSION

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

Caution	Do not click CANCEL during firmware upgrade. It may cause considerable damage to the system. Settings may be reset to factory defaults. It is recommended to check the NVR's settings and operating conditions after the firmware upgrade.

Upgrading the system using a USB memory stick:

1. Insert a USB drive formatted with FAT/FAT32 containing the firmware file into any USB port on 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 'NEW VER'.
4. Click START to begin the upgrade process.

Upgrading system via FTP server:

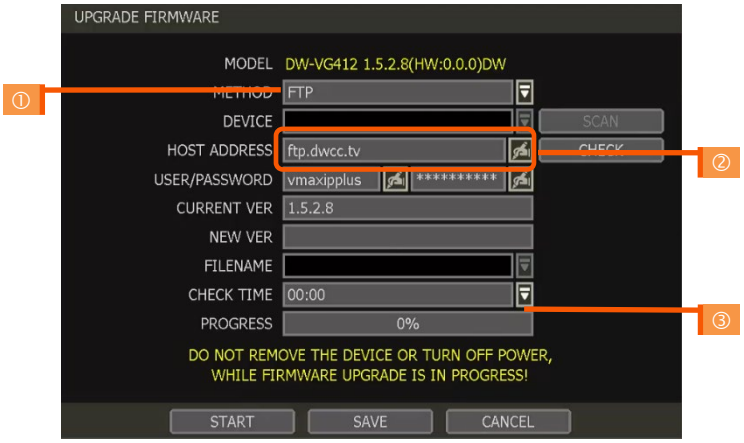
1. Select FTP in the drop-down options under 'Method'.
2. Enter the FTP address: FTP.dwcc.tv, and enter the username and password (these should be automatically filled in). Username: vmaxipplus, password: vmaxipplus.

NOTE	The FTP server address is subject to change without prior notice.

3. Enter Check Time. The system will automatically check the FTP server for newer firmware at the specified hours each day.
4. Click the [OK] button to proceed with the automatic firmware upgrade. After completion, the system will reboot.
5. Click 'Check' to allow the NVR to connect to the FTP server and check the latest Firmware version. If new firmware is available, the NVR will prompt you to upgrade.
6. Click 'OK' to confirm and click 'START' to start upgrading.

To set up the NVR to check for new firmware automatically:

1. Select FTP from the METHOD drop-down options.
2. Make sure the FTP information is entered correctly (see the section above).
3. Enter your preferred time at CHECK TIME, then click [SAVE].



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

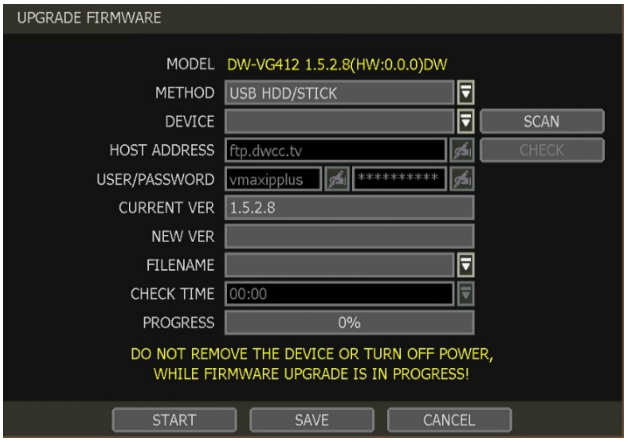
AUTO IP
Shows the NVR's AUTO IP Address.

MAC ADDRESS
Displays the NVR's unique identity number.

SERIAL
Input or edit the unit's serial number to provide additional identification information.

SYSTEM / PERFORMANCE MONITOR
Monitor the system's performance and condition.

KEYPAD BEEP
Users can turn the keypad's beeping sound on or off.



4.1.2. User

The ADMIN user has full authority over system settings and can change the system password, add or delete users, and assign different permission levels to them.

Note The maximum number of users, including an administrator, is 16.

User Management

Admin users can control authorization for each function. This authorization applies when the user connects to the NVR via remote software as well.

1. Add User
   a. Click [ADD].
   b. In the new setup window, set the new user's ID, description, password and password hint.
   c. Select which functions and menu options the user will have access to by checking the box next to the corresponding functions.
   d. In Live and Playback Mode, only the selected channels are visible to the user.
   e. To change the setting, select the user and click [Edit].

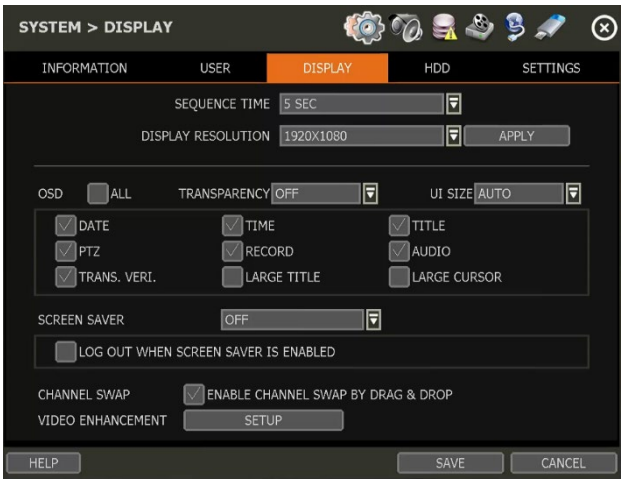
2. Delete User
   a. Select a user in the list by highlighting their name and clicking [Delete].
3. Option
   a. If Auto Logon "On Boot" is enabled, the NVR will not prompt for an ID and password after power-up.
   b. If "Auto Logoff" is enabled, the NVR will log off the current user after the configured inactivity time.
   c. If "show live" is checked, the live image will be shown after logging off.

Setting Authorized Level at the Remote Software (C3 CMS)

The user's authority level is linked between the NVR and the remote software. If a user has been restricted in the NVR, those restrictions will also apply when using the remote software.

4.1.3. **Display**

Set the Sequence dwell time, Display Resolution, OSD display options and spot-out channel.



SEQUENCE TIME

Set the dwell time for the channel sequence display. Camera channels will rotate during the sequence according to this setting.

DISPLAY RESOLUTION

The system supports the following resolutions: 800x600, 1024x768, 1280x1024, 1920x1080, and 3840x1260. Set the output resolution to the connected monitor's resolution. DO NOT set the display resolution higher than the connected display monitor supports.

OSD

Select what information will appear and overlay the channel displays by checking the corresponding boxes.

SCREEN SAVER

The Screen Saver feature protects the display monitor's screen and reduces the NVR's resource use by turning the display off after a set period of inactivity. Set the screen saver's waiting time for when the monitor will automatically turn off. Set between 1 minute and 180 minutes. For increased security, select to log off the current user when the screen saver activates.

CHANNEL SWAP

Check for channel swapping via drag-and-drop.

VIDEO ENHANCEMENT

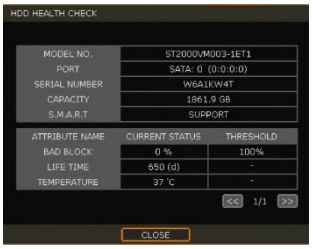
Set display details such as brightness, contrast, sharpness, etc. (*This function may not be supported depending on the NVR model.)

4.1.4. HDD

HDD FULL

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

- **Overwrite:** Record new data over the oldest data in the drive.
- **Stop record:** Stop all NVR recording when the HDD is full.



HDD CHECK

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

Caution	WARNING MESSAGE
	To achieve high-level system stability, a warning message will be displayed when the NVR's internal temperature exceeds the optimal range. Malfunctioning ventilation fans or environmental factors may cause this problem. Inspect to see if the cooling fan is working properly or if the environmental temperature around the system is too high.

HDD FORMAT

When a new HDD is installed or if there is a problem with the HDD, formatting the HDD is recommended. All data on the HDD will be deleted during an HDD format.
If system resources are occupied, such as during a network connection, while the HDD is being formatted, the formatting may fail. Reboot the system to release system resources, then try formatting again.

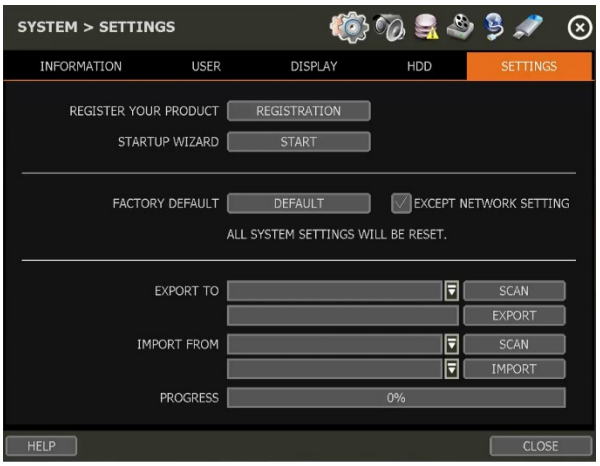
Check the box next to the HDD name to select it. Press the “format” button to format the HDD.

AUTO DELETE

Set the period when the HDD will automatically delete all recorded data. Select from None (default) up to 366 days.

Note	1) It may take a few minutes to format an 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 utilize the archiving memory effectively.

4.1.5. System Settings



STARTUP WIZARD

Users can register their information on the DW server. Registering the product can assist DW personnel when seeking product support and repair.

STARTUP WIZARD

Click [START] to prompt the startup wizard.

FACTORY DEFAULT

Reset the system to its factory configuration. All configurations will be deleted, and the system settings will revert to their factory default. The recorded video will not be deleted.

EXPORT/IMPORT

Save the system settings from this NVR or copy them to another NVR.

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

NOTE	When uploading exported settings to a different NVR, the new NVR's F/W version must match the source 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 set up these functions from the NVR and adjust camera settings, the cameras must support ONVIF. If the camera is ONVIF-compliant but the settings were not integrated via ONVIF, you will have to set the camera's settings in the camera's menu.

TITLE

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

COVERT

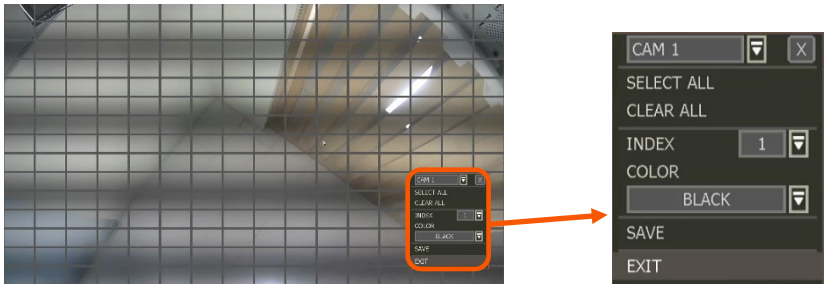
"Covert," also called 'hidden camera', hides the camera's display and playback, as if there were no camera recording, for non-admin users. Covert settings apply to both Live and Playback viewing in the NVR and in the remote software.

Note Only the ADMIN user can set up a covert menu. Non-admin users will see a blank channel.

PRIVACY MASK

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

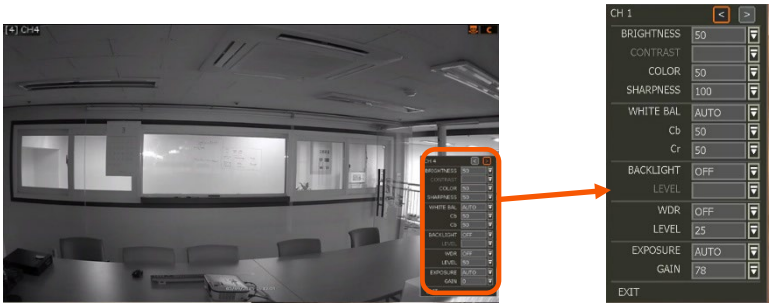
1. Click [SET] beside the desired channel to configure a privacy mask.
2. Use the pop-up menu at the bottom right to select where to place the privacy mask, assign a color, and assign an index number to the mask. Click 'Save' to save the changes and 'Exit' to return to the main setup page.



CAMERA ADJUST

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

1. Click [SET] in the 'CAMERA ADJUST' section beside the desired channel.



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 automatically apply to the camera's view.
6. [Apply All] makes all channels have the same value.
7. Click [EXIT] to exit.

4.2.2. **Audio (Live and Recording)**

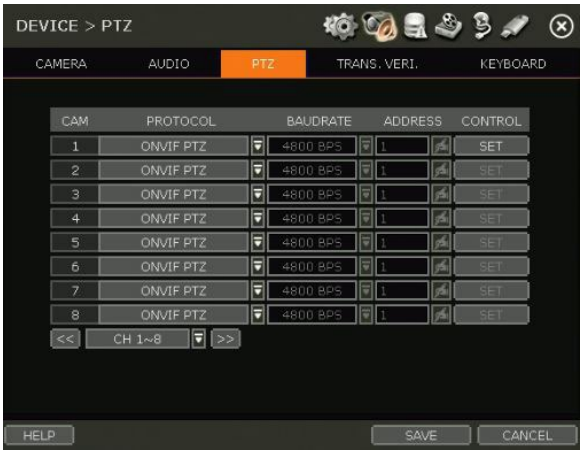
Select an audio input and output, then match them to a specific channel. The number of audio channels may differ depending on the NVR model. When enabled, the channel will start recording video with the associated audio channel, allowing users to playback recorded video with audio.

- AUDIO: Activate and designate camera channels for audio input capture. To hear audio, an audio output device must be connected to the NVR, or the audio must be viewed using the Web Viewer.
- LIVE OUT: Activate and designate camera channels for audio output through a connected speaker. An audio output device must be connected to hear audio from the NVR. Full-screen the channel to hear the video while viewing in Live Mode.
- USE 2-WAY AUDIO: Enable two-way audio for connected devices.

4.2.3. **PTZ**

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

1. If the camera is connected to the NVR via ONVIF protocol, make sure ONVIF PTZ is selected in the Protocol field.
2. If the camera is connected via RS-485 cables, ensure that serial communication with the PTZ camera through the RS-485 port is properly configured. The Protocol, baud rate, and camera address set in the NVR must match those set in the camera’s settings.



PROTOCOL

Select the proper protocol of the connected PTZ camera. This determines the protocol the camera and NVR use to communicate. This field does not need to be changed if the camera is connected to the NVR over the network via the ONVIF protocol. Default is ONVIF PTZ.

BAUD RATE

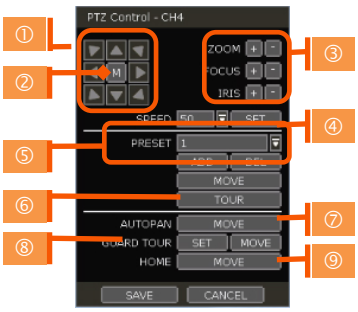
Select the baud rate level from 2,400bps up to 57,600bps. This determines the rate at which information is transferred between the camera and NVR. This field does not need to be changed if the camera is connected to the NVR over the network via the ONVIF protocol.

ADDRESS

Set the P/T/Z driver address of the connected camera. This determines which camera to send PTZ signals to when connected via RS-485 and should match the PTZ camera's address. This field does not need to be changed if the camera is connected to the NVR over the network via the ONVIF protocol.

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

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



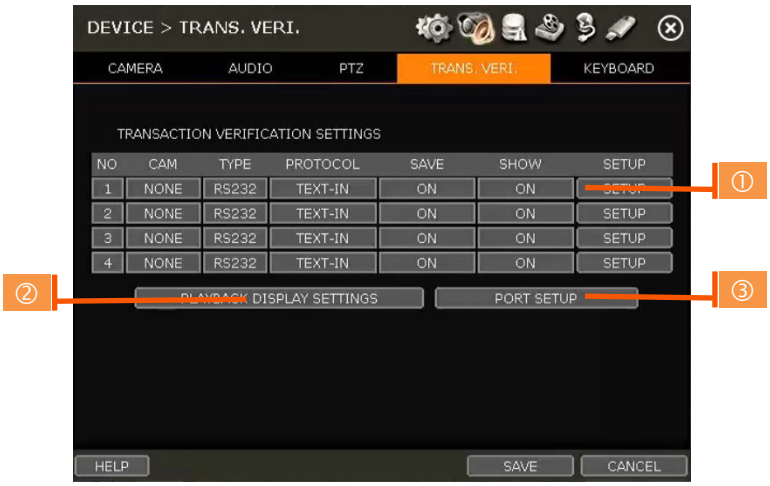
- **Direction buttons:** move camera up/down & left/right.
- **M (depends on the PTZ model):** Show/ hide the camera's OSD menu on the NVR monitor. Use the directional arrows to navigate the menu options.
- **ZOOM/FOCUS/IRIS:** Control IN (+)/OUT (-) for each function. (Depending on the camera's model and supported features).
- **Speed:** Change the PTZ speed (0~100). This sets the speed at which the camera moves when controlled from the NVR via the virtual joystick. Save the changes by clicking [SET].
- **Preset:** Select the PTZ preset position created within the PTZ camera. Preset position setup must be configured within the camera's web interface.
    - 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 a preset number of presets from 1 to 255.)
    - DEL: delete the currently selected preset.

- MOVE: Enter a present number, then press [Move] to move the camera to the preset position for that number.
- TOUR: Set the camera to move between preset positions in order. The camera will keep running the tour until it is manually disabled.
- AUTO-PAN: Set the camera to rotate 360° in one direction. The camera will keep running the auto-pan until it is manually disabled.
- GUARD-TOUR: 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 the >> 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 the << button.
    - MOVE: Start GUARD TOUR.
- HOME: Set the camera to return to its original position.

When the PTZ camera is directly connected to the NVR's rear panel, the AUX control button (AUX) is displayed. Users can control additional settings, such as Power, Light, Wiper, and Pump.

4.2.4. **Transaction Verification Settings**

Transaction verification equipment can be connected to an NVR via the RS-232 port or the LAN.



NO

Port Number of the Serial connection (RS-485 terminal block). For example: NO1 = COM1, NO4 = COM4.

CAM

Assign a camera to the Transaction Verification device. The Transaction information will be associated with the assigned camera.

TYPE

Connection type between the NVR and the Transaction Verification device.

PROTOCOL

The communication protocol between the NVR and the Transaction Verification device.

SAVE

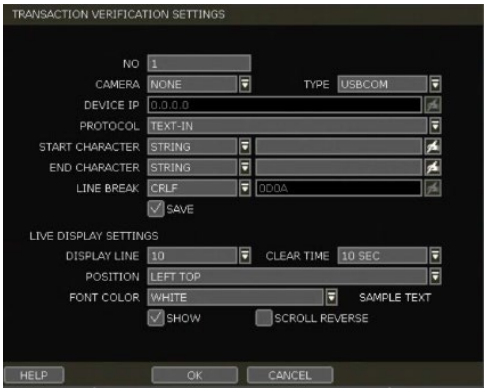
Turn the NVR on or off to save the transaction data.

SHOW

Turn the NVR on or off to display the transaction data.

SETUP (1)

Transaction Verification Settings



- **NO:** ID# of Transaction Verification device.
- **CAMERA:** Select the camera to assign to the Transaction Verification device.
- **TYPE:** Select COM (RS-232) or TCP/IP (LAN)
- **DEVICE IP:** Input the IP address of the Transaction Verification device when it is connected through the network.
- **PROTOCOL:** Communication protocol between NVR and the Transaction Verification device.
  1. TEXT-IN: Receive an ASCII character.
  2. SNVR-POS: Manufacturer's protocol.

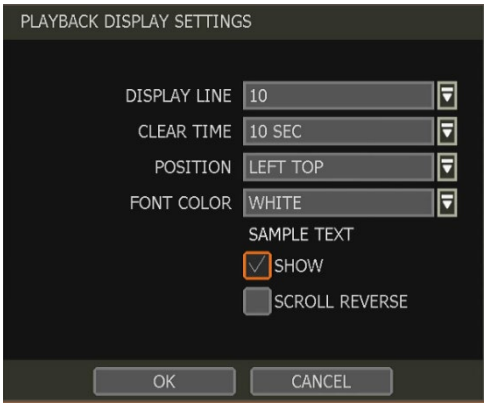
  Contact your Transaction Verification dealer for information.
- **START CHARACTER:** Input the assigned character to start display and save. If there is no input, the system will display and save all data without classification per transaction.
- **END CHARACTER:** Input the assigned character to terminate display and save. It must have a START **CHARACTER** to work correctly.
- **LINE BREAK:** Set the line change character. (It should be a 16-digit HEX Value.)
  1. [CRLF] / [CR] / [LF]: The character that is used in ASCII-type Transaction Verification. (Please contact the Transaction Verification manufacturer for details.)
  2. [Custom]: It can be used except for the above general character. Only numbers (0~9) and letters (A~F) can be used, and even numbers must be entered.
     ex) Hexadecimal: 0x0D 0x0A → 0D0A.
- **SAVE:** Save the transaction verification data.

Live Display Settings

- **DISPLAY LINE:** Set the number of lines to display on the screen.
- **CLEAR TIME:** Set the 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 to "0", the data will not be deleted (if there is a Start Character and the character is entered, the current data will be deleted regardless of the Clear Time setting).
- **POSITION:** Designate the display position of transaction data.
- **FONT COLOR:** Select the font color that will be displayed on the screen. It will be displayed in the color shown in "SAMPLE TEXT."
- **SHOW:** Select to display transaction data in the Live Mode. Transaction data will overlay the video stream.
- **SCROLL REVERSE:** Select to change the direction of scrolling. If it is selected, you can scroll from the bottom to the top; the latest data is displayed at the top.

PLAYBACK DISPLAY SETTINGS (2)

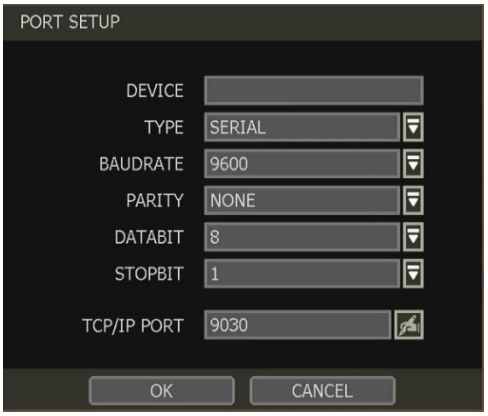
Open the setup screen for Playback Mode



- **DISPLAY LINE:** Set the number of lines to display on the screen.
- **CLEAR TIME:** Set the 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 to "0", the data will not be deleted (if there is a Start Character and the character is entered, the current data will be deleted regardless of the Clear Time setting).
- **POSITION:** Designate the display position of transaction data.
- **FONT COLOR:** Select the font color to display on the screen. It will be displayed in the color shown in "SAMPLE TEXT."
- **SHOW:** Select to display transaction data in the Playback Mode.
- **SCROLL REVERSE:** Select to change the direction of scrolling. If it is selected, you can scroll from the bottom to the top; the latest data is displayed at the top.

PORT SETUP (3)

Open the setup screen for the communication port.



- **TYPE:** Set the communication port type.
  - SERIAL: It is for a 1-to-1 connection between the NVR and the Transaction Verification device without Serial Mux.
  - MUX: It is for a 1-to-Multi connection between the NVR and the Transaction Verification device
- **BAUDRATE:** Set BAUDRATE according to the Transaction Verification device.
- **PARITY:** Set the parity to the connected device's setting.
- **DATA BIT:** Set DATABIT according to the connected Transaction Verification device.
- **STOP BIT:** Set STOPBIT according to the connected Transaction Verification device.
- **TCP/IP PORT:** Set the TCP/IP Port number.

4.2.5. Keyboard

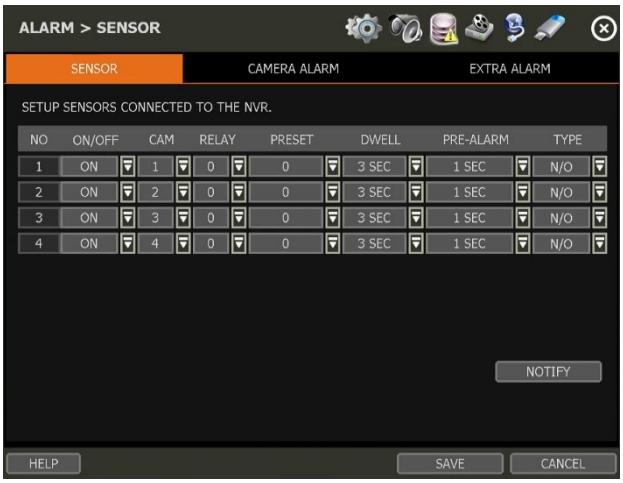
When an external keyboard controller is used, configure the settings to use the keyboard with the NVR. Make sure the Keyboard ID on the SYSTEM > INFORMATION setup page matches the device ID set on the keyboard.

- **KEYBOARD CONTROLLER:** Select the keyboard model.
- **BAUDRATE:** Select the corresponding baud rate used to communicate with the keyboard. The baud rate must match the one set in the keyboard itself.
- **USE KEYBOARD:** Enable keyboard control of the NVR. Mouse interaction will still be available.

4.3 Alarm

4.3.1. Sensor

Users can install multiple sensors on the system to enable pre- and post-alarm recording and intensive recording.



ON/OFF

Turn the sensor input on or off.

CAM

Select the camera associated with the alarm.

RELAY

Select the associated alarm output for serial connection (RS-485).

Caution	Relay contacts can withstand 24V/1A. When connected to an external circuit over 24V/1A, it can cause problems in the system.

PRESET

Set a PTZ camera to move to a preset position when the sensor is triggered. A PTZ camera must be assigned for the alarm, and the preset position must be configured within the camera.

DWELL (Post Alarm)

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

PRE-ALARM

Set a 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 set in the “Record” menu. The recording period will run before the alarm is triggered.

TYPE

Select the sensor type as N/O (Normal Open) or N/C (Normal Close). The circuit of an N/O sensor is usually open; activation occurs when it closes. The N/C type works the reverse way.

Note	Check the sensor type setting (N/O or N/C). It is recommended to use “Dry Contact Type,” as “Wet Contact Type” may damage the system.

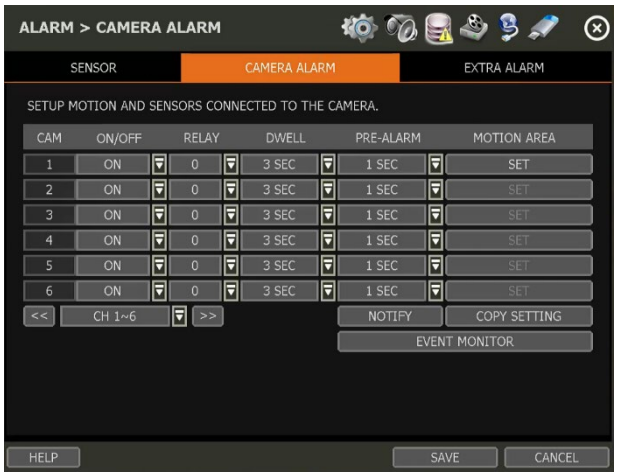
NOTIFY

Enable and select for the sensor notification to create a buzzer sound and/or a pop-up warning when triggered.

Note When “Camera pop-up” is enabled, in multi-screen mode, the system switches to single-channel mode and automatically switches back when the alarm is triggered.

4.3.2. Camera Alarm

Set up the NVR to start recording when motion is detected. The system can also trigger an alarm signal via the selected sensor-out channel. Motion detection must be enabled and configured within the associated camera for the NVR to detect motion.



ON/OFF

Turn the camera alarm on or off. When turned ON, the NVR will trigger an event alarm when motion is detected.

RELAY

Select related output. The NVR will output a signal through the selected relay output port (RS-485).

Caution Relay contacts can bear up to 24V 1A for other devices. If it is connected to a power source exceeding 24V or 1A, the system may have a problem.

DWELL

Set sensor operation time between 1 and 15 seconds. The camera alarm will remain active until the assigned dwell time has passed.

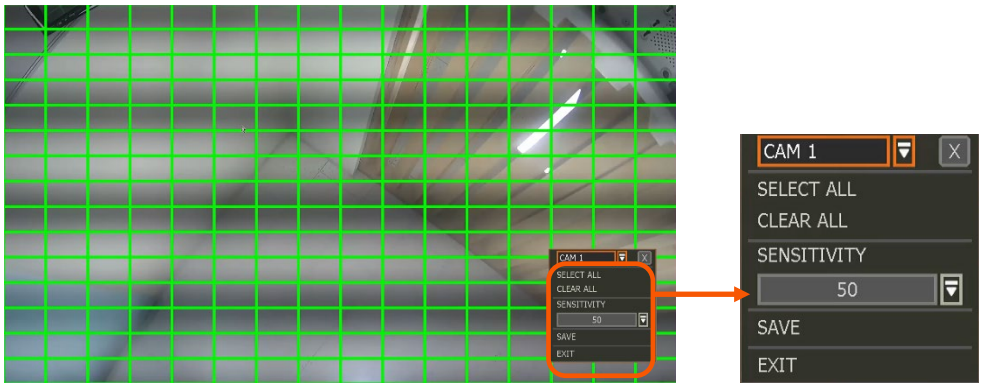
PRE-ALARM

Set a 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 set 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 cursor across the screen to select multiple blocks. Areas where motion detection is activated will appear with a green border. Unselected areas will be shown with a grey border.

1. Click [SET] in the ‘MOTION AREA’ section to set the area.
2. Select the motion detection area and click [SAVE] and then [EXIT] to save the changes. Clicking SELECT ALL enables motion detection across the entire camera’s FoV.



Note The motion detection area and sensitivity should be properly set based on the actual motion observed on the site.

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

Show the event number for each camera. It shows check count numbers, motion detection and sensor detection.

NOTIFY

Enable and select for the sensor notification to create a buzzer sound and/or a pop-up warning when triggered.

Note When “Camera pop-up” is enabled, in multi-screen mode, the system switches to single-channel mode and automatically switches back when the alarm is triggered.

4.3.3. Extra Alarm

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

S.M.A.R.T.

Trigger an alarm when the HDD is about to be taken out of service or is otherwise experiencing drive health issues. Please refer to “4.1.4 HDD” to check the HDD status.

VIDEO LOSS

Trigger an alarm signal when a camera signal is suddenly disconnected.

DISK ERROR

Trigger an alarm signal when the system fails to record images due to an HDD error.

DISK FULL

Trigger an alarm when the HDD reaches a certain percentage of its capacity. If the user sets HDD FULL to STOP RECORDING and the HDD is at the percentage set here, the NVR stops recording and triggers an alarm.

Note	The extra alarm will appear in the event log only when it is set as “ON”.

ON/OFF: Set to ‘ON’ to enable the alarm type.

RELAY: Select related output. The NVR will output a signal through the selected relay output port (RS-485).

Caution	Relay contacts can bear up to 24V 1A for other devices. If it is connected to a power source of more than 24V or 1A, the system may have a problem.

DWELL

Set sensor operation time between 1 and 15 seconds. The camera alarm will remain active until the assigned dwell time has passed.

NOTIFY

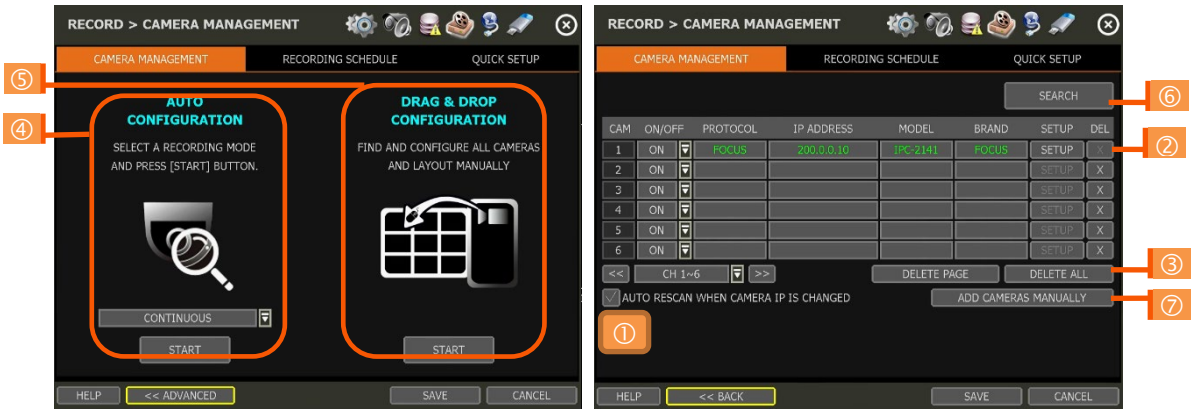
Enable and select for the sensor notification to create a buzzer sound and/or a pop-up warning when triggered.

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

4.4 Record

4.4.1. Camera Management

Users can register/delete/set up cameras by letting the NVR automatically scan and register them, or manually search for and add them.



[DEFAULT MODE] [ADVANCED CONFIGURATION MODE]

SETUP

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

DEL

Delete the camera (“3.3. Deleting Cameras”).

DELETE PAGE (2)

It deletes cameras on the current page (Please refer to “3.3 Deleting Cameras”.)

DELETE ALL (3)

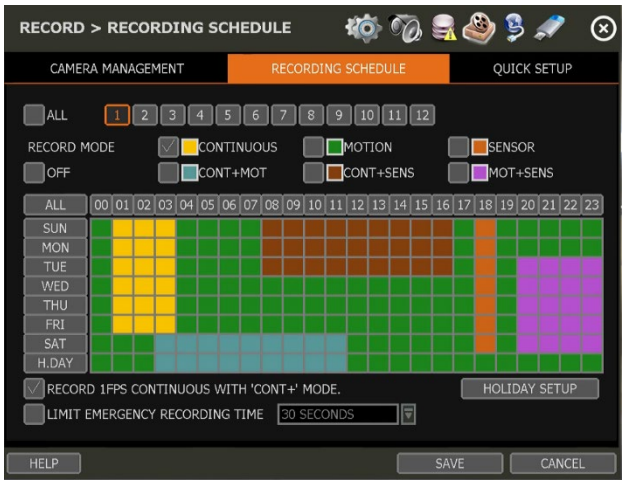
It deletes all cameras (Please refer to “3.3. Deleting Cameras”).

CAMERA REGISTRATION (4, 5, 6, 7)

Users can register cameras using the AUTO CONFIGURATION, DRAG & DROP CONFIGURATION and ADVANCED CONFIGURATION. (Please refer to “3.2. Camera Registration”).

4.4.2. **Recording Schedule**

Set a recording schedule for each camera. Select a camera from the channel numbers at the top to set a schedule for an individual camera or select “All” to apply the same recording schedule to all camera channels. Recording can be set by each hour from 00 through 23 a day, for all days of the week. You can also set up a special recording mode for holidays.



NO COLOR (Off)

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

YELLOW (Continuous Recording)

Record for the duration set in the “CAMERA” settings.

GREEN (Motion-Detection Recording)

The system records only when motion is detected.
If “ALARM > CAMERA ALARM” is disabled, then the system will record when motion is detected, but the motion alarm will not be activated.

ORANGE (Sensor-Activated Recording)

The system records only when a sensor is triggered, as set in the “ALARM > SENSOR” menu.
If “ALARM > SENSOR” is disabled, then the system will record when a sensor is triggered, but the sensor alarm will not be activated.

SKY BLUE (Continuous + Motion Detection Recording)

The system records continuously as set by the “RECORD > CAMERA” menu.
When motion is detected according to the settings in “ALARM > EVENT ALARM”, the NVR will switch to the motion configuration recording mode. If “ALARM > EVENT ALARM” is disabled, then the system will record when motion is detected, but the motion alarm will not be activated.

BROWN (Continuous + Sensor-Activated Recording)

The system records continuously as set by the “RECORD > CAMERA” menu.
When a sensor is triggered according to the settings in “ALARM > SENSOR”, the NVR will switch to the motion configuration recording mode. If “ALARM > SENSOR” is disabled, then the system will record when a sensor is triggered, but the sensor alarm will not be activated.

PINK (Motion Detection + Sensor-Activated Recording)

The system records only when motion is detected AND a sensor is triggered simultaneously. If both “ALARM > SENSOR” and “ALARM > EVENT ALARM” are disabled, 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 cases where the recording schedule is set to “CONT + MOT” or “MOT + SENS”, the system records in continuous or motion detection mode during normal operation. However, when motion occurs in the motion area, or an alarm is activated, the recording mode will switch to the recording mode set in “EVENT ALARM” or “SENSOR” in the “ALARM” menu.

Note **Dark Blue Color**
Data recorded during DST (Daylight Saving Time) will be displayed in Dark Blue in the Intelli-Search Bar in Playback Mode.

HOLIDAY SETUP

Set up specific days as “holidays” in HOLIDAY SETUP to assign a special recording schedule for those days. The system supports up to 32 holidays.
Press the [DATE] button ( ), write a description, and press [ADD] to save the data as a holiday.

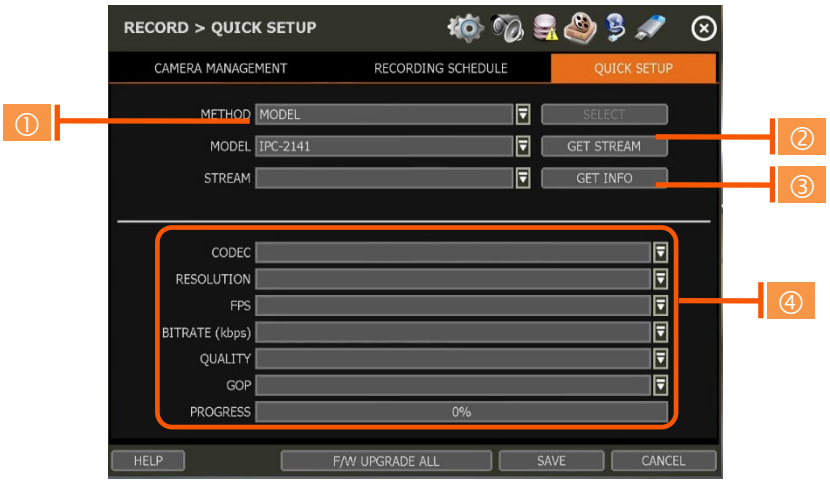
Note **Instant Recording (Emergency Recording)**
In an emergency, the user enables Instant Record by pressing the panic recording button in the menu bar. The system will instantly start recording all channels at full frame rate and the maximum resolution, regardless of the recording mode setting. E-REC will appear in Live Mode, and a red bar is shown in the time search bar with the 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**

Users can set up multiple cameras to record the same scene at once.

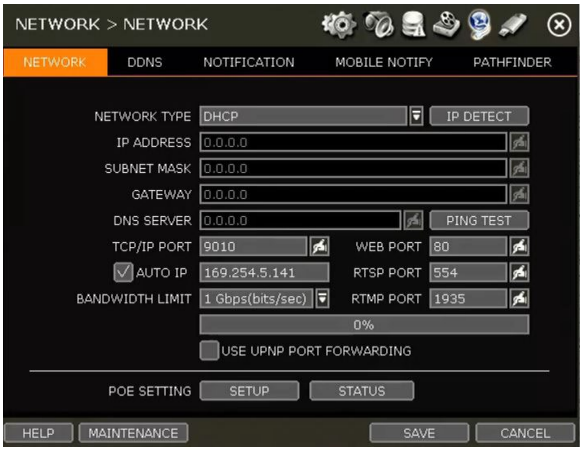


1. Select the model or camera to set up. When selecting the 'Model' method, all cameras with the same model name will be selected.
2. When selecting 'Camera multi-select', the user can select the camera they want to set. If you set the desired camera to 'ON', the user can set the settings for the ON cameras.
3. Click the [GET STREAM] button and get the current stream information.
4. Click the [GET INFO] button and check the current setup for the cameras.
5. Change the setup and click [SAVE].
6. "CAMERAS ARE SUCCESSFULLY APPLIED" message will appear when the process is completed.

4.5 Network

The NVR can be connected to the network or the Internet using either a fixed IP or a dynamic IP, depending on the proper configuration of the NVR and the router.

4.5.1. Network



NETWORK TYPE

Select either STATIC IP or DHCP for a dynamic IP. For proper configuration, it is recommended to assign the NVR a DHCP address, let it auto-discover the network settings, then change the Network Type to Static IP and save the changes.

- **DHCP:** The NVR automatically configures network settings based on current network requirements. If DHCP is selected, click the 'IP DETECT' button to automatically detect all network settings.
- **STATIC IP:** manually enter all necessary network settings. While set to STATIC, the network settings will not change when prompted by the connected DHCP router or DHCP network device.

IP ADDRESS

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

SUBNET MASK

The subnet mask address classifies the subnet 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. Enter the DNS Server information for DDNS, Email Notifications, and the NTP Server. For more information, please consult your network administrator or your Internet provider.

TCP/IP PORT

(Default – Port 9010) Enter the network port number used when connecting to the NVR locally or remotely. If your ISP blocks Port 9010, you may either port forward the blocked port or use a different valid port (e.g., 9020). If multiple NVRs are connected to the same local network, it is recommended to assign each NVR to a different TCP/IP Port.

WEB PORT

(Default – Port 80) Input the port number to use when connecting with a Web Browser. If your ISP blocks Port 80, you may either port forward the blocked port or switch to a different valid web port (e.g., 8080). If multiple NVRs are connected to the same local network, it is recommended to assign each NVR to a different Web Port.

AUTO IP

Displays the system IP address assigned by Auto-IP.

BANDWIDTH LIMIT

(Default – 100 Mbps) Depending on the user's settings, the system can control the data volume transmitted over a network from 25 kbps to 1 Gbps. This function is effective when operating under narrow-bandwidth network conditions or when the user wants to limit the "network bandwidth occupied by video transmission" to a specific level.

USE UPnP (Universal Plug and Play)

UPnP (Universal Plug and Play) Port Forwarding: If a UPnP-supported router is connected, the NVR will automatically forward ports after communicating with the router, eliminating the need for complicated port forwarding setup at the router.

Once the PC has discovered the NVR using Network Discovery, double-click on the icon to open the NVR's web client. Enter the User ID and Password used to log in to the NVR, then click 'Connect'.

Note The maximum number of simultaneous connections is 15 users.

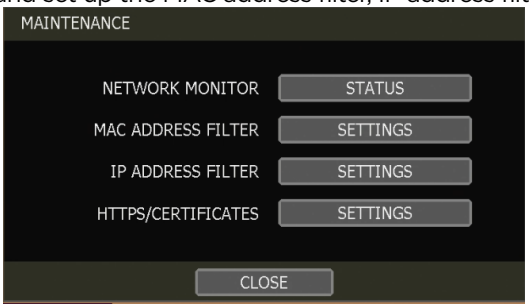
POE SETTING

- **SETUP:** Manually configure the IP address and subnet mask for the cameras connected directly to the NVR's PoE switch.
- **STATUS:** his option determines the network speed mode (10 Mbps or 100 Mbps) for each POE port. Users can check the status of the cameras connected directly to the NVR's PoE switch and reset all PoE cameras as needed. Select from the options Auto (default), Normal, or Type-H. When cameras experience a long ping delay or connectivity issues, try setting the PoE setting to Type-H. It is not recommended to have all ports set to Type-H.

Note This option is not available on 16CH Models. All ports operate only in 100 Mbps mode.

MAINTENANCE

Check the network status and set up the MAC address filter, IP address filter and HTTPS certificate.



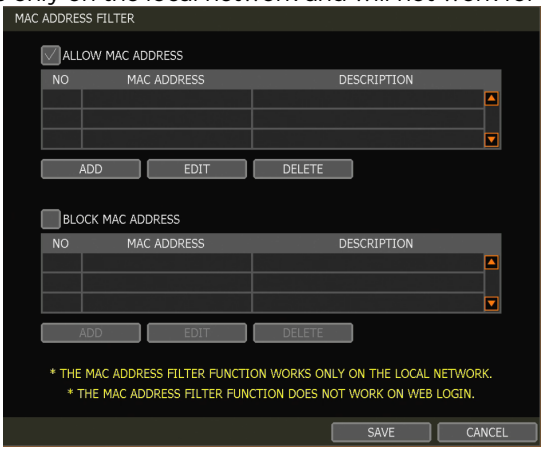
NETWORK MONITOR

Check the network status for each camera and data flow information for the NVR and cameras.

MAC ADDRESS FILTER

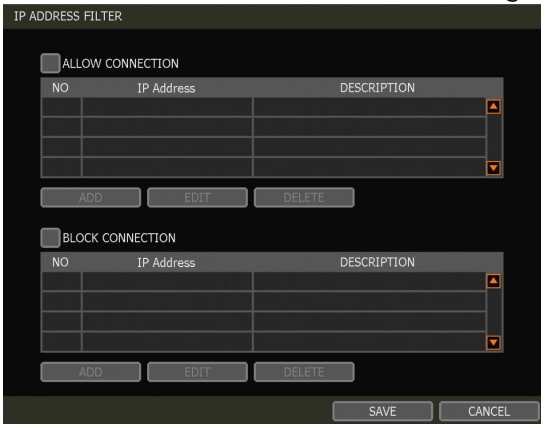
Block or allow specific MAC addresses for clients connecting via the C3 CMS desktop software or mobile viewing application.

NOTE: This function works only on the local network and will not work for web login.



IP ADDRESS FILTER

This function allows or blocks a specific IP address. When the user registers a specific IP address to allow, only that address can access the module. Or when the user registers a specific IP address to block, that address can't access the module. This function is not working on the web Login.



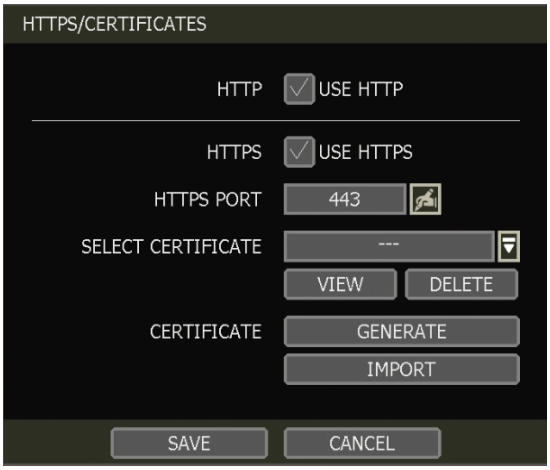
HTTPS/CERTIFICATES

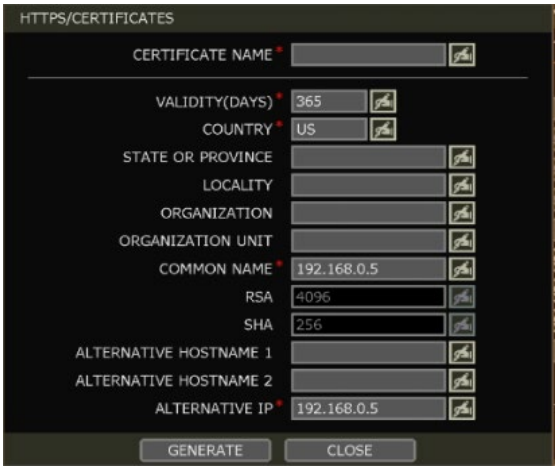
An HTTPS connection is recommended when accessing the NVR remotely from another network. HTTPS connection offers secure access through encrypted communication.
The user must register a certificate for an HTTPS connection. The NVR provides two registration methods:

- Self-signed certificate: Generate one on the NVR.
- External certificate: Register a certificate issued through an accredited authority.

To register a self-signed certificate, navigate to:
NETWORK>NETWORK>MAINTENANCE>HTTPS/CERTIFICATES

Click 'Generate' and fill out the information required. Fields marked with an '*' are mandatory.





Note The NVR's time zone must be set BEFORE generating the certificate. The time on the NVR and network must match. Skipping this step may impact the validity of the generated certificate, and the application time may vary.

When generating a self-signed certificate, a warning may appear when using an HTTPS connection because this certificate is not authenticated through an official authority. There is no problem with encrypted communication, whether you register the certificate on the PC or continue with the warning ignored. To access the NVR via HTTPS without the warning, you can import and use a certificate issued by an accredited certification authority.

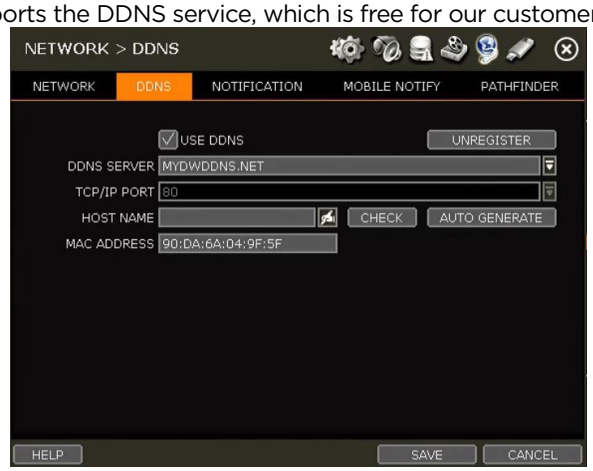
To register an external certificate, click 'Import'. Locate and upload the certificate from a USB stick.

4.5.2. DDNS

Use a public DDNS server or the DDNS server provided by Digital Watchdog (MYDWDDNS.NET) to connect to the NVR remotely.

DDNS SERVER

Digital Watchdog® offers free, dependable DDNS service. This allows you to assign the NVR a URL rather than a long, complicated IP Address. This simplified the connection process to the NVR. Digital Watchdog® supports the DDNS service, which is free for our customers.



To set up DDNS, configure the following information, then click the [SAVE] button.

- **Use DDNS:** Check this box to enable a DDNS address for remote communication with the NVR.
- **DDNS SERVER:** Select "MYDWDDNS.NET"
- **TCP/IP PORT:** The default is 80. You do not need to change this setting if you are using the DDNS service provided by Digital Watchdog. Use the port information from the *Network* menu.
- **HOST NAME:** Assign a domain name for your NVR (Ex, NVROFFICE). If the domain name is unavailable, a message will pop up when you click [CHECK]. A random hostname can be automatically assigned by clicking [AUTO GENERATE].

IP MAPPING and EXTERNAL IP

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

SETTING UP THE REMOTE SOFTWARE (C3 CMS)

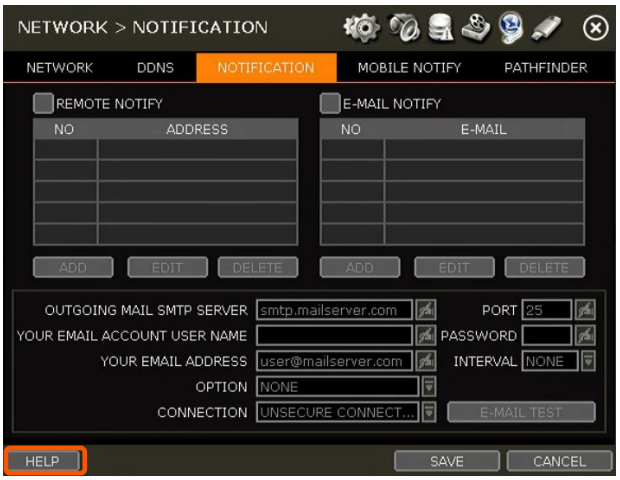
In the menu of [Option > Setting], input DDNS Address and Port number.
The address of the DDNS SERVER is "mydwddns.net," and the Port is "80".

VIEWING WITH A WEB BROWSER

To connect with the NVR's Web Viewer, users can type the NVR's MAC address + mydwddns.net.
In cases where you are using a subdomain name (HOST NAME), type the domain name + mydwddns.net

Example:
1. If MAC address is "00:1C: 84:01:00:02" ➔ input as http://001c84010002.mydwddns.net
2. If the HOST NAME is "NVROFFICE" ➔ input as "http:// NVROFFICE.mydwddns.net"

4.5.3. **Notification**

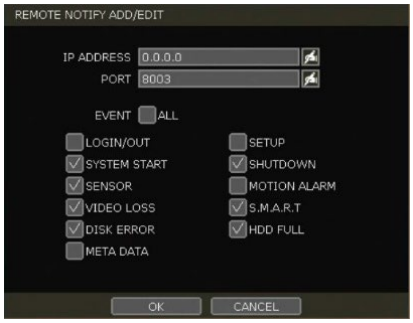


REMOTE NOTIFY

The system can send an alarm message to a remote viewing software by using the IP address of the hosting PC.

Select REMOTE NOTIFY to use this function and set the IP address & events.

- **IP ADDRESS:** Enter the IP address of the PC running the remote viewing software that will receive the event notifications.
- **PORT:** (Default is 8003) Input the port number that is used to communicate with the remote PC.
- **EVENT:** Select which events to be notified about. If "ALL" is selected, all events will trigger a remote notification.



EMAIL NOTIFY

The system can send a notification to an email address.

Select EMAIL NOTIFY to use this function and set email addresses and events.

- **EMAIL:** Input the email address that will receive the event notifications.
- **EVENT:** Select which events will trigger notifications. If "ALL" is selected, all the events will trigger a notification.
- **SNAPSHOT NOTIFY SETUP:** Select camera channels to include live snapshot images of selected channels in the email address. Set the dwell time between camera image captures.
- **VIDEO CLIP ATTACHMENT:** Select to include a short video clip with the email notification when either a sensor or motion detection (CAMERA ALARM) has triggered the notification. The event type must also be selected.

NOTIFICATION SETTINGS

- **OUTGOING MAIL SMTP SERVER:** Enter the SMTP server used to send notifications. Check with your email service provider for SMTP server information.
- **YOUR EMAIL ACCOUNT USER NAME:** Input the username or email address from which the notifications will be sent.
- **YOUR EMAIL ADDRESS:** Input the email address of the account that will be used to send the email notifications.
- **OPTION:** Set the authentication method supported by the server. There are 'None/Use Plain Auth/No Auth' options.
- **CONNECTION:** Set the supported connection type for the email server. There are 'Unsecure Connection/Use SSL Authentication/Use TLS Authentication' options. Check with your email service provider for more information about authentication requirements.
- **PORT:** Enter the port number to use for email sending. Check with your email service provider for more information about the SMTP port.
- **PASSWORD:** Enter the password for the account used to send notification emails.
- **INTERVAL:** For email notifications, select how often the system can send an update email.
- **EMAIL TEST:** Click to check if the settings were entered correctly. The NVR will send a test email and inform you of the result. Depending on the email service, the SMTP server may not send a confirmation email if the email was received.

Note	Configuration priority is always on the "RECORD > SCHEDULE" menu. The system will not email alarm messages for motion alarms or sensors, even though the checkbox for the above event is checked. To receive motion and sensor email notifications, set the "SCHEDULE > RECORD", "EVENT > MOTION ALARM" and "EVENT > SENSOR" accordingly.

4.5.4. Mobile Notify

The system can send an event notification to the mobile device registered with the NVR.
The mobile app "VMAX Plus" must be installed on your smartphone, and the NVR site must be added to the mobile app before you can register for mobile push notifications. The "USE PUSH CHECK" setting must be enabled in the VMAX Plus application for the NVR site.

Once the mobile device is correctly registered with the NVR, it will appear on the Mobile Notify list, along with a unique Device ID.

- **USE MOBILE NOTIFY:** Enable this setting to use mobile push notifications.
- **EVENT:** Select the event to notify.
- **DELETE:** To delete a listed mobile device, select the device, then click the 'Delete' button. The USE PUSH CHECK setting in the VMAX Plus mobile application will then also be turned off.

NOTE

1. The Mobile Push Notification function is available for iPhone, iPad & Android devices using the VMAX Plus mobile application. Otherwise, the mobile application "DW Mobile Plus" can be used for general remote viewing with the NVR.
2. The maximum number of mobile devices is 50.

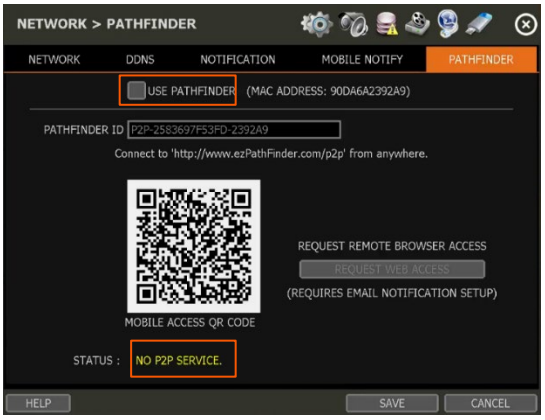
NOTE

Push Notifications will only work when both the NVR and mobile devices have a direct connection via the local network (LAN) or a remote Internet connection. A direct connection (IP address) is required, as Pathfinder connections may not support push notifications.

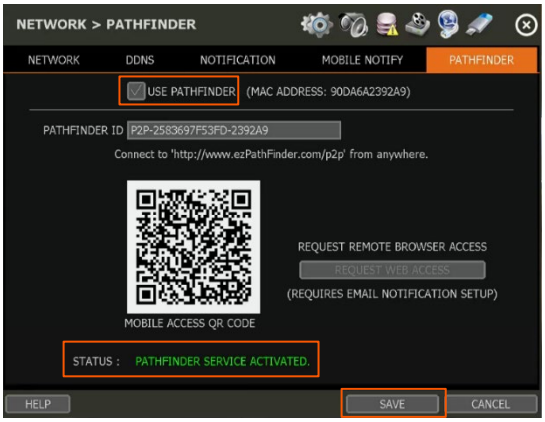
4.5.5. PathFinder™

PathFinder uses STUN to assist with encryption and stream security between the viewer and the NVR when connected via DW's connection service. This connection method provides an alternative way to view video from the NVR over a remote connection without port forwarding.

- **USE PATHFINDER:** Enable this setting to activate the PathFinder service for the NVR. Click SAVE to apply the changes.
- **PATHFINDER ID:** A unique 21-character alphanumeric identification number will be generated for the NVR. This ID can be used either to connect to a web browser (www.ezpathfinder.com/p2p) or to enter it manually into the DW Mobile+ mobile viewing application.
- **QR CODE:** Users can scan the QR code with the DW Mobile+ or VMAX Plus mobile viewing applications to automatically enter the PathFinder ID into the site settings when registering the NVR in the mobile application.
- **STATUS:** Users can check the NVR's PathFinder status at the bottom of the screen.



QR code menu (PATHFINDER service is not in use)



QR code menu (PATHFINDER service is in use)

Note Please refer to "Section 6. Pathfinder Connection Through the Web" for the details.

4.6 Export

4.6.1. Manual Export

Users can easily export recorded video from the NVR to a USB memory stick.

1. In Live Mode, click the [EXPORT] icon in the menu bar to open the EXPORT menu.
2. In Playback Mode, press the [QUICK EXPORT] icon in the menu bar. Pressing it once will indicate the start time for the backup file. Click the icon again to set the backup clip's end time. The EXPORT menu screen will appear.

3. Connect an appropriate USB memory stick and press [SCAN] to recognize it before starting the export process. The USB device must be formatted in FAT32 to be recognized by the NVR.
4. Adjust the following options for the video export as needed:
   - **CAMERA:** Select the camera channels to be included in the exported file. Select 'ALL' to include all camera channels.
   - **FROM:** Set the start time of the exported video.
   - **TO:** Set the end time of the exported video.
   - **DEVICE:** Click [SCAN] to detect the connected USB memory stick. The USB device must be formatted as FAT32.
   - **FILE FORMAT:** The exported video clip will be saved in .SSF file type and can only be viewed using the DW Backup Viewer tool or with a media player.
   - **FILE SIZE:** Click the [ESTIMATE] button to calculate the estimated file size. If the file is too large, reduce the number of camera channels or the length of the video footage to reduce the size.
   - **ADD VIEWER:** Enable this setting include the Backup Viewer with the archived file, which can be used to view the exported SSF video file on a PC.
   - **PASSWORD:** Add a password to protect the file if needed. The password must be entered to view the file on a PC.
5. Click [START] to start the export process. A progress bar will appear on the screen. Click the [CANCEL] button to abort the export process. DO NOT remove the USB until the file export has been completed.

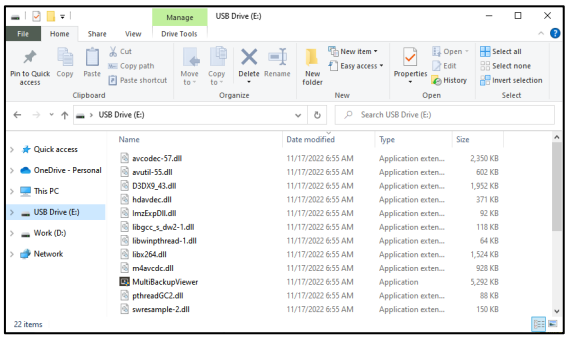
NOTE	A user who is not an ADMIN user can access the Export menu only if their user account has both the Export function and menu access enabled by the system administrator.

4.6.2. Backup Video Playback

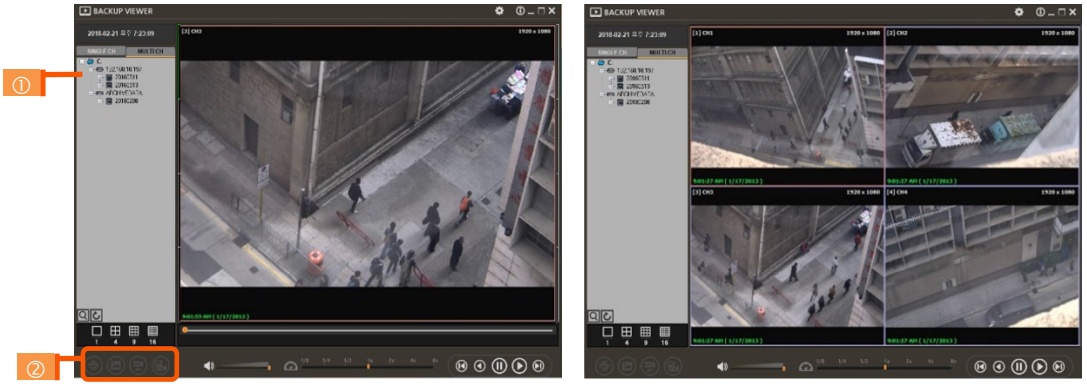
If [ADD VIEWER] is selected, the backup image can be viewed on a PC without installing additional

software. Once the backup device (USB) is connected to a PC, the files will appear in the exported folder.

1. To play recorded data, open the exported folder and double-click the “MultiBackupPlayer.exe” file. In the Backup Player, open the video data file (SSF format) you wish to play back.



2. To playback a single channel, click the [SINGLE CH] tab (①) and select an SSF file to playback, then drag it into the viewing area.
3. To play back multiple channels, click the [MULTI CH] tab and ‘Search’ to open the folder that contains all SSF files.

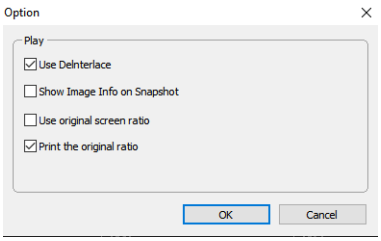


You can print or export an image and digital zoom by using the icons (②) at the bottom-left of the player window.

Option MENU

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

- **Use DeInterlace**: The user can uncheck the DeInterlace checkbox in the “Option” menu. Some PCs do not support “DeInterlace”.
- **Show Image Info on Snapshot**: The image information will be added as a text overlay when exporting an image.

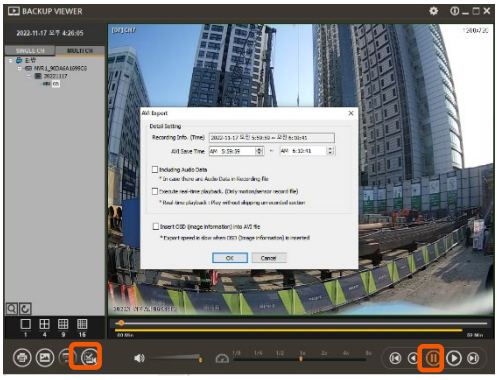


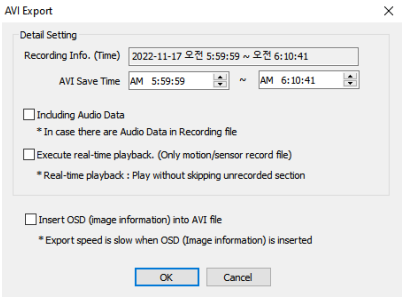
WATERMARK Verification and Convert to AVI File

Convert the backup file to an AVI file to play the file in ordinary media players. The third-party media player must support AVI files.

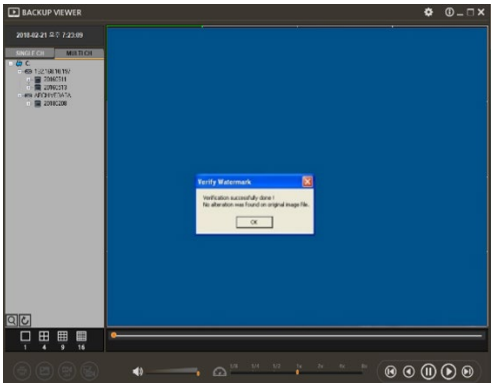
1. Play the SSF file in Single CH mode, then click [Pause].
2. Click [AVI Convert].

3. Define the start and end times.

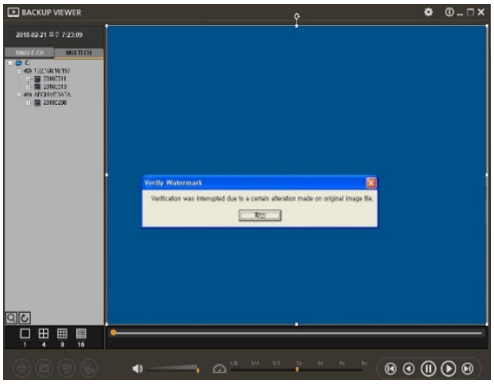




When the AVI file is played back in the Backup Viewer, verify whether the file has been altered or not by pressing the [Watermark] button ( ). If the file has been altered, a pop-up message will appear.



No alteration was found



AVI video clip has been altered.

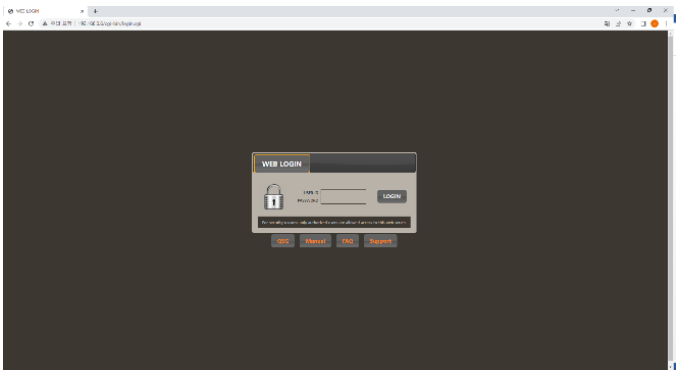
5. Web Surveillance with Web Browser

The VMAX® IP G4™ has a built-in web server. This allows you to access the system via the network using an ordinary web browser for live monitoring, playback, or remote configuration, without installing any additional software.

5.1 Web Login

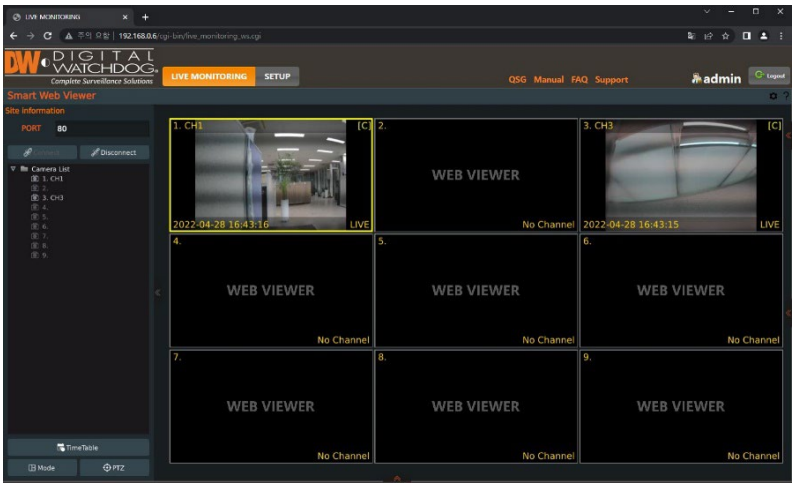
Using a web browser (Google Chrome is recommended), type the NVR's IP Address or DDNS address in the address bar. If the Web Port is set to the default (Port 80), the URL would be "192.168.1.80", which is the equivalent of "192.168.1.80:80". However, if the Web Port were changed to "85", the URL would look like "192.168.1.80:85".

When the login page appears, enter the user ID and password. The default user ID is "admin," and the password is set by the administrator when the NVR is booted up for the first time.



5.2 Web Monitoring

After logging in, the live view from the NVR will automatically appear on the web page. Users can also select Playback, Setup, QSG, Manual, FAQ, Support, or Logout.



LIVE
Users can connect or disconnect all channels and select a specific channel to view in live or Playback Mode.

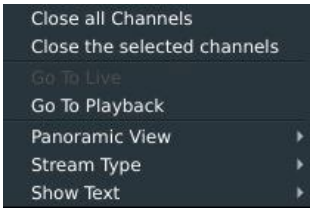
TIME TABLE
Users can open the timetable and play it back at any time.

MODE
Users can change screen mode.

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

POP-UP MENU
Right-click to open additional options:

- **Close all Channels:** Close all channels.
- **Close the selected channels:** Close the selected channels.
- **Go To Live/Playback: Switch** to Live or Playback Mode.
- **Panoramic View:** Change the screen mode to horizontal, vertical, or quad-screen.
- **Stream Type:** Set the stream type. (Auto / 1st/ 2nd)
- **Show Text:** Set the information to display. (Channel title / Mode [Live/Playback] / Date / Time / Resolution)



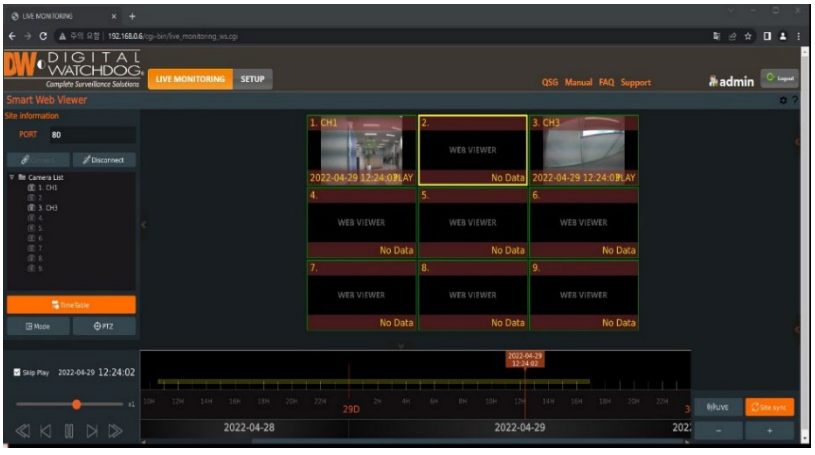
5.3 Web Playback

To remotely playback video from the NVR, click the timetable or [Go To Playback] from the pop-up menu.

PLAYBACK TIME
Select the date and time from the timetable.

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

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



5.4 NVR's Setup Menus from the Web Viewer

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
	PATHFINDER
	HTTPS/CERTIFICATES
	CERTIFICATE GENERATION
	CERTIFICATE IMPORT
LOG	SYSTEM LOG
	EVENT LOG
	VIDEO ANALYTICS LOG
	IVA LOG

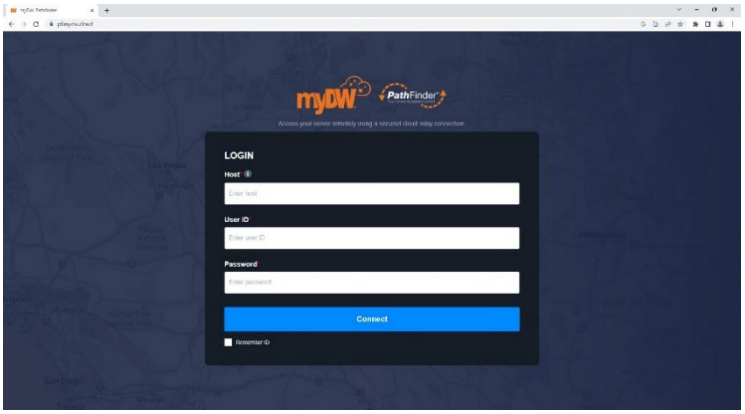
NOTE This NVR system has a built-in web server.
Therefore, this web CGI screen is directly supported by the NVR's built-in web server regardless of the Internet connection.

NOTE SYSTEM REBOOT allows users to reboot the system without changing the setup. Users can use this function when the network is disconnected due to an abnormal system operation and try to reconnect. The IP number assigned to the system may change in DHCP mode.

6.PathFinder™ Connection Through the Web

6.1 myDW™ PathFinder Login

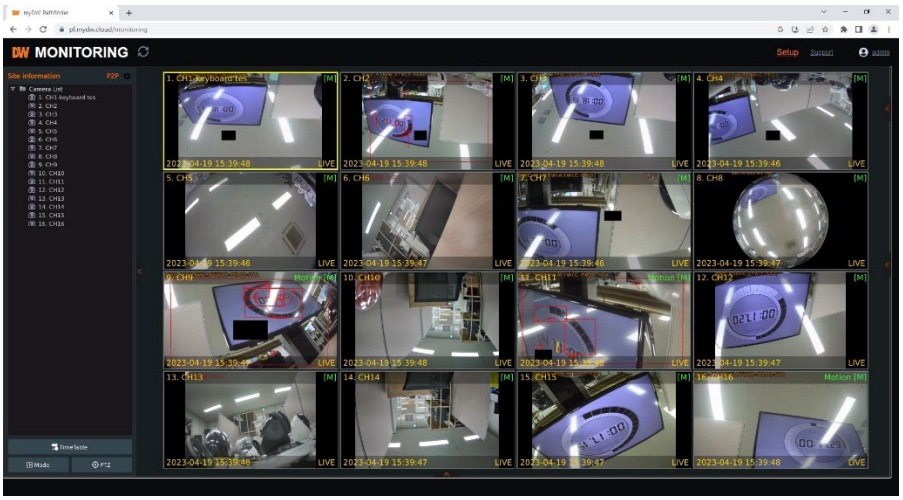
To connect to the NVR through PathFinder from the web, input the address of 'https://pf.mydw.cloud' in the web and open the following login screen.



- **Host:** Enter the IP address, URL, or PathFinder ID of the NVR to connect to.
- **User ID:** Enter the DVR's user ID to connect.
- **Password:** Enter the DVR's password to connect.

6.2 Live

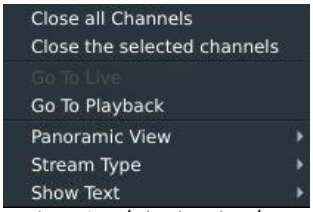
After logging in, the live view from the NVR will automatically appear on the web page.



Users can connect or disconnect all channels and select a specific channel to view in live or Playback Mode.

- **LIVE:** Users can connect or disconnect all channels and select a specific channel to view in live or Playback Mode.

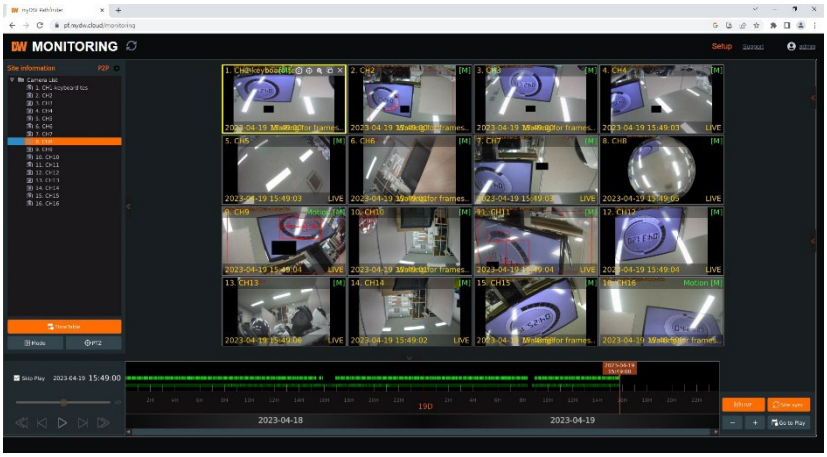
- **TIME TABLE:** Users can open the timetable and play it back at any time.
- **MODE:** Users can change screen mode.
- **PTZ:** Users can control Pan/Tilt, Zoom In/Out, Focus In/Out, and Preset buttons for PTZ cameras connected to the NVR.
- **POP-UP MENU:** Right-click to open additional options:
  - **Close all Channels:** Close all channels.
  - **Close the selected channels:** Close the selected channels.
  - **Go To Live/Playback: Switch** to Live or Playback Mode.
  - **Panoramic View:** Change the screen mode to horizontal, vertical, or quad-screen.
  - **Stream Type:** Set the stream type. (Auto / 1st/ 2nd)
  - **Show Text:** Set the information to display. (Channel title / Mode [Live/Playback] / Date / Time / Resolution)



6.3 Playback

To remotely playback video from the NVR, click the timetable or [Go To Playback] from the pop-up menu.

- **PLAYBACK TIME:** Select the date and time from the timetable.
- **Intelli-search bar:** Move the red vertical line to the time the user wants to search. The colors of the time bar indicate the different recording modes. Refer to “4.3.2” for more information.
- **Playback controls:** Use the Fast Forward, Rewind, and Play/Pause buttons to control video playback.



6.4 Setup

Users can open a new screen for web setup by clicking ‘Setup’ in the upper-right corner. The administrator can configure recorder settings using these menus.

7. Q & A

1. NVR does not 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 in the menus: [Event > Sensor], [Event > Camera Alarm], and [Record > Schedule].
2. An HDD is installed, but the “No HDD” icon (/) is still displayed on the screen.
   1) Check the HDD's cable connection again.
   2) If you can see the HDD list at [System > HDD] but the capacity indicates “0”, the HDD requires formatting.
3. Nothing is displayed on the True HD/VGA monitor, even though power is supplied to the NVR.
   1) Check if the power is supplied properly. You should be able to hear the fan and HDD in operation.
   2) Check the True HD/VGA cable connection with the NVR. Remove all cable connections except the monitor cable, then apply power to the NVR again.
   3) If the display screen is stuck on the 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 recognize the NVR's changed address (dynamic IP provided by the ISP) or connect to the NVR via the domain name without memorizing the IP address.
5. The remote software connection to the NVR works fine, but the web connection doesn’t.
   1) Some ISPs block port number 80. Please try again after changing the WEB port.

      (8080 is the recommended alternative)
   2) Check whether port 80 is open or not.
6. The image is not shown after logging in to the web monitoring.

   The TCP Base port should be opened. The default of the TCP base port is 9010.
7. The image on the remote software has suddenly disappeared after displaying it for a brief time.
   1) Some ISPs restrict upload data/traffic volume. Please contact your ISP.
   2) Upload traffic restrictions 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 the Router.
      > After reconnection, if it is disconnected again after a brief time (in a similar period later), it means that the ISP restricts upload traffic.
8. A backup or firmware upgrade via a USB memory stick cannot be performed, even though it is detected by the NVR.

1) A USB memory stick should be formatted as FAT or FAT32.

2) It is not allowed to use a partitioned or password-protected USB memory device.

9. Time sync through the NTP server does not work.

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

10. Email transmission does not work when using the Email to notify function.

1) The Email notification function uses the SMTP service.

2) Check whether the sending email address is correct and whether the mail server supports SMTP.

3) If you are using an SMTP service that uses TLS authentication (including SSL), such as Gmail or Yahoo Mail, enable [Use SSL Authentication] on the [Notification] setup page.

4) SMTP service is provided based on DNS. Check if the DNS server address is correct at the [Network] setup page.

8. Specifications

VIDEO		DW-VG416xT16P	DW-VG412xT8P	DW-VG49xT4P
Operating system		Embedded Linux®	Embedded Linux®	Embedded Linux®
System	channel	16 channel	12 channel	9 channel
	No. of PoE	16Ch	8 Ch	4 Ch
	Max supported resolution	IP camera max. 4K (3840×2160)		
	Communication protocol	ONVIF® Profile S	ONVIF® Profile S	ONVIF® Profile S
	PoE type	1Gbps, 802.3at		
Display	Speed	480fps	360fps	270fps
	Screen mode	1, 4, 9 and 16	1, 4, 9 and 12	1, 4 and 9
Video-out	Monitor	True HD and VGA	True HD and VGA	True HD and VGA
	Resolution	HD: 3840×2160 (4K), 1920x1080, 1280x1024, 1024x768		
		VGA: 1920x1080, 1280x1024, 1024x768		
System operation		USB mouse, PTZ control by keyboard (optional)		
PERFORMANCE				
Recording speed		Up to 480fps up to 4K (2160p) resolution	Up to 360fps up to 4K (2160p) resolution	Up to 270fps up to 4K (2160p) resolution
Max. throughput		160 Mbps	80 Mbps	80 Mbps
Recording streaming		Dual-stream	Dual-stream	Dual-stream
Recording modes		Continuous, scheduled, sensor and motion detection recording		
		Pre- and post-alarm recording, emergency recording, quick backup		
Playback and search	Speed	x1, x2, x4, x8, x16, x32, x64, x99		
	Channel and resolution	1 and 4 main-stream, 9 & 16: sub-stream		
	Function	Timeline, calendar (date and time), event search, thumbnail search, smart motion search		
Audio input / output		1Ch input/1Ch output		
Alarm input/relay output		8Ch inputs / 4Ch outputs	4Ch inputs / 1Ch output	4Ch inputs / 1Ch output
PTZ control		RS-485, ONVIF	RS-485, ONVIF	RS-485, ONVIF
Storage	HDD interface	2x SATA HDD	1x SATA HDD	1x SATA HDD
	Max. internal storage	Up to 32TB	Up to 16TB	Up to 16TB
	HDD healthcheck	Temperature, S.M.A.R.T. with email notifications Real-time temp alert		
Transaction verification		Text-in Based (USB to Serial support, TCP/IP Network), Display POS Data on Live & Playback		
NETWORK				
LAN		1,000Mbps Ethernet (RJ45)		
Protocols		IPv4, TCP/IP, DHCP, HTTP, RTSP, STMP, FTP, Zero Configuration, NTP, DDNS		
Access	Web viewer	Live, playback and configuration, up to 10 connections		
	Video streaming functions	Dual recording for live and playback and dual stream for local recording and network transmission		
		PathFinder™ easy end-to-end remote connection		
	Monitoring software	C3™ CMS, DW Mobile Plus™		
Network functions		Live monitoring, remote playback and file backup		
Remote system control		Remote system reboot, system management, notifications and remote PTZ control		
Remote Time sync		Time synchronization to an NTP server (pool.ntp.org)		
Remote system notifications		Notifications for system health, events and alarms		
System recovery after power failure		Auto-reboot and journaling file system		

Other function	Firmware upgrade	FTP, USB and CMS over Network		
	Back-up	Local backup by USB, network backup by CMS Import and export settings, watermark and AVI file backup		
	Special features	Snapshot Notify™: Interval camera image verification Event and push notifications via email, text and C3™ Digital Zoom in live and playback POS text-in based (USB to serial support, TCP/IP network)		
	Mobile client	DW Mobile Plus app for Apple® and Android® devices DW Witness™ turns a smartphone or tablet into a surveillance camera.		
	Health check	Real-time system, network and PoE status monitoring		
GENERAL				
Operating temperature and humidity		23°F ~ 122°F (-5°C ~ 50°C) / 10~90% RH		
Certification		CE , FCC, KC, NDAA, TAA		
System	Power requirement	48V 3.75A DC	48V 1.875A DC	48V 1.36A DC
	Power consumption	180W (recorder + PoE ports)	90W (recorder + PoE ports)	65W (recorder + PoE ports)
PoE	Max power per port	802.3at POE+ (Class4), up to 30W per port	802.3at POE+ (Class4), up to 30W per port	802.3at POE+ (Class4), up to 30W per port
	Total PoE power budget	160W	72W	48W
Dimension (W x D x H)		14.96" x 10.55" x 1.77" (380 x 268 x 45 mm)	11.81" x 9.8" x 1.77" (300 × 249 × 45 mm)	11.81" x 9.8" x 1.77" (300 × 249 × 45 mm)
Warranty		5 year limited	5 year limited	5 year limited

* Specifications are subject to change without notice.

9. Warranty Information

Go to https://digital-watchdog.com/page/rma-landing-page/ to learn more about Digital Watchdog's warranty and RMA.

To obtain warranty or out-of-warranty service, please contact a technical support representative at: 1+ (866) 446-3595, Monday through Friday from 9:00 AM to 8:00 PM EST.

A purchase receipt or other proof of the original purchase date is required before warranty service is rendered. This warranty only covers failures due to defects in materials and workmanship that arise during normal use. This warranty does not cover damages that occur in shipment or failures which are caused by products not supplied by the Warrantor or failures which result from accident, misuse, abuse, neglect, mishandling, misapplication, alteration, modification, faulty installation, setup adjustments, improper antenna, inadequate signal pickup, maladjustments of consumer controls, improper operation, power line surge, improper voltage supply, lightning damage, rental use of the product or service by anyone other than an authorized repair facility or damage that is attributable to acts of God.

10. Limits and Exclusions

There are no express warranties except as listed above. The Warrantor will not be liable for incidental or consequential damages (including, without limitation, damage to recording media) resulting from the use of these products or arising out of any breach of the warranty. All express and implied warranties, including the warranties of merchantability and fitness for a particular purpose, are limited to the applicable warranty period set forth above.

Some states do not allow the exclusion or limitation of incidental or consequential damages or limitations on how long an implied warranty lasts, so the above exclusions or limitations may not apply to you. This warranty gives you specific legal rights, and you may also have other rights that vary from state to state.
If the problem is not handled to your satisfaction, then write to the following address:
Digital Watchdog, Inc.
ATTN: RMA Department
16220 Bloomfield Ave
Cerritos, CA 90703

Service calls that do not involve defective materials or workmanship, as determined by the Warrantor, in its sole discretion, are not covered. The cost of such service calls is the responsibility of the purchaser.