Network Video Recorder

User's Manual

NVST IP6800-32 NVST IP6816E-32 NVST IP6832E-32

1

Thank you for using our product.

- 1. This is user's manual for NVR(Network Video Recorder).
- 2. This manual contains product specification and introduction, installation guide, operating guide and other necessary matters for easy understanding. Users should read this user's manual carefully for proper use.
- 3. Contents in this manual may be changed according to the specification change and feature improvement without any notification.
- 4. This user's manual shall never be copied without prior agreement and violating this may be a reason for legal punishment on piracy.
- 5. If there is any incorrect or insufficient content in this user's manual, notify it to Customer Support Center.

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CH1. Product Introduction

1-1. Product Contents

After removing packing materials of this product, check whether all following contents are included.



Main Body (NVR): This converts the analog video and audio signal to the digital signal and saves on HDD.



Power cable: This is a power cable to the product.



MOUSE: This is an controller for convenience.



Remote Controller: This is an IR remote controller for convenience.



Battery: These are 2(two) battery for the remote controller.

1-2. Product Characteristics

1) High quality picture

This enables recording and playing high quality digital image.

2) High reliability

With Embedded hardware and software design, this maintains higher product reliability.

3) Simple usage

This allows users to use it conveniently by placing control buttons similar to existing ones on VCR, and users can easily learn the usage.

4) Pentaplex System

Pentaplex System allows live, recording, backup, networking and playback simultaneously.

5) Selectable recording setup

For recording methods, users can select the frame rate, resolution and video quality individually in order to be appropriate for user's environment.

6) Remote monitoring

With using exclusive line or Internet network, you can search or monitor recorded images remotely by installing exclusive client program on Windows PC or Mac.

7) Backup

You can backup with a versitile external USB devices.

8) Audio recording

You can record all sound inputs simultaneously. Moreover, you can listen to the sound in search and live monitoring and play mode.

9) Various recording methods

This provides convenient use with manual recording, recording by dates and days, hourly schedule recording, sensor and motion detection event recording and others to enable unmanned monitoring.

10) Various total monitoring features

You can cover any security scenario through various sensor inputs and contact output control.

11) Display information in easy-to-understand information method

This enhanced convenience of user by displaying information (date, time, recording method, recording frame number, HDD capacity and others) in monitoring, recording and playing mode in easy-to-understand way.

12) P/T/Z control

By built in RS485, various P/T/Z cameras can be used.

13) Dual CODEC for video transmission

NVR can send 120 fps (based on CIF) regardless of the local recording and viewing setup regardless with recording setup.

14) Web browser support

You can monitor and playback the video and control the PTZ camera by internet explorer.

15) Built in S.M.A.R.T.

You can automatically check the health of the hard disk drives.

16) Language pack

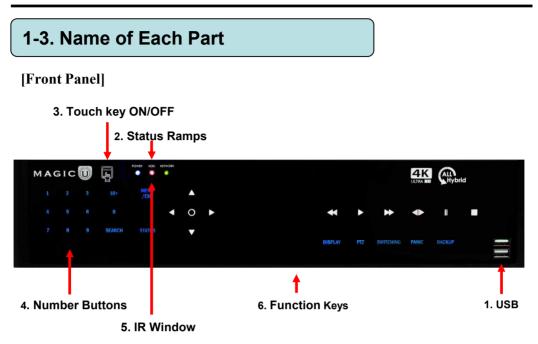
Basically NVR has multiple language set, furthermore you can choose the language set if you want.

17) Touch LED Switch

You can operate with touch LED switch in front panel.

18) HD Spot out

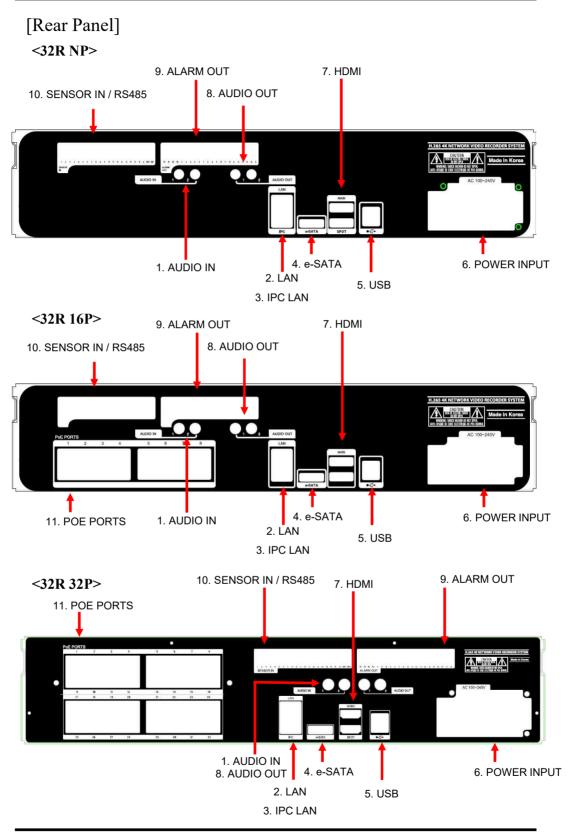
You can use one of HDMJI to the HD spot.



- 1. USB ports : These USB ports are for mouse and USB devices.
- 2. Status lamps

POWER : Blue color back light. Power indicator. HDD : Red. Indicate the recording. NETWORK : Green. Lit on connecting the network

- 3. Touch Key ON/OFF
- 4. Number buttons : If you press this button, it will be changed to full screen in live viewing or playback If you want to go to 20ch, push the 10+ button twice.
- 5. IR Window : the window for remote controller
- 6. Function keys
- 1) MENU/EXIT : It will move to the setup screen from the live mode or exit without saving, press this button.
- 2) SEARCH : It will change to the playback mode from the live mode.
- 3) DISPLAY : It will change the screen splitting sequentially. It can be adapted both live and play mode.
- 4) SWITCHING : It will change to switching mode except 20 splitting.
- 5) PTZ : It will change to the pan, tilt and zoom control mode from the live mode.
- 6) PANIC : This button is used in emergency status. If you push this button,
 - the DVR starts to record with maximum speed regardless of setting value.
- 7) BACKUP : It will move to the backup screen from the live or play mode.



- 1. AUDIO IN : RCA audio in terminals.
- 2. LAN : This is the Gigabit Ethernet LAN cable connection terminal for NVR.
- 3. IP LAN : This is the Gigabit Ethernet LAN cable connection terminal for IP Camera.
- 4. eSATA : e-SATA port for external HDD storage.
- 5. USB : USB port for mouse and USB devices. You should connect correctly the USB devices and mouse as picture directed.
- 6. POWER INPUT
- 7. HDMI : Real HD and 4k output for high resolution monitor.
- 8. AUDIO OUT : RCA audio out terminal.
- **9.** ALARM OUT : This terminal blocks connect external electric devices to the product (Warning Lamp and others).
- SENSOR IN : This terminals can be connected to external sensors.
 RS485 : For control the pan and tile cameras.

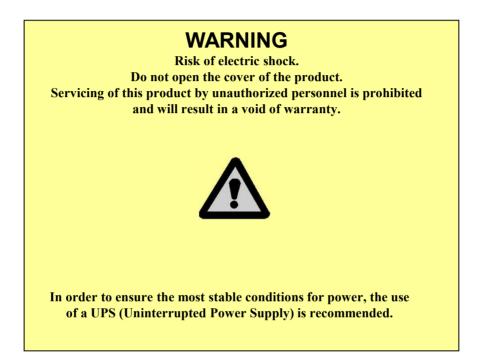
<32R 16P/32R 32P>

11. POE PORTS : POE connection terminal for IP Cameras.

✤ For more details, refer to [CH 2. Installation Method and Cautions].

CH2. Installation Method and Cautions

2-1. Cautions



- Avoid installing the product where there are direct rays or it is hot by locating near from heat generator. (May cause fire)

- Do not put vase, flowerpot, cup, cosmetics, drug, and anything the contain water on product. (May cause fire or electric shock, and it may injure people by falling)

- Do not insert or drop any metal object (coin, hair pin) or flammable object (match, paper) into air hole. (May cause fire or electric shock)

- Do not put any heavy object on it. (May injure people by being fell or destroyed.)

- Put power plug surely not to be moved. (If not, this may cause fire.)

- Unplug power plug and antenna when there are thunders and lightening. (May cause fire.)

- For cleaning the product, wipe surface with dry towel. Using chemical agent or cleaner may change the color and unpeel paint. Do not put several plugs at same time. (May cause electric shock.) If there is smoke or strange smell, stop operation. In this case, turn the power off and unplug it, and then contact our service center. (If you keep using it, this may cause fire or electric shock.)

- Do not unplug by pulling cord. (If cord is damaged, it may cause fire or electric shock.)

- Do not plug or unplug with wet hands. (May cause electric shock.)

- Keep the power cord untwisted. (May cause fire or electric shock.)

- Use proper adapter. (Using too much electric power may cause fire or electric shock.)

- Do not install it at where exposed to rain and wind and water drop. (May cause fire, electric shock and transformation.)

- Keep away from fire. (May cause fire.)

-Do not disassemble or remodel on your own. (May cause malfunction or electric shock.)

- Do not put next to flammable materials like flammable spray. (May cause fire.)

- Do not install it at a place with too much dirt. (May cause fire.)

- Do not install it on unstable places like shaking table and inclined place or shaking place. (May injure users by falling down or being upside down.)

- Do not put an heavy object on power cord or avoid it from being pressed by the device. (May cause fire or electric shock.)

- In case of using extension cord, do not use several devices at same time. (May cause fire with abnormal heating of extension.)

- When there are dirt on power plug pin or power outlet, clean it nicely. (May cause fire.)

-Do not damage on power cord or plug, and bend or twist or pull too much, and put it between other objects or heat. If power outlet insertion part is not tight, do not use it. (May cause fire or electric shock.)

-Do not drop or give a shock to the product. (May injure people or cause malfunction.)

- Do not touch power adaptor or signal controller. (May cause electric shock.)

- Do not put any object too close to block cooling fan. (May cause fire.)

- In case of exchanging batteries with improper type, there might be danger of explosion.

- For used batteries, throw away separately from other garbage.

- When you take out batteries, avoid children from eating them by mistake. Keep them away from children. (If a child ate them, contact a doctor right away.)

Note :

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense. Changes or modifications are expressly approved in the instruction manual. The user could lose the authority to operate this equipment if an unauthorized change or modification is made.

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

FCC Warning :

This equipment may generate or use radio frequency energy. Changes or modifications to this equipment may cause harmful interference unless the modifications are expressly approved in the instruction manual. The user could lose the authority to operate this equipment if an unauthorized change or modification is made.

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

This product has obtained EMI registration.

2-2 Product Installation

This product may be composed of camera and monitor in default, and additionally the sensor, microphone, speaker and PC for network can be connected if necessary.

2-2-1. Power Connection

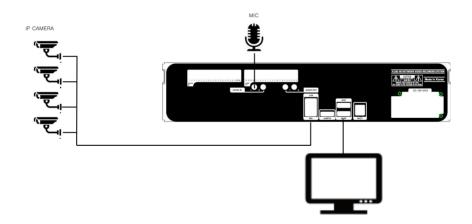
1) Connect adapter or power cable to power input terminal at rear side. (free voltage from 100V to 240V, 50/60Hz)

X You must operate it at the rated voltage instructed on the user's manual. In case power higher than the rated voltage is supplied, it may cause damages on product.

2-2-2. Connecting External Device

- * Connect it when power of the product is off.
- * Read through user's manual for the device you are connecting carefully.

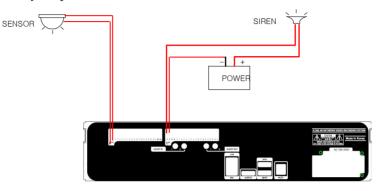
1) How to Connect External Video/Audio Device



Connect cameras to POE PORTS by channels. Connect microphone (AMP) to AUDIO IN by channels. Connect VGA OUT to VIDEO IN of monitor. Connect HD output to HD Monitor. Connect AUDIO OUT to AUDIO IN of monitor (or speaker).

2) How to connect external sensor

Sensor terminal is composed of 1 input channel and 1 output channel. Sensor out terminal is relay output with 1A, 24V or 0.5A,125V.



Sensor In : Connect the sensors. The sensor are composed of both signal and ground terminals, with a voltage difference of 5V. In the case that the sensor used for input is of the N/O (Normal Open) type, when the voltage difference between the signal and ground falls to 0V (short), the NVR can use this as a trigger to start alarm/sensor based recording.

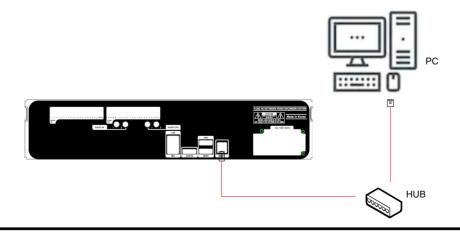
Sensor Out : Connecting external electrical devices

The relay output terminal does not provide power, and functions only on an ON/OFF basis via a relay. Normally, the signal and ground should be on an OPEN basis, and the NVR will complete the relay connection.

3) Connecting with PC using LAN cable

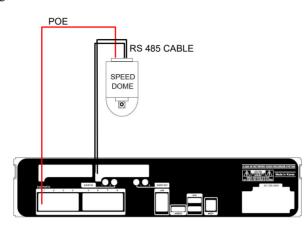
If you want to connect NVR to PC directly, use LAN cable, and if you want to use HUB, connect cable via hub.

- *Hub : This is a device connecting one office to devices located near with using cable when you organize LAN
- *Cable : This is standard UTP cable used for communication among devices through Hub and others when you organize LAN



4) Connection Using PTZ camera

In case of using pan and tilt cameras, connect PAN/TILT DRIVE to product as shown at following figure.



5) Installing Hard disk drive

In case of installing the hard disk drive, open the upper case and install the hard disk drive on the hard bracket. Remember that the main power should be off to install the hard disk drive. If you have any trouble, please contact the technical support.

CH3. How to Use

3-1. General Usage Information

This NVR can be operated with a mouse or remote controller under the four main modes listed below:

Live Mode – This is the "main or default" mode. From this mode you can view in real time all currently operating cameras, information regarding camera status, and have access to Pan/Tilt camera controls. In addition, system status information will be shown during live mode, and other modes can be entered from Live mode.

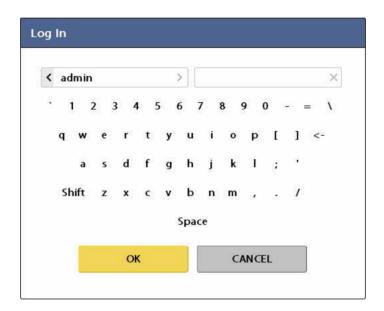
Setup Mode – The user will be able to customize settings for Live viewing, Recording, Backup, and Camera related devices under the Setup Mode.

Search Mode – In Search Mode, the user will be able to review all recorded footage in the case that an event must be reviewed using a calendar or event based search.

Backup Mode – In Backup Mode, the user will be able to archive the desired data to the preferred supported media of their choice (ex. External CD&DVD RW, USB Backup, Remote Client Software, etc.)

Password Protection – The NVR system will utilize a user ID and password system to prevent unauthorized usage of this product. Control of the system will only be possible after entering a proper ID and password as illustrated below. (Factory Default settings are blank for these fields).

IDs and passwords should be managed by a system administrator, as different users may be given different levels of access to the NVR.



3-2. LIVE Mode

In this section you will know how to split the video mode into 1, 4, 6, 8, 9, 12, 16, as well as auto sequencing, PTZ Control, Mouse control, Setup configurations, Backup.



3-2-1. LIVE Mode Control

1) Live View Status

You may use the Live Menu Bar located at the bottom for quick shortcuts and view status of certain items.

C	Recording indicator
Ê	Event recording indicator
P	Motion detection indicator
_	Sensor activation indicator

2) Live Menu Bar

You may use the Live Menu Bar located at the bottom for quick shortcuts and view status of certain items.

\$ Q ↓ A 15.51.33 HDD 75.3% Schedule Record Network 15.51.33 2021/08/19 ★

Ø	Go to setup
Q	Go to playback
	Screen Split mode change
Ç	Sequence activation
۹×	Audio out channel & Audio Mute indicator
	Backup
G	Lock/ Unlock indicator
🔵 HDD 75.3%	Hard drive usage & lamp
Schedule Record	Scheduler activation indicator
Network	Network connection indicator
	Search Event List indicator
15:51:33 2021/08/19	Date & Time
*	Live Menu Bar (Fix or auto hide)

3) Live Popup Menu

By Right-Clicking anywhere on Live mode, you may view the Live Popup Menu. By using the Live Popup Menu, you can quickly jump to the necessary configuration and settings.



4) Live Toolbar

When a channel is selected on live mode, the live toolbar is displayed as follows. You can enter PTZ or Zoom mode or use Snapshot function.



3-2-2. LIVE Mode Feature

1) Setup : refer to 3-4

2) Split.

You can change video split mode for Live View. Click the channel number at the top to switch to the channel on the page.

£.	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16
22	18	19	20	21	17	23	24
25	26	27	28	29	30	31	32

3) Audio Out

You can choose the audio out from this menu.

		1	Audi	o Of	f		
1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24
25	26	27	28	29	30	31	32

4) Instant Replay

This is very convenient function to catch the abrupt accident. During live viewing, you can go directly to the playback screen.

If you choose the 'Instant Replay' it immediately switches to search mode and playback the video.

5) Search : refer to 3-3

6) Backup

There are two ways to enter the backup. The first one is that right click on the live screen, and the second one is that enter directly from 'Search' upon playback. If you choose the 'backup' from the live menu, below backup screen appears.

• You can set the backup device, time and channel from the backup screen.

Backup								
Device USB			~	None	_			
Туре								
exe								
From								
			\sim	00:00:00			*	
То								
			Y	00:00:00			×	
Camera								
1	2	3	4	5	6	7	8	All On
9	10	1119	20	21 IZ	14 22	1523	🗹 16 🔽 24	All Off
25	26	27	28	29	30	31	32	
🗹 Audie	0							
Even	t Recordir	ng						
Password	ł							
Estimati	on	Start	Stop					
Status							}	
			Exit		Hid	e		

• After that, if you click the 'Estimation' button, it will show the estimated backup file size.

Estimation	Start	Stop	
[0 MB/4219 MB			

• Then click the 'Start' button.

WARNING Do NOT remove the backup device till end sign. The device and system may be damaged.	

7) Snapshot

You can save the live snapshot by this menu. All channel will be saved individually to the USB memory by JPG format . You should put in USB memory before saving.

8) Freeze

You can freeze the current live video channels.

9) PTZ (Pan, Tilt and Zoom)

It is possible to control the pan and tilt camera by itself. Press the 'PTZ' button to enter the PTZ mode. For Menu setting, you can set it by pressing button as displayed at bottom of window.

• You can set the direction of camera by using the arrow buttons.



Preset[SEL]	Preset setup
One Push[8]	Auto Focus
Menu[7]	Camera OSD menu
Zoom -/+	Zoom out/in with mouse or [1]/[2] buttons on the remote controller.
Focus -/+	Adjust the focus with mouse or [3]/[4] buttons on the remote controller.
IRIS -/+	Adjust the iris with mouse or [5]/[6] buttons on the remote controller.

For more details, refer to [CH 2-2. Connection Using PTZ camera] and [CH 3-4-3. Device]

Preset[SEL] : You can enter the preset number using the keypad appearing the preset button or 'Enter' button on the remote controller.

1	2	3
4	5	6
7	8	9
	0	
R	un[SE Set	L)
[Pk	ay/SUBME	NU]
Cle	ear[Sto	[qc
	Exit	

Run[SEL]	Move to preset number
Set[Play]	Set a position and name of a preset number
Clear[Stop]	Clear a preset set
Exit	Exit preset mode

How to use Preset

1. Click the right mouse button and choose PTZ from a live pop-up menu.

2. After you move the screen, click the set button and set the position and name.

※ If you choose not a specified preset, UNDEFINED is displayed on the screen.※ You can set up to 32. If you choose out of valid range, there is no action.

•	Camera[0]	: You can choose the PTZ camera with mouse or [0] buttons on the remote controller
•	Setup[9]	: If you press Setup using mouse (or [9] button on the remote controller) in PTZ Menu, PTZ setup window will appear. You can set the pan and tilt speed, 32 preset name and tour sequence as well as dwelling time.

PTZ Settings															
Pan Speed		Tilt Speed			Preset dw	ell time									
4	~	4		~	8 sec	. Á	-								
Preset 1~8	Preset 9~16	Preset 17	/~24	Preset 25-	-32										
Preset 1			Prese	t 5 🗌			2	Tour							
		Clear				Clear	(х	~	x	~	x	~	x	~
Preset 2			Prese	t 6 🗌				×	~	x	~	×	~	×	~
		Clear				Clear		x	~	×	~	×	~	×	~
Preset 3			Prese	t7 🗆				x	~	x	*	x	~	×	~
neset 5		-	riese					x	~	×		×	~	×	~
		Clear				Clear	d	x	~	x	~	x	~	x	~
Preset 4			Prese	t 8 🗌				x	~	x	~	×	~	×	~
		Clear				Clear		x	~	x	~	×	~	x	~
					Cl	ear All				(ок	С	ANCEL	I	

Pan Speed	Set pan speed 1~7
Tilt Speed	Set tilt speed 1~7
Preset dwell time	Set preset dwell time 2~60 sec
Tour	When you check the tour box, the preset tour starts in the order specified by the user.

✤ How to use Tour

Choose a preset from upper left to right.

 $\,\%\,$ If you use not specified presets, it automatically skip the tour.

10) Zoom

Digital zoom of live screen for selected channel. It can be 8x zoom and also control the position by mouse dragging.





: You can choose the camera for zoom with mouse or [0] buttons on the remote controller.

Zoom[9]



: You can zoom with mouse or [9] buttons on the remote controller.

11) Sequence

Sequence Mode On /Off: Switches screens as set on Dwell time under Screen Setup

12) OSD

This feature shows current settings of product through GUI (Graphic User Interface) and INFO button at front side is used for this feature. When you turn on power, this will show current date and time, System Lock Setting, HDD usage, Video Loss Check, Sensor ON/OFF, Motion Detection Check, Recording Status and Schedule Feature Usage. As you press INFO button once more, GUI disappear->OSD disappear->GUI appear->OSD appear will happen sequentially.

GUI (Graphic User Interface): displaying current status on monitor as images
OSD (On Screen Display): displaying current status on monitor as character

13) System Information

It shows the system information.

System Info					
Firmware version	3.0.0.0				
HDD	0/160 GB				
MAC Address	00:09:1B:00:01:02				
IP					
Connected IP	192.168.0.2 🗸				
Watch User	0				
Search User	0				
Setup User	0				
Oldest Date	2012/07/27 00:00:00				
	ОК				

14) Lock/Log In

Logs off current user and locks NVR from any further configuration and screen setup until next Administrator logs in.

15) Alarm Control

You can control all alarms connected and the NVR system buzzer.

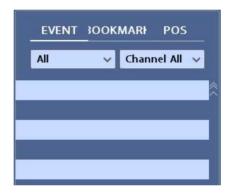
larm Control	
Alarm 1	۲
Alarm 2	
Alarm 3	
Alarm 4	
Alarm 5	
Alarm 6	۲
Alarm 7	
Alarm 8	۲
Alarm 9	
Alarm 10	
Alarm 11	
Alarm 12	
Alarm 13	
Alarm 14	
Alarm 15	
Alarm 16	۲
Buzzer	
Close	e

3-3. Search Mode

Search mode consists of two different modes of searching. The video data can be selected by 3 modes.

Time	Panorama	Thumbnail				
Time	Search by Month / Day / Time selection.					
Panorama	Play the specific channel continuously.					
Thumbnail	Play the specific channel by user defined interval.					

In each mode, you can check the Event / Bookmark / POS as follows, and it moves to the corresponding log time by double-click



The event types and channels that can be changed differ depending on the mode and combination of EVENT, BOOKMARK and POS.

Search Mode	Event	Bookmark	POS
Time	Both event type and channel can be changed.	Both event type and channel cannot be changed.	Channel can be changed.
Panorama / Thumbnail	Only event type can be changed.	Both event type and channel cannot be changed.	Both event type and channel cannot be changed.

Change pages in time mode:

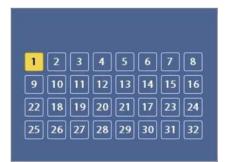
The page can be changed in two ways as follows.

ige		Channel	Channel		Page
1 2 3	4 5	6 7 8	123	4 5	6 7 8
9 10 11	1 12 13	14 15 16	9 10 11	12 13	14 15 1
2 18 19	20 21	17 23 24	22 18 19	20 21	17 23 2
25 26 27	28 29	30 31 32	25 26 27	28 29	30 31 3
(Page Mode)			(Cl	nannel m	ode)

In the Page mode, it operates in the same way as the split of a live view. The Channel mode is changed to 1 division of the corresponding channel when clicked. To switch between the two modes, click this eigen.

Change channels in panorama/thumbnail mode:

The function changes by changing the target channel, not by changing the page.



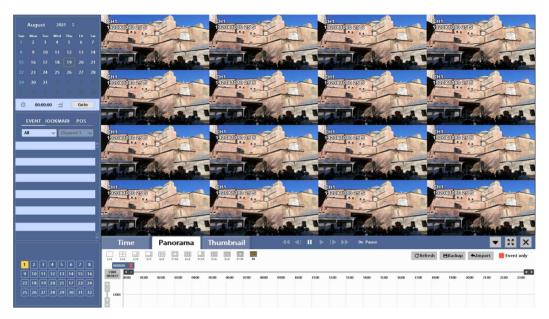
3-3-1. Search Selection Type

1) Time Based search selection



- Select the Date you wish to view by selecting a Date from Calendar.
- Select time you wish to view by selecting a time from Time Line.
- You may click on Refresh, Backup, Import, Exit, Full Screen, Hide for additional features and options.

2) Panorama Search



- Select search date from calendar
- Choose the channel and interval, then select the time from bar or typing
- The selected channel will be played individually by interval time difference



3) Thumbnail Search

- Select search date from calendar
- Choose the channel and time from bar or typing
- The selected channel will be played continuously. If you want to play faster, use the FF button.

4) Search Related buttons

• You may click on Refresh, Option, Backup, Import, Exit, Full Screen, Hide for additional features and options.

C Refresh	Reload all data list.			
Backup	Backup recorded data to external USB device.			
★Import	Playback recorded data from external USB device.			
▼ Hide bottom of Playback Toolbar				
Load playback data to full screen mode.				
×	X Move to Live video mode.			
Event only	Event only			

3-3-2. Play Mode

If you choose 'Full Screen', the full screen appear. You can control the play speed in here.



Play Screen GUI

- 1. Split Screen
- 2. Sequence
- 3. Audio
- 4. Event list
- 5. FB (Fast Backward): FB×1, 2, 4, 8, 16, 32, 64 times faster
- 6. SB (Slow Backward):SBx1/2, SBx1/4
- 7. STILL (Pause) / Frame advance
- 8. Play : Forward normal speed($\times 1$)
- 9. SF (Slow Forward):SFx1/2, SFx1/4
- 10. FF (Fast Forward): FF × 2, 4, 8, 16, 32, 64 times faster
- 11. Playback Status information
- 12. date and time during playback : click to change date and time
- 13. Show: Timeline, Refresh, Backup, Import and Event Only
- 14. Cancel full screen
- 15. Exit playback
- 16. Toggle auto hide

3-4. SETUP Mode

Access Setup menu from Right Clicking mouse button to Popup Menu. Configure Display, Record, Device, Alarm, Network, System which is navigated by clicking on corresponding tab menu at the top of the screen.

Apply	Apply changes
Default	Return to factory default settings.
Close	Close the menu. If there is a something that has not been applied after the change, a pop-up will be asked.

3-4-1. Display

Configure OSD and Main Display setting. 1) OSD

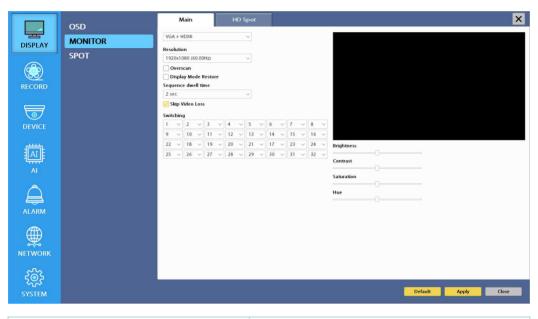
	050		×
DISPLAY	OSD MONITOR	Date Format	
	SPOT	Time Format 24 HR ✓	
		Language English ✓	
RECORD		OSD Information Bar	
		Auto hide v Display HDD Usage	
DEVICE		Percent v	
Â			
ALARM			
æ			
⊶ 7 •• NETWORK			
5 <u>0</u> 3			
SYSTEM		Default Apply Close	

Date Format	YYYY/MM/DD, MM/DD/YYYY, DD/MM/YYYY
Time Format	24HR, 12H(AM/PM)
Language	Select system language.
OSD	OSD On/Off
Information Bar	Information Menu Bar Hide always/Auto hide/ Show always
Display HDD Usage	Percent/Oldest Date

2) Monitor

2-1) Main

• Configure and view Resolution, Sequence Dwell Time and color settings.



Resolution	1280x720, 1920x1080, 2560x1440, 3840x2160
Device	HDMI
Overscan	Cut off a bit of each edge of the screen
Sequence dwell time	1 sec ~ 60 sec
Skip Video Loss	Skip a video loss channel when you set the sequence of the live screen.
Switching	Set a display for the live screen.

Brightness	Adjust a brightness.
Contrast	Adjust a contrast.
Saturation	Adjust a saturation.
Hue	Adjust a hue.

2-2) HD Spot

• Configure and view Resolution, Sequence Dwell Time settings.

	OSD	Main HD Spot	×
	MONITOR	None	
DISPLAY	SPOT	Resolution	
	5101	1920x1080 (60.00H2) ~ Mode	
		32 Screen	
RECORD		Sequence dwell time	
		2 sec 🗸	
		🔀 Skip Video Loss	
5		Switching	
DEVICE			
		$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	
		17 v 18 v 19 v 20 v 21 v 22 v 23 v 24 v	
AI		25 v 26 v 27 v 28 v 29 v 30 v 31 v 32 v	
Â			
ALARM			
æ			
NETWORK			
~7~			
રે⊚ર્ટ			
SYSTEM		Default Apply Default	Close
STSTEWI			

Device	None or HDMI
Resolution	1280x720, 1920x1080, 2560x1440, 3840x2160
Mode	1, 4, 9, 16, 20, 25, 32 Screen
Sequence dwell time	1 sec ~ 60 sec
Skip Video Loss	Skip a video loss channel when you set the sequence of the live screen.
Switching	Set a display for the live screen.

3) Spot

• Configure and view Resolution, Sequence Dwell Time settings.

OSD MONITORDISPLAYSPOTRECORDADEVICEAAIAALARMARETWORKASYSTEMA	Resolution 1920x1080 (60.00Hz) Overscan Display Mode Restore Sequence dwell time	$\begin{array}{c c c c c c c c c c c c c c c c c c c $
Resolution		1280x720, 1920x1080, 2560x1440, 3840x2160
Device		HDMI
Overscan		Cut off a bit of each edge of the screen
Sequence dwell time $1 \sec \sim 60 \sec$		1 sec ~ 60 sec
Skip Video Loss		Skip a video loss channel when you set the sequence of the live screen.
Switching		Set a display for the live screen.

3-4-2. Record

Configure and view Event In, Record, Group, Holiday settings

1) Codec

	CODEC	Camera 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 🗙
DISPLAY	RECORD	Main Stream Resolution
	GROUP	H3GH 1920x1080 V Apply All (Noin Steam) Framerate
	SCHEDULE	30.00 V
RECORD	HOLIDAY	Quality 3
	SENSOR EVENT	Sirate Auto Bitrate
1	MOTION EVENT	4000 (2000 ~ 10000 Kbps)
DEVICE	POS EVENT	Sub Stream Resolution H364 640:350 V Apply All Sub Steam
		Framerate 3000 V
		3000 V Quality
		4
A		Sirate Auto Bitrate
		530 (500 ~ 10000 Kbps)
ALARM		Audio
∰		Total 45/0/0/0 (240) (1080P 960fps) (1.4/80M)
o∓• NETWORK		Estimated Recording Days
NETWORK		1.35 Day
562		
2025		
SYSTEM		Default Close Close

Codec and Resolution	Set a codec and resolution.
Framerate	Set a frame per seconds.
Quality	Set a quality.
✤ ALL Apply	Apply the setting to all channels.

Bitrate Auto	Automatically sets the best bitrate according to the camera resolution and fps.
Bitrate	Set the bitrate manually.
Audio	On / Off

✤ Total	It shows the total fps.
 Estimated Recording Days 	This is an automatic calculator of the recoding days.

2) Record

	CODEC	Camera 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 🗙
DISPLAY	RECORD	Rec Type Event V Apply All
	GROUP	Event Recording
	SCHEDULE	Duration 15 sec V
RECORD	HOLIDAY	Pre Alarm 5 sec
	SENSOR EVENT	Codec
	MOTION EVENT	Main Stream 1080Pp15 2750Kbps
DEVICE	POS EVENT	Sub Stream
		480x256(15190Kbps) Total 45/02/00 (240) (10809 960/[p-3] (1.4/80.00)
ALARM		
SYSTEM		Default Apply Close

Rec type		None, Conti, Event, C/E
A Event	✤ Duration	$5 \sim 60 \text{ sec}$
Event	PreAlarm	$0 \sim 10 \text{ sec}$
✤ ALL Apply		Apply the setting to all channels.

Main Stream	The resolution of the main stream.
Sub Stream	The resolution of the sub stream.
Bitrate	It shows Bitrate of the camera.

✤ Total	It shows the total fps.
 Estimated Recording Days 	This is an automatic calculator of the recoding days.

- Event recording has priority in recording. In C/E recording, the recording will follow continuous recording setup in normal condition while it would follow event recording setup in event generation.
- For convenience, you can use the 'Apply All' menu to change with the same preference. You don't have to setup each channel if you using the 'Apply All' function.
- Duration is to set post event recording time.
- Pre alarm is to set pre event recording time.
- Total shows total fps of all channels. If total fps is more than supported, it turns red. If it turns red, you need to set a lower resolution or FPS.

3) Group

• With this menu, you can set the group using the scheduler. If you choose 'Group' tab, you can see the similar screen with 'Record'. The setting is similar

	CODEC	Camera 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 🗙
		Rec Type (Group A)
DISPLAY	RECORD	Continuous V Apply All
	GROUP	Rec Type (Group B)
	A CONTRACTOR OF A CONTRACTOR O	Continuous V Apply All
	SCHEDULE	Rec Type (Group C)
RECORD	HOLIDAY	Continuous V Apply All
necond		Rec Type (Group D)
	SENSOR EVENT	Continuous V Apply All
$\overline{\Box}$	MOTION EVENT	Event Recording
		Duration
DEVICE	POS EVENT	15 sec v
		PreAlarm
		5 sec v
		Codec
		Main Stream
		1080P@15 2750Kbps
<u> </u>		Sub-Stream
\square		480x256@15.190Kbps
<i>←</i>		
ALARM		Total
		45/0/0/0 (240) (1080P 960fps) (1.4/80M)
₩.		
NETWORK		
NETWORK		
~~~		
ςoγ		
~~~		Default Apply Close
SYSTEM		

4) Schedule

- In recording, Schedule recording setting is most preferred. So if you activate the weekly scheduler, you cannot record manually.
- Schedule On : The weekly scheduler is activated.
- Holiday On : The holiday that set by user is activated.
- Since you can set recording weekly, you can reduce recording of unnecessary time period. In Scheduler window, days and channels are displayed, and recording information for each channel is displayed at bottom of window.

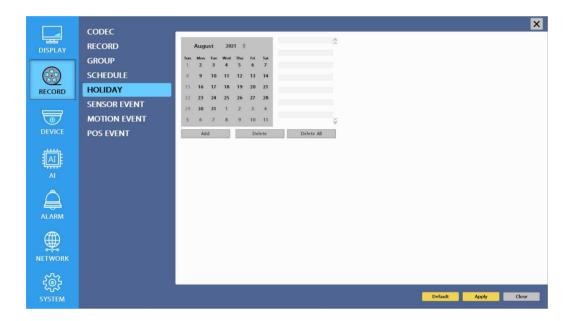
* How to set the weekly scheduler

- 1. Choose 'Scheduler' to 'On'.
 - 2. Choose group and drag to wanted time.
 - 3. Press the time bar _____, if you want to set the detailed time.
 - 4. Press 'Enter' button to change the group of the selected area.
 - 5. If you activate 'Holiday' scheduler, choose 'holiday'.

	CODEC																					×	
DISPLAY	CODEC RECORD	Schedule																					
	GROUP	All 0 1	2 3	4 5	6 7	3 9 1	0 11	12 1	3 14	15	16	17 1	8 19	9 20	21	22	23						
	SCHEDULE	Sunday							T														
		Monday																					
RECORD	HOLIDAY	Tuesday												-									
	SENSOR EVENT	Wednesday																					
	SENSON EVENT	Thursday																					
$\overline{\mathbf{O}}$	MOTION EVENT	Friday																					
DEVICE	POS EVENT	Saturday					_		_				_										
	POS EVENT	Holiday																					
		< +												1.0	• ,	>							
ATE		O None O Group	00	roup B	O Gro	ip C	Gro	oup D															
alter be		Camera				Status				Car	mera	0		Î				Statu	IS				
		Camera01				None				Cam				_				None					
		Camera02				None				Cam	erat	8						None	e				
AI		Camera02 Camera03				None None				Cam Cam	iera1	8 9						Non	e				
		Camera02				None				Cam	iera1 iera1 iera2	8 9 0						None	e e				
AI		Camera02 Camera03 Camera04				None None None				Cam Cam Cam	iera1 iera1 iera2 iera2	8 9 10						Non Non	e e e				
â		Camera02 Camera03 Camera04 Camera05 Camera06 Camera07				None None None None None				Cam Cam Cam Cam Cam	iera iera iera iera iera iera iera	8 9 10 11 12 13						Non Non Non Non Non	e e e e				
AI		Camera02 Camera03 Camera04 Camera05 Camera06 Camera07 Camera08				None None None None None None				Cam Cam Cam Cam Cam Cam	ieral iera2 iera2 iera2 iera2 iera2 iera2	8 9 10 11 12 13						Non Non Non Non Non Non	e e e e e				
ALARM		Camera02 Camera03 Camera04 Camera05 Camera05 Camera06 Camera08 Camera09				None None None None None None None				Cam Cam Cam Cam Cam Cam Cam	ieral ieral ieral ieral ieral ieral ieral ieral	8 9 10 12 13 14						Non Non Non Non Non Non	e e e e e e e e				
ALARM		Camera02 Camera03 Camera04 Camera05 Camera06 Camera07 Camera08 Camera09 Camera10				None None None None None None None None				Cam Cam Cam Cam Cam Cam Cam Cam	ieral ieral iera2 iera2 iera2 iera2 iera2 iera2	18 19 12 12 13 14 15						Non Non Non Non Non Non Non	e e e e e e e e e e e e e				
ALARM		Camera02 Camera03 Camera04 Camera05 Camera05 Camera06 Camera08 Camera09				None None None None None None None				Cam Cam Cam Cam Cam Cam Cam	ieral ieral ieral ieral ieral ieral ieral ieral ieral	8 9 10 12 13 14 15 16 17						Non Non Non Non Non Non	e e e e e e e e e e e e e				
alarm		Camera02 Camera03 Camera04 Camera05 Camera06 Camera07 Camera09 Camera10 Camera11 Camera12 Camera12				None None None None None None None None				Cam Cam Cam Cam Cam Cam Cam Cam Cam Cam	iera iera iera iera iera iera iera iera	8 9 10 12 13 14 15 16 17 18 9						Non Non Non Non Non Non Non Non Non	e e e e e e e e e e e e e e				
ALARM		Camera02 Camera03 Camera04 Camera05 Camera06 Camera07 Camera08 Camera10 Camera11 Camera12 Camera13 Camera13				None None None None None None None None				Cam Cam Cam Cam Cam Cam Cam Cam Cam Cam	iera iera iera iera iera iera iera iera	18 19 11 12 13 14 15 16 17 18 19 10						Non Non Non Non Non Non Non Non Non	e e e e e e e e e e e e e e e e e e e				
alarm		Camera02 Camera03 Camera04 Camera04 Camera06 Camera06 Camera08 Camera08 Camera08 Camera04 Camera10 Camera13 Camera13				None None None None None None None None				Cam Cam Cam Cam Cam Cam Cam Cam Cam Cam	iera iera iera iera iera iera iera iera	8 9 11 12 13 14 15 16 17 18 19 10 11 12 13 14 15 16 17 18 19 10 11 12 13 14 15 16 17 18 19 10 11 12 13 14 15 16 16 17 18 19 19 19 19 19 19 19 19 19 19 19 19 19						Noni Noni Noni Noni Noni Noni Noni Noni	e e e e e e e e e e e e e				
alarm		Camera02 Camera03 Camera04 Camera05 Camera06 Camera07 Camera08 Camera10 Camera11 Camera12 Camera13 Camera13				None None None None None None None None				Cam Cam Cam Cam Cam Cam Cam Cam Cam Cam	iera iera iera iera iera iera iera iera	8 9 11 12 13 14 15 16 17 18 19 10 11 12 13 14 15 16 17 18 19 10 11 12 13 14 15 16 17 18 19 10 11 12 13 14 15 16 16 17 18 19 19 19 19 19 19 19 19 19 19 19 19 19						Non Non Non Non Non Non Non Non Non	e e e e e e e e e e e e e				
alarm		Camera02 Camera03 Camera04 Camera04 Camera06 Camera06 Camera08 Camera08 Camera08 Camera04 Camera10 Camera13 Camera13				None None None None None None None None				Cam Cam Cam Cam Cam Cam Cam Cam Cam Cam	iera iera iera iera iera iera iera iera	8 9 11 12 13 14 15 16 17 18 19 10 11 12 13 14 15 16 17 18 19 10 11 12 13 14 15 16 17 18 19 10 11 12 13 14 15 16 16 17 18 19 19 19 19 19 19 19 19 19 19 19 19 19						Noni Noni Noni Noni Noni Noni Noni Noni	e e e e e e e e e e e e e				
ALARM NETWORK		Camera02 Camera03 Camera04 Camera04 Camera06 Camera06 Camera08 Camera08 Camera08 Camera04 Camera11 Camera13 Camera13				None None None None None None None None				Cam Cam Cam Cam Cam Cam Cam Cam Cam Cam	iera iera iera iera iera iera iera iera	8 9 11 12 13 14 15 16 17 18 19 10 11 12 13 14 15 16 17 18 19 10 11 12 13 14 15 16 17 18 19 10 11 12 13 14 15 16 16 17 18 19 19 19 19 19 19 19 19 19 19 19 19 19						Non Non Non Non Non Non Non Non Non Non	e e e e e e e e e e e e e				
alarm		Camera02 Camera03 Camera04 Camera04 Camera06 Camera06 Camera08 Camera08 Camera08 Camera04 Camera11 Camera13 Camera13				None None None None None None None None				Cam Cam Cam Cam Cam Cam Cam Cam Cam Cam	iera iera iera iera iera iera iera iera	8 9 11 12 13 14 15 16 17 18 19 10 11 12 13 14 15 16 17 18 19 10 11 12 13 14 15 16 17 18 19 10 11 12 13 14 15 16 16 17 18 19 19 19 19 19 19 19 19 19 19 19 19 19					D	Noni Noni Noni Noni Noni Noni Noni Noni	e e e e e e e e e e e e e	Apply	Cl	ose	

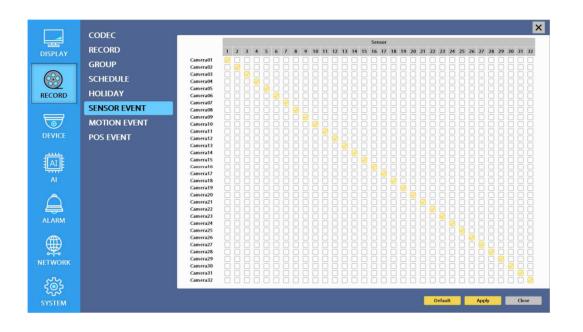
5) Holiday

With this menu, you can add the holidays. Use the 'Add' button for adding the holiday and use the 'Delete' or 'Delete All' buttons for removing the existing holidays.



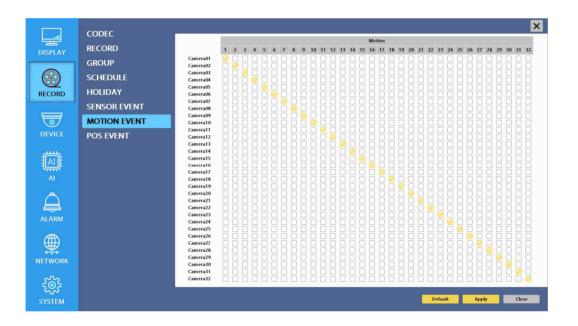
6) Sensor Event

- With this menu, you can set sensor input-setup. You can also set each channel individually.
- Although you set Motion Detection and Sensor Setting to On in Event menu, if Event Input in Rec Menu is set to None, it only detects and does not record.



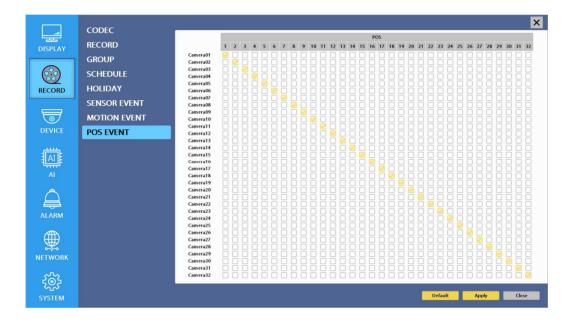
7) Motion Event

- With this menu, you can set motion detection setup. You can also set each channel individually.
- Although you set Motion Detection and Sensor Setting to On in Event menu, if Event Input in Rec Menu is set to None, it only detects and does not record.



8) POS Event

- With this menu, you can set POS setup. You can also set each channel individually.
- Although you set Motion Detection and Sensor Setting to On in Event menu, if Event Input in Rec Menu is set to None, it only detects and does not record.



3-4-3. Device

• Configure and view Camera, Audio, Motion Detection, Alarm Out, PTZ, Controller.

1) Camera

	CAMERA	Camera 1 2	3 4 5	6 7 8 9	10 11 12	13 14 15	16 17 18 1	9 20 21 22	23 24 25 26 27 28	29 30 31 32	×
DISPLAY	COLOR MOTION DETECTION	Camera Title		Apply All							
	AUDIO	Detected	POE Unlinked	1	(PO	: 0.0W)					
RECORD	SENSOR	URI ID	admin			Password			Apply All	1	
	PTZ POS	Main Stream	Codec and Resolutio	in v	PS	Bitrate (Kbps)	Ap	oly All			
DEVICE	CONTROLLER	Sub Stream	Defau	v l		0	Apj	oly All			
			45/0/0/0 (240)) (1080P 960fps)						Include DVR / N	IVR
AI		Index			URL				Device	Camera	-
ALARM											
5		Previous	1	/0 (0)	Next				Auto Assign	Scan	
کی SYSTEM									Default App	ly Close	

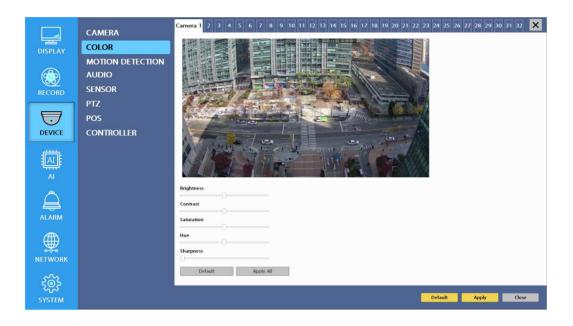
POE	On / Off POE
Camera Title	You can set a camera name.
Convert	Hide a camera from Live view but Record for future searching option.
Detected	Detected a camera video type
URL	Type IP Camera address or use Scan function
ID/Password	Type ID and password of the camera
✤ ALL Apply	Apply the setting to all channels.
Main Stream/Sub Stream	It shows the main and sub stream of the camera.
✤ ALL Apply	Apply the setting to all channels.
Default	Clear assigned camera settings.

Total 45/0/0/0 (240) (1080P 960fps) (1.4/80M)			🗌 Include DVR / NVR
Index URL		Device	Camera
Previous 1/0 (0) Next		Auto Assign	Scan
Include DVR / NVR	Display local camer	as of DVR / NVR	

For convenience, you can use the 'Scan' function to connect all your IP cameras on your network or NVR.

Include DVR / NVR	Display local cameras of DVR / NVR
Previous	Go to previous page
Next	Go to next page
Auto Assign	Auto assign IP cameras on the list to each channel.
Scan	Scan IP cameras

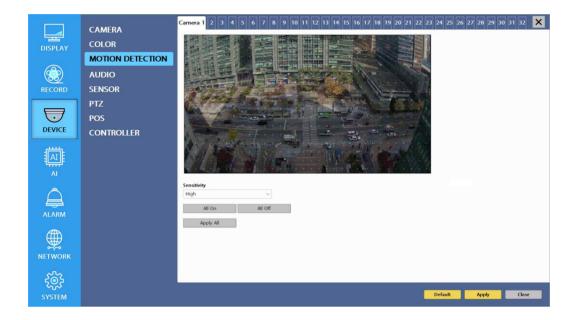
2) Color



Brightness	Adjust Brightness
Contrast	Adjust Contrast
Saturation	Adjust Saturation
Sharpness	Adjust Sharpness
Default	Change to default settings
✤ ALL Apply	Apply the setting to all channels.

3) Motion Detection

• Change settings for Motion Grid selection and Sensitivity Level. You can set multiple area.



Sensitivity	Low, Mid, High
All On	This will activate the motion detection of the all area.
All Off	This will deactivate the motion detection of the all area.
Apply All	Apply the setting to all channels.

4) Audio

	CAMERA									
		Camera01	Audio 1	✓ Camer	a17 None	~				
DISPLAY	COLOR	Camera02	Audio 2	✓ Camer	a18 None	~				
	MOTION DETECTION	Camera03	None	~ Camer	a19 None	~				
	AUDIO	Camera04	None	✓ Camer	a20 None	~				
	AUDIO	Camera05	None	✓ Camer	a21 None	~				
RECORD	SENSOR	Camera06	None	✓ Camer	a22 None	~				
	PTZ	Camera07	None	∨ Camer	a23 None	~				
		Camera08	None	✓ Camer	a24 None	\sim				
	POS	Camera09	None	✓ Camer	a25 None	~				
DEVICE	CONTROLLER	Camera10	None	✓ Camer	a26 None	\sim				
		Camera11	None	✓ Camer	a27 None	~				
		Camera12	None	✓ Camer	a28 None	~				
144		Camera13	None	~ Camer		~				
		Camera14	None	✓ Camer		~				
		Camera15	None	✓ Camer		~				
Â		Camera16	None	✓ Camer	a32 None	~				
ALARM		Audio Out1	All Off	V (Outpa	it together with F	IDMI)				
ALANIVI		Audio Out2		~ (outp	it together marr					
		Audio Out3		~						
æ		Audio Out4	All Off	~						
IETWORK										
522										
202										
SYSTEM								Default	Apply	Close

Camera	Assign audio input to a video channel.
Audio Out 1	Select which channel will be heard during Live View with HDMI.
Audio Out 2	Select which channel will be heard during Live View.

5) Sensor

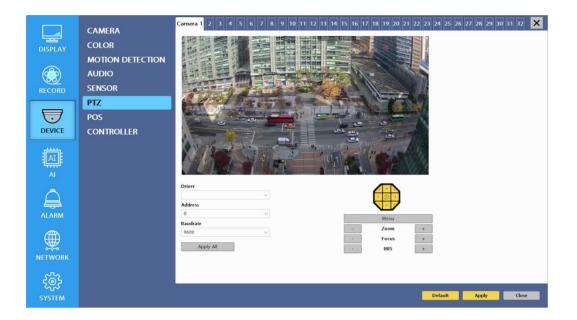
Selectable option is N.O. (Normally Open) / N.C. (Normally Close)



✤ For more details, refer to [CH 2. Installation Method and Cautions].

6) PTZ

Configure Pan/Tilt/Zoom camera for control via NVR System and Remote client.



Driver	Choose Driver to be suitable for PAN/TILT Camera manufacturer.
Address	Choose address to be suitable for PAN/TILT Camera manufacturer.
Baudrate	Choose baudrate to be suitable for PAN/TILT Camera manufacturer.

- You have to set Comport value according to the connected camera.
- For connection of PAN/TILT Camera Receiver part, refer to user's manual of the related PAN/TILT Camera.

7) **POS**

This sets the POS interface(text inserter) with the NVR and cash register.

% If you are using a USB hub, you can use up to 4 USB POS.

	CAMERA	Serial	USB 1(Off)	USB 2(Off)	USB 3(Off)	USB 4(Off)		×
	COLOR	Channel Channel 1	~					
DISPLAY	MOTION DETECTION	Baudrate	Databit					
	AUDIO	2400	~ 8		\sim			
	SENSOR	Start Word	End Word	I				
RECORD	PTZ	lanore Word						
		- <u> </u>						
DEVICE	POS	Skip Text						
DEVICE	CONTROLLER	0 0	(0 ~ 100)					
		0 0	(0 ~ 100)					
		Number of add line	(0 - 100)					
ĄI		0	~					
Â		Overlay Position						
ALARM		Upper Left	~					
		Text Overlaying Durat	on ~					
		Text Size						
o-∓-o NETWORK		Text Color	~					
		White	~					
ĘÕ								
SYSTEM						Default	Apply	Close
Channe	1	Select a C	hannel of P	OS				
Baudrat	te	Select a b	audrate of	POS				
Batabit		Select a d	latabit of P	POS				
Start W	ord	Type a st	art word o	f transactio	on			
End Wo	ord			transactio				
Ignore	Word	Type a w	ord which	you want	ignore du	ring text	insertio	on.
Skip Te					-			
Skip Te	ext	Skip Stri			-			

Overlay Position	This will determine the text position.
Text Overlaying Duration	This will determine how long display the text up to 120 seconds. (60~120 sec)
Text Size	Change text size.
Text Color	Change text color.

How to Connect POS

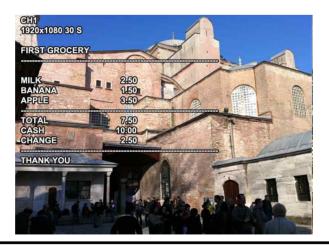
1. Connect USB to RS232 serial cable between POS and NVR.



2. To set manually, at first you should know the setting values of the POS. You can get the information from the POS setting screen.

Register	Info	Condition	Setting				E
Counter Setting	POS Setting	Place Setting	Receipt Setting				
			Dev	ice Setup			
		Device	Use	Part	Port	Protocol	
	Ba	arcode Scanr	er No	*		2	
	Re	eceipt Printer	Yes	PR4RT	COM1	4800,8,n,1	
	Ca	ashbox	No				
	In	formation	No				
	Pr	inter1	No				
	Pr	inter2	No				
	Pr	inter3	No				
		inter4	No				
	-	arcode Printe	r No				
		erminal1	No				
	and the second s	erminal2	No				
		erminal3	No				
		erminal4	No				
	Te	elephone	No				
		Save	Close				

3. If your setting is correct, you can see the below NVR screen on transaction. (This is the popup screen. You can set popup in the 'Event In' setup.)

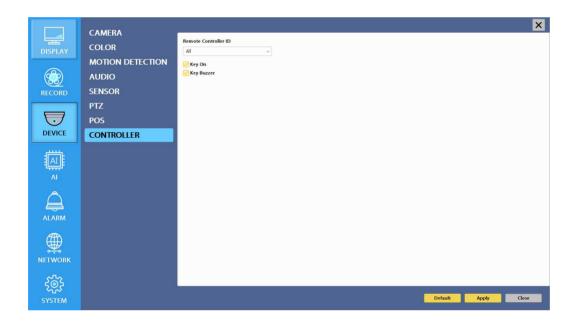


8) Controller

This sets the ID of remote control. If you have many NVRs in the same place, you can control separately the NVR by different remote control ID.

✤ Remote controller ID setup

Use the ID setup and number key to set the ID of remote control on the remote controller. You may check the ID by pressing the remote control key. The ID should be the same between the NVR and remote control. And you can turn it on/off the key sound.



Remote Controller ID	All, 00 ~99
Key Buzzer	ON / OFF

3-4-4. AI(Artificial Intelligence)

• Configure AI functions.

1) Engine

	ENGINE REGION DETECTION	Camera 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 🗙
	LINE DETECTION	31(1)(69)
DEVICE		- A
ALARM		Ceje Enable Chject Display Region Display Sensitivity
		Center
ЗОР SYSTEM		Default Apply Close

Enable	Enable video analysis function.
Object Display	Display detected objects on live mode
Region Display	Display detected regions on live mode
Sensitivity	Center or Mid Bottom

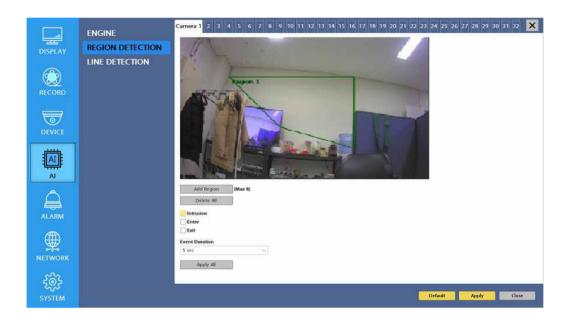
***** How to set Object of AI functions.

- 1. Check Enable to activate AI functions.
- 2. Check Object Display to display object in Live mode.
- 3. Apply and check the function on live mode of the recorder.

2) Region & Line Detection

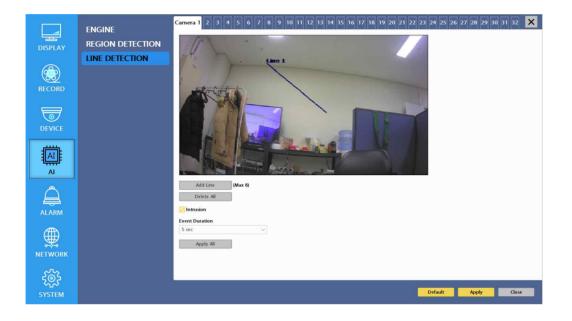
* How to set Region(Region and Line) of AI functions.

- 1. Check Enable in order to activate AI functions.
- 2. Check Region Display in order to display Region in Live mode.
- 3-a. Apply and go to Region Detection menu.
- 4-a. Click Add Region and make a region.
- 5-a. You can move and adjust the region by dragging the edge of region.
- 6. Apply and check the function on live mode.



Intrusion	The display will appear when motion is detected in the same direction as the option.
Enter	Detect an event when an object enters the Region.
Exit	Detect an event when an object exits the Region.
Event Duration	$1 \sec \sim 30 \sec$

- 3-b. Apply and go to Line Detection menu.
- 4-b. Click Add Line and make a line.
- 5-b. You can move and adjust the line by dragging the edge of line.
- 6. Apply and check the function on live mode.



3-4-5. Alarm

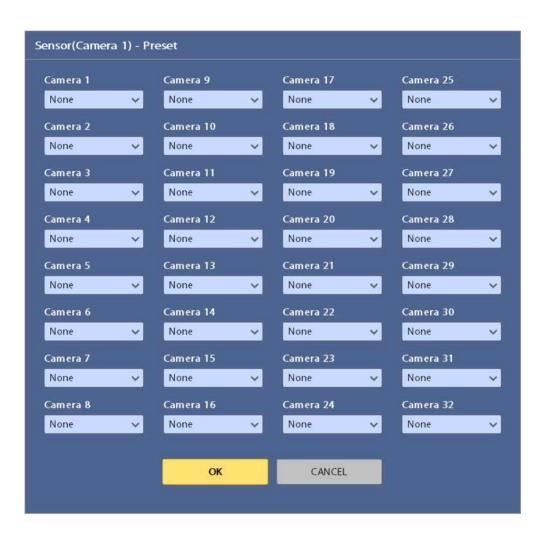
4-1) Sensor In

• You can choose the action after sensor in between relay, buzzer sound and pop up. Also you can choose more than one action.

_	SENSOR								Alarm					-		_	_	0	_		mail	>
ISPLAY	MOTION		1	2	34	5	6		Alarm 8 9		11	12 1	3 14	15	16	Buzzer	Main	Popup HD Spot	Spot	1	mail 2	Prese
	MOTION+SENSOR	Camera01 Camera02	8		36	38	8	8	88	38	8		38	8	8	8	8	8	8	8	8	0
	VIDEO LOSS	Camera03 Camera04 Camera05																				
ECORD	POS	Camera06 Camera07	H	H	Ę	iĂ				iH	Ħ		İH	H	H			H		B		
	SNAPSHOT	Camera08 Camera09	8				8						18					ē	ē			
0	HDD	Camera10 Camera11 Camera12	H		36		Н											H		H		
EVICE	ALARM	Camera13 Camera14	H		36	18			86	18												
iiii		Camera15 Camera16			38																	
		Camera17 Camera18 Camera19	Н	님			Н				H			H		Н	H	H	H		H	
AI		Camera20 Camera21	8		38	18	8		88	18		88] 🛛			ē	B	8	B	8	8	
		Camera22 Camera23 Camera24			36																	
		Camera25 Camera26	Ħ	H		iH	H	H		iH	Ħ		i A	H	Ä	H	H	R		B		
		Camera27 Camera28	8		38		8	8					8							8		
		Camera29 Camera30 Camera31	H	H	i b		Н	H		iH	H			H	H		Н	H				
TWORK		Camera32	Ö			50	Ö			i D			10		0						Ö	Ó
		Allow Duration Ti		itely.																		
£ <u>0</u> ;																						
YSTEM																		Default		Apply		Close

- Choose a sensor connected to a channel.
- If a sensor does not work, please check again the sensor type.
- Alarm 1 is relay out.

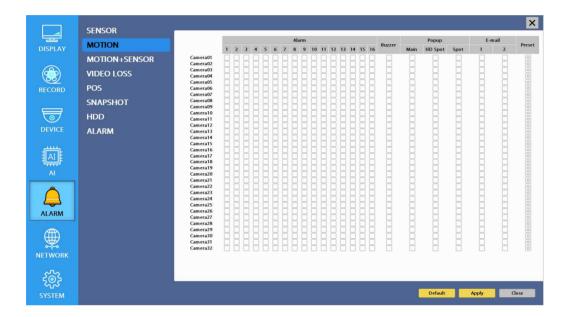
• Also you can choose more than one action. Furthermore you can set the preset position number by motion detection. If you click the 'setup' icon you can see the preset screen.



• You can assign the preset position individually by specific motion.

4-2) Motion Detection

• You can choose the action after motion detection between relay, buzzer sound and pop up.



• Also you can choose more than one action. Furthermore you can set the preset position number by motion detection. If you click the 'setup' icon you can see the preset screen.

Camera 1	Camera 9	Camera 17	Camera 25
None	✓ None	V None	None 💊
Camera 2	Camera 10	Camera 18	Camera 26
None	✓ None	V None V	None 💊
Camera 3	Camera 11	Camera 19	Camera 27
None	V None	V None N	None 🗸
Camera 4	Camera 12	Camera 20	Camera 28
None	✓ None	V None	None 💊
Camera 5	Camera 13	Camera 21	Camera 29
None	✓ None	V None	None 💊
Camera 6	Camera 14	Camera 22	Camera 30
None	✓ None	V None	None 💊
Camera 7	Camera 15	Camera 23	Camera 31
None	V None	V None N	None 💊
Camera 8	Camera 16	Camera 24	Camera 32
None	✓ None	V None	None 🗸

• You can assign the preset position individually by specific motion.

4-3) Motion Detection + Sensor In

• You can choose the action after motion and sensor detection between relay, buzzer sound and pop up.

	SENSOR																					×
DISPLAY	MOTION		Alarm 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16											5 16	Buzzer	Popup Main HD Spot Spot			E-	E-mail 1 2		
DISFLAT	MOTION+SENSOR	Camera01]]													Spor	ġ		0
	VIDEO LOSS	Camera02 Camera03 Camera04	Н	빒┢			Н	Н	H		Н	H	8			H	H		Ц	H		
RECORD	POS	Camera04 Camera05 Camera06	H				H	H	H		H	H			18	H	H		B	H	H	
ECORD	SNAPSHOT	Camera07 Camera08	R	ÄF	įÈ	įд	R	R	R	16	R	Ä	R	Ä	18	Ä	R	Ā	R	R	Ä	
-		Camera09 Camera10	Ā	8 F	ĪĒ	i A	A	A	8 A	36	R	Ā	A	R	18	R	R	A	R	R	R	
0	HDD	Camera11 Camera12	8	88	38		8	8	88	38	8	8	8	81	38	8	8	8	8	8	8	0
EVICE	ALARM	Camera13 Camera14	8	88	38	18	8	8	88	38	8	8	8	88	38	8	8		8	8	8	
		Camera15 Camera16		88	38] 🛛	8		88	38		8			38	8				8		0
AI		Camera17 Camera18] [В			36												00
		Camera19 Camera20 Camera21	H	öþ	įþ	įĦ	ğ	H.	Ыb	jþ	ğ	Ĕ.	ġ.	b i	jb	g	- H			ġ.	H	
<u>A</u>		Camera22 Camera23	H		įþ	İH	H	H	H		H	H	H		ĬÄ	Ä	B	Ä	H	Ä	ä	
		Camera24 Camera25	A		įĘ	ĬÄ	Ħ	Ä	2 A		Ħ	H.	Ä	۲,	18	Ä	R		R	H	B	
LARM		Camera26 Camera27	R	RF	ĨĒ	i A	R	R	RP	Ē	R	R	R	R	38	R	R	R	R	R	R	0
		Camera28 Camera29		ĒĒ		18	B		88		8				38							0
Ð		Camera30 Camera31	8	88	38	8	8	8	88	38	8	8	8	88	38	8	8	8	8	8	8	
TWORK		Camera32																				Ø
<u> </u>																						
∽u∼ /STEM																		Default		Apply		Close

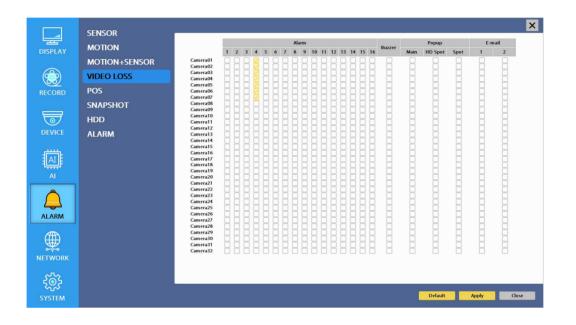
• Also you can choose more than one action. Furthermore you can set the preset position number by motion detection. If you click the 'setup' icon you can see the preset screen.

Motion+Sensor(C	amera 1) - Preset		
Camera 1	Camera 9	Camera 17	Camera 25
None	V None	Vone V	None 🗸
Camera 2	Camera 10	Camera 18	Camera 26
None	V None	Vone V	None 🗸
Camera 3	Camera 11	Camera 19	Camera 27
None	V None	None 🗸	None 🗸
Camera 4	Camera 12	Camera 20	Camera 28
None	V None	None 🗸	None 🗸
Camera 5	Camera 13	Camera 21	Camera 29
None	V None	None 🗸	None 🗸
Camera 6	Camera 14	Camera 22	Camera 30
None	V None	None 🗸	None 🗸
Camera 7	Camera 15	Camera 23	Camera 31
None	V None	None 🗸	None 🗸
Camera 8	Camera 16	Camera 24	Camera 32
None	V None	None 🗸	None 🗸
	ок	CANCEL	
	-		

• You can assign the preset position individually by specific motion.

4-4) Video Loss

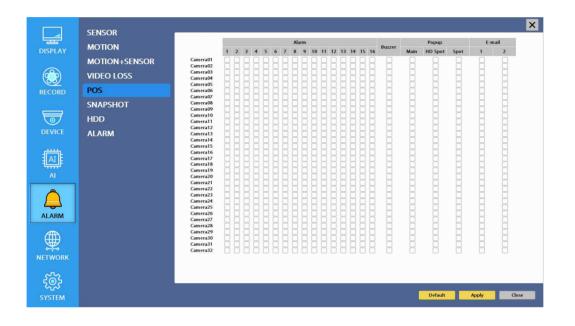
• You can choose the action after video loss between relay, buzzer sound, and pop up.



• Also you can choose more than one action.

4-5) POS

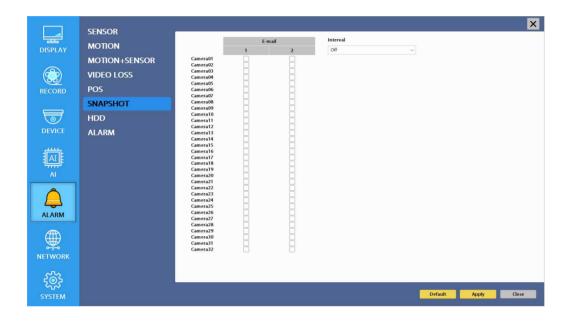
• You can choose the action after POS transaction or video loss between relay, buzzer sound and pop up.



• Also you can choose more than one action.

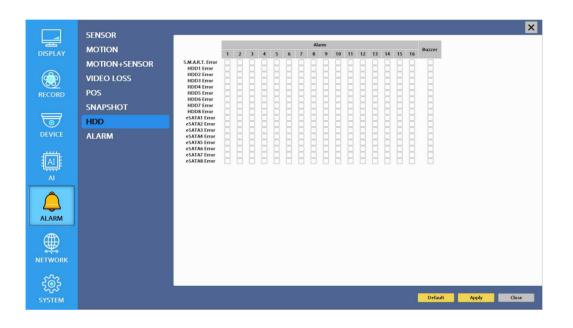
4-6) Snapshot

• Set up snapshot according to the set email settings



4-7) HDD

• Set an alarm or buzzer when S.M.A.R.T error occurs in the HDD



4-8) Alarm

- You can choose the duration time from 5 to 60 seconds after motion detection between relay, buzzer sound, pop up and preset.
- You can set a name of the alarms.

	SENSOR										×
			Duration		Name			Duration		Name	
DISPLAY	ΜΟΠΟΝ	Alarm 01	5 sec	~	Alarm 1	(with Relay)	Alarm 09	5 sec	×	Alarm 9	
	MOTION+SENSOR	Alarm 02	5 sec	~	Alarm 2		Alarm 10	5 sec	×	Alarm 10	
	VIDEO LOSS	Alarm 03	5 sec	~	Alarm 3		Alarm 11	5 sec	Y	Alarm 11	
		Alarm 04	5 sec	×	Alarm 4		Alarm12	5 sec	Y	Alarm 12	
RECORD	POS	Alarm 05	5 sec	~	Alarm 5		Alarm13	5 sec	×	Alarm 13	
	SNAPSHOT	Alarm 06	5 sec	×	Alarm 6		Alarm 14	5 sec	×	Alarm 14	
5	HDD	Alarm 07	5 sec	Y	Alarm 7		Alarm 15	5 sec	Y	Alarm 15	
DEVICE		Alarm 08	5 sec	Y	Alarm 8		Alarm16	5 sec	Y	Alarm 16	
AI ALARM NETWORK	ALARM	Duration Buzzer S sor Popup S sec HD Spot Pr S sec Spot Popup S sec Preset S sec			> > > >	E-mail Interval 1 sec 3 Add Image 5 Schedule Working hour 0 0	(0 ~ 23 Hour	r) 1			
کیک SYSTEM										Default Apply	Close

✤ Email

Set events to send the email.

nterval	
1 sec	~
Add Image	
Schedule	
Working hour	
0 0	(0 ~ 23 Hour)

Interval	Set an interval for sending emails.
Add Image	Send a snapshot of events to the email.
Schedule	Set schedule.

3-4-5. NETWORK

Configure and view Address, Port, DDNS, E-mail, Control and Status settings.

1) Address

Configure Network information for Remote client connection.

	ADDREES		×
	ADDRESS PORT	DVR Name NVR 1	
	DDNS	MAC Address	
	MAGIC IP	00.0918.00.00.03 Type	
RECORD	E-MAIL	Ethernet	
5		DHCP IP	
DEVICE		Subnet Mask	
AI		Cateway	
AI		ONS Auto DNS 1P	
Â			
ALARM		IP Camera POE Gateway Gateway	
		10.1.0.1 10.2.0.1 Subnet Mask Subnet Mask	
		255.255.0 255.255.0	
<u>ເ</u>			
ራዥኦ SYSTEM		Default Apply Clos	•

NVR Name	Type the URL of NVR using virtual keyboard.
Туре	It can be supported only Ethernet.
DHCP (Dynamic Host Configuration Protocol)	Set whether you want to use DHCP or not (On/Off). If you connect LAN after setting it to On, IP is allocated automatically. If you set it to Off, you have to input IP. DHCP is a protocol that allows managers to manage and allocate IP address centrally.
IP	Type the IP address.
Subnet Mask	Type the subnet mask.
Gateway	Type a gateway.
DNS Auto	If you connect LAN after setting it to On, DNS IP is allocated automatically. If you set it to Off, you have to input DNS IP.
DNS IP	Type the DNS IP.
IP Camera	Set IP Camera gateway.
POE	Set POE gateway.

2) Port

There are 4 kinds of ports for the case such as watch, search, setup and web. You can individually set the port number of the NVR. The default is 8000. You can choose from 8000 to 9999.

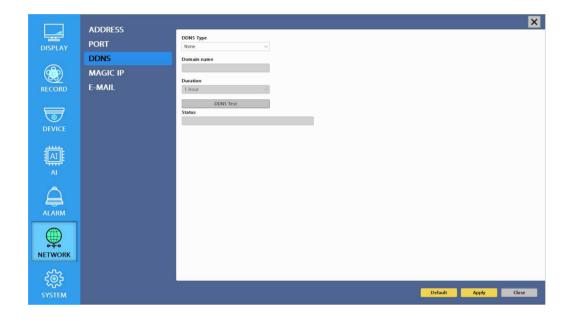
If you activate 'uPNP (Universal plug and play)' box, NVR connects the router automatically with these port number. You don't have to setup the router.

ADDRESS Streaming DISPLAY PORT 8000 (8000 - 9999) DDNS Search 8000 (8000 - 9999) MAGIC IP E-MAIL 8000 (6000 - 9999) Veb, ONVIF 8000 (6000 - 9999) RECORD E-MAIL 8000 (6000 - 9999) Web, ONVIF 800 (6000 - 9999) Image: Strings Status (554, 8000 - 9999)	
DDNS Search B000 6000 - 9999) RECORD E-MAIL B00 6000 - 9999) Wets, ONVIF 80 B0 60, 8000 - 9999) RTSP 554 DEVICE 554 UPNP 554 UPNP Test	
MAGIC IP 8000 6000 ~ 9999) RECORD E-MAIL Settings B00 6000 ~ 9999) B00 6000 ~ 9999) RTSP 554 DEVICE 554 UPNP Test 654,8000 ~ 9999)	
RECORD E-MAIL 8000 (8000 - 9999) Web, ONVIF 80 (80, 8000 - 9999) BO (80, 8000 - 9999) S54 554, 8000 - 9999) UPNP uPNP	
RECORD E-MAIL Web, ONVIF 80 80 (80, 8000 - 9999) RTSP 554 DEVICE 554 UPNP uPNP	
80 (80, 8000 - 9999) RTSP 554 DEVICE 554 uPNP uPNP Text	
RTSP DEVICE 554 (554, 8000 ~ 9999) UPNP uPNP Test	
DEVICE 554 (554, 8000 ~ 9999)	
ucPNP ucPNP Test	
uPNP Test	
A I E Status	
Al	
NETWORK	
2 ⁿ 2	
	_
SYSTEM Default Apply C	se

Watch	Type the port. (1000~40000)
Search	Type the port. (1000~40000)
Setup	Type the port. (1000~40000)
Web(Onvif)	Type the port. (80, 1000~40000)
RTSP	Type the port. (554, 1000~40000)
IPCamWebPage	The Channels are assigned from 8081.
uPNP	ON / OFF
uPNP Test	Test uPNP
Status	It shows the test result of uPNP.

3) DDNS

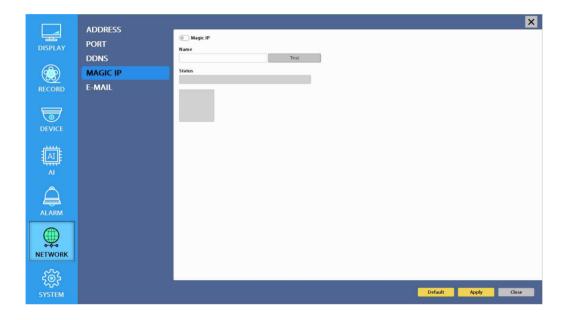
This is the function to automatically change the IP of NVR to URL. This product supports the automatic DDNS service using manufacture's internal server. Also you can choose Dyndns.2



DDNS Type	Choose a DDNS type.
DDNS Server	Defend on the DDNS type, it will be auto-typed or disable.
Port	Defend on the DDNS type, it will be auto-typed or disable
Domain name	Type the port of the email account.
ID	Defend on the DDNS type, it will be auto-typed or type the ID of your DDNS.
DDNS Password	type the DDNS password.
Duration	choose the time sync frequency with DDNS server.
DDNS Test	Test your DDNS.

4) Magic IP

P2P service, which enables network access simply by using a smartphone to scan the supplied product QR code.



- ✤ Magic IP setup
- 1. Check Magic IP.
- 2. Make your own ID for Magic IP.
- 3. The ID must start with letter and contain at least 8 characters.
- 4. When the test is done and succeed, it's QR code is automatically created.

5) E-mail

You can send a notification of events by email. Fill all the information correctly and push the 'Email Test'. Also you can select each event individually by 'Event Set'.

	ADDRESS		×
	ADDRESS PORT	E-mail On Recipient	
	DDNS		
	MAGIC IP	Sender	
RECORD	E-MAIL	SMTP Server	
5		Port 25	
DEVICE		Authentication	
		Account Password	
ALARM		E-mail Test	
NETWORK			
ХОТ SYSTEM		Default Apply Close	

Receiptor	Type the email address of the receiptor.
Sender	Type the name of the sender.
SMTP Server	Type the SMTP server of the email account.
Port	Type the port of the email account.
Authentication	Set whether you want to use authentication or not (On/Off).
SSL	Set whether you want to use SSL or not (On/Off).
Account	Type the email account of the sender.
Password	Type the password of the send's email account.
E-mail Test	Test the email account.

3-4-6. SYSTEM

Configure and view system Date/Time, User Authority, Storage, System Log and Configuration settings

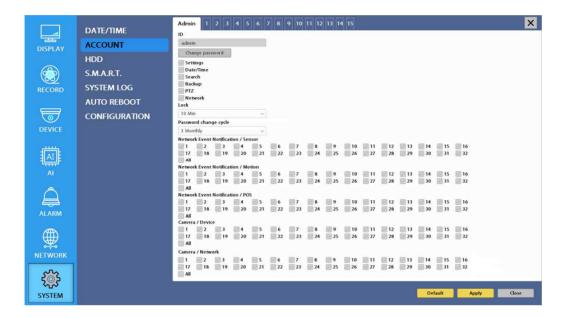
1) Date/Time

	DATE		×
	DATE/TIME	Timezone	
DISPLAY	ACCOUNT	v	
	HDD	Daylight Saving Time	
	S.M.A.R.T.	Date 2021/09/01	
RECORD	SYSTEM LOG	Time	
	AUTO REBOOT	12:07:10	
5		NTP Server	
	CONFIGURATION	time.google.com 🗸	
DEVICE		time.google.com NTP Check	
		1 Day V Sync	
ALARM			
•			
302			
SYSTEM		Default Apply Close	•

Timezone	Choose the time zone of your site. If you using the NTP function, it must be set correctly to your zone.
Daylight Saving Time	It enables to adapt the day light saving time automatically.
Date / Time	This sets product time. Input time by pressing number buttons after moving cursor with direction buttons. Be careful to move to backward. The overlapped data will be deleted with warning message.
NTP (Network Time Protocol) Server	This function is to change the time of NVR automatically via network. Press the 'Enter' button and using the virtual keyboard, type the address of NTP server.
NTP Check	choose the time sync frequency.
Sync	Sync the time and NTP.

2) Account

This sets User authority individually. You can give to each users the authorities such as setup, search, backup, PTZ, network and camera control.



ID	Type an ID.
Change Password	Type a password.
Setup	Authorizes the setting of the system.
Search	Authorizing the search of the system.
Backup	Authorizing backup of the system.
PTZ	Authorizing PTZ of the system.
Network	Authorizing network of the system.
Network Event Notification	Authorizing a network event notification.
Camera	Authorizing a camera.
Lock	select the auto-lock time.(Off, 1~10 min)

3) HDD

Display the information and usage of the hard disk drives.

	DATE/TIME	×
		Total
DISPLAY	ACCOUNT	HDD 0/160 GB Format
	HDD	HDD Check
	S.M.A.R.T.	HDD Overwrite
RECORD	SYSTEM LOG	Auto Deletion Off
	AUTO REBOOT	
5		HDD 1 Format eSATA 1 Format
	CONFIGURATION	HDD 2 Format eSATA 2 Format
DEVICE		HDD 3 Format eSATA 3 Format
		HDD 4 Format eSATA 4 Format
		HDD 5 Format eSATA 5 Format
		HDD 6 Format eSATA 6 Format
AI		HDD 7 Format eSATA 7 Format
		HDD 8 Format eSATA 8 Format
\cap		
ALARM		
₩		
*		
NETWORK		
552		
2,23		
SYSTEM		Default Apply Close

Total	Display the HDD usage being used for the product. If you press the 'Enter' button on here, all the hard disk drives will be formatted.
HDD Check	Check the HDD.
HDD Overwrite	Determine whether you want to continue recording if there is no spare saving space at hard disk drives.
Auto Deletion	You can select the holding period of the data. If you choose 'OFF', the NVR keep the maximum data regarding the HDD capacity.

4) S.M.A.R.T :Self-Monitoring Analysis and Reporting Technology

This function lets you probe the hard disk drives and investigate the status of the drivers automatically.

	DATE/TIME										×
	ACCOUNT	💿 s.M	.A.R.T. On								
DISPLAY		S.M.A.R.T									
	HDD	Check Da	iy								
	S.M.A.R.T.	Sunday Boot Me		×							
<u> </u>		2 Errors		~							
RECORD	SYSTEM LOG	Tempera									
	AUTO REBOOT	Check Tir									
5	CONFIGURATION	30 min		~							
DEVICE	CONFIGURATION	Limit									
		55℃ (13	(1°F)	~							
, 111											
			Error/Test	Temperature	Reallocation(Sector)	Used(Day)		Error/Test	Temperature	Reallocation(Sector)	Used(Day)
Al		HDD 1					eSATA 1				
		HDD 2					eSATA 2				
\wedge		HDD 3					eSATA 3				
		HDD 4					eSATA 4				
ALARM		HDD 5 HDD 6					eSATA 5 eSATA 6				
		HDD 6					eSATA 6				
Æ		HDD 8					eSATA 8				
∰		11000					contro				
NETWORK											
₹ <u>`</u> ``}											
5									Default	Apply	Close
SYSTEM									Default	Apply	ciuse

S.M.A.R.T.			
S.M.A.R.T. On	Set whether you want to use S.M.A.R.T. or not (On/Off).		
Check Day	Determine the date to perform the S.M.A.R.T.		
Boot Message	The number of message of showing the errors.		
Temperature			
Check Time	Temperature check period.		
Limit	The upper tolerance of the hard disk drive temperature.		
Alarm out	You can choose Buzzer or Relay		

5) System Log

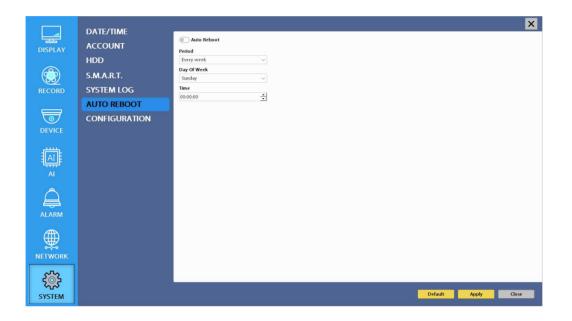
You may view all System administration log from Setup \rightarrow System \rightarrow System Log. Also you can export the system log and easily send it to technical support for trouble shooting.

				×
	DATE/TIME ACCOUNT	00676:[2021/09/01 13:41:38] Video Loss CH 18	*	
DISPLAY	HDD	00677:(2021/09/01 13:41:38) Video Loss CH 19 00678:(2021/09/01 13:41:38) Video Loss CH 20		
	S.M.A.R.T.	00679[2021/09/01 13:41:38] Video Loss CH 21 00680:[2021/09/01 13:41:38] Video Loss CH 22		
RECORD	SYSTEM LOG	00681:{2021/09/01 13:41:38] Video Loss CH 23 00682:{2021/09/01 13:41:38] Video Loss CH 24		
	AUTO REBOOT	00683:(2021/09/01 13:41:38) Video Loss CH 25 00684:(2021/09/01 13:41:38) Video Loss CH 26		
	CONFIGURATION	00685:[2021/09/01 13:41:38] Video Loss CH 27		
DEVICE		00686:[2021/09/01 13:41:38] Video Loss CH 28 00687:[2021/09/01 13:41:38] Video Loss CH 29		
		00688:(2021/09/01 13:41:38) Video Loss CH 30 00689:(2021/09/01 13:41:38) Video Loss CH 31		
		00690:[2021/09/01 13:41:39] Video Loss CH 32 00691:[2021/09/01 13:41:46] Setup Start		
<u> </u>				
Ĥ				
ALARM				
NETWORK			¥	
~~~		Refresh Export		
र्ूट्रे system				Close

Refresh	Refresh the system log.
Export	Export the system log.

#### 6) Auto Reboot

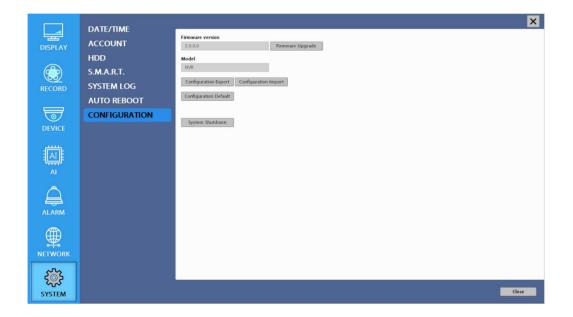
Set schedule for auto reboot.



Auto Reboot	On / Off
Period	Set auto reboot period
Day Of Week	Set the day
Time	Set the time

#### 7) Configuration

Shown at the following screen, from Setup  $\rightarrow$  System  $\rightarrow$  Firmware, you may view the current firmware version as well as Upgrade the firmware and additionally, Export, Import, and Default NVR Configuration.



Firmware version	Show the firmware version.
Upgrade	Upgrade the firmware.
Export	Export system settings.
Import	Import system settings.
Default	Return to factory default settings.

You should connect correctly the USB devices, before you use firmware upgrade, export and import.

## 3-5. Firmware Upgrade

If you want to upgrade, please follow that;

- 1. Download the latest firmware to USB memory root directory.
- 2. Put this memory to USB slot of NVR.
- 3. Choose 'Upgrade' and you can see the below screen will appear.
- 4. Select the desired file, then choose 'OK'.

	DATE/TIME		×
DISPLAY	ACCOUNT	Firmware version 3.0.0.0 Firmware Upgrade	
DISPLAY	HDD	Model	
	S.M.A.R.T.	NVR	
RECORD	SYSTEM LOG	Configuration Expor Firmware File Import	
	AUTO REBOOT	Configuration Defau Device	
5	CONFIGURATION	USB	
DEVICE		System Shutdown test 0	
يبيني		test 1 test 2	
AI		test 3	
		↔ File Name	
$\wedge$		rie vane	
l ↓			
ALARM		OK CANCEL	
<b>₽</b>			
NETWORK			
<b>₹</b> [™]			
ና እ SYSTEM			Close

Upgrade		
Are You Sure?		
	OK	

Upgrading 32%

If you choose OK, you can see the below download window on the NVR screen.

## WARNING!!!

Do not turn off the power during download procedure. If you power off manually, all memory will be deleted !

X After upgrading, NVR will reboot automatically. Before rebooting, do not operate manually !

# **Trouble Shooting**

Symptom	Checkpoint	Countermeasure
● Can't turn on power.	Is NVR connected to power supply cable?	Connect power cable
● There is no image on monitor	<ul> <li>Are NVR and monitor turned on?</li> <li>Are cables of NVR connected?.</li> </ul>	<ul> <li>● Turn on power.</li> <li>● Connect NVR cable.</li> </ul>
Only INFO OSD is on monitor and no image	<ul> <li>Is camera turned on?</li> <li>Are cables of NVR and monitor connected?</li> </ul>	<ul> <li>Turn on camera.</li> <li>Connect cables of NVR and monitor.</li> </ul>
● There is Video Loss message.	Is connection between NVR and camera normal?	Check whether NVR and camera are connected properly
● Can't search with Client Program.	● Isn't another user using same IP?	● Use it after another use finishes using it. If another user is searching NVR remotely with same IP, you can not search.
Motion Detection doesn't work well	● Isn't it too bright or too dark?	<ul> <li>Increase Motion Detection sensitivity.</li> <li>Install camera closer.</li> </ul>
There are differences between Live screen and actual condition during remote monitoring	● Isn't camera installed too far away?	● Since it buffers Live images, there might be changes with actual condition. (1~2 sec)
● Live doesn't work well in remote monitoring	<ul> <li>Is it set to True Color?</li> <li>Are PC specifications and VGA Card specifications are appropriate?</li> </ul>	Upgrade the VGA card to the latest driver.