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DVR/NVR Operation Manual (10.6)

Digital Video Recorder
Network Video Recorder

Operation Manual

(EN Rev 1.2)

DVR / NVR

Operation Manual

Thank you for purchasing a product.
This manual describes the function usage of DVR / NVR.
Before installation or operation, please become familiar with this manual.

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This manual is common operation manual for multiple models, and thus, some UI and the usage can be slightly different by models.
For the specific product specification, please refer 'Product Manual'.

UI and some functions can be changed for improvement of firmware or quality without any notification. The updated manual can be downloaded from manufacturer's web page.

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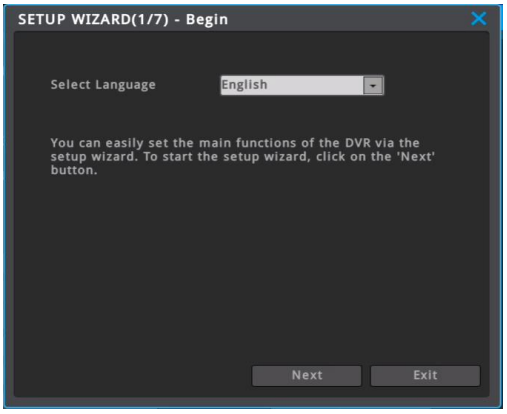
Setup Wizard

The Setup Wizard makes it easy to set up DVR/NVR's "Language, Network, DDNS, Time, Hard Disk, Record Mode and Wizard."
The Setup Wizard is automatically launched on the first boot of the DVR/NVR, and you can run the Setup Wizard through the "Menu > System > Tools > Setup Wizard".

Start

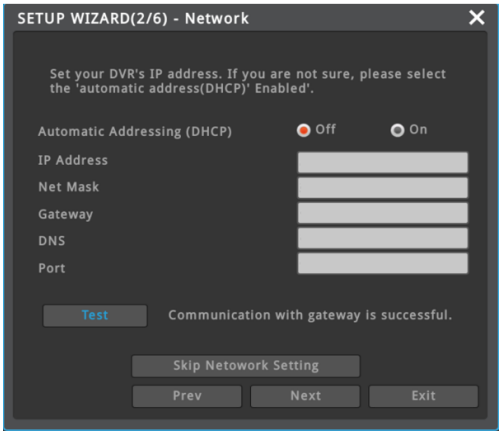
You can select the language you want to use.



Network

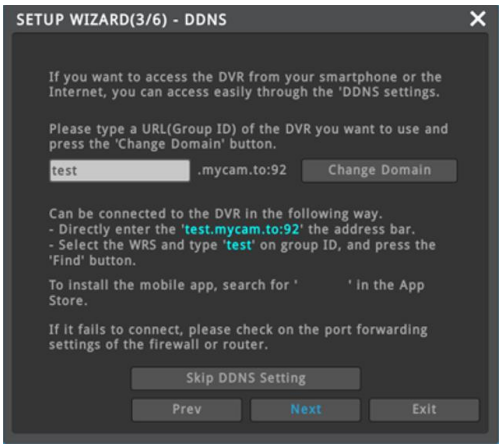
Set up IP address of DVR/NVR or skip network setup.
Press "Test" button to check if there's problem in network communication or not.

1) Network normal - "Communication with Gateway is successful."
2) Network abnormal - "Communication with Gateway is failed."



DDNS

Setup DDNS of DVR/NVR or skip DDNS setup.
Enter domain name to use then press "domain change" to create domain name.

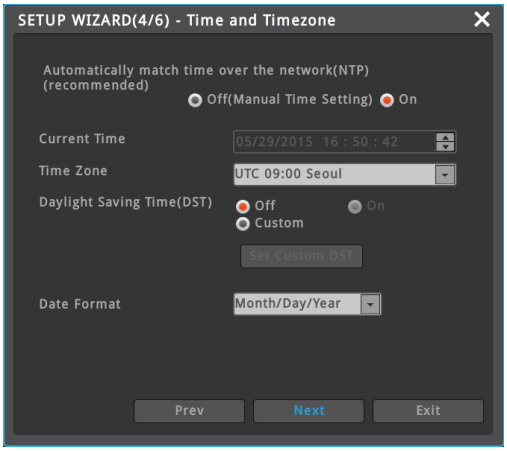


Connection method after Domain "test" created
1) Browser - Enter http://test.mycam.to in address bar
2) Mobile application – test.mycam.to
3) Exclusive software Control Center – test.mycam.to

Domain change message
1) Domain change normal – Success
2) Domain change fail – Domain cannot be used

Time and time zone

Setup time, standard time zone and daylight saving time (DST).



Network(NTP) autotime synchronizing
1) In case DVR/NVR is connected to internet – In use
2) In case DVR/NVR is not connected to internet – Not in use

Daylight saving time (DST, summer time)
1) DST saving time is used – In use
2) DST saving time is not used – Not in use

Hard Disk

Connected hard disk is searched automatically and shown as inventory.
Select hard disk to use and run "Enable and format" to format and enable (start record) selected hard disk.

Enable (Start record)
1) Hard disk starting record – Yes
2) Hard disk connected to DVR/NVR but not starting record – No

※ It is recommended to enable all connected HDDs.
However, if an HDD shows any malfunction, please disable the HDD until it is replaced or repaired.

Record mode

There are 3 type of record modes.

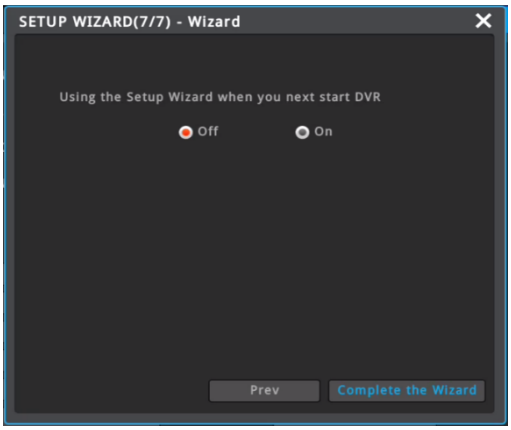
1) Normal image 1fps, Motion image 15fps (recommended)
 - If there's no movement 1 frame per second, if there's movement, 15 frames per second will be recorded.

2) Record 15fps only moving image
 - It does not record anything, If there is no movement, while it record 15 frames per second if there is movement.

3) Always record 30fps
 - All channels, always record 30fps.

Wizard

Select whether to use the Setup Wizard when you restart the DVR or NVR.



After finishing setup, click [Complete the Wizard].

<Note>
DVR/NVR's default account is admin and default password is '12345'
The default password is very weak for security. It is highly recommended that user must change the password periodically. The responsibility for security problems by using default password is to user.

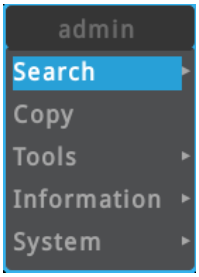
Usage

FUNC Menu

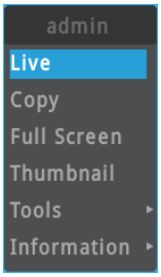
All DVR/NVR functions can be controlled by using mouse. For convenient use, freqeuently used functions and convicient functions are gathered in FUNC menu. To open FUNC menu, click the mouse's right button at live or playback screen.

FUNC menu at Live screen

- ✓ Search – Move to last playback time, Move to latest record data
- ✓ Copy – Copy recorded data
- ✓ Tools - PTZ, Instant PTZ, Camera Setup, Multi, SEQ, Set Custom, Spot, Digital Zoom, Freeze, Snapshot, Manual Relay, Emergency Recording, All Event Confirm, Bookmark
- ✓ Information – Screen, Screen(Spot), Camera, Network, Recording, Disk, System, PoC, System Alarm
- ✓ System - Menu, Lock, Logout, Power off, Reboot



[Live]



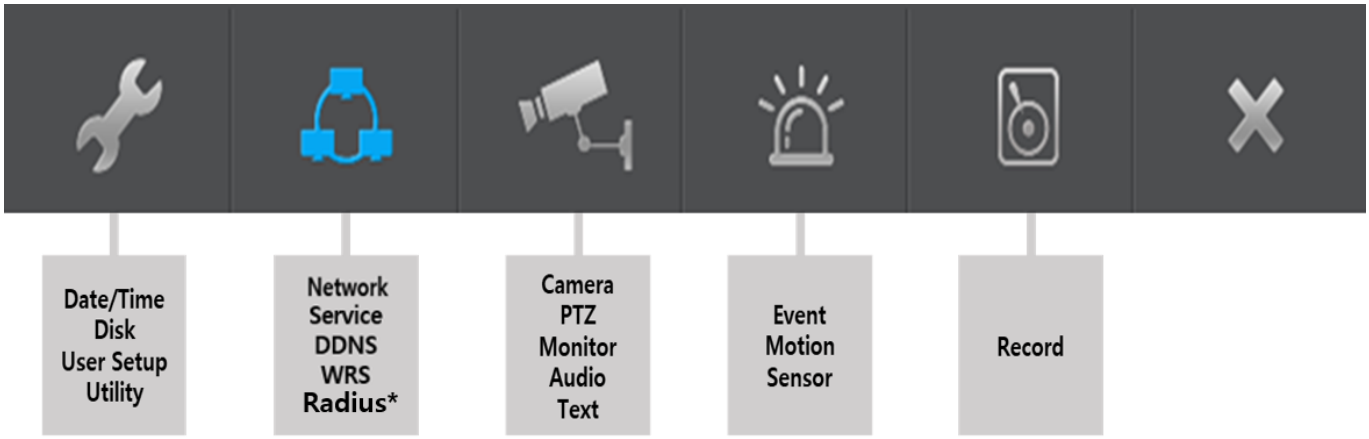
[Playback/Search]

FUNC menu at Search/Playback

- ✓ Live – Turn into live screen
- ✓ Copy – Copy recorded data
- ✓ Full Screen – Turn into full sized screen
- ✓ Thumbnail – Run thumbnail search
- ✓ Tools – Digital Zoom, Snapshot, Multi, Bookmark
- ✓ Information – Screen configuration

Menu structure

Please refer to menu structure below.



<Note> This UI is only appeared for the model supporting Radius.

Menu Structure

Press [MENU] key on front panel or click [Main Menu] button under FUNC menu to enter the setup menu. To exit menu, press "X".

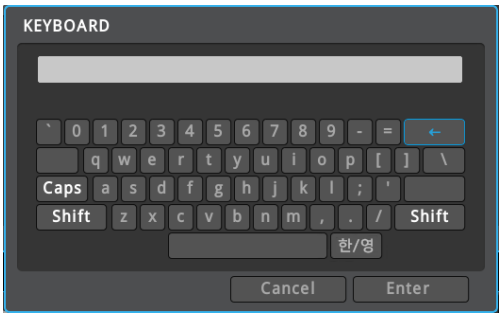
Main menu
The selected tab is shown in bright color and the sub-menu box will show the chosen

Sub-menu
Selected sub-menu will disply the chosen item and the related setting will be shown. To move to the upper main menu, click the [Save Changes] at the bottom of menu, or press "X" button.

Set-up dialogue box
The selected tab is shown as orange, and to move to the previous/next tab.

Dialogue box for string input

Dialogue box for string input is shown as follows. User can enter words or numbers using a mouse or direction buttons.
Mouse to enter it. To delete the entered letter, press [←] button, and to enter a space, press [SPACE] button. To exit the dialogue, press [ENTER] button to save string and exit or press [CANCEL] button to cancel the string.



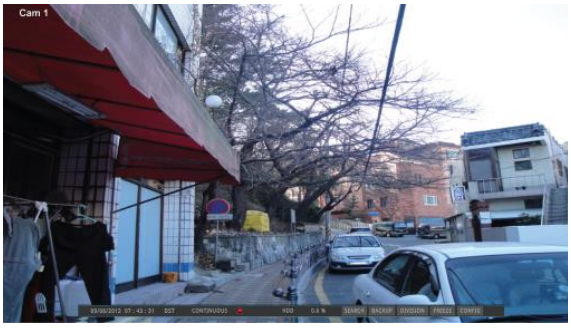
Monitoring

Basic screen

The basic screen will be maximum multi-screen DVR/NVR supports and if rebooted after multi-screen mode has been modified, previous multi-screen mode will be shown.

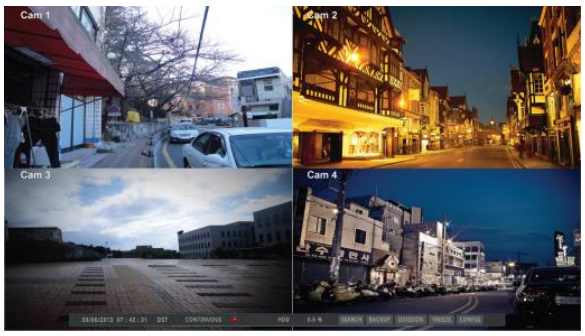
Single screen

click the channel number you want to view or Double click the left mouse button.
Click [MULTI] button or Double click the left mouse button again to o return to multi-screen
.



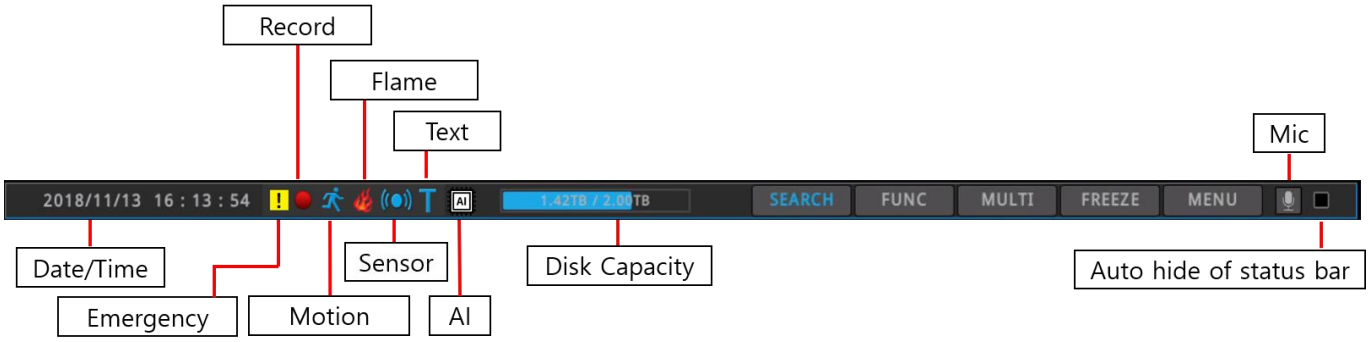
Multi screen

Click [MULTI] for multi-screen display to choose multi-screen mode.



Screen description

Status bar represents status of DVR/NVR.
Status bar shows current date/time, emergency record, record status, motion detection, flame detection (when using flame detection camera), sensor, text, AI, disk capacity, Mic enabling and auto hide of status bar.



Auto switch mode (Sequence)

Auto switch screen mode is a feature in which the selected channel or multi-screen division switches in sequence with the time interval of 1 – 60 seconds. (Please refer to "Monitor setup" for further configuration method).
Auto Switch mode can be set in every division mode by pressing the [SEQ] button.
Press [SEQ] button once more to leave from Auto Switch mode.

Check video

When turned on, DVR/NVR starts booting automatically and shows screen after the booting.

<Reference>
Auto login "ON": means login set without any login dialogue box (default - auto login ON, admin)
Auto Login "OFF": means there will be dialogue box requiring password.

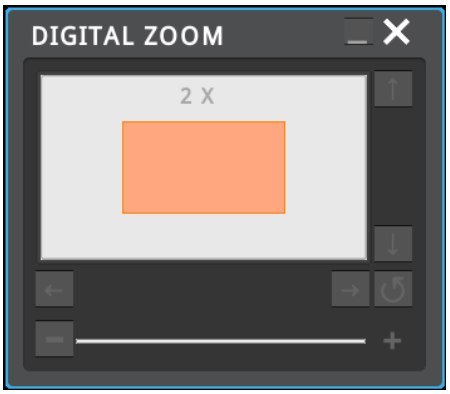
Event screen

It is available to set the selected screen pop-up automatically when an event is triggered
Users can choose events for pop-up from event source. Event source supports Sensor, Motion Detection, No video, Text, System event and so on.
If multiple events are triggered, the corresponding screens will pop up automatically.
For example, if events are triggered in 3 Channels, they will be displayed in 4 screen division automatically. To return to the original channel, press the button of one of the popped up channels.
Press [ESC] to return to original channel.

<Warning>

1. Image popup will be performed after setting image popup "enable" and selecting event source (sensor, motion detection, no video, text).
2. To use flame detection function, flame detection camera should be connected. After connection, DVR/NVR can automatically detect the sensor as a flame detector. (It is not possible to change the sensor type by manually.) Please contact to CS for the flame detection camera models.

Enlarged screen



Using D-Zoom on a single screen, users can enlarge the area user want to view. Click on [Zoom] button or icon in single / full screen or [FUNC] button then select Zoom button to activate Zoom mode.
To expand or reduce, please use +, - button or use mouse wheel drag.
Enlarge mode can be used between 1.00X ~ 10.00X range.
To return to the previous screen, select a button and press the enter or left click the mouse.

<Note>
Live/playback in multi-channel mode does not support zoom. To use zoom, please make live and playback screen into single mode.
In order to use the flame detection function, the flame detection camera which can detect fire (fire source) must be connected to the DVR or NVR, and the sensor must be selected as the flame detector. Please contact CS for available flame detection cameras.

Pausing the live screen

Just like in playback, live screen can be paused.
Click on [Freeze] button while live monitoring to pause image and to return to live again, please click on any button.

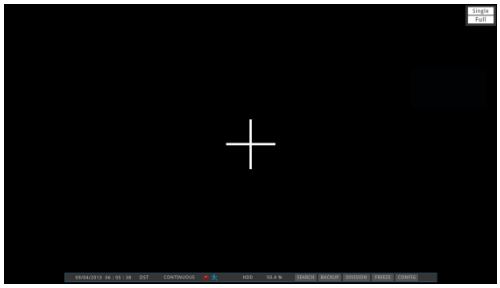
Snapshot picture

Please click on Snapshot while image is Freeze in single live monitoring. Copy them to USB too.

Click FUNC menu -> Tool -> Snapshot to copy image to USB memory without stopping or pausing image.

Instant PTZ

If Instant PTZ in Tool menu is set activated, PTZ mode will be on automatically upon single channel, which PTZ function is set.
+ Mark in the center of image will be on while PTZ function is working.



PTZ control

Connect PTZ camera to DVR/NVR and set relevant protocol on "PTZ" under MENU, and users can operate PTZ while monitoring live images.

When PTZ is on, through PTZ button on front or PTZ buttons under FUNC menu, users can use pan/tilt, zoom, focus, aux, preset functions and Patrol.

Pan/Tilt
pan/tilt function for PTZ configuration channel
Use "Up", "Down", "Left", "Right" to control pan/tilt.

Zoom
Click "Tele", "Wide" buttons to create a preferred focal point.

Focus
Click "near", "far" buttons to focus.

Auxiliary On
Use direction keys or mouse wheel to select aux number (up to 16 Aux functions can be used). Select "on" and press enter or click a mouse)

Auxiliary Off
Use direction keys or mouse wheel to select aux number Aux
Select "on" and press enter or click a mouse.

Loading preset
Used to move to set preset location.
Select wanted Preset number and press [Load] button.

Saving preset
Use to save new preset location.
Use focus/zoom/pan/tilt to move to a location you want to save it and select a preset number and press [save] button.

Patrol
This function can move the view position of PTZ device according to the stored sequences of multiple presets. 8 patrols are supported and each patrol can have 8 presets. Also, each patrol can set the sequences and interval of presets .

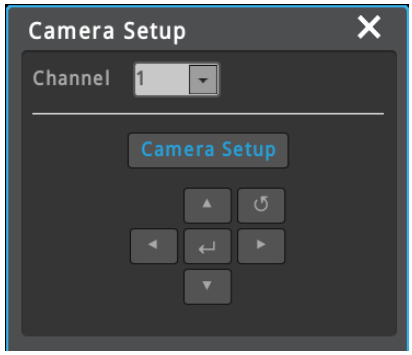
Patrol On
Select the patrol number and click "On".

Patrol Off
Refer the patrol status and select the patrol number which you want to off. And click "Off".
<Note>

Focus may not be controlled for IP camera (Onvif) channel.

Camera Setup

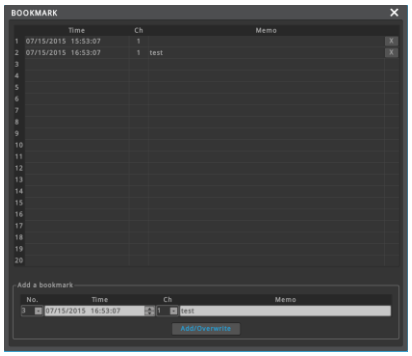
This menu is used to enter the OSD menu of connected camera. Please control camera menu using up, down, left, right.



<Note>
OSD cannot be controlled for IP camera (Onvif) channel.
Please use webpage of IP camera to control OSD.

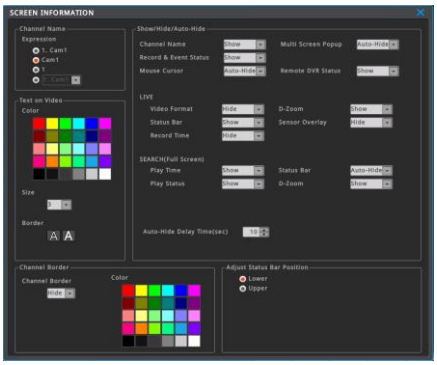
Bookmark

Add / Edit bookmark No, Time, Channel and Memo in FUNC menu → [Tools] → [Bookmark] while live or playback.
Clicks bookmark icon " " in [Search], [Copy], [Thumbnail] to load saved bookmarks.



Screen Information

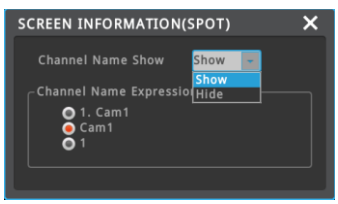
Screen properties can be set by clicking [FUNC menu – Information – Screen]. User can change the expression of channel name, text color, font size, status bar, remoteDVR status etc.
It is possible to show or hide the channel border line. Also, the color of border line can be set.
The position of the status bar can be selected between lower and upper at [Adjust Status Bar Position].
The expression of channel name can be 'channel number and channel name', 'channel name', 'channel number' or 'channel navigator'. It is possible to locate any channel you want on any position of multi-division screen you want if the expression of channel name is 'channel navigator'.



<Caution>
If the expression of channel name is 'channel navigator' and user select "Auto" as a multi division mode, the expression of channel name will be changed to 'channel number and channel name'. If you want to use 'channel navigator', please set again and do not select "Auto".

Screen (Spot)

Spot screen properties can be set by clicking FUNC menu → [Information – Screen (Spot)]. User can set the expression of channel name displayed on Spot screen.



Remote monitoring & control

Users can connect DVR/NVRs, control and monitor it remotely by using Control Center (CMS program)

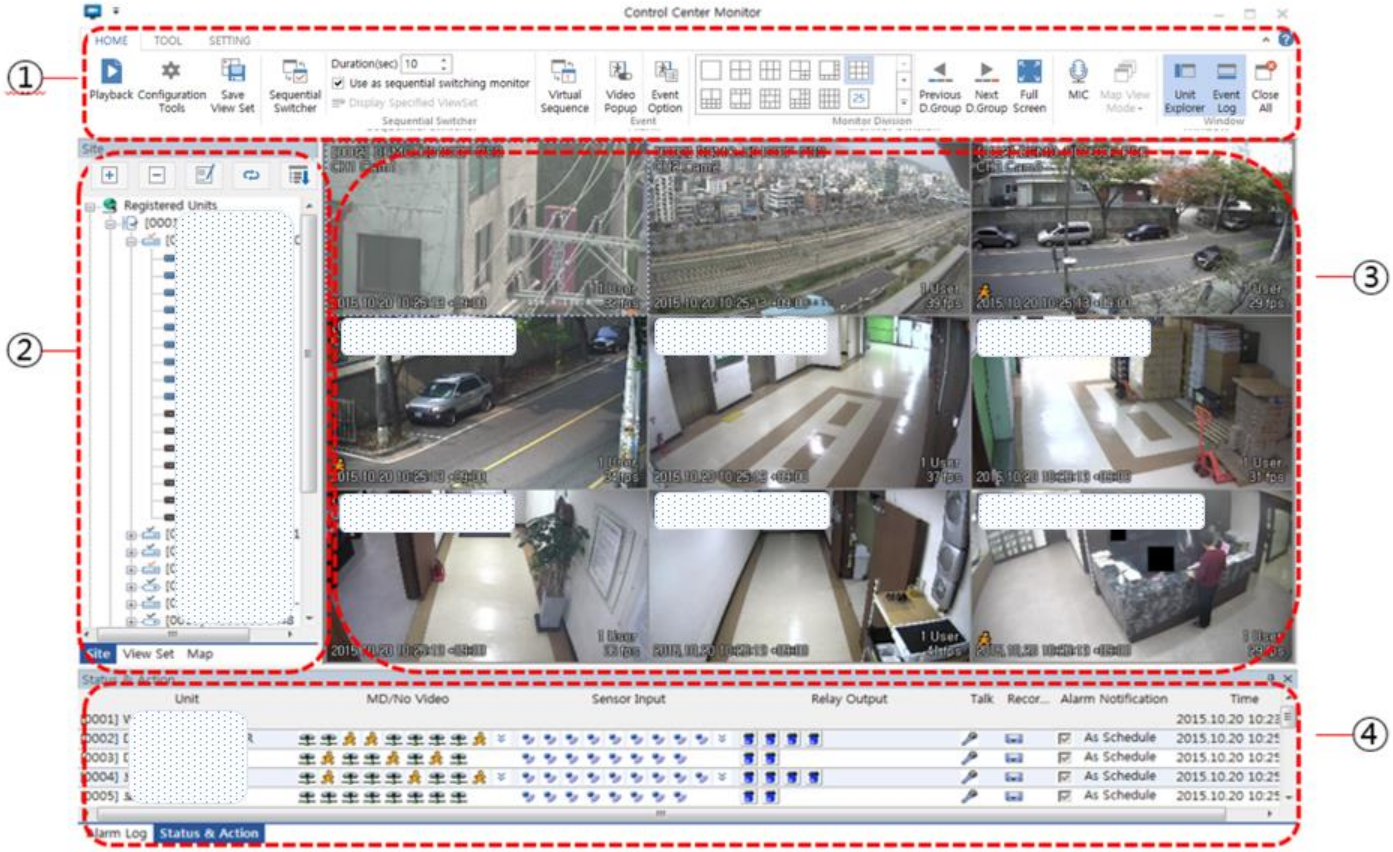
Installation of Control Center

Execute "Control Center Setup vx.x.x.exe" to install the Control Center.

Start of Control Center

After installation is completed, click "Control Center Monitor" icon and execute it.
(ID: admin / Password: admin)

Screen configuration of Control Center



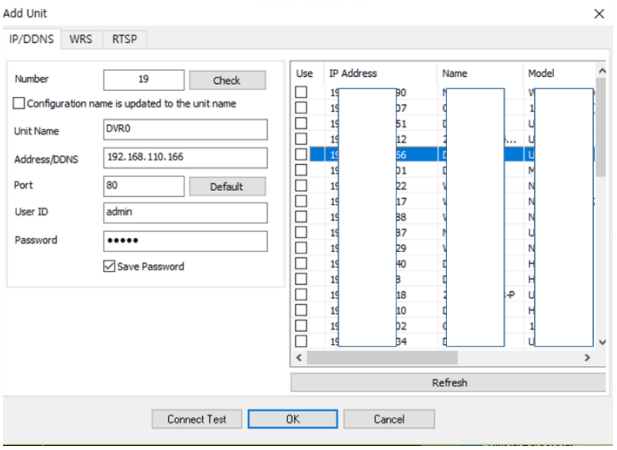
Item		Description
1	Menu/Toolbar	This is menu and function button used in program
2	Unit list window	User can add/delete/edit the unit and refresh the unit list. This indicates unit/viewset/map registered in program. User can click on the list to show image
3	Image window	This indicates live monitoring image
4	Status & Action window	This indicates status of unit, event information and alarm log

Add Unit

Click **[Add]** icon ⊞ on the toolbar or execute **[Add Unit]** by clicking mouse right button at "My Units".

1) Select "URL/IP Address"
2) Enter proper IP address and Port, then click **[Find]** button. If the DVR/NVR is located inside local network, you can easily find the DVR/NVR by clicking **[Auto Detect]** button.
3) Check whether the unit's information is properly displayed.
4) Enter DVR/NVR's ID and password, and then click **[OK]**.
5) DVR/NVR will be listed on the unit list of "My Units".

(DVR/NVR' Default ID/Password is admin/12345)



DVR/NVR's live display

If you click a unit's icon in the "My Units", you can get live monitoring display. Split-screen will be displayed to show all channels of the unit.

All channel Display at the same time

If you click a unit's icon (1), all channels' video will be displayed on the split-screen (2). If you click a unit's icon again, then all video on screen (2) will be off.

Display a specific one channel

If you click one channel icon, that channel on screen (2) will be off. If you drag and drop one channel from 1 to 2, that channel will be displayed on that position.

Playback, Search and Copy

Playback Mode

To enter the playback mode, push “SEARCH” button of remote controller or click “SEARCH” of status bar on lower side of screen. Or click mouse right button and select [Function] ➔ [Search].

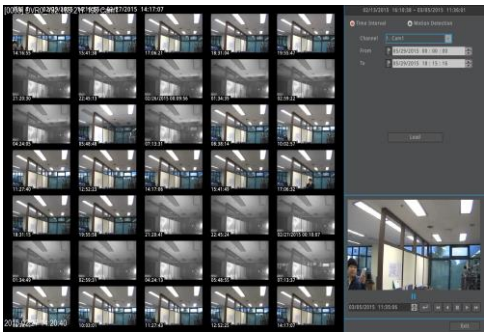
Playback Screen Composition

name		function description
1	Time Search	Display currently playing time. Set the time to want to play and click ↵, then playback time goes to that time and paused. Bookmark list will be displayed when you click ‘Bookmark’ icon. You can select one of bookmarks to go to the bookmarked time.
2	Playback Control Button	Use buttons to control the playback. E: Click this icon to activate, then only video which has event will be played. ◀◀: Reverse playback speed control icon. Every clicking will increase speed. ◀: Playback direction control (backward). ◀II: Step backward. Step playback is skipped by the number of frames set in ‘4’. II: Pause II▶: Step forward. Step playback is skipped by the number of frames set in ‘4’. ▶: Playback direction control (forward). ▶▶: Reverse playback speed control icon. Every clicking will increase speed.
3	Playback Speed Control	Display current playback speed and you can select the speed (1/16x ~ 64x). Playback speed can also be controlled by ◀◀ or ▶▶ button. ‘All’ means that all frames are played without skipping. If recorded fps is low, it looks like multiple times speed playback.

4	Number of skip frames for step playback	It is possible to skip several frames instead of one frame by clicking step forward/backward. If the set number is 10, pressing the step forward button displays the 10 frames later image than the current frame.
5	Playback State	Graphically shows the state of playback.
6	Buttons	LIVE: Return to live monitoring mode COPY: Excute backup menu MULTI: Changing split screen mode THUMBNAIL: Excute thumbnail search mode
7	Screen	Displays the playback videos. Clicks right button of mouse on screen, then FUNC menu is displayed.
8	Type	Select the type of event to be displayed in the Log Viewer (All, Motion, Sensor, Text, Flame, Thermal Detection, AI, No video). 'Image' is an option that shows the history of video loss and detection.
	Interval	Sets timeline interval.
	Show Prealarm, Postalarm-Record Log	Prealarm and postalarm is displayed on timeline when this option is checked with specified color.
	Show Bookmark	Bookmark is displayed on timeline with bookmark icon. To make bookmark, click right button of mouse on screen and select [FUNC menu] → [Tools] → [Bookmark].
	◀ ▶	Moves timeline to the next range.
9	Calendar	Shows the date of current playback video with background color. Dates having recorded data is shown with underbar. Also, user can select the date to playback.
	Log Viewer	Displays the logs that occurred within the time displayed on the timeline. Only the logs of specified by 'Type (8)' are displayed. Selects the event, then the playback time goes to that time and paused.
	Configuration	Sets the configuration of timeline and log viewer. ⊙ Show all channels: Display timeline and log for all channels ⊙ Show selected: Display timeline and log for selected channels ⊙ Link with videos: Display timeline and log for channels displayed on the playback screen
10	Timeline	Displays whether there is recording data. Normal, pre-post alarm, motion, sensor/flame, text, bookmark are displayed with different colors and user can select the type of recorded data to be displayed on the timeline

Thumbnail Search

Thumbnail search will show 35 different thumbnail image on detected images by time interval or motion. Click on selected image for playback or copy.



- Time interval: 35ea thumbnail images are displayed by searching image between entered start and end time.
- Motion detection: 35ea thumbnail images are displayed by searching image on the motion between entered start and end time.

Copy

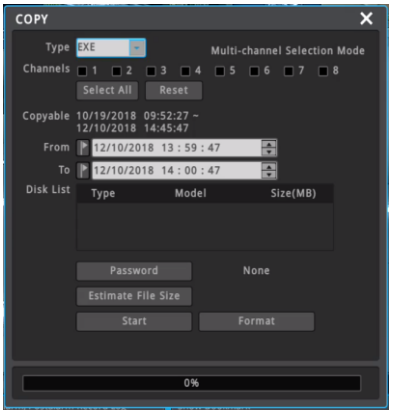
This is for copying recorded videos. There are 2 types of copying, EXE, and AVI.
Only authorized users by security settings can use the Copy function. For more about authority settings, please refer to (user setup) section.
To run copy function, press [COPY] on the Remote control or Click Copy button under Function menu.
If a user runs copy menu during playback, playback time will be set as backup end time.

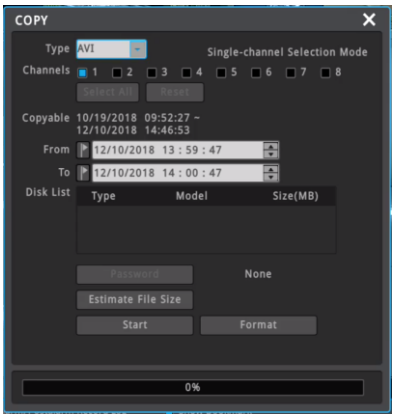
EXE

Multiple selected channels can be copyed as one exe file. Copyed exe file can be played on Windows PC without any other software. Also, it can play with Miniplayer or Control Center Playback.
* Miniplayer supports AV file export function. [File – AVI Export]

AVI

Only one channel can be copied as AVI file. AVI file can be played with general media player on PC or mobile.





Name	function description
Type	Select EXE using direction keys or mouse wheel.
Channel Selection	Press enter on a channel or right click a mouse to select a channel. (Select All : select all channels / Reset : cancel the selection of all channels)
Password	For EXE backup, user can set password.
Estimate File Size	Display the estimated file size according to the duration and number of channels to copy.
Format	Format a USB stick before copying. Press Format or right click a mouse to begin. Support FAT32 and NTFS.

<Note>
Backup file which is not 100% completed cannot be played at PC.
Please install unified CODEC if the PC cannot be played according to the CODEC problem.
It could take long time if user set the copy duration too long.
It is highly recommended to use 'Safely remove' before remove USB memory from PC. If not, all data of USB meory might be deleted.

Configuration

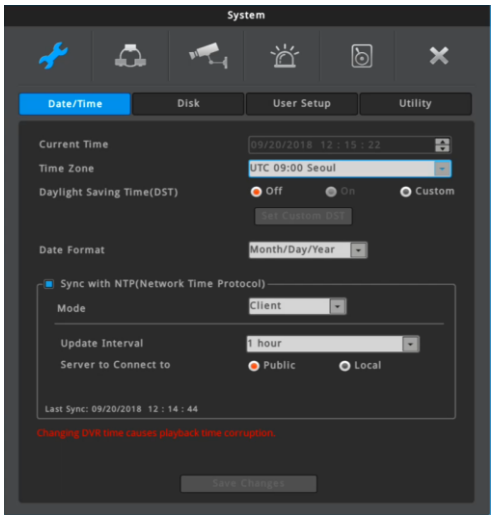
System configuration

Please set time/disk/authority.

Date/time

menu → system → date/time

Before recording setting, DVR/NVR has proper time information. DVR/NVR has 'UTC +09:00 Seoul' as default time zone.



<Note>
1. To search DVR/NVR's recording data properly, DVR/NVR should have exact time zone information. If DVR/NVR has wrong time zone information, user may get wrong recording data during Search, copy, etc.

2. Please note that if user changes DVR/NVR's time information, recording data's time stamps in hard disks will be changed at the same time. DVR/NVR's system log has record for DVR/NVR's time change.

Time settings

<Note>
Under recording, if a user changes time when it is already recording (saved in HDD), it will change the time of the previously recorded videos. Moreover, there will be a history of a time change on the system log.

Standard time zone
Set the time zone to the location a product is used in

daylight saving (DST)
This menu is synchronized with time zone configuration menu. It means only when daylight saving area is on, this function works. Daylight saving applicable area is the same as with Microsoft Windows time zone. Users can select whether to apply daylight savings or not when DVR/NVR is installed in Daylight saving applied zone

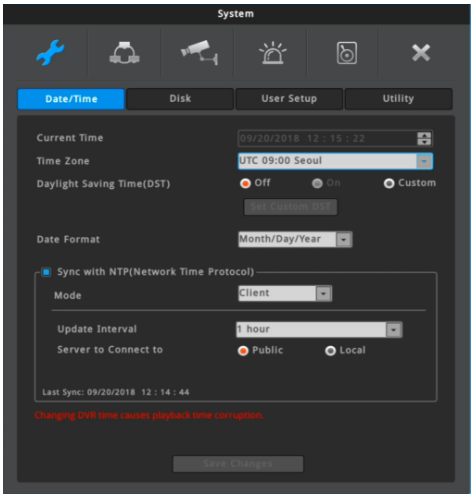
Date format
Date display settings. Select one of, "mm/dd/yy", "dd/mm/yy, "yy/mm/dd".

<Warning>
Changing of "Date/Time" configuration can critically affect HDD recording file system.

NTP

menu → system → date/time **→ Network Time Protocol(NTP)**

NTP (Network Time Protocol) synchronizes the time of all connected device. To set DVR/NVR time to standard time open server which offers standard time on the network and client which is connected to open server to receive time and synchronize it with standard time. Besides that, DVR/NVR can be set as server to offer standard time to other devices and can be set as both server and client as well.



NTP server location

Enabled when NTP mode is set as client/server. Select if NTP server is public or local.

NTP local server IP

Enabled when NTP server is set as local and sets server IP address. Enter NTP server IP address located in local network or DVR/NVR IP address with NTP mode as a server.

NTP mode

Set DVR/NVR NTP mode to client, server or both.

Name	function description
client	Receives standard time from external or internal server and enable Time synchronization of DVR/NVR
server	Make DVR/NVR a NTP server and provide standard time to other DVR/NVR or devices.
both	use both client and server at the same time

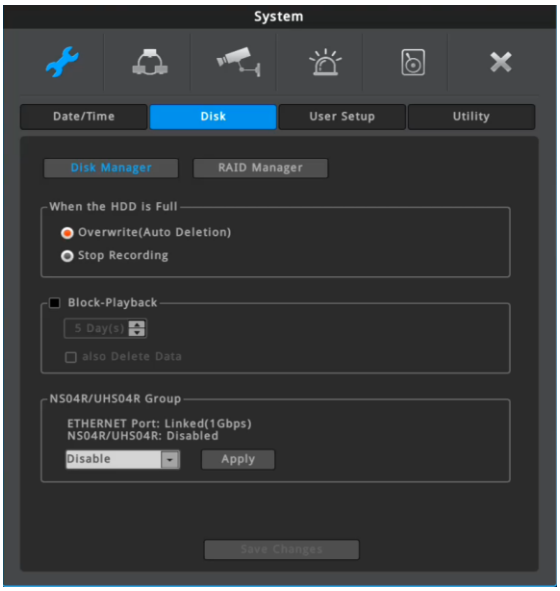
Interval

Configure interval of time sync.

Disk

menu → system → disk

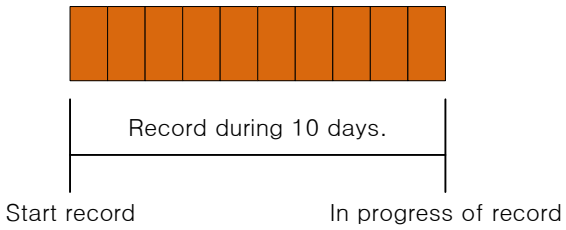
Internal, External HDD can be added, deleted or formatted.



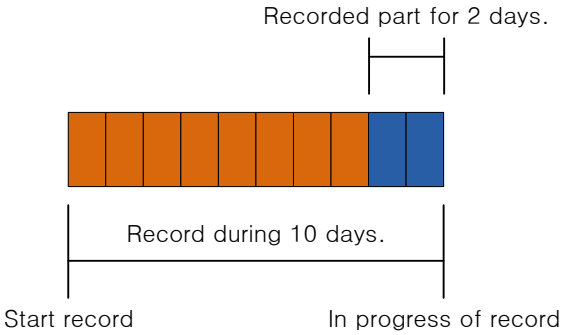
Overwrite (Auto Deletion)
Image is recorded overwriting from the beginning of HDD when HDD is full.

Stop Recording
Record stops when HDD is full.

Block Playback
This function allows only recordings of pre-assigned date to be viewed.
For example, after 10 days of recording (picture 1), if playback block is set at 2 days (picture 2), then as shown in the picture, only the last 2 days of the recordings can be played back.



[Picture 1]



[Picture 2]

Data deletion
This function allows preserving video data recorded during preassigned period of date.
For example, if playback block is set at 3 days, then DVR/NVR will only save data for 3 days and will delete data more than 3 days old even if auto-deletion isn't on.
Once deleted, it can't be restored so please be extra careful.

NS04R & UHS04R Group

<Note> This UI is only appeared for the model supporting NS04R/UHS04R.

Video can be recorded on NS04R/UHS04R located in same network (local network) of DVR/NVR.
Note that UHS04R is the next version of NS04R and NVR supports only UHS04R (not NS04R).

(1) Enable NS04R/UHS04R group in DVR/NVR [menu – system – disk] then select to-be used group. (ex group ID: 90).
(2) Use the rotary switch located in the rear of NS04R/UHS04R so that the group of first NS04R/UHS04R is the same with the DVR/NVR's group. (ex rotary switch 91).
(3) Use the rotary switch located in the rear of NS04R/UHS04R so that the group of second NS04R/UHS04R is the same with the DVR/NVR's group. (ex rotary switch 92).
(4) Connect DVR/NVR and NS04R/UHS04R with hub supporting gigabit using Gigabit Ethernet Cable. Run disk manager of DVR/NVR [menu – system – disk] then select NS04R/UHS04R to enable HDD of NS04R/UHS04R.

<Note>

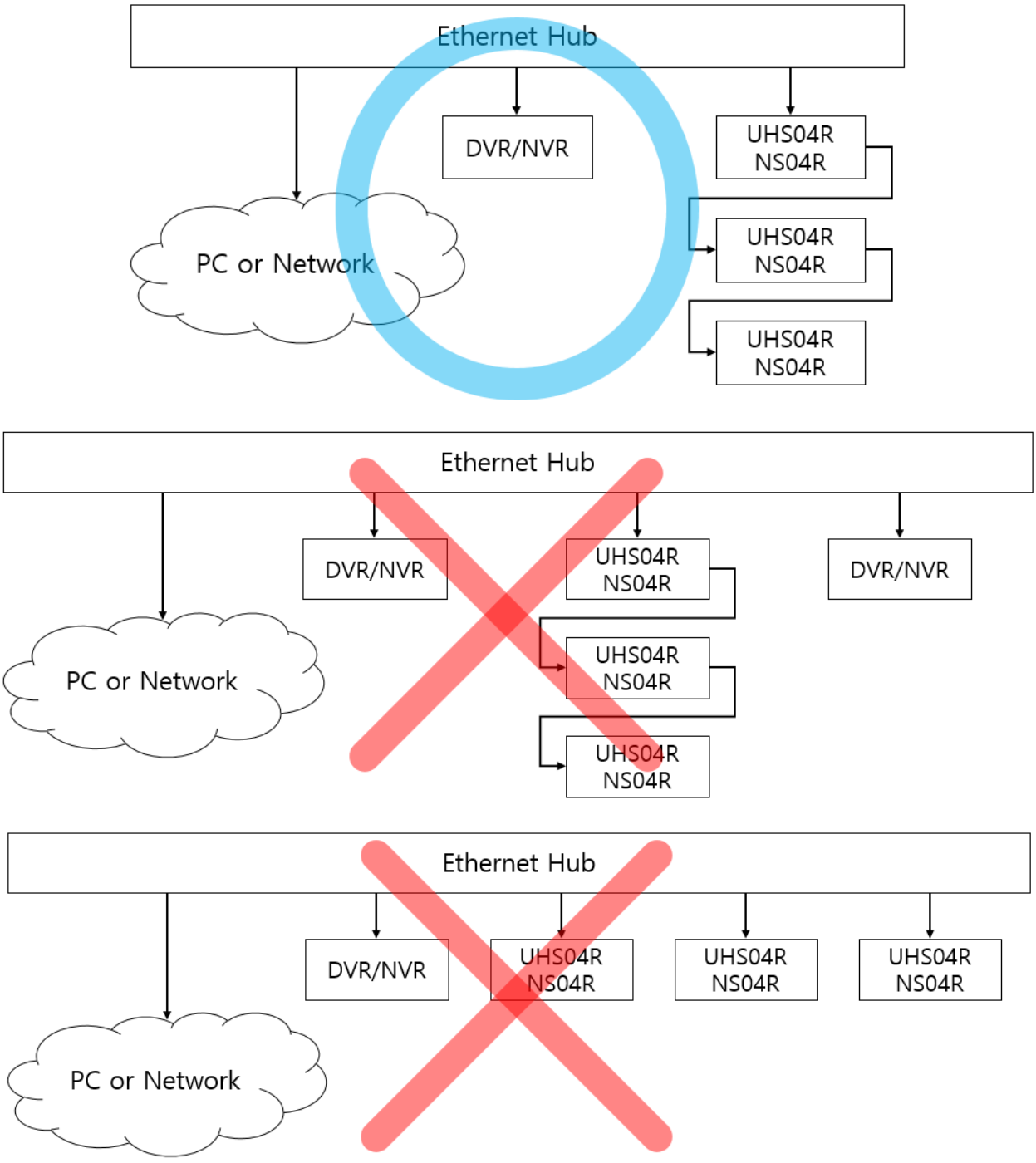
1) Network cable used for connection with DVR/NVR must be Gigabit Ethernet Cable (Category-6). Otherwise read/write performance are declined so in case of data usage is full, some images could not be recorded properly.
2) Hub must be Gigabit HUB.
3) The max data size from single unit of NS04R is read/write 100Mbps repectively.
4) The max data size from single unit of UHS04R is read/write 320Mbps repectively.
5) Please discuss with network manager before connection over network.
6) It could take around 1 min till NS04R/UHS04R and DVR/NVR are connected after power on.
7) DVR/NVR supports connection with NS04R/UHS04R having same group ID with DVR/NVR
8) Please use firmware v10.0 or above of DVR/NVR to use UHS04R with DVR/NVR.
9) It is highly recommended to user 1 or more internal HDD when using UHS04R's RAID. It can protect the missing of recording data during auto rebuilding of UHS04R's RAID.
10) 4 front LEDs will be ON in order then all 4 x LEDs are ON (or OFF, blinking) at the same time. After that HDD's list of NS04R/UHS04R can be verified in DVR/NVR's Disk Manager.
11) NS04R connection to DVR using single port requires DVR's firmware over v7.8, NS04R over v2.0. This feature is not supported under DVR's firmware v7.8, NS04R v2.0.
12) NS04R connection via single port feature could be various based on DVR model so please contact manufacturer's technical center or local dealer for more inquiries.

Recommended network configuration

(1) In case of NS04R/UHS04R is being used, we recommend customized HUB (or switch) used only for DVR/NVR and NS04R/UHS04R's connection. High bandwidth is required for communication between DVR/NVR and NS04R/UHS04R so to secure stable operation it will be good to separate connection from normal network.

(2) In case of multi DVR/NVR's connection to single DVR/NVR, rest of NS04R/UHS04R is recommended to be connected in Cascade method to NS04R/UHS04R initially connected to DVR/NVR.

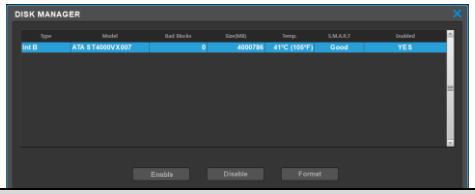
(3) NS04R/UHS04R supports RAID function. Even if DVR/NVR does not support RAID function, user can use RAID function for NS04R/UHS04R's HDDs.



Disk manager

menu → system → disk → disk manager

This is menu for the management of internal or external HDD.
It displays HDD model, bad block, size, temperature, S.M.A.R.T information, and whether the HDD is enabled or not.



name	Function description
Type	Displays the location and types of a disk. Int A (internal A HDD), Int B (internal B HDD), Int C (internal C HDD), Int D (internal D HDD), Int E (internal E HDD), Int F (internal F HDD),eSATA (external HDD), USB
Model	Displays HDD model.
BAD block	Highlights the HDD with BAD block. 0 is shown when there is none. For HDDs not in use, no bad block is displayed.
Temperature	Displays the HDD temperature in Celsius and Fahrenheit.
Size	HDD size will be in MB.
S.M.A.R.T	Displays if HDD can be used or not. - Good: normal - BAD: abnormal (HDD needs to be replace.)
Enable	Displays if HDD is in use or not.
	Yes : can be used / No : can't be used

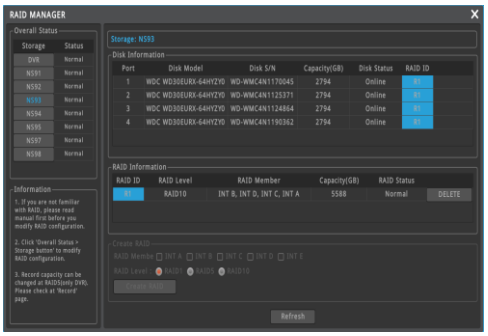
Enable YES
- select HDD in HDD NO mode and click [enable] button.
- A HDD which is used for DVR/NVR does not need additional format. New HDD should be formatted by DVR/NVR.

Enable NO
- select HDD in HDD YES mode and click [disable] button.

Format
- can only run when enabled and click [format] after selecting HDD that needs to be formatted.

RAID manager

menu → system → disk → RAID manager



This is the menu that manages RAID of internal HDD and HDD installed in NS04R/UHS04R.

<Notice>
RAID function can be used if the model supporting NS04R/UHS04R is connected to NS04R/UHS04R or the model supports RAID.

Steps to configure RAID

1) Select "NO" to all HDD activate in "Disk Manager"
2) Select device of creating "RAID (DVR/NVR/NS04R/UHS04R) in RAID Manager"
3) Select RAID Level (1/5/10) after selecting RAID Members.
4) Create RAID by clicking "Create RAID" then all selected HDDs will operate in one "RAID Disk"
5) If you activate "RAID Disk" in Disk Manager" it will be sued as storage of DVR/NVR"

name	function description
Raid Member	Select disks that need to be in Raid.
Raid Level	Select Raid Level 1, Level 5, Level 10.
Create Raid	Create Raid with selected Raid Member and Raid Level.
Raid ID	Displays Raid ID.
Disk Status	Online: HDD is connected, Offline: HDD is not connected.

What is RAID?

- ✓ RAID (Redundant Array Independent Disk) can store the data using the pre allocated parity territory if there is an error in hard disk.
- ✓ Supports RAID 1, 5, 10 and auto restore function when replacing a defective hard disk.

Number of hard disks and RAID construction methods.

- ✓ Depending on the # of hard disks installed in DVR/NVR, availability of RAID level will differ.
- ✓ Refer to the below table for supported RAID level.

HDD #	Possible Level	Actual Recording capacity compared with total HDD capacity
2	RAID 1	50%
3	RAID 5	66%
4	RAID 10	50%
5	RAID 5	80%

* INT F cannot be used as RAID.

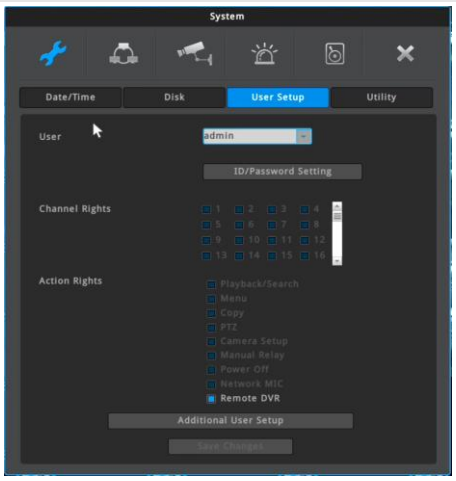
How to deal with a problem occurred?

- ✓ If a problem was occurred during RAID operation, RAID manager will appear, and the faulty HDD state will be changed to Offline or Bad from Online.
- ✓ In this case, please turn off DVR/NVR and replace the faulty HDD with same capacitor's new HDD. If you turn on the DVR/NVR, DVR/NVR will start rebuilding automatically. Once rebuilding was started, it will keep rebuilding at background even if you exit the menu. Please note that completion of proper rebuilding can ensure the reliability of RAID system.
- ✓ Please be careful not to replace the normal operation HDD. If you replace the normal operation HDD, you could lost the data. Be sure to replace the faulty HDD only.

User settings

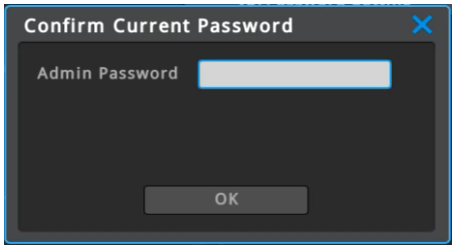
menu → system → user settings

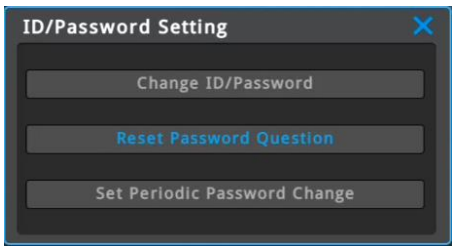
DVR/NVR users will either be manager or user. Managers can use all functions of DVR/NVR without limitation and can set up user settings. Up to 10 users can be registered and each user can only use functions for which they've been given access to.



Confirm Current Password

After entering the current password, you can change ID/password, password initialization questions and setting for periodic password change.

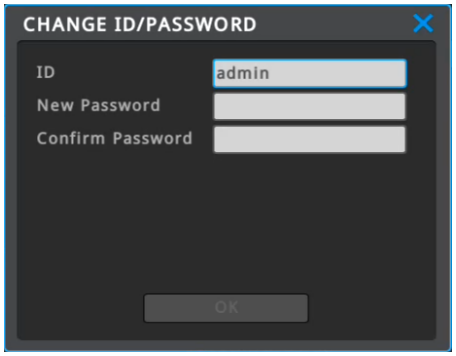




Change ID/Password

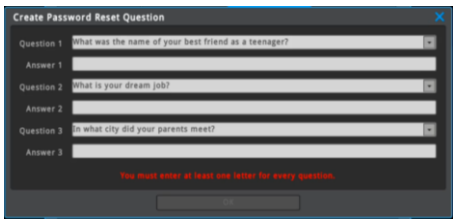
For User 1~10, max 20 and 5~15 characters are allowed for ID and Password.

<Note>
Default manager Password is "12345" and for user 1 ~ 10, password will take a pattern of "11111" for user 1, "22222" for user 2 and so on. So user 10 will have a password of "00000".



Password Reset Question

This is a menu for configuring questions and answers to reset your password.
Select 3 questions and enter your answers, and press 'OK' to exit.
If you forgot your password, you can enter your new password by answering the 'Password reset question' on the login screen.
If you do not set the "Password reset question", the user cannot reset the password. To reset the password, you must contact the manufacturer or the place of purchase.



Periodic Password Changes

User should change the password within set period.

Channel Rights

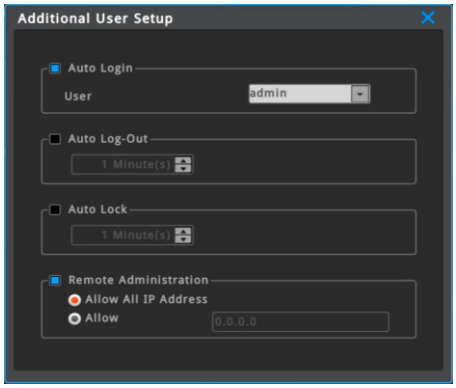
A manager has an access to every channel.
A manager can give access to channels to each user.

Action Rights

"Admin" has the rights to all the functions.
The action rights to each function (Playback/Search, Menu, Copy, PTZ, Camera setup, Manual Relay, Power off, Network MIC, Remote DVR) can be given by each user.

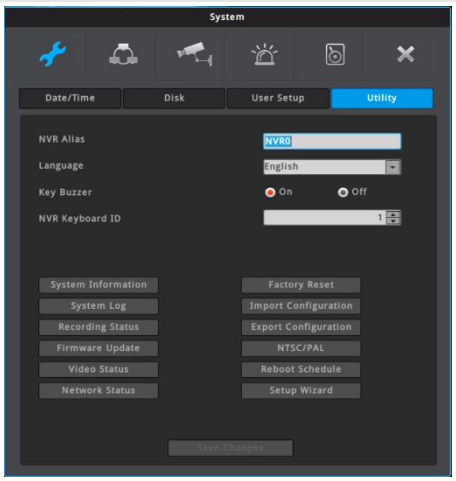
Additional User Setup

- Auto Login On: Select a user that can be automatically logged in when booting.
- Auto Login Off: Login popup will show up when booting. Video can be monitored after login.
- Auto Logout On: If there is no control of DVR/NVR during the selected interval, DVR/NVR will be automatically logged out.
- Auto Logout Off: Auto Logout will not work
- Auto Lock On : Auto lock features is on if there's no operation during time set by user.
- Auto Lock Off : It doesn't use Auto lock feature.
- Remote Administration: You can specify the IP address that can access DVR/NVR remotely.



Utility

menu → system → utility



Utility sets up DVR/NVR alias, remote control ID, and language.

DVR/NVR alias
Set the DVR/NVR alias when connected to network.

Language
Select a language for a system.

Key buzzer
Button sound from remote controller
can be turned on or off.

DVR/NVR keyboard ID
This menu sets the address of keyboard when using all functions of DVR/NVR by keyboard. Default value is "1". If user wants to control various DVR/NVR by one keyboard, its address should have different value. If designated address is configured the same as keyboard, user can control DVR/NVR function.

Remote control ID
When operating more than 1 DVR/NVR, it is possible to manage many DVR/NVR with one remote control by giving different ID to each and every DVR/NVR. A remote control can have maximum of 255 IDs and if users want to use every ID, then select ALL.
Select and control DVR/NVRs that have different ID with one remote control.

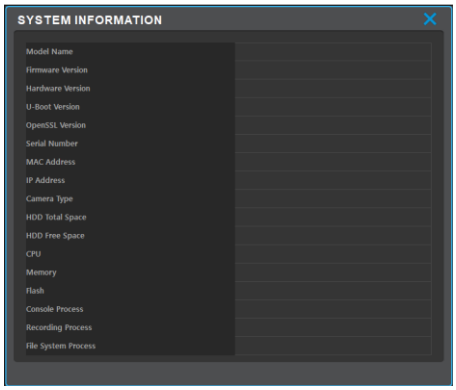
Selecting remote control ID

1) Point a remote control at DVR/NVR and press ID on the remote control.
2) Press ID on the remote control shown on the screen of DVR/NVR.
3) Press again ID on the remote control to complete the selection.

Ex) How to control a DVR/NVR (ID 1) by remote controller

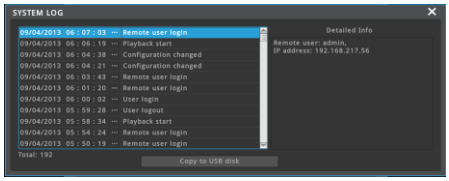
Point the remote controller toward DVR/NVR > press ID button > Press 1 button > Press ID button again.

System Information



It displays DVR/NVR's system information.
System information includes model name, firmware version, hardware version, U-boot version, OpenSSL version, serial number, MAC address, IP address, camera type, Total space of HDD, Remaining space of HDD, CPU, memory, flash, network, console process, recording process, file system process.

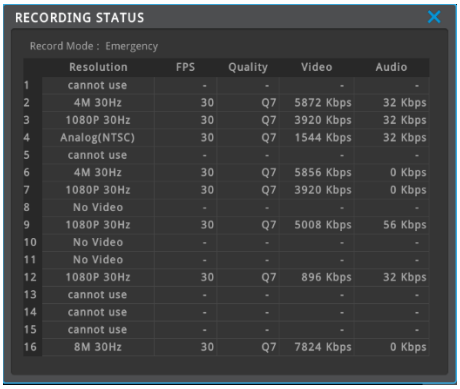
System log



System log shows the log list of system booting, user login, Setting changes. User can scroll the list using mouse scroll button.

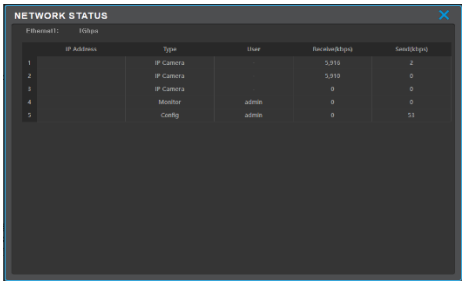
Recording status

Displays DVR/NVR recording status.



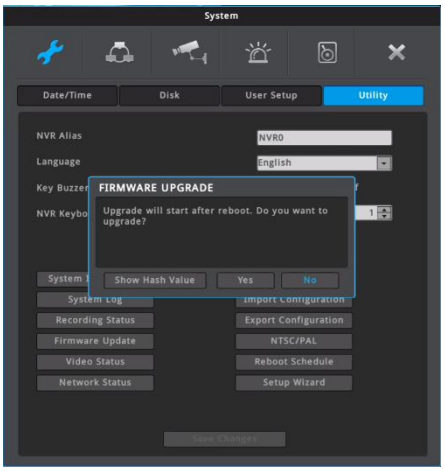
Network Status

Shows the network connection status of the DVR/NVR.
It displays the IP address, device type, connected user, received packet (kbps), and send packet (kbps) of clients connected to the network.



Firmware upgrade

Can update firmware by USB Memory stick



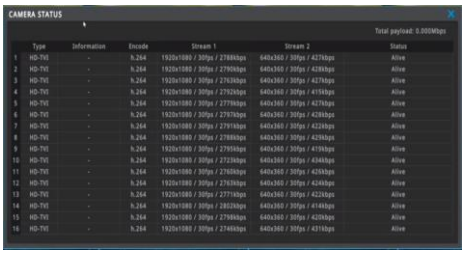
Steps for USB upgrade

1) Put firmware file into USB memory and insert the USB memory into DVR/NVR's USB port
2) Select "Firmware upgrade" button
3) Select "Yes" to the popup "Upgrade firmware from USB disk?"
4) DVR/NVR will reboot automatically.
5) Firmware upgrade completed

<Note>
Firmware upgrade window runs automatically if higher version of firmware than that in use are recognized from USB memory.
Please use USB memory formatted in FAT32 or NTFS.

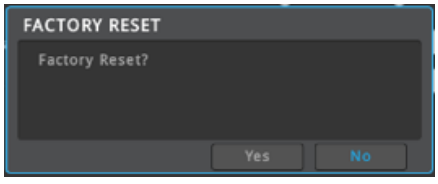
Video Status

It shows status of record per channels of DVR/NVR.
You can check the encoding format, stream1, 2 resolution, FPS, bitrate and other information.
.



Factory reset

Change all set up values to default values.
Only a manager can use this function.



<Note>

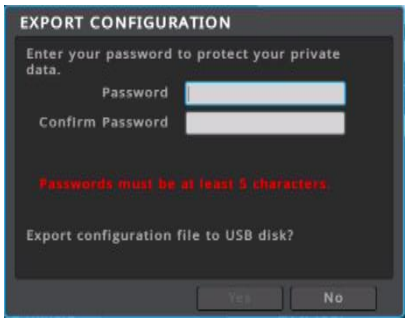
Only 'admin' account can use this function.

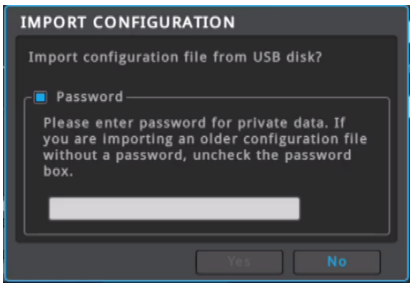
Normal 'user' account cannot do factory reset.

For factory default settings, please refer 'Product Manual'.

Configuration Import/Export

Export – Saves Configuration data in DVR/NVR to USB
Import – Apply exported Configuration data to relevant DVR/NVR or another DVR/NVR.





NTSC/PAL

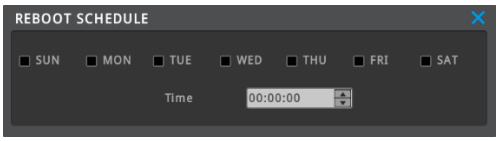
Setup NTSC/PAL mode of the DVR/NVR.

- NTSC-DVR/NVR is running on NTSC(60/30Hz) fixed mode
- FAL-DVR/NVR is running on PAL(50/25Hz) fixed mode
- Auto-(only DVR) DVR can recognize input format of camera Then DVR/NVR is set NTSC or PAL mode automatically

<Note>
When Auto, NTSC/PAL mode will be determined according to the type of camera which is connected at lowest channel number. Please reboot to apply the changed setting.

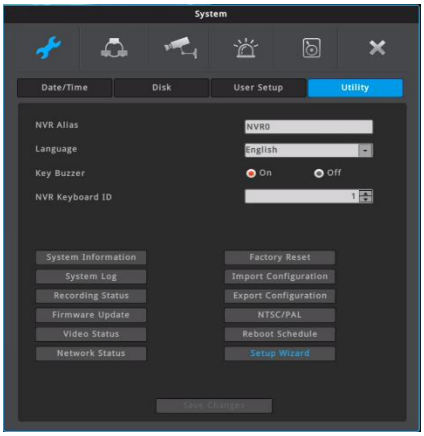
Reset Schedule

User selects the day and time to reboot DVR/NVR automatically.



Setup Wizard

Setup wizard runs automatically on DVR/NVR's initial boots up. It can be run through "Menu > System > Tool > Setup Wizard"



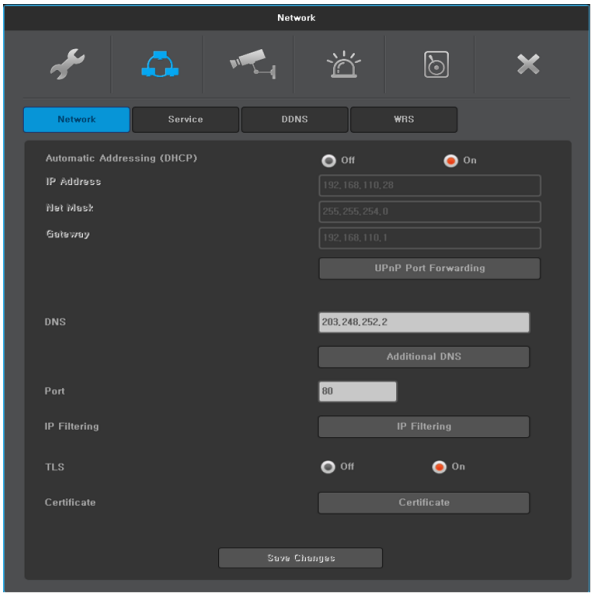
Network

Configure network info when NVR is connected to a network.

Network settings

Menu → Network → Network → Ethernet

Ethernet
Select 'Ethernet' when the DVR/NVR is connected with dedicated line, cable modem or LAN environment.



Automatic Addressing (DHCP)
1) Off: If DVR/NVR's network does not have DHCP server, please select 'Off'. User should manually enter a specific IP address which is given by network administrator.
2) On: If DVR/NVR's network has DHCP server, user can select 'On'. If DHCP is enabled, DHCP server will assign NVR's IP address automatically.

IP Address
IP address is used for the communication between DVR/NVR and Control Center, and it is used for Webviewer to connect DVR/NVR. IP address should be assined by the network administrator. Also Netmask, Gateway addresses given fromt the network administrator should be properly configured. (When DHCP is enabled, this item will be disabled)

Net Mask
Net Mask defines the communication range of IP address. This information should be given from the network administrator. (When DHCP is enabled, this item will be disabled)

IP Address2
<Note> This menu is for NVR having LAN2 or PoE.

(LAN2) – for 64 CHANNEL NVR
64 CHANNEL NVR has two LAN ports, and IP address2 (LAN2) is IP address for 2nd LAN (LAN2) port. IP Address2 (LAN2) must be set different subnet from NVR's IP Address and should be assigned by the network administrator. Also, DHCP can not be used, and external network which requires Gateway can not be connected through LAN2.

(PoE) – for 4/8/36 CHANNEL PoE NVR
IP Address2 (PoE) is IP address for communicating with IP cameras, PC, etc. which are connected to PoE port. IP Address2 (PoE) must be set different subnet from NVR's IP Address. All IP addresses of IP cameras connected to PoE port must be set same subnet with IP Address2 (PoE). Also, DHCP can not be used, and external network which requires Gateway can not be connected through PoE ports.

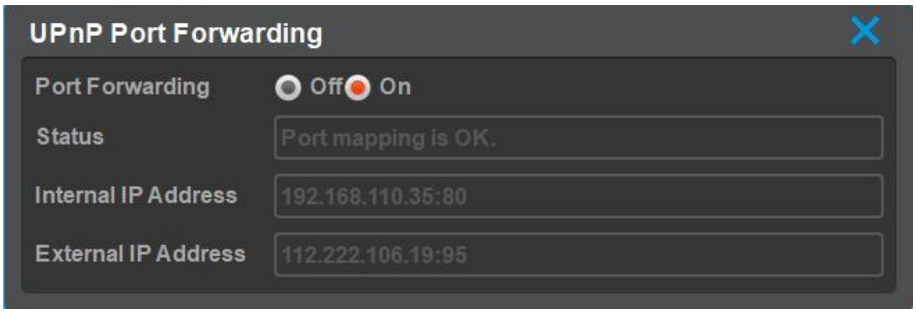
Net Mask2
Net Mask2 is for IP Address2. Net Mask2 defines the communication range of IP address.
This information should be given from the network administrator.

<Note>
This menu is for NVR having LAN2 or PoE.
If IP camera is connected to PoE port, user should do as follows to connect the webpage of that IP camera.

1. Connect LAN cable of PC or notebook PC with one of NVR's PoE port.
2. Set the IP address of PC (or notebook PC). IP address should be in the same subnet with IP Address2 (PoE) of NVR. (ex: If IP Address2 (PoE) is 192.168.110.5 and Net Mask2 is 255.255.255.0, then IP address of PC (or notebook PC) should be set 192.168.110.xxx and subnet mask should be 255.255.255.0.)
3. Connect to the webpage of IP camera connected to NVR's PoE port using PC's web browser.

Gateway
DVR/NVR should have proper Gateway address to communicate with external network. This information should be given from the network administrator. (When DHCP is enabled, this item will be disabled)
Gateway setting is for DVR/NVR's LAN (or LAN1 of 64 CHANNEL NVR).

UPnP Port Forwarding
When using router supporting UpnP, DVR/NVRs which are connected to that router can be accessed through external internet by using automatic port forwarding feature of UPnP.



Set [Port Forwading] as ON, then [Status] will show the status of port forwarding. If 'Port mapping is OK', user can access DVR/NVR through external internet by using [External IP Address].
(UPnP of router must be ON. Please refer the router's manual to set UPnP.)

DNS
DVR/NVR should have proper DNS address to use various network services such as WRS, NTP, e-mail and so on. Also, additional DNS can be configured (DNS2, DNS3). Please ask this information to network administrator.

Port
Register port # in NVR and use it to connect to control center or webviewer.

<Notice>
Default port is 80 and be careful in entering the port # when used with PPPoE modem and router. To use port forwarding & UPnP port forwarding, network port change (e.g. 8000) might be necessary. Please ask this information to network administrator.

Bandwidth limitation.
Bandwidth is to configure the maximum transmission speed. Its default value is unlimited and users don't have to set bandwidth value if there is no need to limit the network data size of DVR**.**

<Note>
This menu is for DVR. Please consult DVR manager if you want to modify bandwidth value.

Default Network Value(DVR)
DHCP: OFF
IP Address: 192.168.0.2
Subnet mask: 255.255.255.0
Gateway: 192.168.0.1

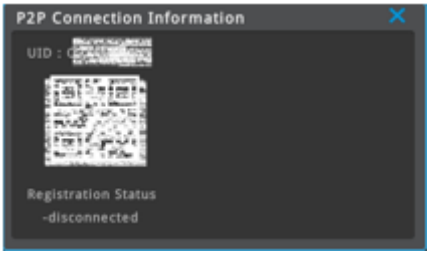
Default Network Value(NVR)

DHCP: OFF
IP Address: 192.168.0.5
Subnet mask: 255.255.255.0
IP Address 2: 10.1.1.1
Subnet mask 2: 255.255.255.0
Gateway: 192.168.0.1

P2P *

Input UID of P2P connection information in mobile application (Android or i-phone) or scan QR code. Remote network connection can be made easily without further configuration.

* Adopted differently based on product specification



IP filtering

Maximum 10 ranges of IP addresses can be set to allow or deny remote network connection

Allow
Allow 192.168.0.0 ~ 192.168.0.255 > another IP address that does not in the range will not be allowed for remote network connection

Deny
Deny 192.168.0.0 ~ 192.168.0.255 > another IP address that does not in the range will be allowed for remote network connection.

<Notice>
IP filtering limits remote connections to DVR/NVR Please be aware of what you are doing before you change this page

TLS

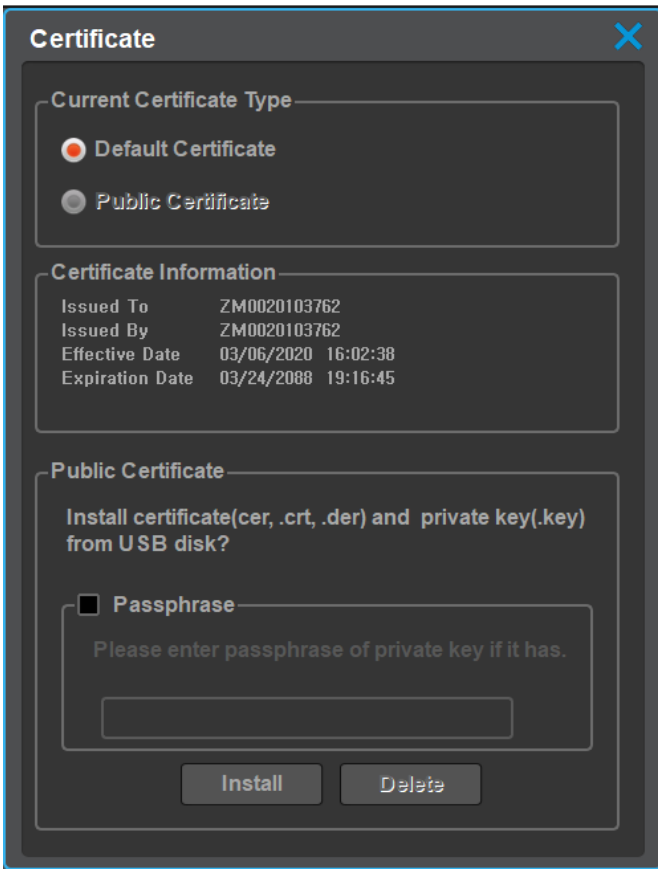
This stands for Transport Layer Security, which encrypts data for sending and receiving over the internet.

<Note>
DVR/NVR FW version 10.4 or higher
If TLS is 'Enabled', WebViewer access should be entered as https://IP address:Port number.

<Note>
Even though TLS is selected as 'enabled', it is not accessible from the old version of Control Center and WebViewer that does not support TLS.

Certificate

Shows certificate information, also provides the ability to generate a certificate and private keys.



Current Certificaite Type
Default Certificate
Public Certificate

Certificate Information
You can view certificate information such as issuance, effective date, and expiration date

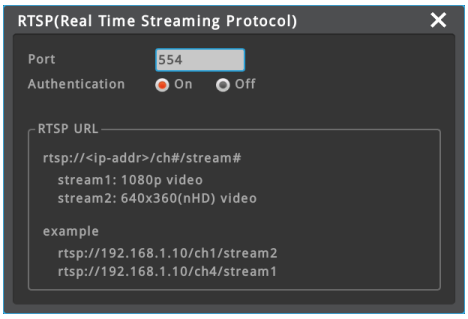
Public Certificate
You can create a certificate on a USB by typing the password.

Service

Menu → Network → Service

RTSP

It is short for Real Time streaming Protocol) and streams real time live image of DVR/NVR



Authentification On: Only authorized users can view RTSP video.
Authentification Off: Non-authorized users can view RTSP video.

Stream1: Main Stream (1st stream)
Stream2: Sub Stream (2nd stream)

In order to view channel 1 of DVR/NVR (Ex: 192.168.1.10), input "rtsp://192.168.1.10/ch1/stream1" on VLC player.

<Notice>

Use VLC player to view RTSP video on PC

Service streaming

User can select 'Service Channel' to provide multi-channel real-time monitoring on mobile application or 'Remote DVR' to control and monitor the DVR/NVR from remote location.

<Notice>
This UI is only appeared for models that support Service streaming.

Service Channel

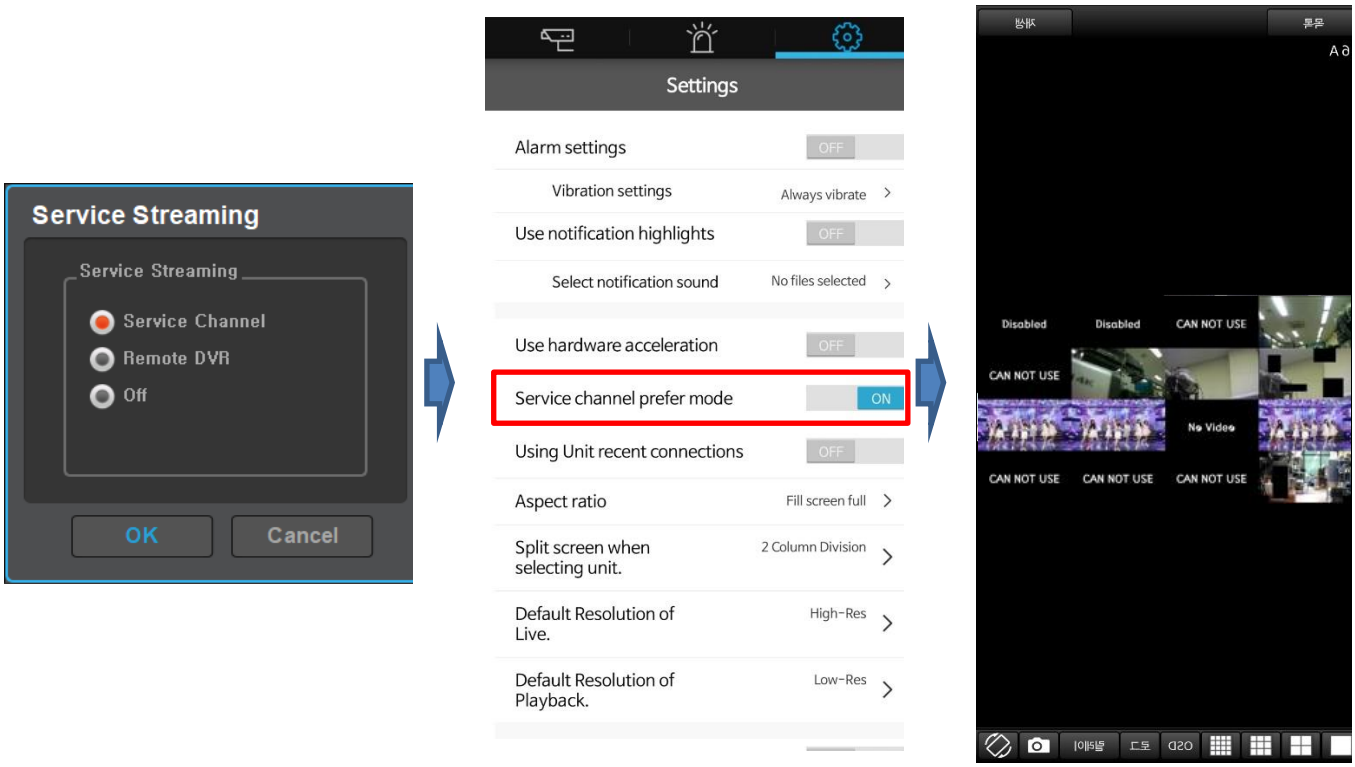
Each channel can be 30 fps (real-time monitoring) at mobile viewer even if multi division mode is selected. Please be sure that DVR is set to 'Service Channel' and mobile viewer is set to 'enabled' for service channel.

DVR's setting

1. Go to [Menu – Network – Service Streaming] and select 'Service Channel'
2. If Service Streaming setting is changed, reboot is required.

To view the service channel on mobile viewer

1. Download the mobile viewer from App Store or Play Store and install it on your smart phone.
2. Execute mobile viewer and register the unit (DVR).
3. Please enable the service channel on setting tab.
4. Touch the registered unit, then service channel will be displayed when multi-division.



To view the service channel on Control Center

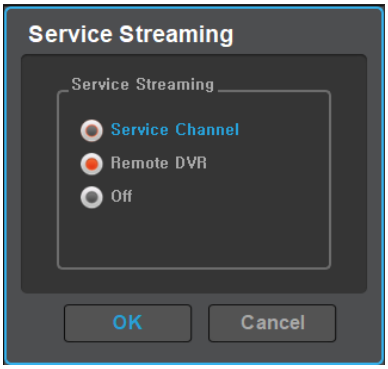
1. Register the unit on Control Center.
2. Open the unit's tree and select 'Service Channel', then you can view the service channel.

<Caution>

1. Please refer the product manual for name of mobile viewer.
2. Refer [Mobile Application] section to know the unit registration method.
3. Rebooting is required when the setting of service streaming is changed.
4. Service channel is supported from mobile viewer 4.0 or above.
5. Only mobile viewer can change the multi-division mode.
6. If multi users use the same service channel, multi-division mode might be changed by other user.
7. Only DVR support service channel (not NVR).

Remote DVR

User can control the DVR/NVR from remote location by using Remote DVR function which is similar to remote desktop of PC. Control Center SW is required. User can see DVR/NVR's main monitor output on PC (Control Center) and mouse control is possible.
Please follow below steps to use Remote DVR function.

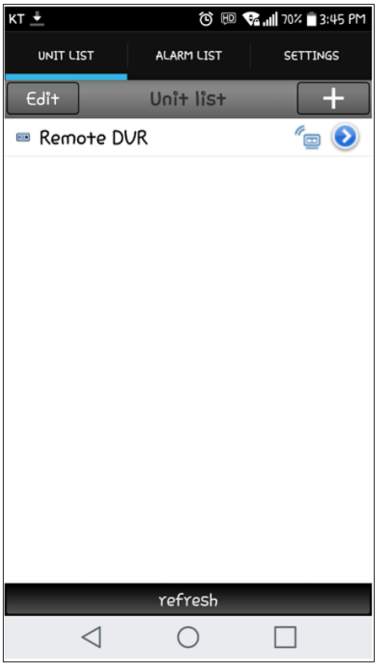


DVR/NVR's setting

1. Go to [Menu – Network – Service Streaming] and select 'Remote DVR'.
2. If Service Streaming setting is changed, reboot is required.

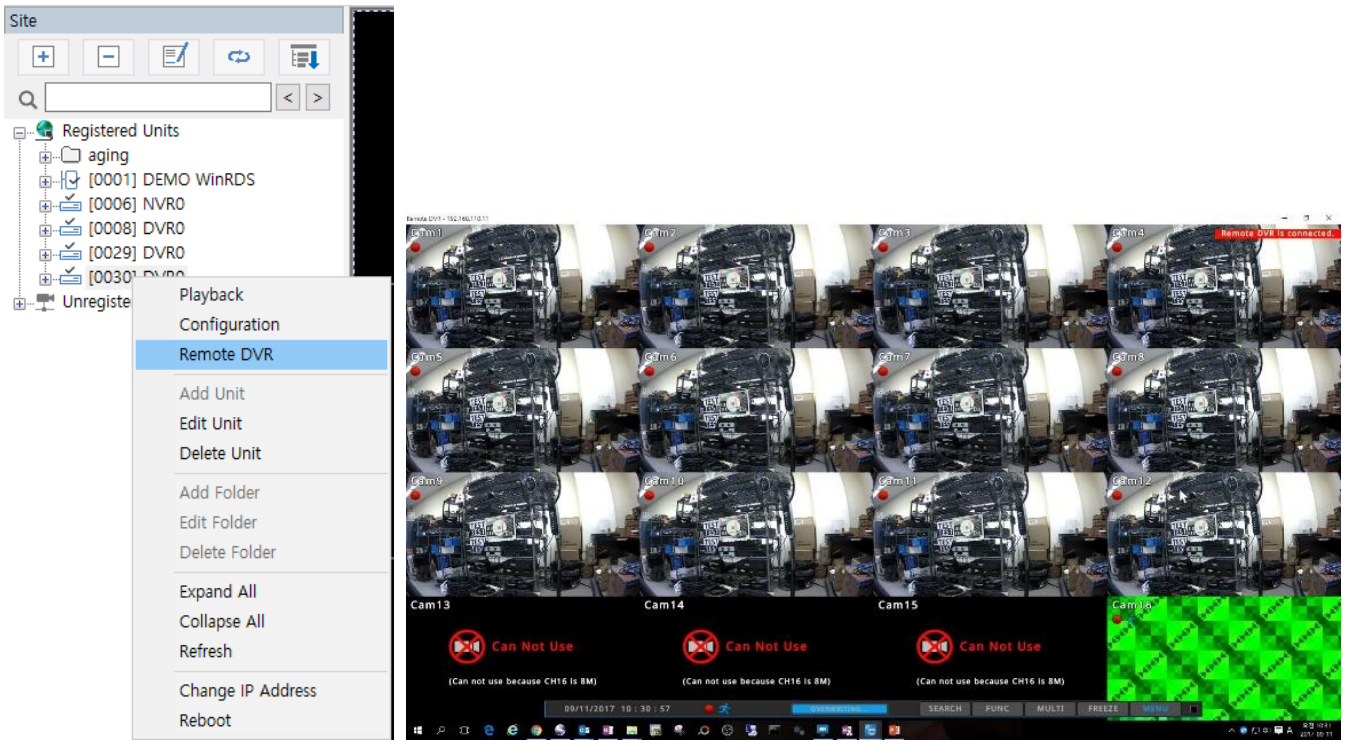
To control the Remote DVR on mobile viewer

1. Download the mobile viewer from App Store or Play Store and install it on your smart phone.
2. Execute mobile viewer and register the unit (DVR/NVR).
3. Touch icon of registered unit.
4. User can control DVR using Remote DVR window.



To control the Remote DVR on Control Center

1. Register the unit on Control Center.
2. Click the mouse right button on registered unit and select [Remote DVR].
3. User can control the DVR using Remote DVR function.



<Caution>

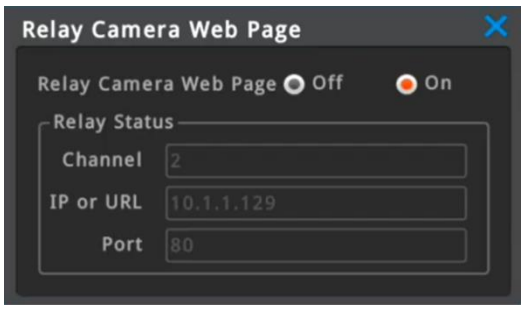
1. Service channel and Remote DVR cannot be used simultaneously. Only one feature can be selected.
2. To use Remote DVR, please use Control Center 6.6 or above.
3. Rebooting is required when the setting of service streaming is changed.
4. DVR/NVR's default service streaming value is Remote DVR.

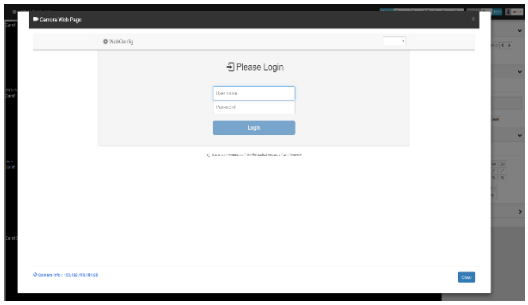
Relay Camera Web Page

User can connect the webpage of IP camera which is connected to LAN2 or PoE port as well as LAN1 by using 'relay camera web page' function. HTML5 Webviewer supports this relay function.

Setting and usage

1. Click [Menu-Nework-Relay Camera Web Page]. If 'On', 'Open Camera Page' in HTML5 Webviewer is activated and user can use relay function.
2. At the PC, open web browser such as chrome which supports HTML5 and connect to NVR's IP address to open HTML5 webviewer.
3. Select the camera channel user wants to connect to camera's web page.
4. Clicking "Open Camera Page" at the top of the web browser will pop up the IP camera's web page in the HTML5 webviewer.
5. While the web page of the camera is kept popped up in HTML5 webviewer, user can access camera's web page through NVR's IP address by using other web browser such as Internet Explorer.
   ※ Caution: While the web page of the camera is kept popped up in HTML5 webviewer, other user can not access NVR's webviewer because NVR's IP address is mapped to camera's web page.





Relay Status

Shows the currently relayed IP camera's web page status

- Channel : Shows the channel of relayed IP camera.
- IP or URL : Shows the real IP address or URL of the IP camera..
- Port : Shows the port number of the IP camera.

<Note>

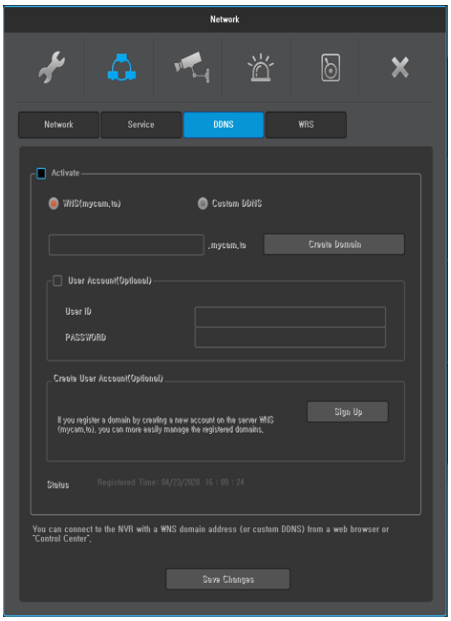
1. This function is available for FW 10.2 or above and only for models having LAN2 or PoE port.
2. HTML5 webviewer supports 'relay camera web page' function.
3. Refer "HTML5 Webviewer" chapter for web browsers supporting HTML5.

DDNS

Menu → Network → DDNS

User can give a domain name to a DVR/NVR by using DDNS service, WNS.

DDNS setting at a DVR/NVR

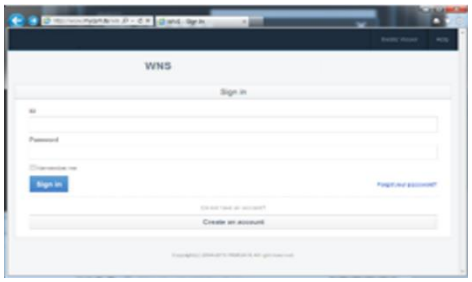


DDNS setting at a DVR/NVR

1. Change DVR/NVR's port which is not in use (e.g. 8000)
2. Configure router's port forwarding setting. (i.e. port 8000 should be connected to DVR/NVR)
3. Activate DDNS(WNS) at DVR/NVR menu
4. Enter domain to use and run "domain change" (Ex: test)
5. If the entered domain name is available, DVR/NVR shows "Success". If the domain name is occupied by another user, DVR/NVR shows "Unavailable domain".
6. If you can connect a DVR/NVR by using assigned domain name, it means DDNS setting is properly completed.

(e.g. http://test.mycam.to:8000)

DDNS setting at a PC



DDNS setting at a PC

1. Change DVR/NVR's port which is not in use (e.g. 8000)
2. Configure router's port forwarding setting. (i.e. port 8000 should be connected to DVR/NVR)
3. Activate DDNS(WNS) at DVR/NVR menu
4. Enter http://www.mycam.to into browser and connect to DDNS site.
5. Login by using DDNS account
   (If you do not have DDNS account, you can create it by "Create an account")
6. Click "+Add" button to add a domain.
7. Enter a domain (e.g. test) then click "Check Name" to check the availability.
8. If the entered domain name is available, it shows "Entered domain is available for use." If the domain name is occupied by another user, it shows "Someone is already using this domain. Please try another."
9. Enter DVR/NVR's serial number to "Serial Number" input.
10. Enter necessary information into "Description" and click "Add" button.
11. If you can connect a DVR/NVR by using assigned domain name, it means DDNS setting is properly completed.

(e.g. http://test.mycam.to:8000)

Custom DDNS

Also, users can use public DDNS sites such as www.dyndns.org or www.no-ip.org. Users should refer to those sites directly to get the registration process.

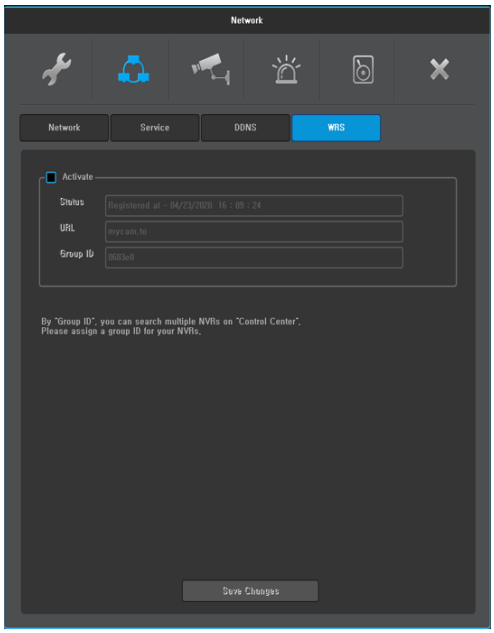
<Note>

Connection will be enabled in about 10 minutes after domain creates.

WRS

Menu → Network → WRS

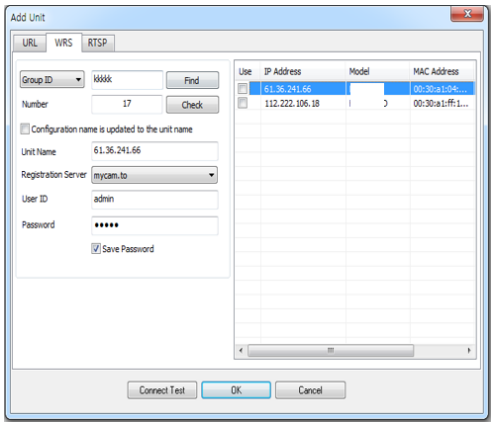
If a DVR/NVR is connected to cable modem or xDSL modem, ISP (Internet Service Provider) may change DVR/NVR's IP address unexpectedly. So, the user cannot get the IP address of the DVR/NVR.



If a user registers a DVR/NVR to WRS server, the user can easily connect the DVR/NVR by using Control Center.

WRS Setting

1. Change DVR/NVR's port which is not in use (e.g. 8000)
2. Configure router's port forwarding setting. (i.e. port 8000 should be connected to DVR/NVR)
3. Enable WRS service at DVR/NVR menu.
4. Enter a Group name (e.g. test)
5. Execute Control Center Monitor program, and execute "Add Unit".
6. Select "Server [WRS] Search" at this menu.
7. Enter the Group name (e.g. test) into Group name input box, and execute Search.
8. Find your DVR/NVR by checking MAC address or Serial number, and enter DVR/NVR's account information.
9. You could find the added unit at the tree menu and if you click the icon, you can get video from the DVR/NVR.



Group

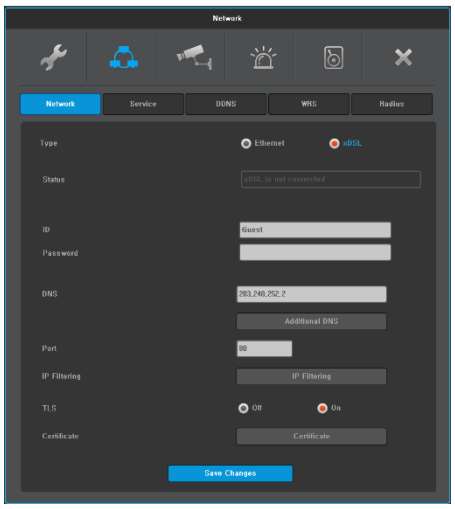
Group name must be a specific name.
Even if DVR/NVR has dynamic IP address, Control Center can easily connect the DVR/NVR by using the Group name.

Status

It shows WRS registration status of the DVR/NVR.

xDSL

menu → network → network → xDSL



DVR/NVR is connected to xDSL line and use PPPoE type, please change type by xDSL and configure user ID and Password. User ID and Password should be same as xDSL.

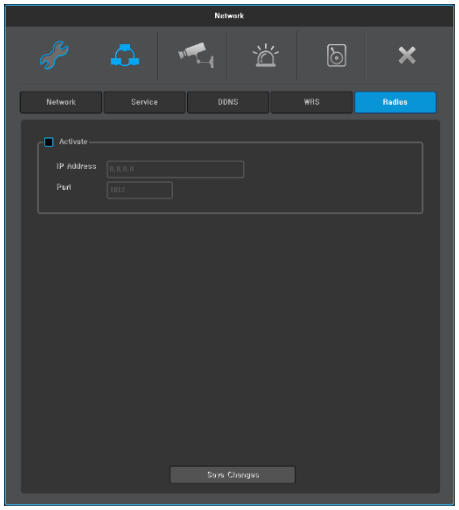
User ID/Password
Configure user ID and Password when DVR/NVR is connected to xDSL.

Status
It shows connection status of DVR/NVR.

<Warning>
*This UI is only appeared for models that support xDSL.

Radius

menu → network → RADIUS



Radius function manages many DVR/NVR accounts with one account using Radius server.

Radius menu configures status, IP address, and port. Status should be configured as enable in order to use Radius function. Port by default can use 1812 and if server assigns a port, then it needs to be configured.

'User ID', Password' and 'Radius Shared Key' are needed from administrator of Radius server after forwarding DVR/NVR account information to him.
Received 'ID/Password/Shared key' are used to register DVR/NVR at Control Center.

<Warning>
*This UI is only appeared for models that support Radius
*Please consult a server manager to use Radius function.

Device Settings

In Device setup, user can configure camera, monitor, audio, text, serial which are connected to DVR/NVR.

Camera

menu → device → camera (DVR)

Conditions on camera connected to DVR can be set.

Each channel's type (video format), config, privacy, name can be configured.

<Note>
To disable channel for live/recording, please uncheck the left check box.
Please refer 'Product Manual' for supported video formats by models.

Type	Description
BNC-Auto	Automatically detect the format of video input. If input video is unstable, sometimes auto detection can be malfunction. At that case, user can select the type of video manually.
IP	IP camera (Onvif / WESP) is supported. Also, another DVR's channel can be treated as an IP camera. Please click 'Config' button to configure IP camera's setting.
HD-SDI	Video type is fixed to HD-SDI. Only HD-SDI video can be displayed.
EX-SDI	Video type is fixed to EX-SDI 1.0. Only EX-SDI 1.0 video can be displayed.
EX-SDI 2.0	Video type is fixed to EX-SDI 2.0. Only EX-SDI 2.0 video can be displayed.
EX-SDI 4M	Video type is fixed to EX-SDI 4M. Only EX-SDI 4M video can be displayed.
EX-SDI 8M	Video type is fixed to EX-SDI 8M. Only EX-SDI 8M video can be displayed.
SD(960H)	Video type is fixed to analog SD. Only analog SD (including 960H) video can be displayed.
AHD 2M	Video type is fixed to AHD 2M. Only AHD 2M video can be displayed.
AHD 4M	Video type is fixed to AHD 4M. Only AHD 4M video can be displayed.
TVI 2M	Video type is fixed to TVI 2M. Only TVI 2M video can be displayed.
TVI 4M	Video type is fixed to TVI 4M. Only TVI 4M video can be displayed.
TDM	The channels set as TDM on TDM setting, TDM video can be displayed.

<Caution>
1. Only universal models support analog SD (including 960H), AHD 2M, AHD 4M and TVI 2M, TVI 4M.
2. If the type is not BNC-Auto, only selected type of video can be displayed.
   Ex 1) If type is fixed to IP, only IP camera video can be displayed even if that channel's BNC is connected to another camera.
   Ex 2) If type is fixed to HD-SDI and EX-SDI camera is connected to that channel, video will not be displayed.
3. Please refer the product manual or rear panel silk for channel restriction according to video format,

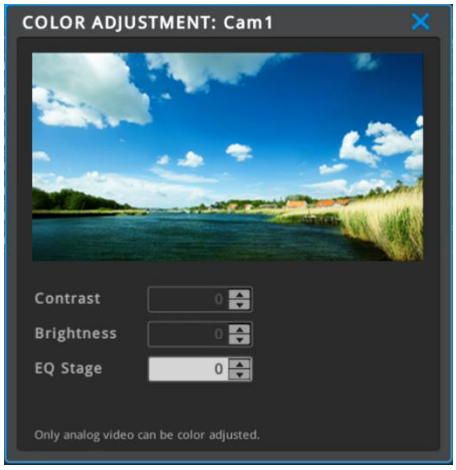
Name

Channel name which is shown in DVR/NVR monitor, Control Center and mobile app can be set.

Config

BNC

Contrast, Brightness, EQ Stage of connected camera can be adjustable when the type is BNC camera.



<Note>

EQ(Equalizer) Stage

- For AHD or TVI camera, if the video is 'no video' status due to the long transmission distance, user can manually change the EQ level.
- Select video type of camera (excluding BNC-Auto) and adjust EQ stage. 0 ~ 10 are available.

EX) In case of AHD 2M Camera:
Select AHD 2M at [Menu → Device → Camera → Type], then video will be shown but the quality may not be good. Click [Config] and change EQ stage to adjust the video.

<Caution>

1. Color adjustment function is applied to analog video (analog SD including 960H, AHD 2M/4M, TVI 2M/4M) and only universal DVRs support this function.
2. If BNC is selected, IP camera can't be displayed even if IP camera is connected.

IP Configuration

IP camera or other DVR/NVR's channel can be configured when the type is 'IP'..

To register IP camera

1. Select Protocol, Onvif or WESP.
2. Click "Search Local IP Camera" button. It will show the list of IP camera and DVR/NVR connected in the same network.
3. Click the searched unit and click the "Add" button. Or user can configure the IP address, port number, user ID and password manually.
4. Click the "Get Camera Information" button to get the possible settings of IP camera.
   - If failed, please check ID and password.
5. Set "Change Stream Config". When 'Off', NVR do not change any configuration of IP camera.

   When 'On', NVR can configure resolutions, encoding Type, fps and bps of IP camera. (fps and bps can be configured at recording program page.)

<Caution> When 'Off', video can not be shown if the configuration of IP camera is not suitable for NVR.

6. When "Change Stream Config" is 'On', select the resolutions of main stream and 2nd stream.
7. Click 'Apply' button to apply the settings.
8. Choose whether to enable audio transmission. If "Off" is selected, the registered IP camera will not transmit audio. When "On" is selected, the audio input to the IP camera is sent with the video.

<Note> Audio may not be available according to the model of IP camera.
If audio transmission is set as "On" for IP camera which does not support audio function, it may cause malfunctions or you could not get video.

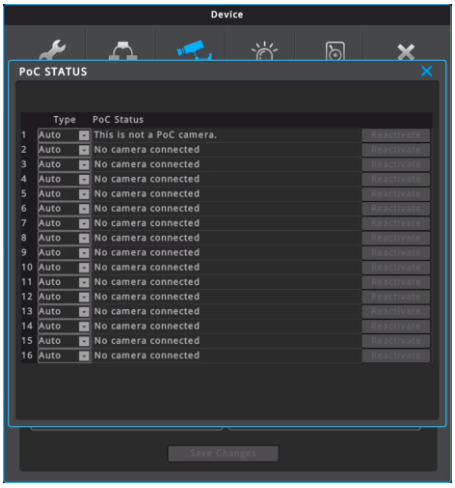
9. Select the authentication method.
10. Close the window and click "Save Changes" button.

* Click 'Clear' button to clear all setting information.

<Note>
1. IP camera registration
   1) IP camera supporting WESP: select WESP
   2) IP camera supporting Onvif: select Onvif
2. DVR/NVR's channel Registration
   1) Supporting FW
      (1) Lower than FW 8.2 – max 10 channels when no user is connected.
      (2) FW 8.2 and upper version – All channels of DVR/NVR
   2) Protocol must be WESP.
   3) Frame rate can be decreased by the number of connected users.
3. Authentication method
   1) Auto : Attempts to authenticate using Username Token method, if failed then it authenticates using HTTP Digest method again.
   2) Username Token : Attempts to authenticate using Username Token method.
   3) HTTP Digest : Attempts to authenticate using HTTP Digest method.

PoC Status

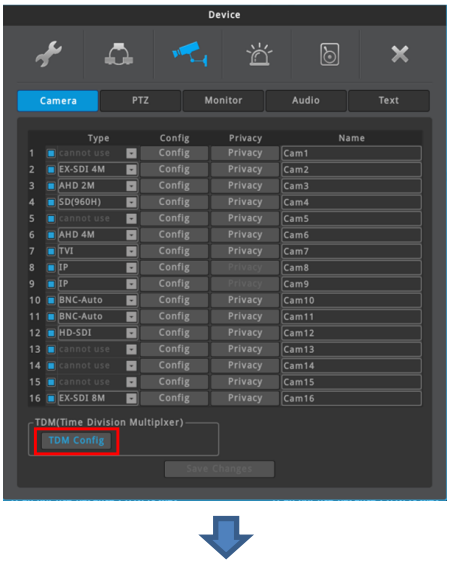
When PoC camera is connected, the power of the camera can be controlled in PoC status window.



1. It is ready to use when PoC adaptor is connected to DVR.
2. User can control camera power by setting Auto or Off on each channel.

TDM Connection

1. Click [TDM Config] button below at [Menu – Device – Camera] Menu.
2. Select channels to be used as TDM input and the number of channels of TDM.
3. After selecting and closing TDM configuration window, the result will be displayed on [Menu – Device – Camera] menu.
4. Click "Save Changes" button.
5. Connect TDM video to DVR's video input channel which is set to TDM.
6. TDM video is recognized as EX-SDI 2.0.



<Caution>
1. If the camera is connected to the channel occupied by TDM, TDM video will be shown.
2. The channel settings of the TDM MUX must be set in order from the number 1 to the actual number of video used.
3. The channel numbers of the TDM MUX and the channel

numbers of the DVR are mapped as shown below.

Ex1) If odd channels support TDM:

If DVR's ch5 is set as TDM and the number of TDM channels is set to 3, DVR's ch4 ~ ch6 are mapped with TDM MUX's ch1 ~ ch3.

Ex2) If even channels support TDM:

If DVR's ch8 is set as TDM and the number of TDM channels is set to 5, DVR's ch4 ~ ch8 are mapped with TDM MUX's ch1 ~ ch5.

Privacy

Each channel can have 4ea privacy mask zones (black quadrangle). Privacy masked zone is applied to Live/Record/Playback image, so the video in privacy masked zone will not be displayed.

Setting

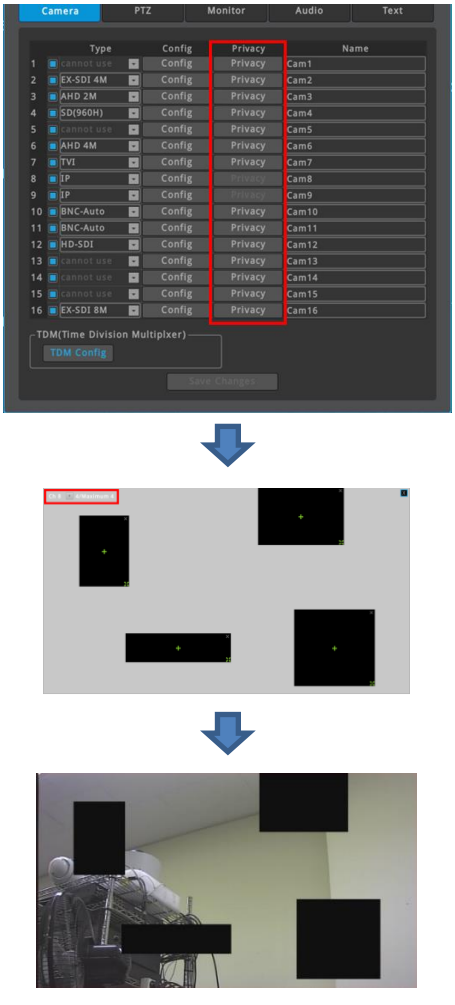
1. Go to [Menu – Device – Camera] and click the channel's [Privacy] button.
2. Click "+" to add privacy mask zone.
   - Mask moving: drag and drop the mark.
   - Resizing mask: drag and drop the mark.
3. Close the window by clicking "x" and click "Save Changes".

<Note>

Max 4ea privacy masks per channel are supported.

Privacy mask is not applied (disabled) to IP camera channel.

To use privacy mask, please set on IP camera's web page.



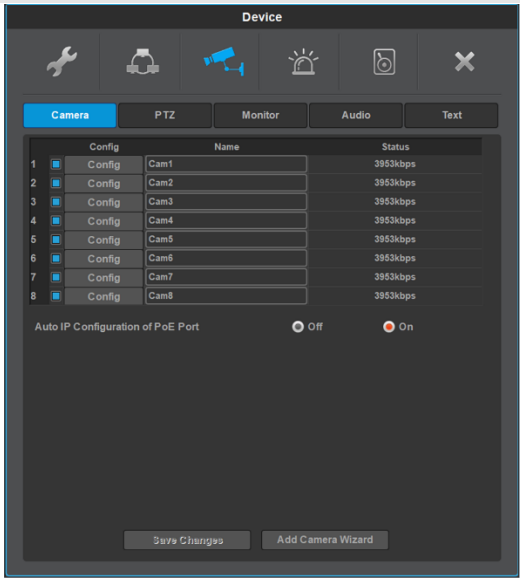
menu → device → camera (NVR)

Conditions on camera connected to NVR can be set.

Each channel's config and name can be configured.

<Note>
To disable channel for live/recording, please uncheck the left check box.
Unlike DVR, privacy and TDM can not be configured.

<Note>
1. Please use Category 6 or above for LAN cable.
2. If IP camera is connected to PoE port of NVR, please set the IP camera's IP address be in the same subnet with IP Address2(PoE) of NVR.
3. It is highly recommended that shield cable must be used for PoE port.



Auto IP Configuration of PoE Port

If NK series camera is connected on PoE port, user can use this function to automatically configure the IP address of IP camera.
If 'On, NK series camera's IP address is automatically configured with the same network band with [Network] → [IP Address 2 (PoE)].
For example, if NVR's IP address 2(PoE) is 10.1.1.1 and a camera is connected to PoE port 1, then the camera is assigned to channel 1 and the IP address will be 10.1.1.31. If a camera is connected to PoE port 2, then the camera is assigned to channel 2 and the IP address will be 10.1.1.32.

<Note>
If IP camera's user ID and password is not a default value, user ID and password should be entered at [Config] window before use this function.

Name

Channel name which is shown in NVR monitor, Control Center and mobile app can be set.

Config

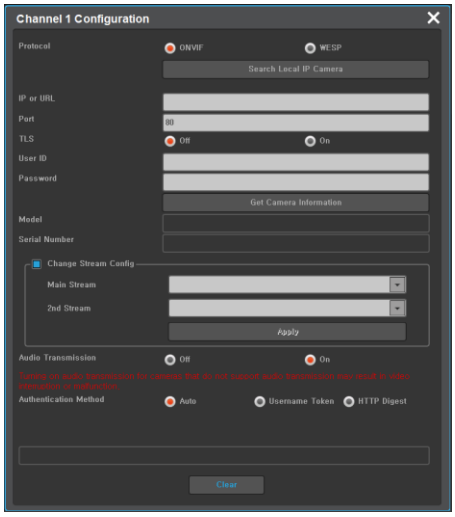
Same as the DVR' [Config] when the type is IP.

Status

Displays the camera's connection status. BPS will be shown when normal, 'Connection Failed' will be shown when the connection is failed.

IP Configuration

IP camera or other DVR/NVR's channel can be configured when the type is 'IP'..



To register IP camera

1. Select Protocol, Onvif or WESP.
2. Click "Search Local IP Camera" button. It will show the list of IP camera and DVR/NVR connected in the same network.
3. Click the searched unit and click the "Add" button. Or user can configure the IP address, port number, user ID and password manually.
4. Click the "Get Camera Information" button to get the possible settings of IP camera.
   - If failed, please check ID and password.
5. Set "Change Stream Config". When 'Off', NVR do not change any configuration of IP camera.
   When 'On', NVR can configure resolutions, fps and bps of IP camera. (fps and bps can be configured at recording program page.)

<Caution> When 'Off', video can not be shown if the configuration of IP camera is not suitable for NVR.

6. When "Change Stream Config" is 'On', select the resolutions of main stream and 2nd stream.
7. Click 'Apply' button to apply the settings.
8. Choose whether to enable audio transmission. If "Disable" is selected, the registered IP camera will not transmit audio. When "Enable" is selected, the audio input to the IP camera is sent with the video.

<Note> Audio may not be available according to the model of IP camera.
If audio transmission is set as "On" for IP camera which does not support audio function, it may cause malfunctions or you could not get video.

9. Select the authentication method.
10. Close the window and click "Save Changes" button.

* Click 'Clear' button to clear all setting information.

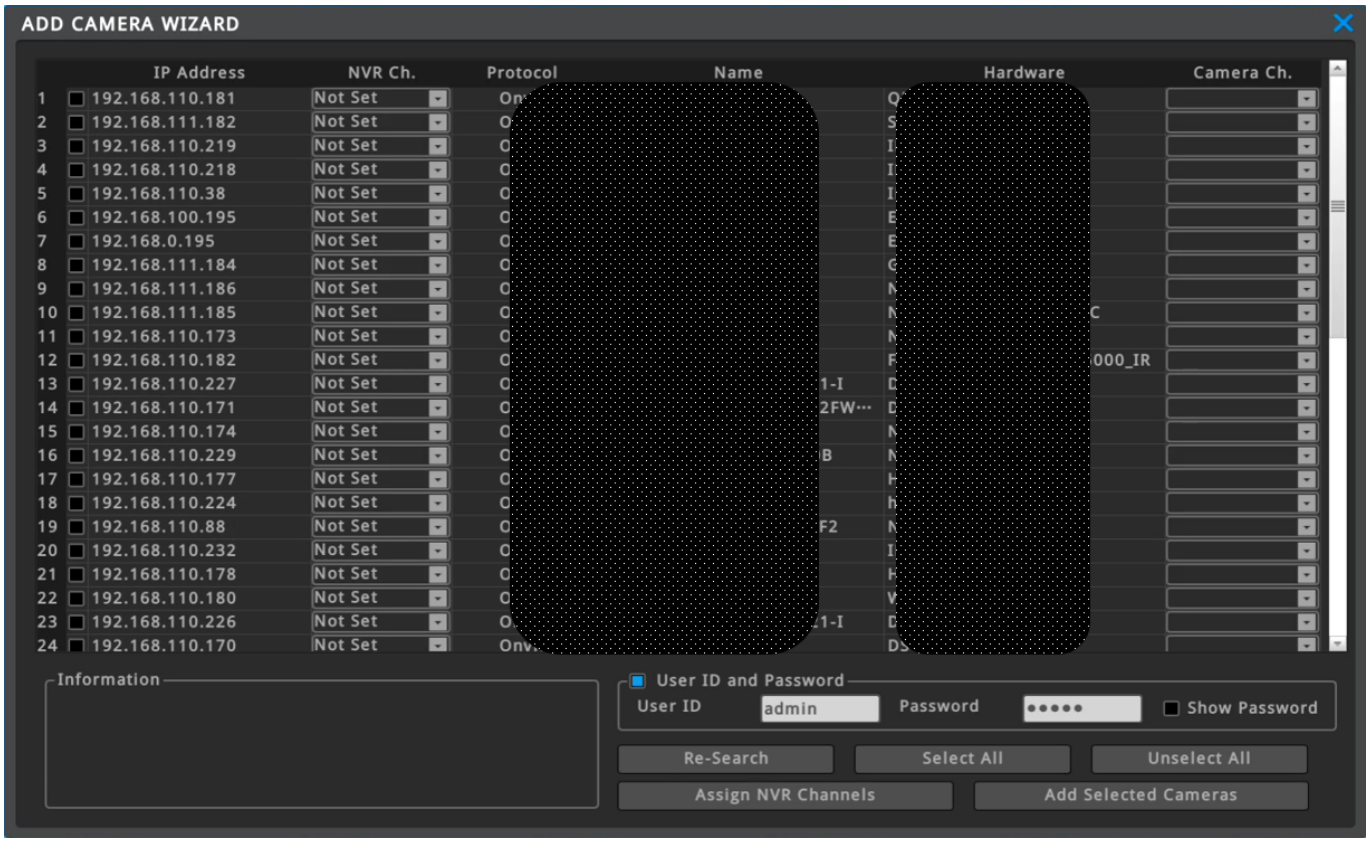
<Note>

1. IP camera registration
   1) IP camera supporting WESP: select WESP
   2) IP camera supporting Onvif: select Onvif
2. DVR/NVR's channel Registration
   1) Supporting FW
      (1) Lower than FW 8.2 – max 10 channels when no user is connected.
      (2) FW 8.2 and upper version – All channels of DVR/NVR
   2) Protocol must be WESP.
   3) Frame rate can be decreased by the number of connected users.
3. Authentication method
   1) Auto: Attempts to authenticate using Username Token method, if failed then it authenticates using HTTP Digest method again.
   2) Username Token: Attempts to authenticate using Username Token method.
   3) HTTP Digest: Attempts to authenticate using HTTP Digest method.

ADD CAMERA WIZARD

This menu is only for NVR.

All IP cameras on the same network can be registered at once.



Click the column name such as "IP Address", "NVR Ch.", "Protocol", "Name", Hardware" and "Camera Ch." to sort the list by each item.
IP cameras or DVR/NVRs that are discovery after being sorted are shown last.

IP Address
IP address of IP camera or DVR/NVR.
All IP cameras and DVR/NVRs on the same network is listed.

NVR Ch.
Select NVR's channel number to be mapped with IP camera or DVR/NVR's specific channel.

Protocol
The IP camera or DVR/NVR's protocol is shown.

Name
Name of IP camera or DVR/NVR is shown.

Hardware
Hardware name of IP camera or DVR/NVR is shown.

Camera
If the unit is IP camera, this menu is unactivated. If the unit is DVR/NVR, user select the channel number of DVR/NVR to be mapped with local NVR's channel.

Information
Information of selected unit is shown.

When Onvif, the information provided by IP camera is shown.

User ID / Password
Set the user (admin) ID and password.
It is possible that user register multiple cameras having same ID and password at once.

Re-Search
The list is researched by clicking 'Re-Search'.

Select All
All IP cameras/DVR/NVR in the list are selected.

Unselect All
All selected IP cameras/DVR/NVR in the list are unselected.

Assign NVR Channels
The selected IP cameras or DVR / NVRs are sequentially assigned to the NVR channels in sorted order.

Add Selected Cameras
Add multiple IP cameras or DVR / NVRs with 'NVR channel' set at once.
After clicking 'Add Selected Cameras' button, 'ADD CAMERA WIZARD' wildow is closed.
Click "Save Changes" button to apply.

<Caution for PoE IP camera registration>

1. IP Address2 (PoE) of NVR must be set different subnet from NVR's IP Address.
2. All IP addresses of IP cameras connected to PoE port must be set same subnet with IP Address2 (PoE).
3. Shielded ethernet cable must be used for PoE port.

PTZ

Menu → Device → PTZ

Port
Select one of one COM Port to use.

Universal DVRs: None, COM2, COM3, CoC, CoC(Auto), UCC-B
Non-universal DVRs: None, COM2, COM3, CoC(UCC-A), UCC-B
Analog all-in-one DVRs: None, RS485, CoC, CoC(Auto)
NVR: disabled

Device
Select a device that is connected to the port.

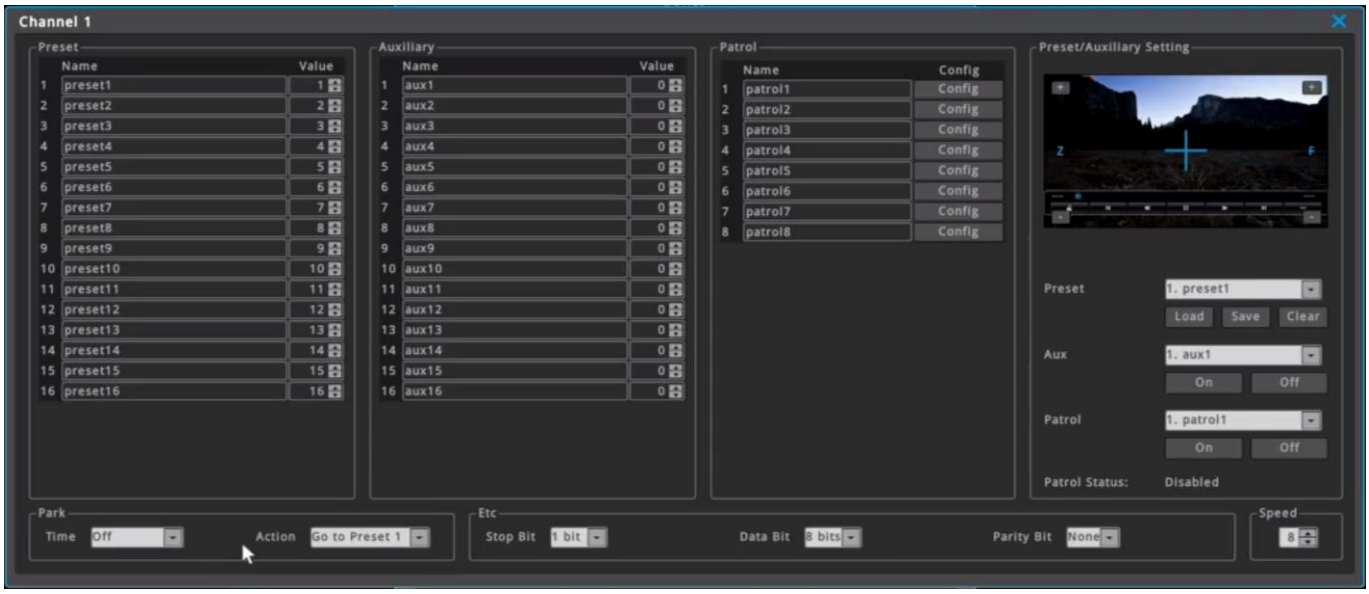
Address
Select the device's address that is connected to the port.

Baudrate
Select the device's baudrate that is connected to the port.

<Note>
1. All menus will be inactivated for IP camera channels.
2. CoC (Auto) is function that the setting of CoC can be automatically done according to the video format. For SDI cameras, only UCC-A is supported for CoC(Auto).
3. UCC-B are functions for universal DVRs and non-universal DVRs
4. COM2/COM3 is dedicated to RS-485.
5. For PoC model, please connect PoC power adapter to use CoC (UCC) function.
6. For IP camera, user does not have to set the Port, Device, Address and Baudrate.

PTZ ETC

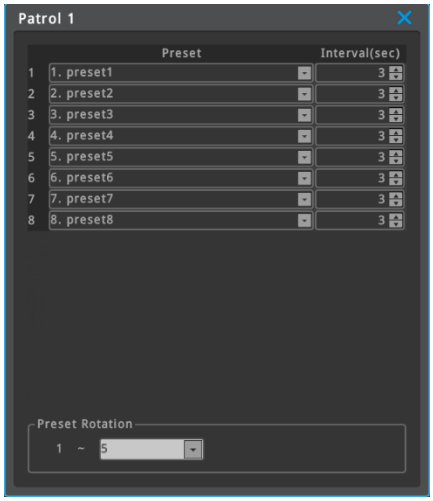
Preset, auxiliary, patrols, etc. which are related to PTZ camera can be set.



Preset, Auxiliary
Max. 16 Preset and 16 Auxiliary can be configured on DVR/NVR. User can change the name of preset and auxiliary.
'Value' of preset means the preset number of IP camera, and 'Value' of auxiliary means the code of aux. For more details, please refer the manual of IP camera.
(Preset and Auxiliary menu can be inactivated according to the camera model.)

Patrol

DVR/NVR support 8 patrols. User can change configuration and the name of patrol.



Preset: Patrol can have 8 presets. User can set the sequence of presets.

Interval (sec): Set the interval of each preset. After interval time, PTZ is moved to the next preset position. The range of interval time is 1 ~ 255 sec.

Preset Rotation: Setting the number of preset to rotate. If you set "5", patrol will be operated from number 1 to number 5.

<Note>

1. Interval time includes the moving time of PTZ device.
2. During patrol, the current patrol number is displayed on the right upper side.

Preset/Auxiliary Setting

Preview screen shows the video of IP camera and user can control PTZ with preview screen. Also, user can set or confirm the Preset, Auxiliary and Patrol setting.

- Preset: Load the selected preset, save or delete preset
- Auxiliary: Turn on or off the selected AUX

Park

User can set time and action of Park. If there is no PTZ control during the set time, Action is performed. (Go to Preset *x*)

Etc

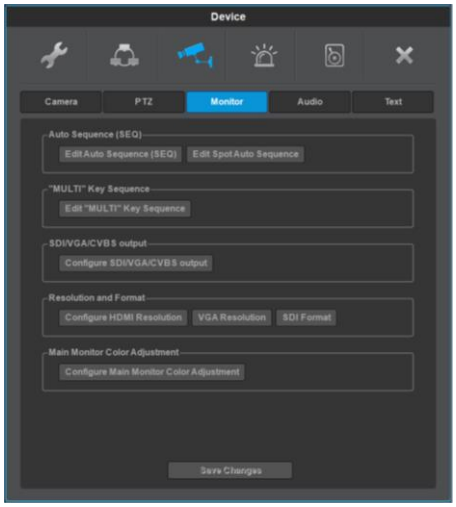
This is not used menu.

Monitor

menu → device → monitor

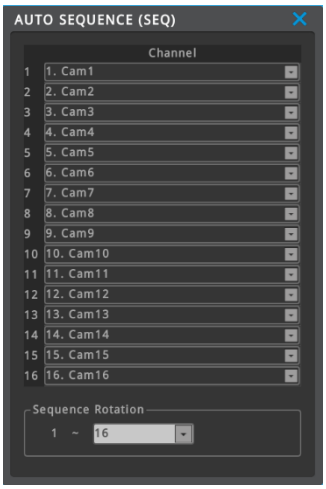
Configure SEQ, MULTI, SDI/VGA/CVBS output, HDMI Resolution, VGA Resolution, SDI Format, Spot Sequence.

*The UI is applied differently depending on the product specification.



Auto Sequence (SEQ)

To enter the auto sequence mode, push [SEQ] button of remote controller, or click [FUNC]-[Tool]-[Sequence]. To exit the auto sequence mode, push [SEQ] button of remote controller again, or click [FUNC]-[Tool]-[Sequence] again, or click [SEQ] on the right upper side of screen.



Click [Edit Auto Sequence (SEQ)]to edit the sequence of screen mode. Max. 64 modes can be sequentially changed, and each mode can be single channel mode or multi division mode.
Sequence mode is rotated from 1 to number which is set in “Sequence Rotation”. Sequence rotation interval can be configured on “Sequence Interval(sec)”. Sequence interval is available to set from 5 to 60 seconds.

The default value of "Restore after Event-Popup" is “Off”. If alarm popup occurs during sequence mode, sequence mode will be stopped under this condition. But, if "Restore after Event-Popup" is “On”, sequence mode will be activated again after alarm popup time finishes.

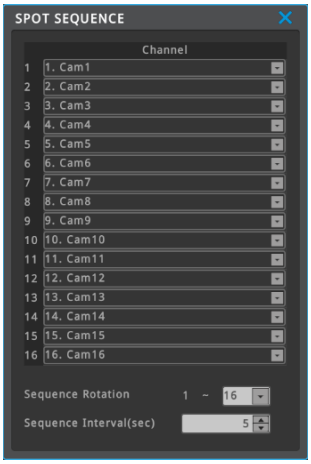
For models supporting Spot monitor, [Edit Spot Auto Sequence] can be used to edit the sequence of Spot monitor. This menu is almost the same with [Edit Auto Sequence (SEQ)] except “Restore after Event-Popup”.

* Adopted differently based on product specification

SPOT SEQUENCE

User can edit the sequence of Spot.
It supports max. 64 sequence rotation.
Sequence interval can be set as 5~60 sec.

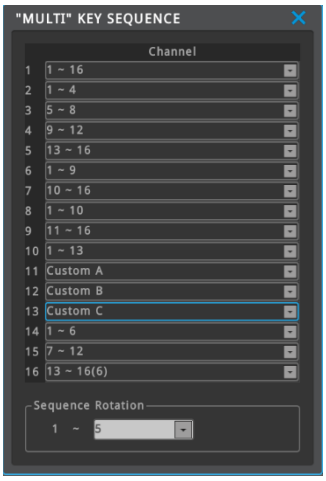
To excute the Spot Sequence function, click [FUNC Menu – Tools – Spot] and select the Spot sequence.



* Adopted differently based on product specification

Multi Key Sequence set-up

Select multi-screen order through multi set-up. Maximum 64 multi division modes can be set-up.



* Adopted differently based on product specification

SDI/VGA/CVBS Output

HDMI+ SDI duplicate

SDI output is the same with the HDMI output.

HDMI + SDI Spot

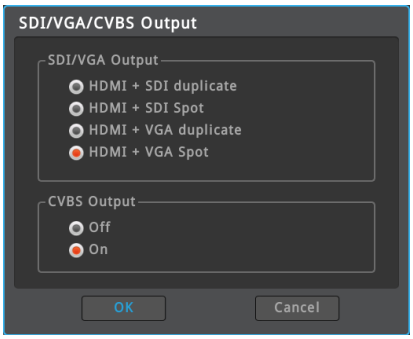
SDI output will be used as Spot output.

HDMI+ VGA duplicate

VGA output is the same with the HDMI output.

HDMI + VGA Spot

VGA output will be used as Spot output.



CVBS Output

CVBS output can be ON or OFF.

* Adopted differently based on product specification

<Caution>
Rebooting is required after mode setting is changed.
In case of DVR, IP camera's video is not displayed on Spot output.

HDMI RESOLTUTION

Resolution of HDMI output can be changed.
Selectable resolutions are 1920x1080, UHD/4K (Preferred), UHD/4K (Fixed).
Rebooting is required after resolution is changed.

<Caution>

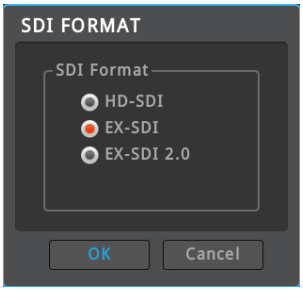
1. It is recommended to use certified HDMI cable. If the cable is not a certified cable, 4K UHD may not be displayed.
2. If HDMI resolution is set to "UHD/4K (Preferred)" and HDMI monitor does not support 3840x2160 (4K UHD), then the resolution of video output will be automatically changed to 1920x1080. If monitor supports 4K UHD, then the resolution of video output will be automatically changed to 4K UHD.
3. If HDMI resolution is set to "UHD/4K (Fixed)" and HDMI monitor does not support 3840x2160 (4K UHD), then monitor cannot display anything. Please change the HDMI resolution to 1920x1080 by Remote Controller.

VGA RESOLTUTION

Resolution of VGA port can be changed.
Selectable resolutions are 800x600, 1024x768, 1280x1024, 1920x1080,
Please reboot to apply new resolution.

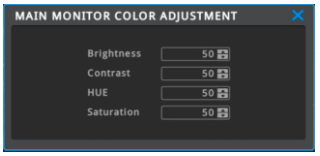
SDI FORMAT

Select the video format of SDI output. (HD-SDI, EX-SDI and EX-SDI 2.0)
Click 'OK' to apply the format and rebooting is not required.



MAIN MONOTOR COLOR ADJUSTMENT

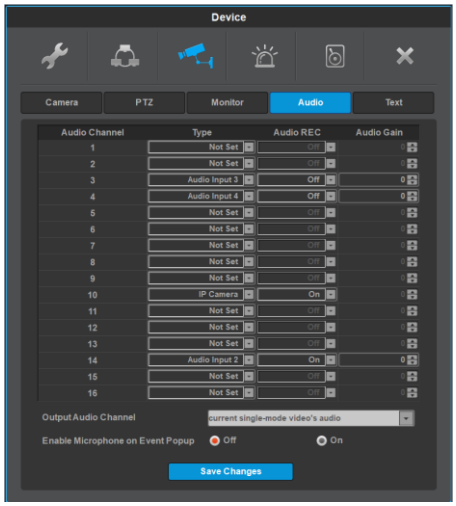
Adjust brightness, contrast, hue and saturation of the main monitor's output except OSD menu.



Audio

menu → device → audio

Configure audio channel, audio recording, volume, synchronization, mixing on this menu.



Audio channel
The channel number which audio is output.

Type
Select the audio type to be mapped with video channel.
Audio input port in rear panel can be selected.
For example, if audio input 2 (in rear panel) is selected as an audio channel 1, then audio which is input from audio port 2 in rear panel will be output with video channel 1.
Some DVRs support SDI audio. (Please refer the product specification.)
If camera send audio through SDI, DVR can record and play audio.
For IP camera channel, IP camera's audio can be selected.

Audio REC
Select ON or OFF. If set "off", audio will not be recorded and only can be heard with live video. If set "on", audio will be recorded with video. During playback, audio will be output.

Audio Gain
Control the audio gain from -8 to 7.

<Note> Audio of IP camera channel is depended on the setting of IP camera.

Output Audio Channel
Selects audio channel to output. User can select one of audio channel to output regardless of the mode of monitor. Also, user can select 'current single-mode video's audio'.

Enable Microphone on Event Popup
This function is for some specific IP camera supporting bi-directional audio such as emergency bell camera. If 'On', Mic audio connected at 'Audio input 1' is output to the event popped up channel without pressing Mic icon on status bar of monitoring screen. If 'Off', press the MIC icon on status bar to send the MIC's audio to that channel.

Text

menu → device → Text

Configures text info and click "Text" to configure the text.
Max 4 text can be connectable using USB to serial cable.

Device
As a text input device, Star Finger 007, VSI Pro, VSI Hydra, Peridect, EPSON ESC/POS, SunPark PMS can be interfaced through USB. Also parking breakers(Yellow system), Hanwha-Techwin ANPR, WGI parking breakers(TBD) and face fever detection device(TBD) can be interfaced through Network.

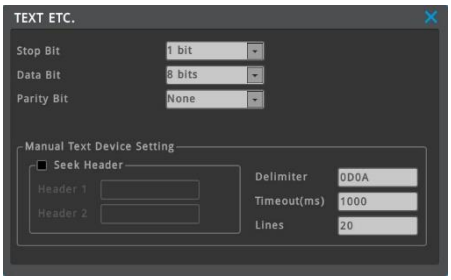
<Note>
Interface with Parking breakers(Yellow system), Hanwha-Techwin ANPR will need additional support. Please contact to Customer Service Center.

Baud Rate
Select baud rate of serial communication.

Type
Select channel to synchronize with Text port.

Text REC
Set On/Off of recording of Text input.

Etc. (Manual Text Device Setting)
User can manually set header/delimiter/lines/timeouts. These values need to be exact and are different by devices, so please call the store you purchased the device from or refer to that device's manual.



Seek Header
If Text device is set manually and there is the text pointed out as Header, it is regarded starting of text information from the relevant letter. In case of not using Header, all text after Delimiter is regarded as new text.

Delimiter
It is a constantly inserted info to search for the end of the line. If DVR/NVR finds delimiter, it will see the place as the end of the line.

Timeout(ms)
Even if text line is not full, if there is no further information during 'Timeout(ms)', DVR/NVR deals with the text information which is input from the device as one information.

Lines
It is to define how many lines single information has. For example, if user sets 30 lines, system recognize binding 30 lines as a single information.

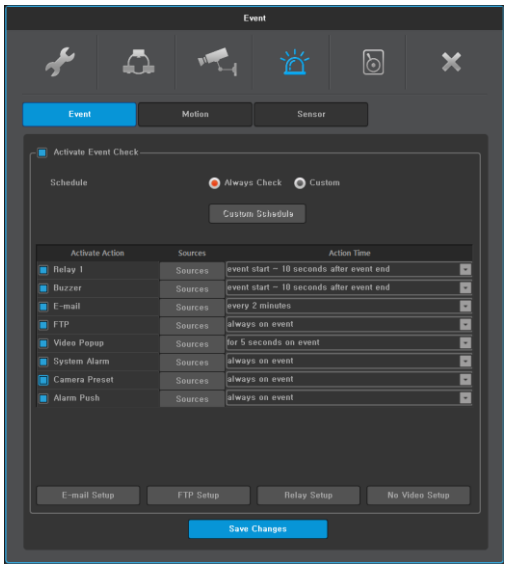
<Notice>

Please refer to technical support of manufacturer to use text function using USB to serial cable.
Star Finger 007 and VSI Pro can be used based on protocol already interfaced, others must be used in Manual.

Event Configuration

Event

menu → event → event



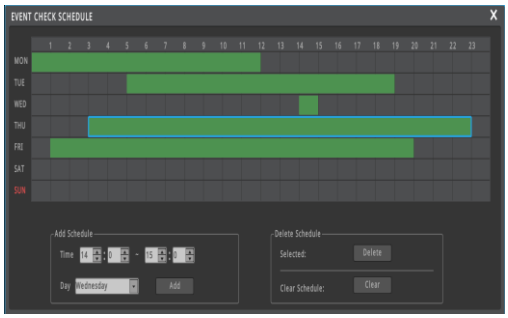
Event set up has 4 set up procedures, event, motion, sensor, and preset.

Activate Event Check
User can activate the event check. If not checked, all events will be ignored.

If schedule is set to 'Always Check', event will always be checked. If schedule is set to 'Custom', event will be checked during only user defined schedule.

If schedule is set to 'Custom', user can define schedule by using 'EVENT CHECK SCHEDULE' window.

<Caution>
If not selected time, or 'Activate Event Check' menu is not checked, DVR/NVR ignores all events and event action or event recording is not performed.

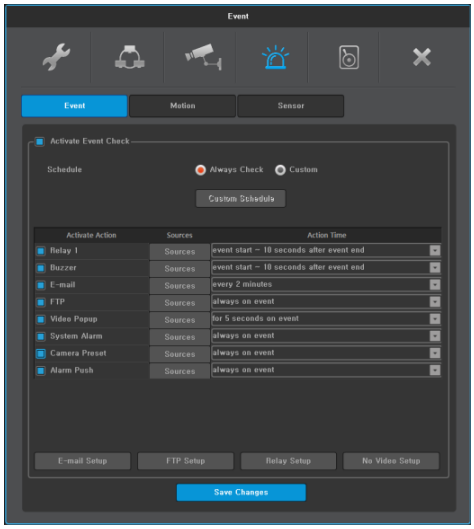


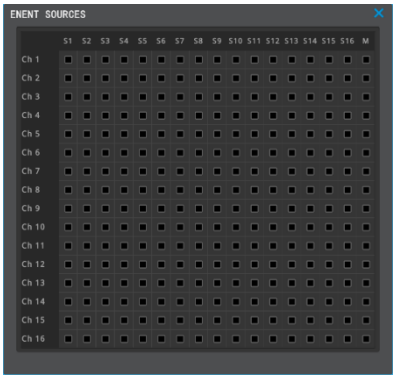
Custom Schedule
Set begin/end of event checking time and day, and click "Add". The corresponding info will be graphically displayed on day/time table.

- Day: set applicable day
- Time: set applicable time from begin to end of event checking time
- Add: schedule registration
- Delete Selected: Schedule unit which is graphically selected will be deleted. If user does not select schedule and click 'Delete', then previously selected item will be deleted first and deletion will be achieved in reverse of time set up.
- Delete All: whole schedule will be deleted

Sync event

Configuration for Event synchronization.





Relay
When events that have been selected in "Event Sources" occur, event notification by relay goes on for the time period set in "Action time"
* Adopted differently based on product specification

Buzzer
Event notification by buzzer goes on for the time period set in "Action time".

E-mail Setup
When events occur, DVR/NVR sends text information and image of event to certain email address

FTP
When events occur, DVR/NVR sends image of event to deginated FTP server

Video Popup
When selected event source's event is occurred, video which is mapped channel and sensor will be popup.

Multi channels and multi sensors can be mapped, and multi channel's video will popup in multi division mode (4/9/16).

System alarm
Image will pop up to notify triggered events upon event from event source happens.

Camera preset
When events occur, PTZ preset runs according to previsous settings

Alarm push
If event in event source happens, event notification will be delivered to mobile application in push alarm.

<Note>

1. To use flame detection feature, please connect flame detection camera. Please contact to CS for the flame detection camera models.
2. After connecting the flame detection camera, change the sensor to Flame Detector.
3. Alarm push feature will be working over v3.4.x version of Android/IOS mobile application.

Action Time

- Dwelling time of relay or buzzer: Relay or buzzer remain for the selected time preriod
- E-mail: Sends email according to the interval
- FTP, System alarm, camera preset, Alarm push: Always operate on event

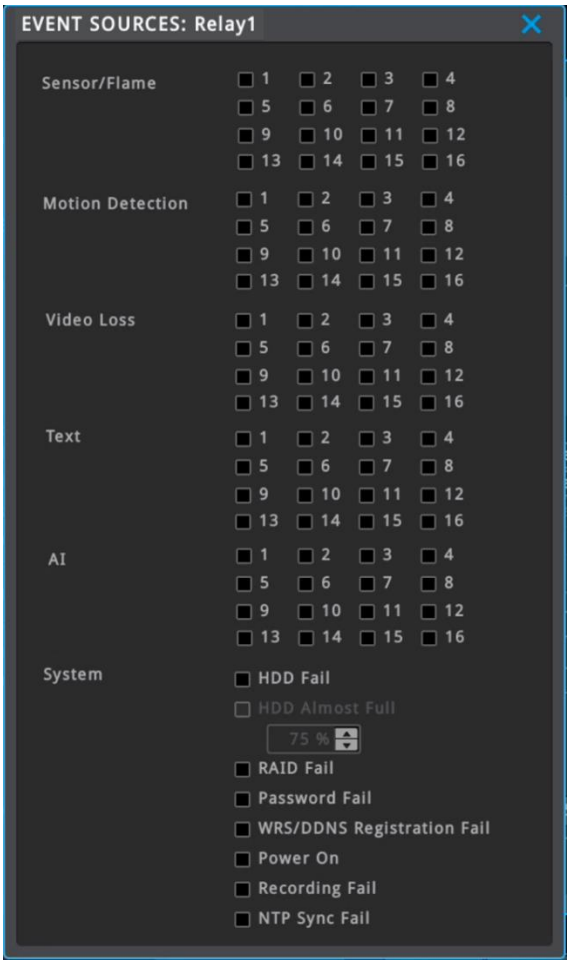
<Notice>

1. If Action time is off, action for events will not work.
2. Event action is working when action is enabled (checked).

EVENT SOURCES

Check Sensor/Flame, Motion detection, Text or systems for activating event.

System event sources of HDD Fail, RAID fail, fan fail, password fail, WRS registration fail, power on and recording fail can be checked (some or all)



HDD Fail

Event notification for HDD performance problems or connection status problems.

HDD Almost Full

Event notification when data stored in HDD is larger than the set value. It is activated when "HDD Fail" is checked.

RAID Fail

Event notification when RAID status has problem.

Password Fail

Event notification when login password is incorrect.

WRS Registration Fail

Event notification when WRS registration is failed.

Power On

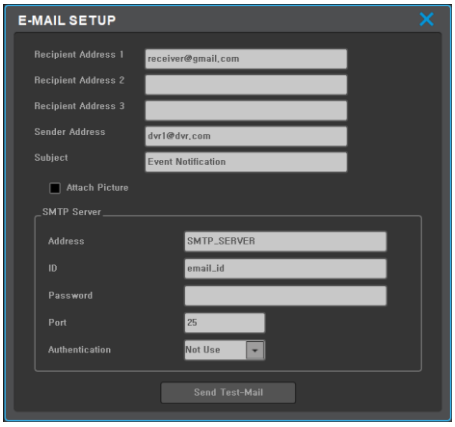
Relay will be operated during set action time when DVR/NVR is power on.

Events other than Sensor/Flame, Motion Detection, Video Loss, Text and Power On cannot be used in conjunction with the relay.

Recording Fail

If recording is not working normally, popup window pops up with buzzer. Until HDD is recovered, popup window will pop up with buzzer every 10 minutes after user click 'Ok'.

E-mail Configuration



Recipient Address
Input E-mail address with receiver's E-mail info.
E-mail format should be xxxx@xxxxxx.xxx and the users must only use combination of numbers and the English letters
Max. 3 recipients can be registered.

Sender's E-mail address
Sender's E-mail address is set when user use E-mail for output selection and user setup E-mail address as xxxx@xxxxxx.xxx.

Subject
User can modify the subject of e-mail. Max. 20 letters including symbols are supported.

Picture attachment
When sensor, motion detector and video loss occur, relevant event info with channel video will be sent to an e-mail. Only system event info will be sent for system event.

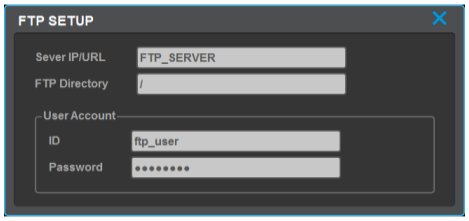
Authentication
There are a few ways to send email (No authentication, SMTP server authentication and TLS authentication.)

- No authentication: sends email to the recipient address without server authentication
- SMTP authentication: sends email to the recipient after SMTP server authentication. The recipient address must support SMTP authentication
- TLS authentication: sends email to the recipient after TLS server authentication.

<Note>

1. If 2 step authentication is required by mail server, please follow the mail server's policy. (App password might be required.)
2. For Gmail, please set 'Allow less secure apps: ON' at [Google Account] → [Sign-in & security] page.

FTP Configuration



The DVR/NVR sends 1 video image per event to a FTP server when an event occurs.

<Note>
Since FTP just transmits an image, if there is no image system event, it is not supported.

Server IP/URL
Enter the FTP server address to send image

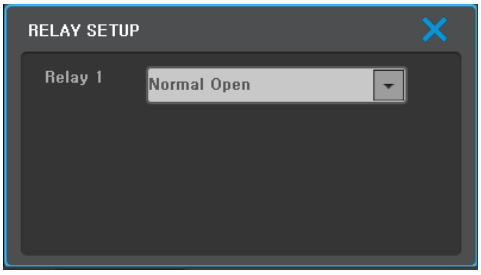
user ID
Enter the relevant ID when asked for FTP server authentication.

Password
Enter FTP server password.

FTP Directory
Select Folder to save image If folder is not indicated, the image is sent to the folder which server selects

Relay Setup

This function sets the relay action. You can decide whether to open or close the relay contacts when an event occurrs.



<Note>
It depends on the product specifications.

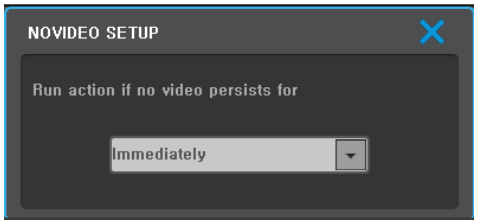
Relay

1. Normal Open: It is normally opened, and closed when an event occurs.
2. Normal Close: It is normally closed, and opened when an event occurs.

<Note>
In case of Normal Close setting, relay may turn on during boot time.

No Video Setup

No video setup is a function that generates an event if no-video condition lasts for a specified time.



<Note>

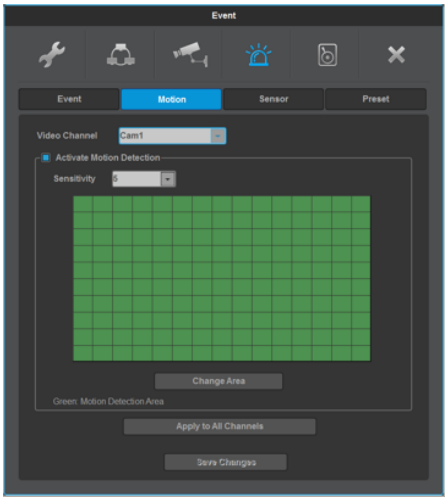
Time Setup

You can specify no-video time interval.
The time can be set as immediately ~ 10 minutes.

Motion detection

menu → event → motion

DVR can activate motion detection for each channel. The motion detection setting of the IP camera such as motion detection area and sensitivity should be done on the IP camera.
If motion detection is activated, motion detection can be a source of event.



Video Channel & Activate Motion Detection

Select one of video channel and select activate or deactivate motion detection. Each channel can have different setting.

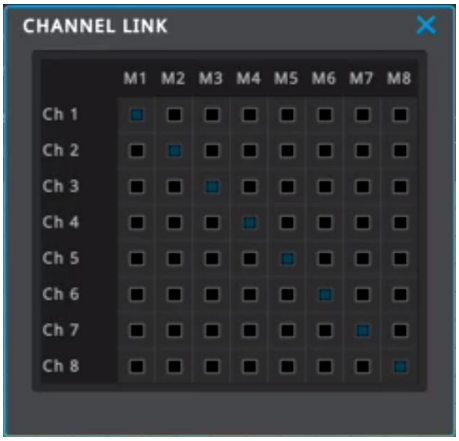
Apply to All Channels

Current video channel's setting will be applied to all channels.

<Note>
To set the motion detection, please use webpage of IP camera.

Motion Detection - Channel Link

A motion detection event that occurred on one channel can be utilized on other channels.



User area

When selecting a channel, user area can be configured.
1 grid size is 15x10 and factory default value is "All grid selected".
Press "change area" button to open motion detector enabled area Set up window.

Users can set motion detection area in screen. The motion detection Zone by setting is indicated in translucent green.

<Notice>
If an area is set up when motion detector set up start point is enabled, all values will be applied as disabled and if set up when motion detector set up start point is disabled, then all values will be applied as enabled. In other words, opposite set up to the value of the initially selected area will be applied.

Sensor

menu → event → sensor

Sensor can be set by each channels and name can be changed.

Name

Name can have max 20 characters including number and symbol.

Type

Real Pannel – Sensor which is connected to SENSOR IN port of Rear panel is used. Its Config can be set as Normal Open, Normal Close and Flame Detector. If Flame Detector is selected, sensor input will be recognized as a flame.

- Coax – Sensor of Coaxial camera. is used.
- IP Camera – Sensor of IP camera is used.
- Flame Detection Camera – When Flame detection camera is connected, please set corresponding sensor.

Name	Description
Normal Open	If sensor's electric contacts become connected, DVR recognizes it as an alarm.
Normal Close	If sensor's electric contacts become disconnected, DVR recognizes it as an alarm.
Flame Detector	It works when flame detection signal is received from flame detection camera or sensor input.
UPS Alarm	When received an alarm signal from UPS, it turns off the power automatically.
Thermal Detector	It works when thermal detection signal is received from thermal detection camera or sensor input.

<Note>

1. If sensor input is occurred, sensor name and alpha-blended red background color will be overlayed. To change the overlay setting, click [FUNC menu] – [Information] – [Screen].
2. Alarm push can be done if
   1) motion, sensor, flame detection or text, AI, event is on
   2) video event is on or off (whenever)

<Note>

What is sensor overlay? – Function to inform user by blinking the transparent red box and sensor name on video.

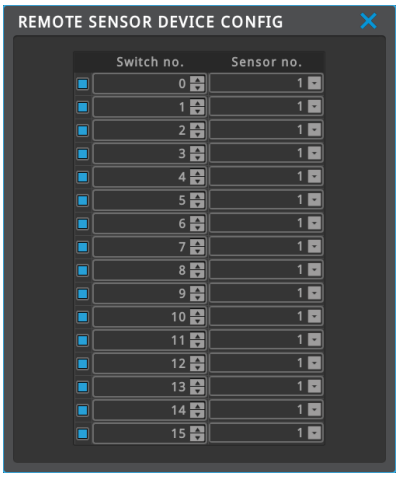
Remote Sensor Device

User can map the input signal from remote sensor device to the sensor switch.

By using this function, remote sensor device can be used as an even source for relay, buzzer, email, FTP, video popup, camera preset, alarm push, etc.

<Note>

Currently, supported protocol of remote sensor device is emergency bell (Seho IS, Hitek, Chamsule Tech), and will be added more protocols.



Record Setting

Record mode has 3 types as normal/event, schedule/event, and emergency record.

- Normal/Event record – Record start up upon bootup according to defined program.
- Schedule/Event record – Record start up upon defined schedule's program and time.
- Emergency record – Record at max setup regardless of record mode and program. It can be turned on or off by REC button of remote controller.

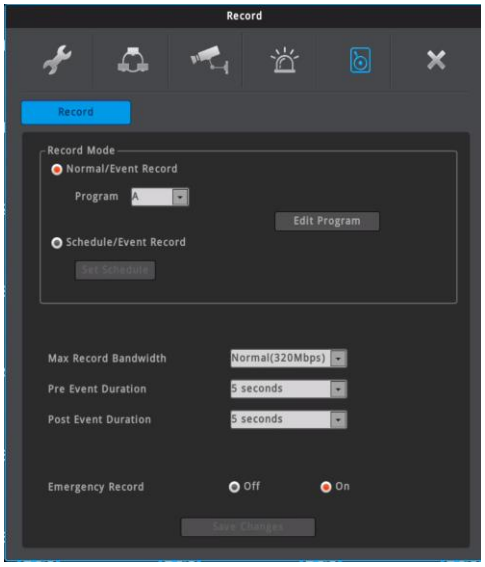
Recording

menu → record → record

Both normal/event, schedule/event record can be achieved by selecting program and frame rate will be defined by program selection.

Normal/Event Record

Normal Record means video recording when there is no event, and Event Record means video recording when there is event. Video is always recorded according to the selected program after booting. 9 programs from A to I are available. For more details on programs, please refer next session.

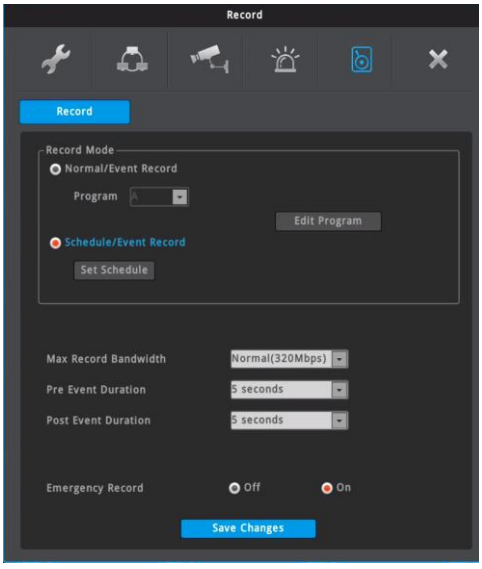


<Note>

1. Event record means the recording when motion is Detected, or sensor, text, flame detection are occurred. Normal record means the recording when event is not occurred.
2. 'Event record' can set the video quality and frame rate (fps) for event recording. This setting is applied only for event recording. 'Normal record' setting is independent from 'Event record' setting. 'Normal record' can set the video quality and frame rate for normal recording.
3. Event record is more important than normal record, and thus, frame rate of event record cannot be set less than the frame rate of normal record.
4. The video quality of IP camera can be set in web page of IP camera, not in 'Program' page.

Schedule/Event Record

Schedule/Event Record means recording only at a specified schedule time. User can set the time schedule and set the program for each time schedule. Program can be selected among 9 from A to I. One program can be applied on one schedule, at least one schedule per day and max 50 schedules per week can be defined.

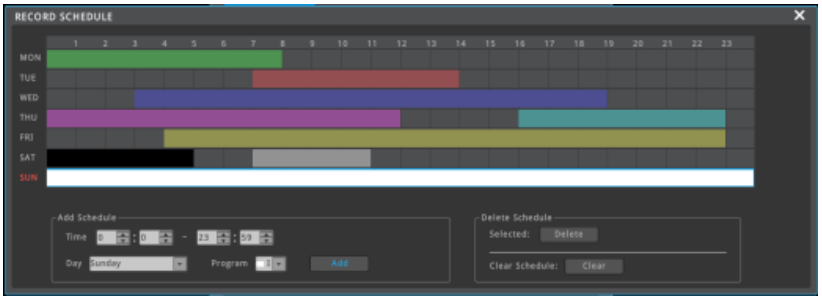


Set Schedule

Set begin/end time to record, day and program, and click "Add". The corresponding info will be graphically displayed on day/time table.

- Day: set applicable day
- Time: set applicable time from begin to end to record
- Program: set the record program to be applied to this schedule
- Add: schedule registration
- Delete Selected: Schedule unit which is graphically selected will be deleted. If user does not select schedule and click 'Delete', then previously selected item will be deleted first and deletion will be achieved in reverse of time set up.

- Delete All: whole schedule will be deleted



<Warning>
When configuring time sector, previously configured time can not be included.

Max Record Bandwidth
In case of 64ch NVR, the Max. record bandwidth is 320Mbps/400Mbps.
(When the Max record bandwidth sets to 400Mbps, the pre-alarm time is set to 3 seconds.)

Pre Event Duration (Record time before event)
User can select between 1~5sec and time ahead of event will be recorded as much as time set by user.

Post Event Duration (Record time after event)
User can select between 1~30mins and time after event will be recorded as much as time set by user

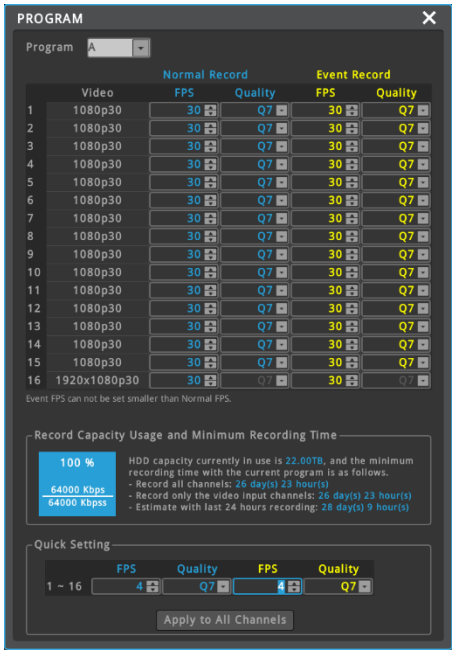
Emergency Record

Emergency Record should be set as "ON" to use emergency recordings
To start emergency recording, set 'Emergency Record' as ON. And push [REC] button of remote controller, or click [Func]-[Tool]-[Emergency Recording]. During emergency recording, video will be recorded with max fps and highest quality regardless record mode, program and schedule.
To stop emergency recording, push [REC] button of remote controller again, or click [Func]-[Tool]-[Emergency Recording] again. Record mode will be returned to previous setting.

Program

menu → recording → program

Frame and record quality can be setup using [Program] and record condition to be used in record mode can be set up.



Select mode from A to I based on record condition or change frame or quality per channel setup each channel's frame at user's own preference.

Program
There are 9 programs from A to I composing recording quality and resolution per channel.

Channels
Display the channel No.

video
Displays entered video resolution and FRP.

Normal Record
Select frame rate (number of frame per second) and quality that are applied for normal video without events.

Event Record
Select frame rate (number of frame per second) and quality that are applied when event occurs. When event occurs DVR starts to record by the frame rate and quality of Event Record.

FPS
FPS means frames per second. Users can select 1 to 30 (NTSC) or 25 (PAL) fps.

Quality
This configures the recording quality. Value of Q can be configured between 1 - 10. The higher the number, the better recording quality is.

<Note>
Please refer the product manual for details of bitrate of NVR.

Record capacity in use and minimum storable time consumption
It indicates record capacity status of DVR along with amount of connected HDD.
It also indicates storable time of all channels, only channels in use and expected storable time based on amount of storage duing last 24 hours.

Quick Setting
Apply the same setting for all channels at once.

<Notice>
1. If the recording setting exceeds 100% of the 'Record capacity usage', 'Program' page cannot be closed. Please check the 'Record capacity usage' window.
2. The video quality of IP camera can be set in web page of IP camera, not in 'Program' page.
3. Frame rate (fps) of event record cannot be set less than frame rate of normal record.
   - If frame rate for normal recording and event recording is the same, lowering the frame rate for event recording will lower the frame rate for normal recording.
   - If frame rate for normal recording and event recording is the same, increasing the frame rate for normal recording will increase the frame rate for event recording.

4. Event record setting and normal record setting are independent.
   - If the frame rate of event record is 5 fps, it records at 5 fps when event occurs regardless of the normal record setting.

Recording setting of IP camera

Recording setting of IP camera follows below rules.

- Common
  - The fps of event record is the same with the fps of live video and the fps of IP camera.
  - Normal record fps can be 'no rec', '1' or the same with the event record fps.
    - ◆ 1 fps means 'I frame only'. The real fps is depending on the GOP setting of IP camera.
  - If the resolution of 2nd stream is high resolution, it can cause the performance limitation. (2nd stream is used for multi division mode.)

- When "Change Stream Config" is 'On'
  - The fps of IP camera is set to the fps of event record.
  - The resolution of IP camera is selected on [menu] → [device] → [camera] → [Config] → [Get Camera Information] → [Resolution].
  - Quality (bps) can be roughly set in 'Program' page. But the real bps is different by the IP camera models and thus, 'Record capacity in use and minimum storable time consumption' is not accurate. User can check the bps of IP camera at [Func Menu]-[Information]-[Camera].

- When "Change Stream Config" is 'Off'
  - NVR does not change any configuration of IP camera (resolution, fps, bps).
  - Fps of live video and event record follows the setting of IP camera.
  - 'Record capacity in use and minimum storable time consumption' is not accurate.

  <Caution> Video can not be shown if the configuration of IP camera is not suitable for NVR.

There can be compatibility problem for some IP camera. If there are compatibility problem, please follow as belows.

- Upgrades the DVR/NVR as latest FW version.
- Check the manufacturer's homepage to check the compatibility list of IP camera.

If the problem is not resolved, please ask to CS.

Utility

Changing Booting Logo and Empty Channel Logo

User can change the logo image for booting logo and empty channel (inactivated channel/unauthorized channel/unassigned channel) logo.

Changing Booting Logo

Copy the jpeg image file with the name "wgi_boot_logo.jpg" to USB memory. (Only 720x480 resolution supported) Insert USB memory to DVR/NVR and reboot after buzzer sounds. This image will be shown during booting.

Changing Empty Channel Logo

Copy the png file with the name "wgi_app_logo.png" to USB memory. (Recommended resolution is 640 x 360 with 16:9 ratio) Insert USB memory to DVR/NVR and reboot after buzzer sounds. This image will be shown in inactivated channel/unauthorized channel/unassigned channel position.

<Note>
Image with very low resolution will not be applied.
File name and resolution is not suitable, buzzer will not sound and logo will not be applied.
Firmware 8.2 and upper version support this feature.

Changing multiple channel names using USB memory

1. Please make new text (*.txt) file using PC and describe the names of channels in the following format. You can skip channels you don't want to change.

   ```
   CH1: Door
   CH3: Exit
   ```

2. Please save the text file with the name "**wgi_channel_name.txt"** and MUST select the letters encoding as **UTF-8.**
3. Copy the "wgi_channel_name.txt" file to USB memory.
4. Insert the USB memory into the USB slot of DVR/NVR.
5. Automatically the channel names saved in txt file are applied. After all channel names are applied, buzzer will be beep.
6. When buzzer is beeped, please remove the USB memory from DVR/NVR.
7. After about 5 seconds, you can see that your channel name has changed.

<Note>
1. This function is supported above FW v8.4.
2. There must be only one file named "wgi_channel_name" in the USB memory regardless extension.
3. If firmware file and "wgi_channel_name.txt" file exists in one USB memory, channel names will be changed after firmware upgrade.

Usage of USB PC Keyboard

User can use USB PC keyboard. Only English and Korean are supported.

Viewer

WebViewer

WebViewer is Web application program loaded to monitor real-time image or to monitor the images recorded through Web browser to PC located remotely.

System requirement

Items	Recommendation
CPU	Core i5 3.0GHz
Main Memory	8GB
Video Memory	512MB or higher
Display	1024MB PCI-E Graphic Card Support AGP Accelerate (AMD Radeon HD 7000 Series or Higher)
BUS	Support PCI-E 16X or higher
Network	100/1000 Ethernet NIC
OS	Windows 7(x64) / Windows 8(x64) / Windows 10(x64)
Browser	Internet Explorer 8 or higher
Others	DirectX 9.0 or higher

Installation

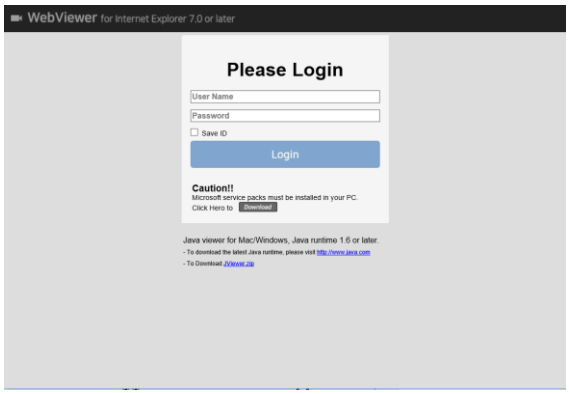
Webviewer Installer
Auto installation program is provided from login page to use Webviewer function. ActiveX installation is required to a PC which has first connection.

<Caution>
Please close all programs related to Control Center while Webviewer Installer is being installed. Otherwise, it may affect the installation.

login

After inputting an IP address that is set to the system, the WebViewer Login page will be connected.
Examples of input method in address box are http://192.168.1.100 as IP address type or www.addresstest.com as domain address. In case of changing the port value besides default value 80, just input the changed port value.

Input the set of User ID & Password, click 'LOGIN' to access. If password didn't change tin Control Center, ID and Password will be admin/12345.

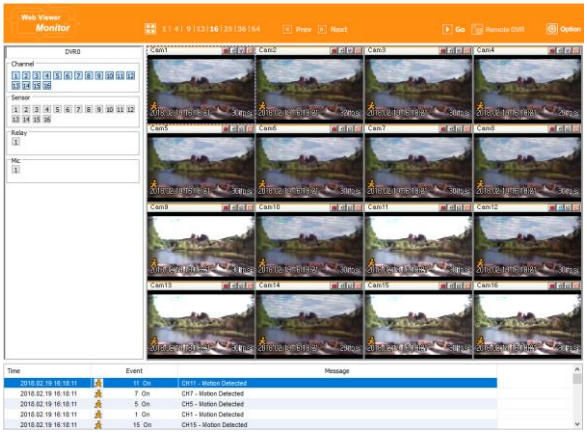


User set up

To access WebViewer, user authority and password can be changed in DVR/NVR or the account menu of Control Center configuration.

Monitor

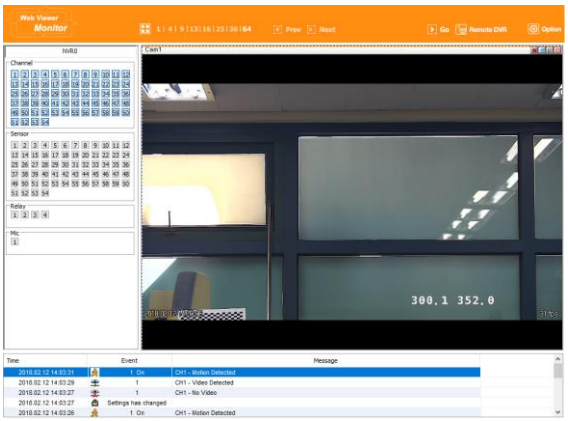
When it is authorized with User ID & Password input at Login page, it moves to monitor page. At Monitor page, monitor real time image of cameras connected to DVR/NVR, or it can control PTZ camera, Relay, and use Microphone function according to user's authorization.



Screen division and changing video position

The first monitor page will display the maximum screens of the connected model.

It can to change to 1, 4, 9, 13, 16, 25, 36, 64 divisions by clicking the number on top of page.
Also, it can change to 1 channel mode by double click any one of channel image. Double click again, it is restored to previous screen division.



At division screen, it can change screen location using mouse drag.
If Ch3 image moves to Ch1, drag Ch3 image and drop on Ch1 location so as to exchange between 3ch and 1ch image.

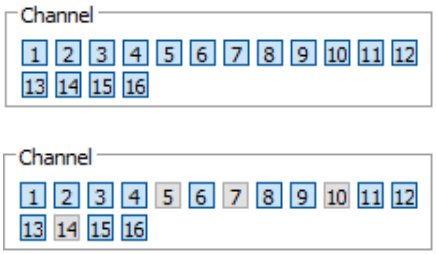
Press the very front icon on the upper screen on multi screen mode to switch to a full screen mode.
To go back to normal screen mode from full screen mode, press ESC key

Move to Playback

Click the Go on the upper right to move to playback page.

Channel On/Off

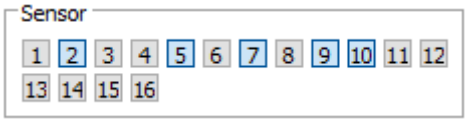
It is On/Off button for the Channel located to left in page. Click the channel wanted to On or Off.
And Default is "On".



Sensor indication

The icon indicates when sensor occurs in system

When it sensors, relevant sensor icon comes to Red, and indicates sensor number of video. When sensor is not triggered, icon keep as blue.



Relay operation

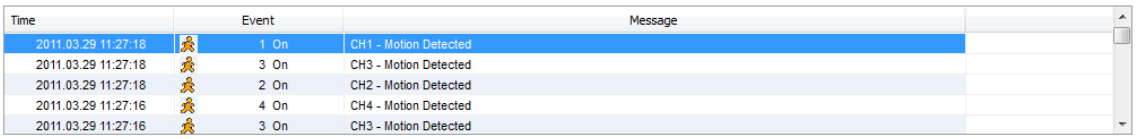
It can On or Off Relay of the unit. Click the number button to activate Relay On, then the icon Changes from Blue to orange color.

Not activated Relay button means, the product is no supported. Relay is need user's authority. Refer to user manual in the unit for the setup of User's authority of Relay.

Using microphone

Microphone can be set On or Off. Default is Off and it is changed from the projected type button to orange when click the button for the use Mic.

Event information



It shows real time event data occurred at the bottom of monitoring page.
Indicated Event data list are as follow

button	description
	Motion Detect On
	Flame Detect Input
	Sensor Input
	Relay Output On
	No Video, Video Detected

Video recording & save

Video recording

Select by clicking "Rec Start" in right button of Mouse after selecting channel user wants to record during monitoring. It can record max. 10 minutes of video During Quick Recording, recording time is indicated on video.

If "Rec Stop" is pressed by clicking right mouse button, recroding stopped. Then, open the dialogue box to store recorded files. At this time, user can save it to the directory with any file name by user.

Saved recording file is saved into "*.re4" file format. re4 file can playback through Control Center Playback program or Mini Player program.

Saving video

There are 2 types for saving Video - jpg, bmp. Saving means the function to record 1 frame of current monitoring channel.

To save video, select the channel and click right button of mouse. And select "Save As" and point out the location and press save button.

Using PTZ

During monitoring, select a channel with PTZ configuration and right-click to select "PTZ" to use PTZ. PTZ control lets users use Pan/Tilt, Zoom/Focu functions.

Pan, Tilt control

There is a cross line in the middle and click image to operate Pan, Tilt. In the middle click Left/Right direction to control Pan, and Click Up/Down direction to control Tilt. The further it is clicked from the middle, the faster Pan/Tilt will operate.

Zoom, Focus control

Move mouse to the edge of left & right to see slide bar for Zoom, Focus.
The unit Area Zoom In available has Zoom Zero operating button. It can zoom in/out using slide bar at left of image, left slide bar can control Focus.

Move to Preset

In case of Preset set, Mouse on image press right button for pop-up menu and "Goto Preset" is indicated additionally. When select Preset list, it moves to Preset position selected. Preset should be set up by user in advance.

Activating Auxiliary

In case of Preset set, "Auxiliary" is indicated additionally, and it operates action when select registered menu.

<Reference>
Supported PTZ camera list can be refereed to (PTZ manipulation).

Using Audio

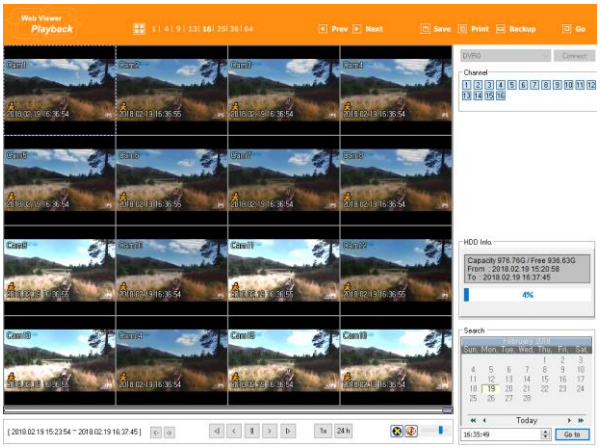
In case of Channel setup sync with Audio, press right mouse button on the image to activate pop-up menu to "Listen".

Playback

This page is to playback recorded images, and user who has authority of 'HDD' among user ID or administrator can use this function.

Playback that is made up 16 divisions can play the images by searching through colander by recording period and moving the period. It can backup recorded image and also print Pause image or save to Bmp file.

Below are each title and function of Playback.



Video Division & Changing Channel

Playback supports 1, 4, 9, 13, 16, 25, 36, 64 divisional screens. Select division using menu on top of page as shown in the above picture.

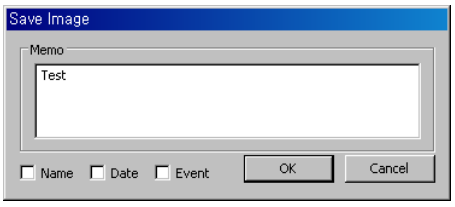
Press the very front icon on the upper screen in multi-screen mode to switch to a full screen mode.
To back normal screen mode from full screen mode, press ESC key.

Save image

It can save playback image to BMP file.
Click mouse to channel to save. Dotted line will be surrounding to the selected channel, and click 'Save' button

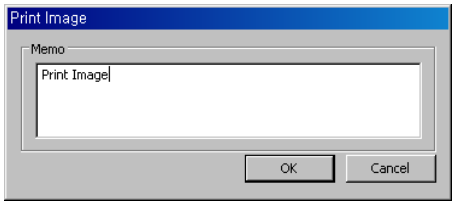
Save imamge dialog box appears, then it can input message or select channel name, date, event and data.

Press 'OK' to open dialog box for the saving location, then save bmp file.



Print

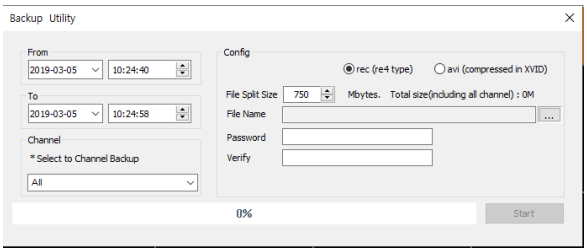
Select image with mouse for the channel to print image saved, and then click 'Print' button.



Window comes to input Memo, and click 'OK' button to print the image through the printer connected.
Print material includes 'Printing Date', 'Channel name', 'Recording Date' 'Event', 'Memo'.

Backup

There are re4 (Multi channel) and avi (single channel) Set from, To time and select the channel for backup
Point out the location for backup. Input in Password/Verify.
In case of playback backed up file, correct password should be input.

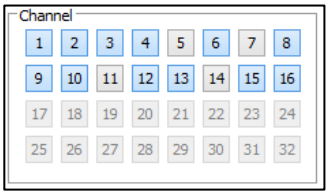


Move to Web Monitor

Click 'Go' button at top of page, and it can move Web monitor page.

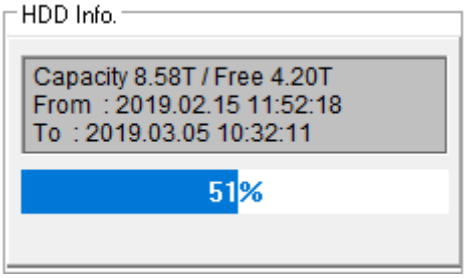
Channel On/Off

Same function as the Channel On/Off function at Web Monitor.
Located on the right, and click the wanted channel to "On" or "Off". All channels are On by Default.
Disabled Channel button means the product doesn't support it.



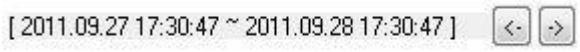
Recording Duration & Checking Record Capacity

Displays the used and remaining space of HDD and the dates on which the first recording and last recording were done. It also shows in % how much space a user is using.

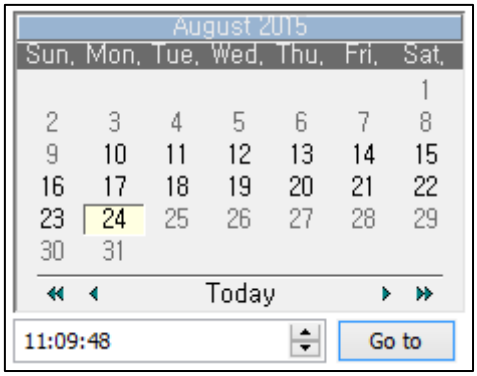


Calendar search

Recorded date is enabled in black color, and others unrecorded date disabled in grey. Click [Go to] button after select date & time so as to playback images on the date & time selected.



'When clicking the 'Go To' button, it indicates for 24hours from the time selected at left bottom. As above picture, it is possible to change the time zone with '24h' button.

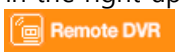


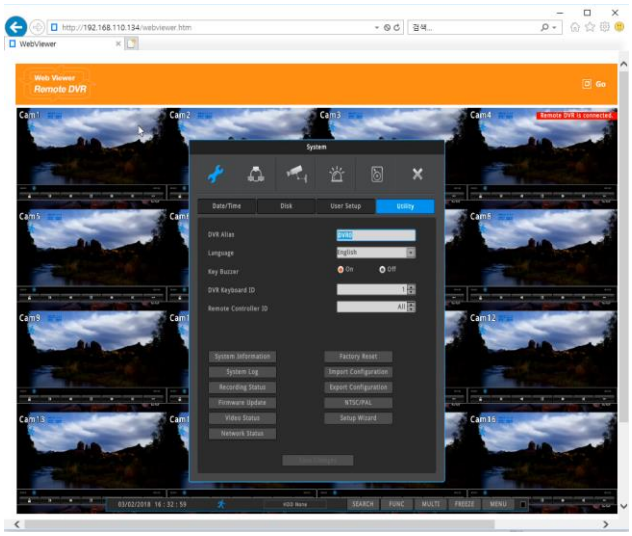
Function buttons on the bottom of an image

① Indicates playback range of recorded image.
② Press ←,→ button as the time set at (5) so as to change the time zone to playback in forwarding and reversing.
③ From left button, it can 'Move a frame back', 'Play backward', 'Stop', 'Play', 'Move a frame forward'.
④ It is the function to set play speed. After click the button, it can set the play speed '0.5x, 1x, 2x, 4x, 16x, 32x, 64x, and All'.
⑤ It is the function to set play area. After click the button, it can select play area '10min, 30min, 1hour, 3hour, 6hour, 12hour, 24hour'.
⑥ It can select DirectX use or not. If check DirectX mode, it can play image into Direct Draw based on graphic card and performance of PC.
⑦ It is the function to set audio play or not, and volume

Remote DVR

Weviewer supports Remote DVR function. Remote DVR is similar to the Remote Desktop of Windows PC and it can show the DVR/NVR's video output and can control DVR/NVR at remote location.
To use Remote DVR, click [Remote DVR] icon located in the right upper side.





HTML5 Webviewer

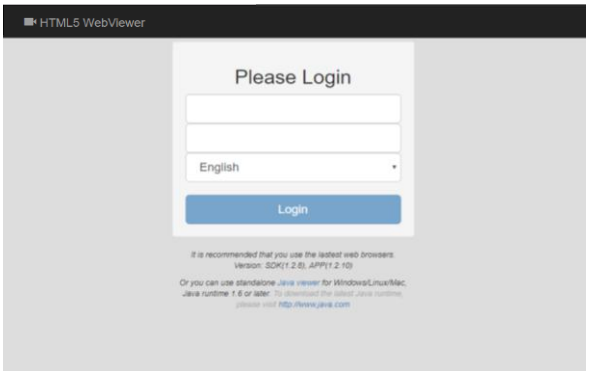
HTML5 is the new technology which does not require any active-x or plug-ins and is not depend on OS. DVR/NVR supports HTML5 webviewer which can monitor the DVR/NVR with web browsers supporting HTML5. (Currently HTML5 Webviewer does not support 4M and 4K video input. HTML5 Webviewer will support 4M and 4K in the near future)

System Requirements

Items	Recommended
CPU	Core i5 3.0GHz
Main Memory	4GB
Video Memory	512MB or higher
Display	1024MB PCI-E Graphic Card Support AGP Accelerate
BUS	Support PCI-E 16X or higher
Network	100/1000 Ethernet NIC
Web Browser	Chrome, Firefox, Safari
OS	Windows 7 / Windows 8 / Windows 10 / OS X Mavericks (version 10.9)

Login

After inputting an IP address or domain address of DVR/NVR on web browser's address box, the Webviewer's Login page will be connected. (Examples of address are http://192.168.1.100 as an IP address type or www.addresstest.com as a domain address.) Default port number is 80. If you change the port number, then please input the changed port number to web browser's address box (http://192.168.1.100:*port_number*).



Input the user ID and password of DVR/NVR, and click 'Login' to access. Default ID is admin and default password is 12345.

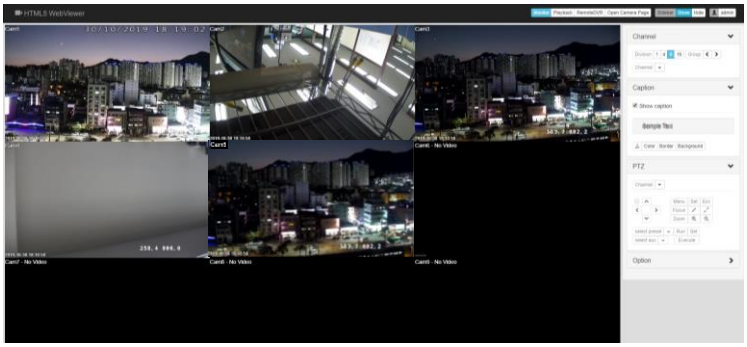
<Note>

1. If you connect the DVR/NVR via Internet Explorer, then previous Webviewr page will be shown. If you connect the DVR/NVR using mobile devices, then Mobile viewer page will be shown.
2. If you connect the DVR/NVR via web browsers supporting HTML5 such as Edge, Chrome, Firefox, Safari, etc., then HTML5 Webviewer page will be shown. (Currently, HTML5 Webviewer officially supports Chrome, Firefox and Safari.)
3. You can also use JavaViewer for Mac/Windows.
4. Languages: English, Korean, Chinese (HTML5 webviewer below 1.2.10 supports only English)

Monitor

When it is authorized with User ID & Password input at Login page, it moves to monitor page.

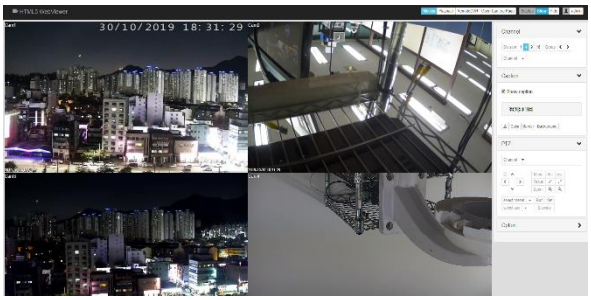
At monitor page, user can monitor the real time video of connected DVR/NVR and can control PTZ camera, Relay, and Microphone functions according to user's authorization.



Screen Division

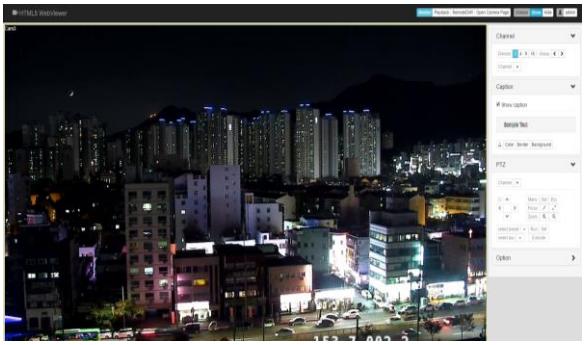
At initial monitor page, all video channels will be shown with the maximum division. The number of video channels will be depend on the DVR/NVR model.

You can change the screen division mode by clicking Division 1 4 9 16 Icon.



Single Division

Double click the video channel to see with single division mode. If double click again, the previous screen division mode will be shown.



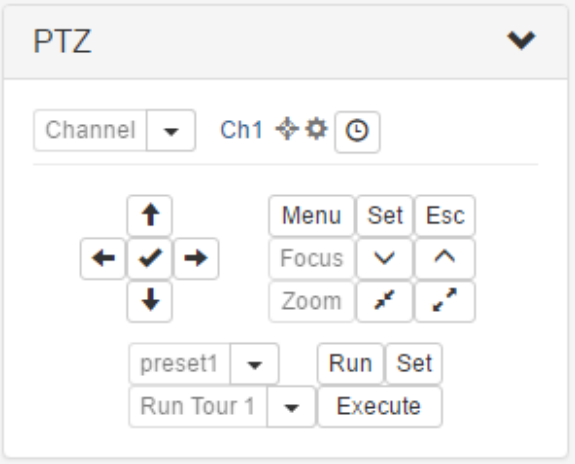
Full Screen

Using full screen function of browser (such as F11 key), user can monitor the DVR/NVR with full screen.

<Note>
User can show or hide the 'Sidebar' by clicking Sidebar Show Hide Icon.

Using PTZ

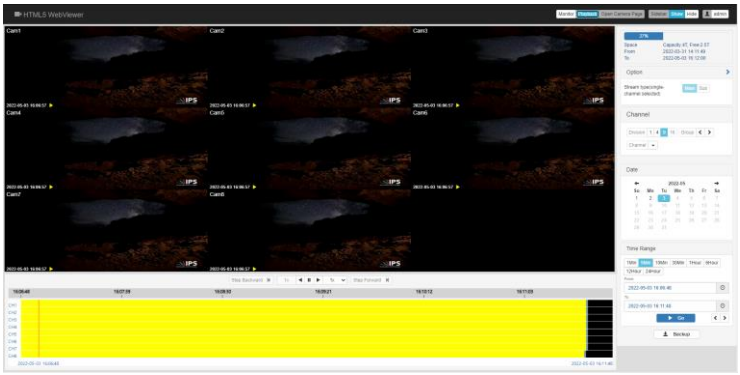
User can control the PTZ by using PTZ menu on sidebar. After selecting video channel, user can control Pan/Tilt, Zoom/Focus, Preset, Auxiliary functions of PTZ camera.



Playback

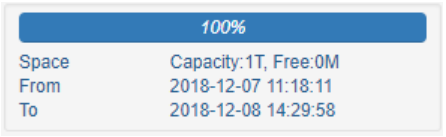
By clicking Playback icon at the top, user can playback the DVR/NVR's recorded video. Note that only authorized users for playback/search can use playback function.

At initial playback page, all video channels will be shown with the maximum division. The number of video channels will be depend on the DVR/NVR model.



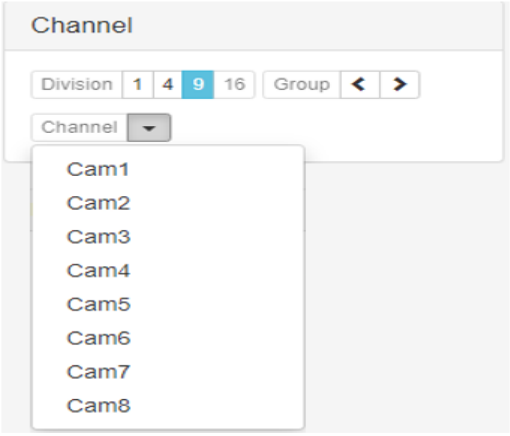
Status for the recording duration and capacity

This status menu shows the used space and remaining space of HDD. Also, it shows the recording start time and shows the last recording time.

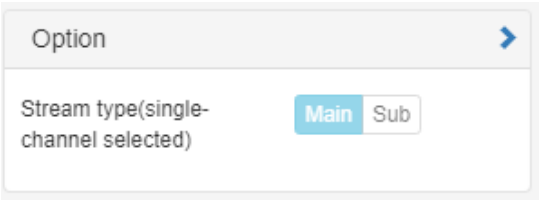


Selecting channels

Selects the channels to playback. Then HTML5 Webviewer will playback that channels.



If you click [ ] icon, then you can set the stream type for single-channle mode. 'Main' means the max. resolution and 'Sub' means 2nd stream with lower resolution for multidivision mode or mobile environment.

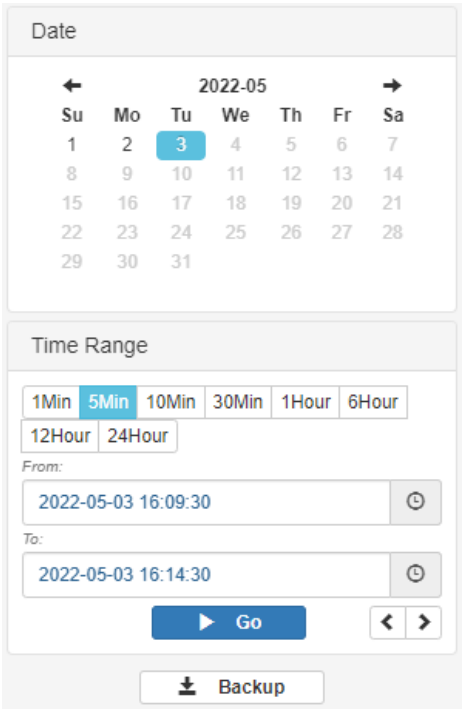


Search and Playback

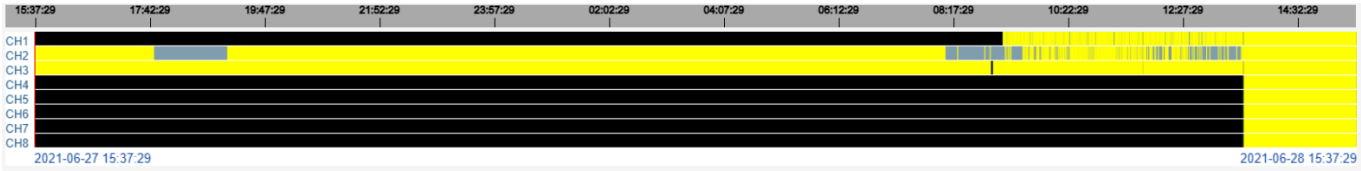
Recorded dates are displayed by black color in calendar, and unrecorded dates are displayed by grey color. Selects the date to playback.
Also, selects time range to playback. If you select '5 Min', the time range of 'From' to 'To' will be 5 minute. Even if you manually select 'From' time, 'To' time will be set 5 minute after 'From' time.

All settings are done, then click [Go] to playback.

<Note>
Audio is not supported.



Timeline



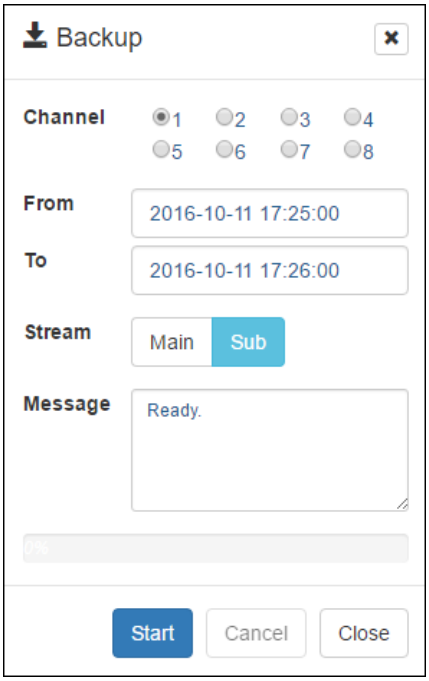
Timeline shows the recording status including event information.
Timeline with grey means 'no event'. Timeline with yellow means that motion is detected. Timeline with red means that sensor is input.

Playback Control

Playback control icons upper left side can be used to control playback. Various playback speed from 1/16x ~ 16x can be set.

Backup

User can backup by clicking [Backup]. The format of backup file is mp4 file.



Sequence

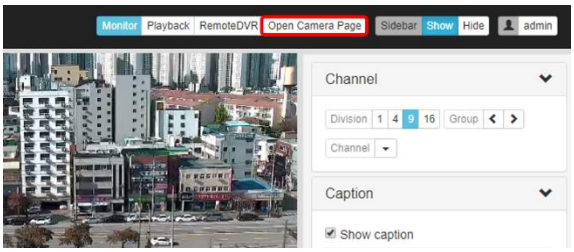
1. Select the channel to backup.
2. Select the start and end time to backup (From, To).
3. Select the stream resolution, 'Main' (high resolution) or 'Sub' (low resolution).
4. Leave message (optional) and click 'Start'.
5. Select the directory to store the backup file after finishing backup.

<Note>

1. Only one channel can be backup at once. Please use Control Center to backup multi channels at once.
2. Audio is not supported.
3. Control Center supports very powerful and convenient functions. Please use Control Center for more powerful functions.

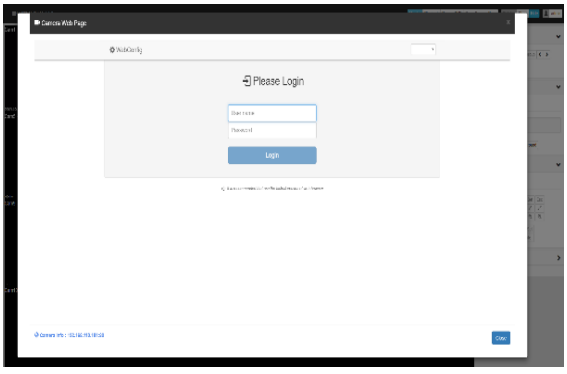
Open Camera Page

To connect to camera's web page, select the channel to connect and click [Open Camera Page]. Then, camera's web page will be popped up in HTML5 webviewer. User can change settings of camera.



To connect to another camera's web page, close the pop up window and select another camera. And click [Open Camera Page].

If user wants to use another web browser, then excute another web browser such as Internet Explorer and connect to NVR's IP address. Camera's web page will be shown.



<Note>

1. [Menu-Network-Releay Camera Web Page] must be set 'ON'.
2. While the web page of the camera is kept popped up in HTML5 webviewer, other user can not access NVR's webviewer because NVR's IP address is mapped to camera's web page.

Mobile Application

Mobile application is supported for Smart Phone (Android and iOS). It is available to serach and install as free of charge in Apple App store & Google Android Store. (Please refer product manual to find out the name of application.)

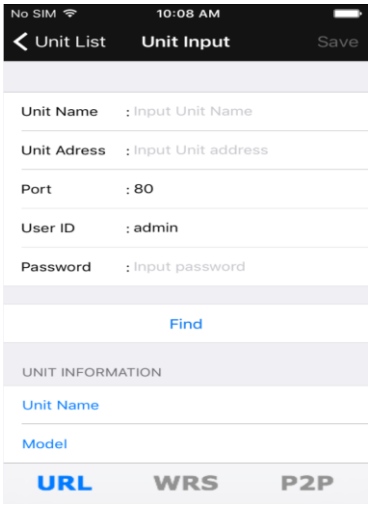
- ✓ Available to register up to 100 units
- ✓ Supports multi-stream function
- ✓ Able to search system and event logs.
- ✓ Supports remote control function.

Supports Digital Zoom, PTZ Control, Image saving, Image e-mail sending, etc. in Single Monitoring Mode.

registration method for iOS app

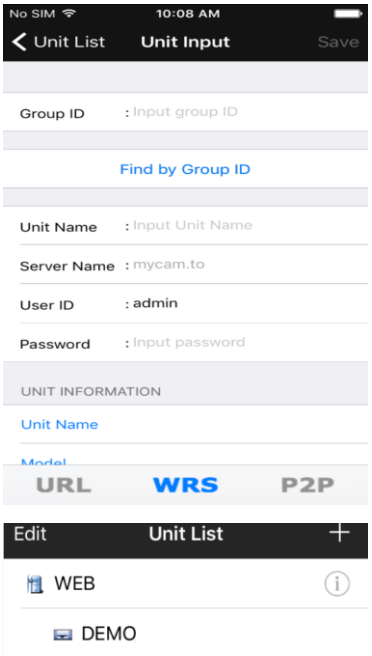
URL register

1. Touch "+" button after application installed.
2. Select URL in category.
3. Touch "Find" button then there's unit name and IP address shown. Touch save button to finish unit register.
4. Touch unit created to enter unit's screen.



WRS register

1. Select WRS in category.
2. Enter group ID created in the DVR/NVR.
3. Click on "search by group ID".
4. Touch "Find" button then there comes unit name of searched DVR/NVR and IP address and touch save button to finalize unit register.
5. Touch unit created to enter unit's screen.



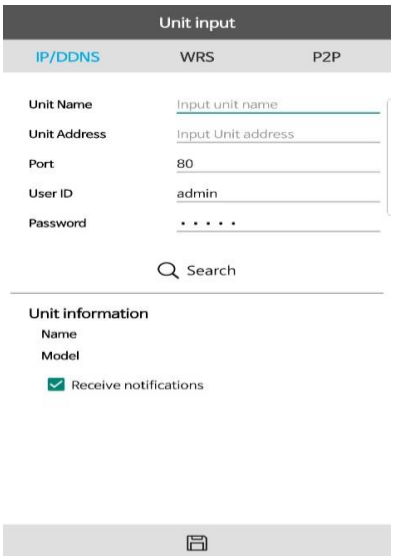
<Note>

WRS of DVR/NVR and port forwarding must be enabled to register unit.
*P2P feature might not be included based on types of model.

Register method for Android app

URL register

1. Touch "+" button after application installed.
2. Select IP/DDNS in category.
3. Touch "Find" button then there's unit name and IP address shown. Touch save button to finish unit register.
4. Touch unit created to enter unit's screen.



WRS register

1. Select WRS in category.
2. Enter group ID created in the DVR/NVR.
3. Click on "search by group ID".
4. Touch "Find" button then there comes unit name of searched DVR/NVR and IP address and touch save button to finalize unit register.
5. Touch unit created to enter unit's screen.

<Note>

WRS of DVR/NVR and port forwarding must be enabled to register unit.
*P2P feature might not be included based on types of model.

Mobileviewer

This service allows users to view video by accessing to DVR/NVR from mobile device's web browser without certain applications. The device must support either wifi, 3G or Lte.

Input the form of http://IP/svc/mviewer.html to access to DVR/NVR from the web browser

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