

*H.264* DIGITAL VIDEO RECORDER

# User's Manual



eyemax HX Series

Model: HX-04/08

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## Safety Precautions

- Turn off the power of the product before installing the product. Do not plug many plugs into one outlet
  - It can cause an electric shock or a fire.
- Do not put any containers with liquid such as water, coffee, beverage etc. on top of the product.
  - It can cause a fire, an electric shock or a product problem.
- Do not put any heavy object on top of the cable or excessively bend the cable.
  - It can cause a fire.
- When wiping the surface of the product, do not use water, chemical or detergent, and always use a dry towel.
- - It can cause an electric shock, problems or scratches to the surface of the product.
- Do not install the product where the level of humidity, dust or smoke is high.
  - It can cause an electric shock or a fire
- When unplugging the power, hold the plug and unplug slowly. Do not hold the plug with wet hands or plug to a loose power outlet.
  - It can cause an electric shock or a fire.
- Do not disassemble or reconfigure the product. Because high level of current flows on the device, it is dangerous to do so.
  - It can cause a fire, an electric shock or an injury.
- Always check for dangerous elements where the product is installed. If dangerous elements (Moisture, damaged cable, unstable installation etc.) are identified, please contact your nearest service center.
  - It can cause an electric shock or a fire.
- Because the cable connected to this device can be damaged, keep at least 15cm of clearance between where the product is installed and where the power outlet is.
  - It can cause a fire, an electric shock or an injury.
- Install the product in a cool location not exposed to direct sunlight. Do not install the product where traffic is high or near the heating devices.
  - It can cause a fire.
- Install the product on a location with a flat surface where it is ventilated well and not too high.
  - It can cause a problem or an injury.
- The power outlet must be grounded and the voltage range must be within 10% of the rated voltage. Do not share the power outlet with hair dryer, iron, refrigerator or heating device etc.
  - It can cause an explosion.
- When replacing the battery, always replace with the same type of battery as the one provided. When disposing the battery, follow the direction of the manufacturer.
  - It can cause an explosion.
- For old hard drives, you may not be able to recover the data stored on the drive. When you use a damaged hard drive, you will see a sign on the screen saying "Error or defective". For the old hard drive, contact your nearest service center or the original retailer to replace the hard drive.
  - We do not responsible for the data loss from misuse by the user.

	<b>CAUTION</b>	
<b>RISK OF ELECTRIC SHOCK. DO NOT OPEN.</b>		

**CAUTION!** TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

**Explanation of Two Symbols**



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of un-insulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

THE GRAPHIC SYMBOLS WITH SUPPLEMENTAL MARKING ARE ON THE BOTTOM OF THE SYSTEM.

“WARNING – TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THE UNIT TO RAIN OR MOISTURE”

**FCC CLASS A NOTICE**

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.

# Caution

Please read the following precautions carefully before installing the product and follow the directions for installation.

- Do not install the product where the level of humidity, dust or smoke is high.
- Do not install the product where it is exposed to direct sunlight or close to the heating device.
- Do not install the product where there is danger of electric shock or near magnetic object.
- Do not install the product where the temperature is too high (40°C or above) or too low (0° or less).
- Do not put objects with high conductivity on top of the ventilation outlet of the product.
- Make sure the power is turned off before installing the product.
- Secure sufficient space to connect the product when installing the product.
- Do not install the product where it is not flat, not ventilated well or where vibration is severe.
- When you install the product near electronic appliances such as radio or TV, it can cause problems to the product.
- Do not disassemble the product unless done by a technician.
- Be careful not to let alien particles get inside the product.
  - It can cause a problem to the product.
- Install the product where it is ventilated well.
  - The product at least 15cm away from the wall power outlet because the cable can be damaged
- Do not install the product at a location close to a product or broadcast receiver with strong electric or magnetic wave.
- Do not put heavy objects on top of the product.
  - It can cause a problem to the product.
- Install the product at a flat and stable location.
  - The product may not operate normally.
- The product at a location with appropriate level of temperature and humidity.
  - Do not install the product where the temperature is too high (40°C or above) or too low (0° or less)
- Because the vibration and impact can damage the product, do not throw any objects to the location where the product is installed.
- Do not install the product where it is exposed to direct sunlight or close to the heating device.
- Firmly fixate the product at a location where it is well ventilated.
  - It can cause problems to the product depending on the surrounding environment. It is recommended to use the Automatic Voltage Regulator. It is recommended to wrap wires around the Ferrite core.
- The power outlet must be grounded.
- If you hear any noise or smell any odor from the product, turn the product off and contact your nearest service center.
  - It can cause a fire or an electric shock.
- Periodically have the product checked by the service center to safely use the product.
  - When replacing the battery, always replace with the same type of battery as the one provided. When disposing the battery, follow the direction of the manufacturer.
  - We are not responsible for the problem from misuse by the user.
- Do not move or flip the product over while using the product.

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# CHAPTER 1

## Installation

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## 1-1. Product characteristics

- Adopted the stable Embedded Linux
- Stable file system recovery even after power supply is disconnected from a power outage.
- Realized small file size and high video quality by applying the H.264.
- Supports terra byte hard disk ( up to 2TB )
- Real time recording
  - 04CH: Up to 120IPS@704 X 240 at NTSC / Up to 100IPS@704 X 288 at PAL
  - 08CH: Up to 240IPS@352 X 240 at NTSC / Up to 200IPS@352 X 288 at PAL
- Supports various recording resolutions and qualities.
  - D1(704x480), Half D1(704x240), CIF(352x240) at NTSC
  - D1(704x576), Half D1(704x288), CIF(352x288) at PAL
  - 5 stage recording qualities (Very high, high, normal, low, and very low).
- Easy operation through various user interface and user friendly GUI system.
- Realized powerful multi-function.
  - Real time video display and recording, network transmission and back up can be performed simultaneously.
- Easy search functions.
  - Date/Time search (Calendar search), event search
- Recording before event. (Can be 2 seconds).
- Recording after event. (Can be only up 10 seconds).
- The operating condition pre-check function according to the change in motion detection and movement detection
- Can set recording quality and number of recording frames per seconds.
- Powerful recording schedule management.
- Complete synchronization of video/audio.
- Easy software upgrading through USB storage device or network.
- Maximum of 3 clients can be connected to 1 DVR at the same time.
- Band width setting is automatically set depending on the network speed connected to this device.
- Remote alarm notification via e-Mail.
- PTZ (Pan/Tilt/Zoom) operation.
- Remote control operation
- Key board control operation (optional)
- Supporting Daylight saving
- Auto detecting video output port between VGA and BNC

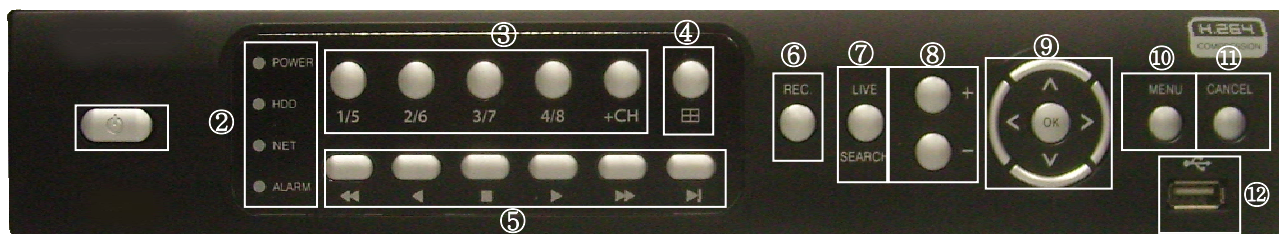


## 1-2. Components



Reference: The type of components can be applied differently by the option.

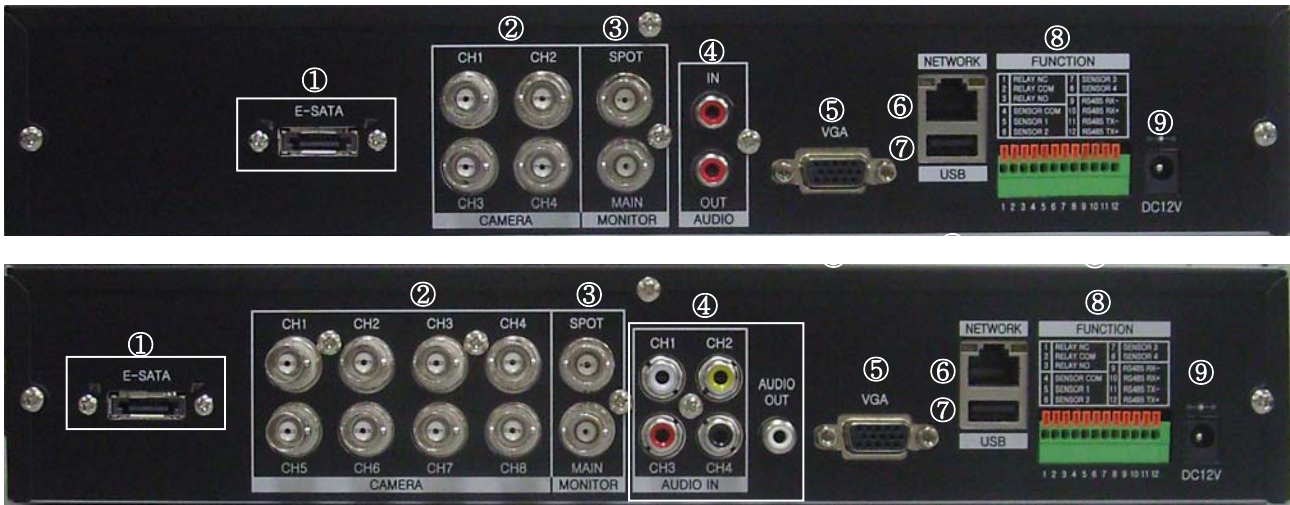
## 1-3. Front side



- ① **POWER SWITCH:** Used to turn the product on/off and when logging off.
- ② **Front LED:** The LED is turned on when the power is on , search is in active , record is in active and network is in use.
- ③ **CHANNEL SELECTION:**1~4ch selection – push 1/5~4/8 is each 1~4 buttons, 5~8 – You should push +CH + 1/5 = 5<sup>th</sup> channel,
- ④ **SPLIT:** Used to channel screen division;  
1 ,4,6,9 Auto Sequential
- ⑤ **PLAYBACK BUTTONS:** Used for operation in playback mode.
- ⑥ **Record :** It is used for recoding data
- ⑦ **LIVE / SEARCH:** Used to change to live / search mode
- ⑧ **+ , - BUTTONS:** Used to control PTZ, zoom in/out of time bar and change configurations.
- ⑨ **AUTO/OK , < > ^ ∨ BUTTONS:** Used to control/change configuration.
- ⑩ **MENU BUTTON:** Used to enter menu mode.
- ⑪ **CANCEL BUTTON:** Used to cancel and exit.
- ⑫ **USB:** USB storage devices can be connected for backup and upgrade.

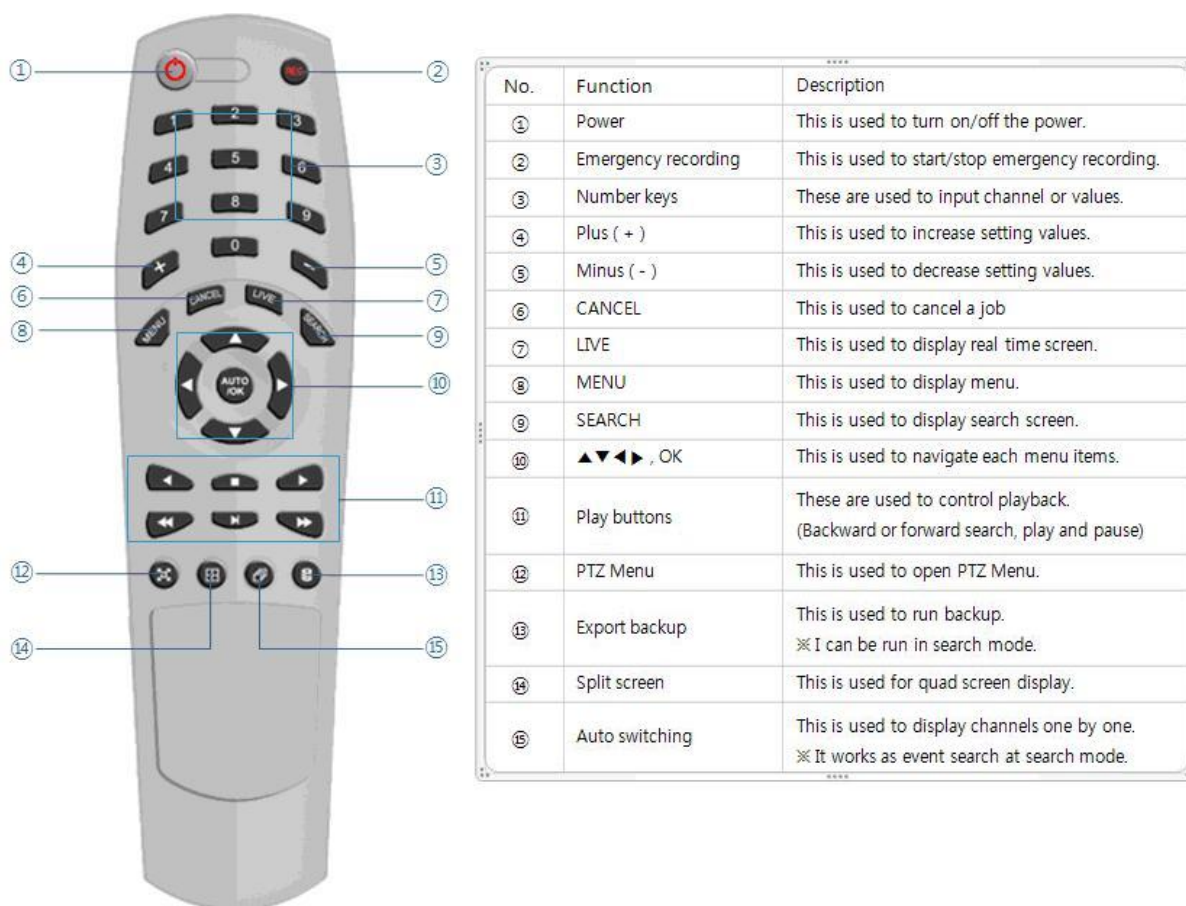
**CAUTION !** +CH button is **not used** in 4CH DVR !

## 1-4. Rear side



① E-Sata port for External HDD	② Camera input
③ Spot output(up) & Main Monitor output(Down)	④ Audio in and out
⑤ VGA	⑥ Network Port
⑦ USB Port	⑧ RS485, SENSOR INPUT, RELAY OUTPUT
⑨ Power input	

## 1-5. Remote controller



**Reference:** The shape of remote controller can be different by the model.

### How to set the ID of remote controller:

1. Press cancel button about 3 seconds then light of power button turns on.
2. Enter two digit numbers which is the id of remote controller using number keys.

※ You have to input '0' first when you are to input one digit number.

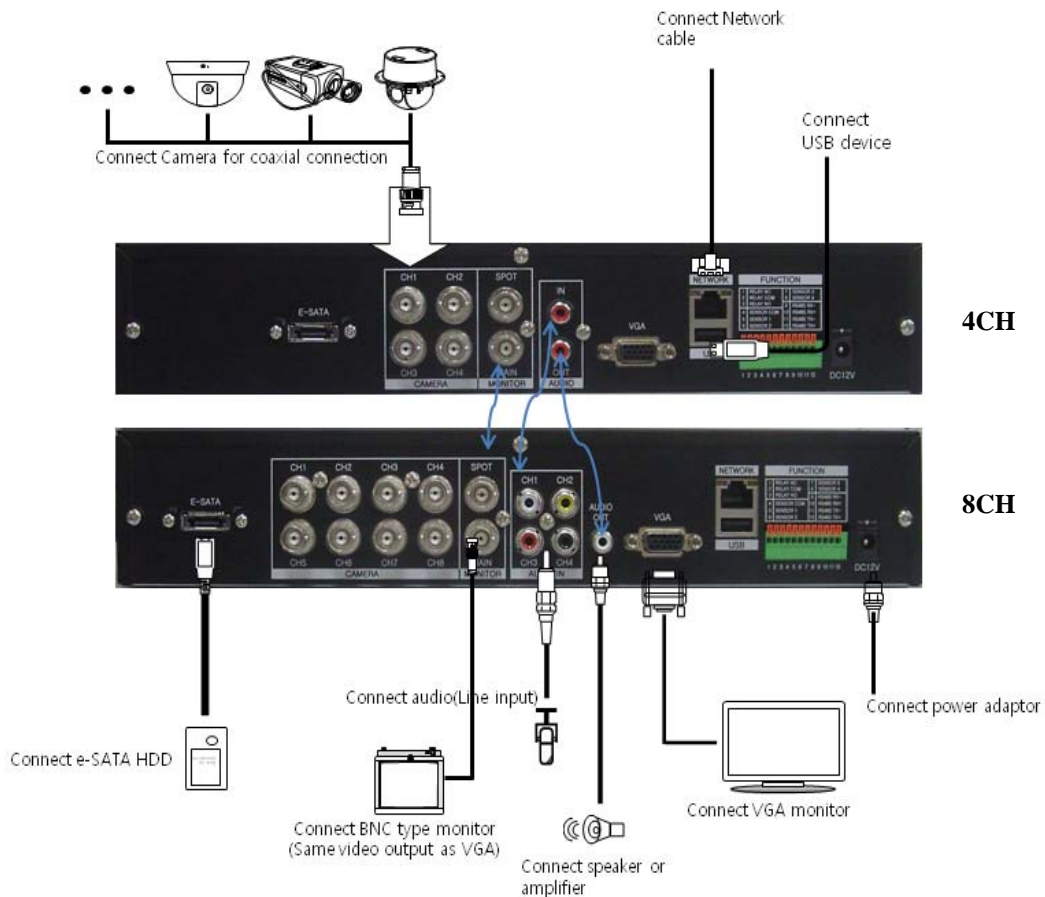
**Ex)** In case you want to use '2' as ID, input '02'.

3. Every time you press the number key the light of power button will blink.
4. Stopping blinking means that the id is saved.

## 1-6. Connection and initial setting

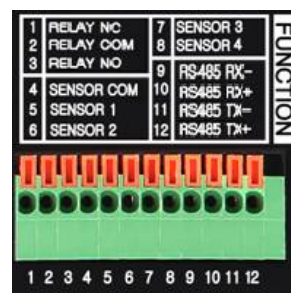
### ! Caution

- The camera or other external devices can be connected to this device in numerous methods. Refer to the user manual of the camera or other external device for addition information on connection methods.
- When installing the camera, check whether the power of the camera is turned off.
- After installing the monitor, turn on the power of the DVR.



## 1-7. RS-485 connection

- ① This device has 1 data port (RS-485).
- ② Use this port to connect the PTZ camera or the keypad.  
(Optional)
- ③ PTZ camera / keyboard connection
  - i. Connect the PTZ serial communication cable to the RS-485 port.
  - ii. When connecting the cable, make sure that the TX- of the device is connected to the RX- (TX-) of the camera (keyboard), and TX+ of the device is connected to the RX+(TX+) of the PTZ camera(keyboard).
  - iii. Recommended initial data setting is 9600 baud rate, 8 data bits, 1 stop bit and no parity.
  - iv. When connecting the PTZ camera or keyboard, always change the setting of the DVR setting menu according the RS-485 setting of the camera, keyboard and this device.
  - v. Set the same baud rate when you are to use PTZ camera and keyboard at the same time.



## 1-8. Control port (output) connection

- ① For interface and auto control with the external sensor, the interfacing control output port (Set value from “Setup → Event → Sensor/Motion/Video loss” menu) and the “RELAY” port are connected.
- ② If the control device (Alarm light, amplified siren, external relay etc.) is “NC (Normal Close)” type, connect to the control output NC (Normal Close) port.
- ③ If the control device (Alarm light, amplified siren, external relay etc.) is “NO (Normal Open)” type, connect to the control output NO (Normal Open) port.

## 1-9. Sensor (input) connection

- ① Connect one of the signal cables (2 cables) of various sensors (IR sensor, heat ray detector, magnetic etc.) to the COM port and connect the remaining signal cable to the sensor number you want. (Sensor “NC, NO” type can be set from “Setup → Event → Sensor” menu.)

4	Ground
5	Sensor 1
6	Sensor 2
7	Sensor 3
8	Sensor 4



**Caution:** NC and NO cannot be selected simultaneously.

## 1-10. About internal hard disk

The hard disk installed inside the device is a precision device which can be damaged even with the small impact. To prevent the hard disk from being damaged, manage the device as follows.

To prevent the data loss, it is recommended to back up any important data into an external storage device.

When installing or uninstalling the hard disk, you must always turn off the power of the product.

- If the power is turned on, do not move the device.
- Do not install this device where it is too hot and humid and where the temperature change is sudden. It can cause a problem to the device.
- DO NOT pull out the plug or intercept the power supply while this device's power is on.
- When there is a power outage while the power is turned on, some data can be lost.
- Do not drop the hard drive or put any metallic object, such as coins, inside the device.
- In case of a power outage while recording, avoid adding, replacing or moving the HDD. The recorded data can be lost. In this case, turn on the power with the original hard disk that was used while the power outage occurred. And then add, replace or move the HDD.
- Because the hard disk is a high precision device, the parts inside the disk can be damaged at the slightest impact. Please read the following precautions in detail and follow the directions.
  - Do not directly put the hard disk on the desk or table. Because the parts inside the hard disk can be damaged at the slightest impact, put a thick cushion below the hard disk.
  - If you use the motored driver, the parts inside the hard disk can be damaged from the vibration.
  - When replacing the hard disk, be careful not to cause any impact to the other parts.
  - Be careful not to cause an impact from the tools and hard disk used for the installation.
- Protect the hard disk from static electricity.



### Caution

This device has elements to cause an electric shock, an accident or a problem to the product. Also the hard disk may not be recognized or operated properly due to incorrect installation and setting. Therefore consult with an experienced expert technician when installing the hard disk.



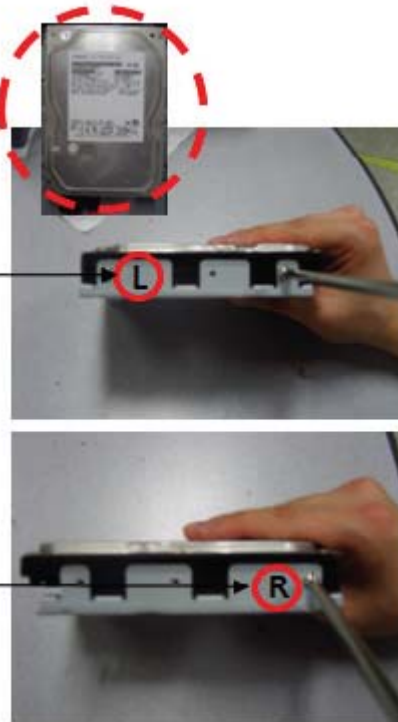
- ① Install the hard disk to the bracket and tighten the 4 screws.

► Connecting bracket to hard disk

Set the SATA cable connection port to lower direction to install the hard disk to the bracket

Connect the bracket marked as "L" To the left side of hard disk

Connect the bracket marked as "R" to the right side of hard disk



- ② Connect the SATA cable to the hard disk



► Connect power cable



► Connect SATA cable

- ③ Connect the SATA cable to the SATA port of the main board.



<4CH>



<8CH>

The first SATA cable port on the main board must be connected at all times. If a hard disk is not connected, this device may not operate normally.

- ① Close the cover of the main unit.
- ② Tighten the screws.
- ③ After installing the hard disk, you must format the hard disk from the setting menu.

#### A. Hard disk replacement

First turn off the power of the device and then unplug the power.

- ① Loosen the screw on the left, right and rear side of the product.
- ② Separate the cover of the main unit.
- ③ After removing all of power/SATA cable connected to hard disk, please separate hard disk bracket from the body.
- ④ Loosen the screws on the left and right side of the bracket holding the hard disk.
- ⑤ Separate the hard disk from the bracket holding the hard disk.
- ⑥ In the reverse order of removing the hard disk, assemble the new hard disk.
- ⑦ After replacing the hard disk, turn on the power of the device.
- ⑧ Reference
  - Each SATA cable must be connected to the connecting port precisely.
  - Do not vertically put the hard disk in upright position or put other objects on top of the hard disk.
  - When connecting/disconnecting the hard disk, do not use a motored tool.
  - Refer to the following when adding/replacing the hard disk.



B. Recommended list of hard disk

- Hard disks of below are the ones proved to be compatible through experiment.
- Please refer to when adding or replacing the hard disk.

Manufacturer	Model name	Capacity
Seagate	ST3250312CS	250GB
	ST3250310CS	
	ST3320613AS	320GB
	ST3500312CS	500GB
	ST3750330SV	750GB
	ST31000322CS	1TB
	ST31000528AS	
	ST31500341AS	1.5TB
	ST32000542AS	2TB

Notice: HDD not in the recommended list may not work properly even if it is detected by DVR.



**Caution**

When you select the hard drive in use for resetting, the video data saved previously will be deleted. Therefore you must be careful.

# CHAPTER 2

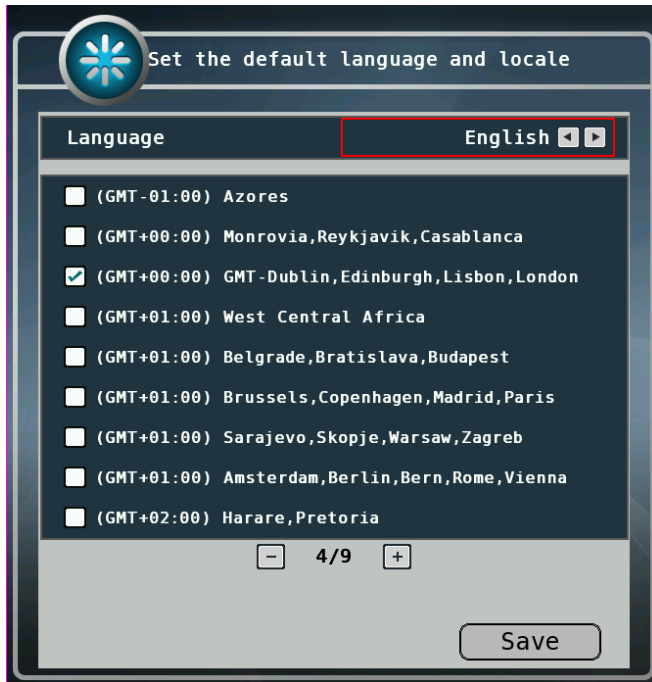
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## 2-1. Operation

### 1) Start up

1. Press power button to turn on this device, then it boots with power indicator light turned on.



2. After booting Login window will be displayed.




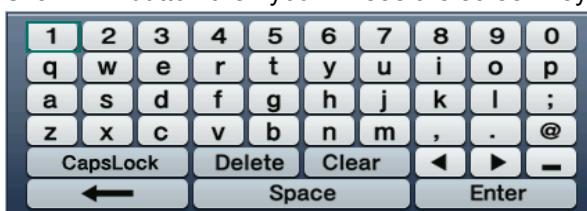
Notice!: without login by any user, DVR works as “guest” mode and only the live display can be controlled. After login by admin, DVR setting is enabled.

① [User]

- You may select user to login and authority is restricted by kind of user. The access rights can be set for each user.
  - I. admin for system administrator (Access rights to Live, Search and Setup)
  - II. guest (Access rights to Live only)
  - III. user1/user2/user3 for general user (Access rights can be set by administrator)

② [Password]

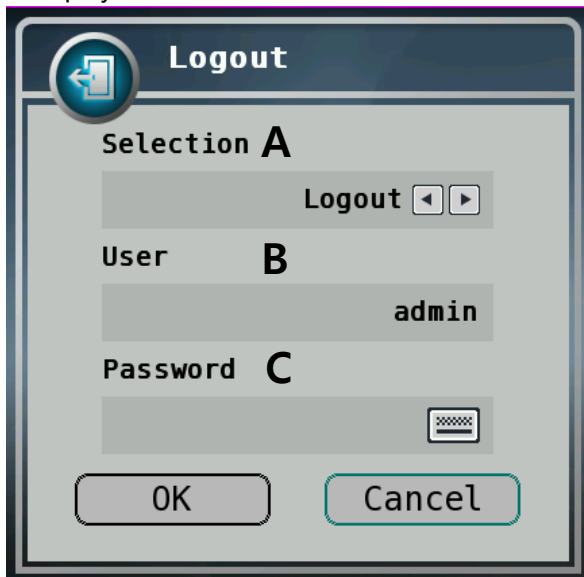
- The default user is set to 'admin' with password: 000000.
- Click  button then you will see the screen keypad as right.



3. Input password by using virtual keypad on screen.
4. Click "Login" button to execute DVR system and you will see live screen.

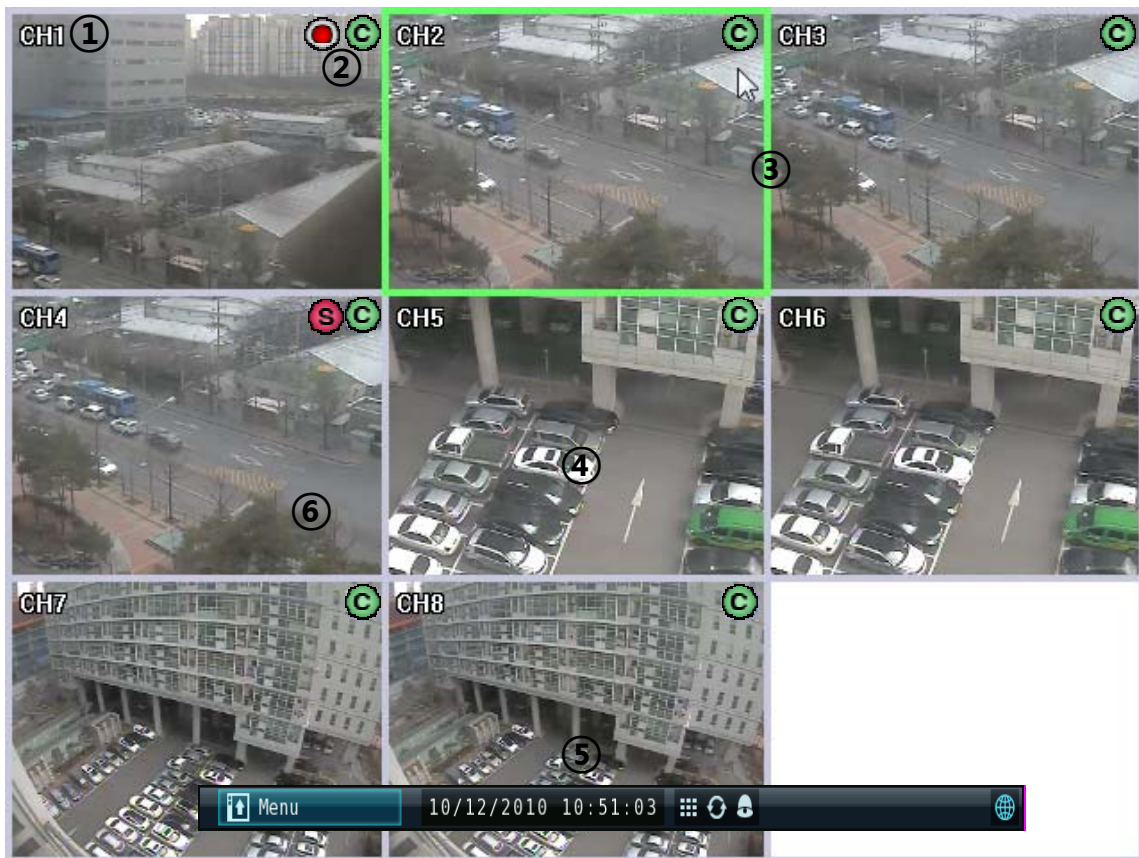
## 2) Shutdown

1. Press Log out button in Main Menu while you are logged in, then logout window will be displayed as below.



- A. Selection: Select "Logout" or "Shutdown".
  - B. User: Display current user has logged.
  - C. Password: Input password.
2. Click "OK" button to "Logout" or "Shutdown".

## 2-2. Live display



- ① [Camera name]
  - Shows camera name
  - If you want to modify channel name, you can do so by selecting [Setup] → [Video/Audio] → [Camera]
- ② [Status icon] (OSD)
  - Status icon shows current status of camera/recording.
  - OSD feature

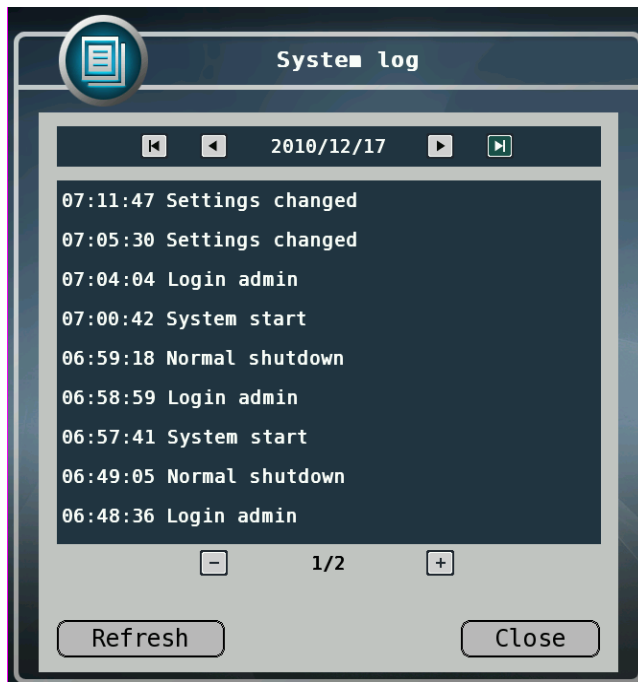
Item	Icon	Description
Camera		Audio icon
		Motion icon
		PTZ icon
Recording		Continuous recording
		Emergency recording
		Recording by motion
		No recording
		Recording by sensor






- ③ [Channel selection]
  - Selected channel shows green rectangle on the edge of the screen.
- ④ [Live view] (Live button on the remote controller)
  - It shows current live view as real time.
- ⑤ [Current date/time]
  - A. It shows current date/time. You can change date/time setting at [Setting] → [System] → Date/Time.
- ⑥ System control toolbar –[Live screen]



- 1)[Menu]
  - Click Menu bar to see system control bar
- 2)[Set up]
  - You can set up DVR systems
- 3)[Search]
  - You can enter the search menu
- 4)[PTZ]
  - You can enter PTZ operation menu

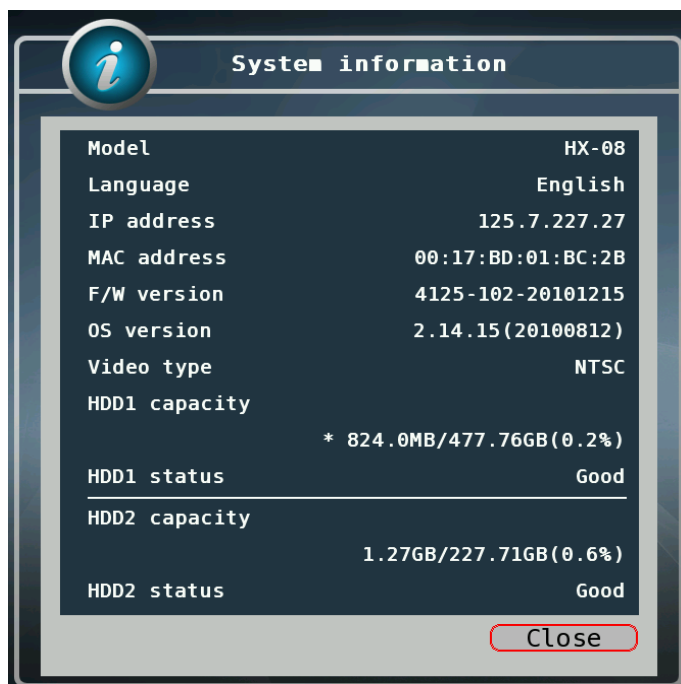
5)[System log]



- You can see log in time and information of DVR
- This shows the system log in DVR.
- Click  button from live screen to show the list of system log.
- You can see the log of previous date or next date by using   buttons.
- You can see the previous or next log list by using   buttons.
- Click “OK” button to close window.



6)[system information]



- a. Model: It displays the name of model.
- b. Language: It displays language currently set.
- c. IP address: It displays IP address.
- d. MAC address: It displays MAC address.
- e. F/W version: It displays the version number of firmware.
- f. OS version: It displays the version number of OS.
- g. Video type: It displays video input/output signal type of NTSC or PAL. When video input comes in, it will be automatically detected and cannot be set by user.
- h. HDD capacity: It displays the capacity of hard disk and current utilization ratio.
- i. HDD status: It displays the status of HDD, which is shown "Good" or "Error" according to the status of HDD. If you want to use 2HDD, you can put extra SATA or e-SATA port

7) [Log out] --- please go to 2-1→ 2) shut down


- You can log out of the system


8)[Time bar]

- It shows current time of DVR

9)[Screen Division]

- It shows screen division, if you want to see screen division, you should Click the icon.

4ch -  you can see 1,4 channel division.

8ch -  you can see 1,4,6,9 channel division.

10) [Auto Sequence]

- Push the icon, you can monitor the picture one by one automatically.

11) [Alarm]

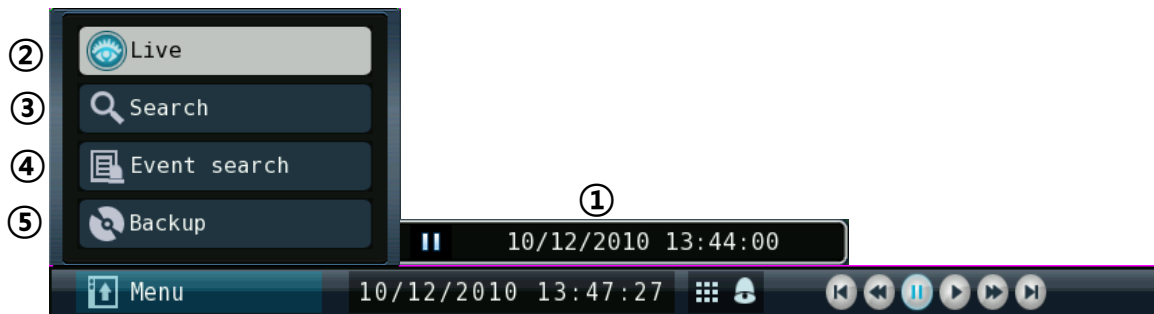
- This button is used to turn off alarm out put

12) Network status

- This button network connection status

When the light in on(Blue) it means DVR connected to network, it is black, the network connection is off.

⑦ [System control toolbar – Search screen]



1. [Playback date/time]

- It shows the date/time currently playback.

2. [Live screen]

- Click **Live** button to switch to live screen.

3. [Date/time search]

- Click **Search** button to select the date and time to playback. (Refer to “Chapter 2-5 Search(playback) and backup”.)

4. [Event search]

- Refer to “2) Event search” at Chapter “2-5 Search (playback) and backup”.

5. [Back up]

- Click Backup to run backup recorded data.
- Refer to Chapter “2-5 Search (playback) and backup”.

6. [Menu] – Click the bar, You can see search menu.

7. [Current time bar] – It shows current time.

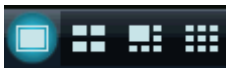
8. [Screen division] (Click this icon to see division screen)

- Divided screen can be displayed as below.

04ch: 1/4 division



08ch: 1/4/6/9 division



9. [Alarm off]

- It is used to turn off the alarm out.

10. [Previous frame]
  - It displays previous frame and pause. (1 step backward play)
11. [Fast backward playback]
12. Click this button to playback fast backward. The speed of fast backward playback can be set to one of the following, X2, X4, X8, and X16.[Stop]
  - Click this button to stop playback.
13. [Forward playback]
  - Click this button to playback forward as normal speed.
14. [Fast forward playback]
  - Click this button to playback fast forward. The speed of fast forward playback can be set to one of the following, X2, X4, X8, and X16.
15. [Next frame]
  - It displays next frame and pause. (1 step forward play)
  - ※ **System control bar is shown when mouse pointer moves to lower position of screen, and it is hidden when mouse pointer moves to upper position.**

## 2-3. System setting

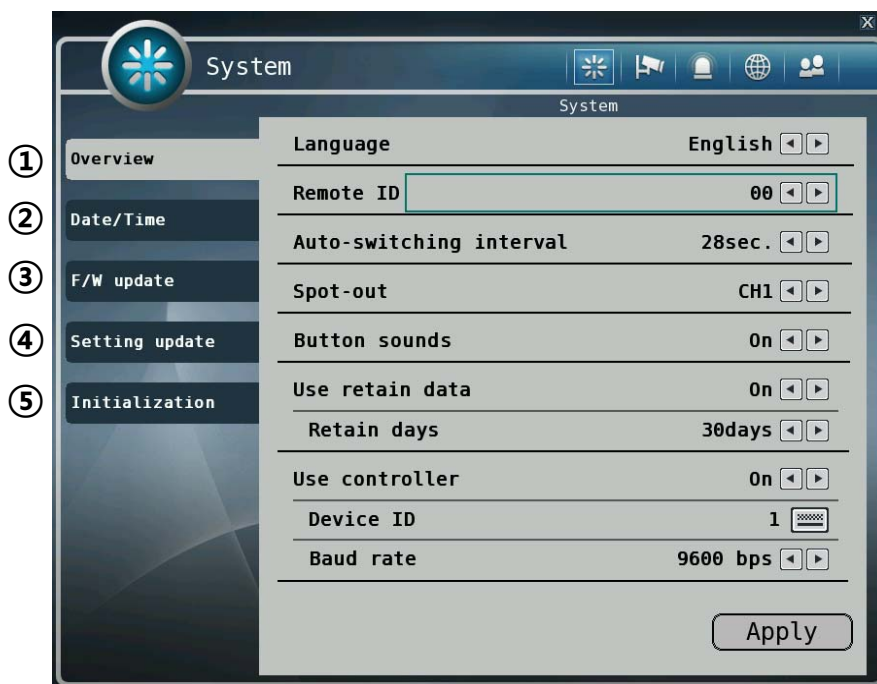
System setting can be configured by setup menu. Working condition can be specified by mouse / remote controller.

Only admin user can setup system configuration by menu.


※ Press “Menu” on the remote controller and use Left/Right/Up/Down button to select menu by pressing “OK” button.

( Left/Right : Top menu, Up/Down : Sub Menu )



### 1) System

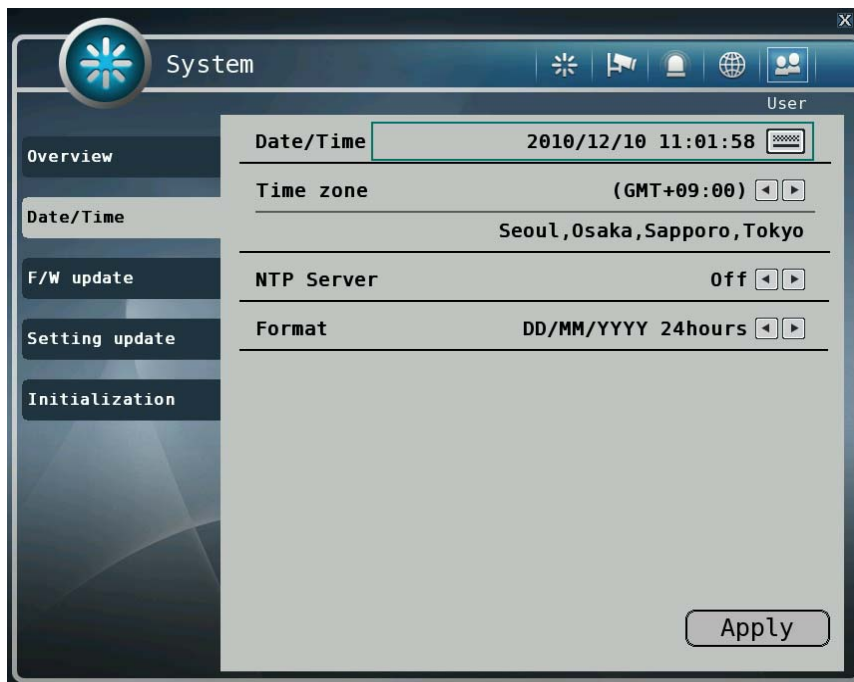


#### ① [General setup]

- You can specify the system configuration by this menu.
- Use  button to change configuration.
  - A. Language: Select display language.
  - B. Remote ID: ID can be selected from 00 to 99.
  - C. Auto-switching interval: Set the interval camera switching.
  - D. Spot-out : You can set up channel to see spot-out monitor
  - E. Button sounds: Select the use of button sounds.
  - F. Use retain days: Preserve an outdated data is automatically deleted.
    - A. Data retain days: Data saving period can be set from 1 day to 60 days
  - G. Use controller: Select the use of keyboard controller.
    - A. Device ID: Specify the ID of connected keyboard controller.
    - B. Baud rate: Specify the baud rate of serial port.

②[Date/Time]

- Specify date and time of system.
- You can specify setting by using   button
- Select date and time, then you will see virtual keypad as below.



A.Date/Time: Specify current date and time

B.Time zone: Specify the time zone.

C.NTP Server: It supports using internet time server to synchronize time.

D.Format: Specify the display format of date/time.

Ex.) Setting as “DD/MM/YYYY AM/PM” will displays “16/12/2010 AM 12:00”.

※ **Daylight saving time is applied automatically according to corresponding location setting.**

③ [F/W update]

- It is used for updating firmware.



- A. File: Select a firmware file to update using  buttons after putting USB Memory stick.
- B. Refresh: Read list of files from USB memory.
- C. OK: Starts updating firmware with selected file.

④ [Setting update]

- It is used to import or export setting values.



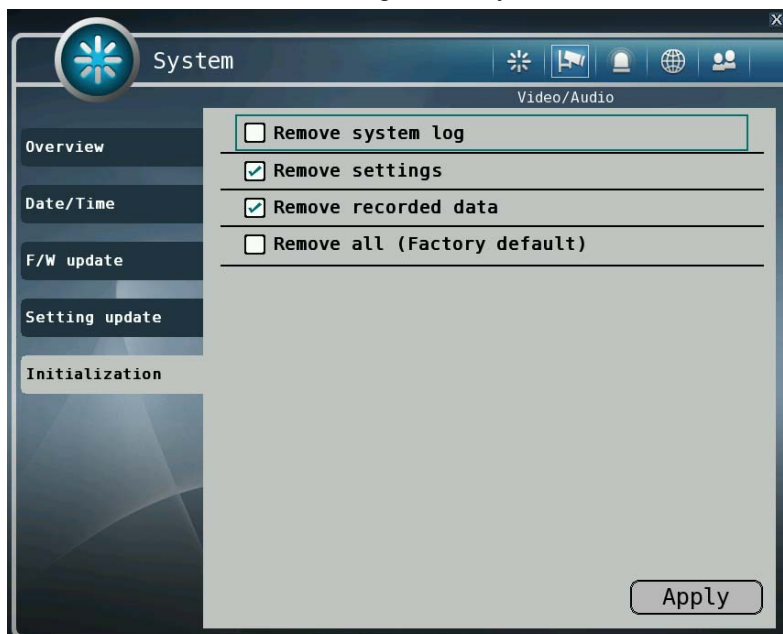
- A. Import: Imports setting values from USB memory.
- B. Export: Exports setting values to USB memory.
- C. Refresh: Reload files from USB memory.

**!** **Caution**

USB memory stick is needed to update F/W or setting values. Once you disconnected and reconnect USB memory, you should press "Import" button to read list of file from USB memory. "USB is not detected." Message will be shown when you are to run updating without connected USB.

⑦ [Initialization]

- You can initialize data and configuration by this menu.



- A. Remove system log: Remove all log files.
- B. Remove settings: Remove setting files.
  - i. After initializing setting all the setting values will be restored as default values.
- C. Remove recorded data: Remove all recorded data.
- D. Remove all (factory default): Delete entire data in the system and restore as factory default

**!** **Notice**

- If data is initialized, it can't be recovered. Before use "initialize", important data must be backup.
- "Removing recorded data" makes HDD be formatted and you will loose recorded data.

## 2) Video / Audio

On this menu, camera, recording, color, OSD, display, audio, and PTZ can be configured.



### ① [Camera]

- You can specify channel name of camera.
  - A. Camera no.: Select the camera number to change name.
  - B. Camera name: Input camera name (Maximum 12 characters)
  - C. Audio: Select camera to associate with each audio input.

### ② [Recording]

- You can specify recording configuration.





- A. Total: Max frame rate has restricted by screen resolution.
- B. Resolution: Specify resolution of recorded video. (CIF / Half-D1 / D1)
- C. Camera: Select camera to set frame and quality.
- D. Quality: Specify image quality for selected camera.  
(Very high, High, Normal, Low, Very low)
- E. Normal frame rate: You can specify recording frame rate when recording method is continuous for selected camera.
  - ※ **Frame rate cannot exceed event frame rate.**
- F. Event frame rate: You can specify recording frame rate when recording method is event for selected camera.
- G. Click "Apply all" button to apply setting to all cameras.

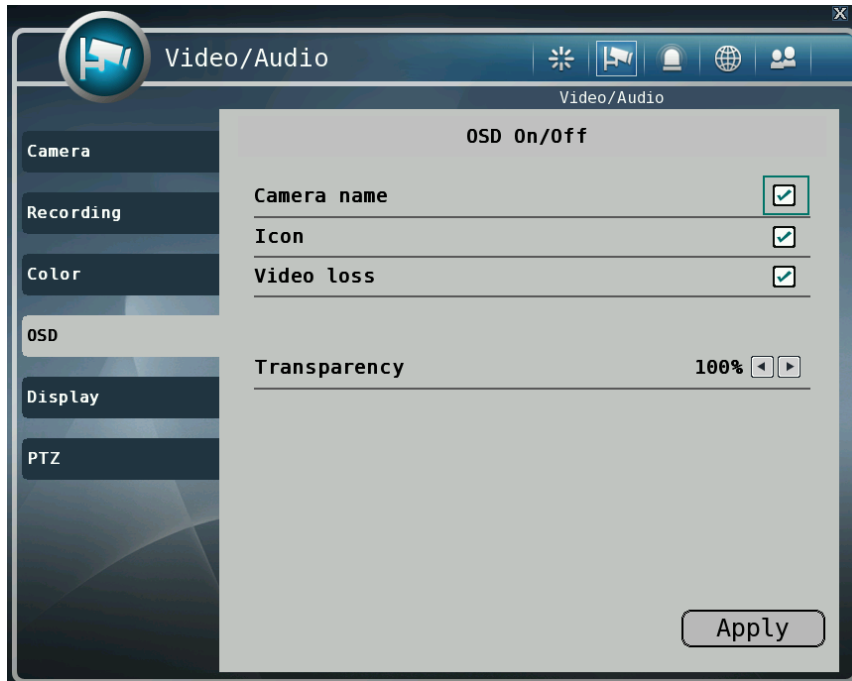
③ [Color]

- You can adjust brightness, contrast, saturation and hue



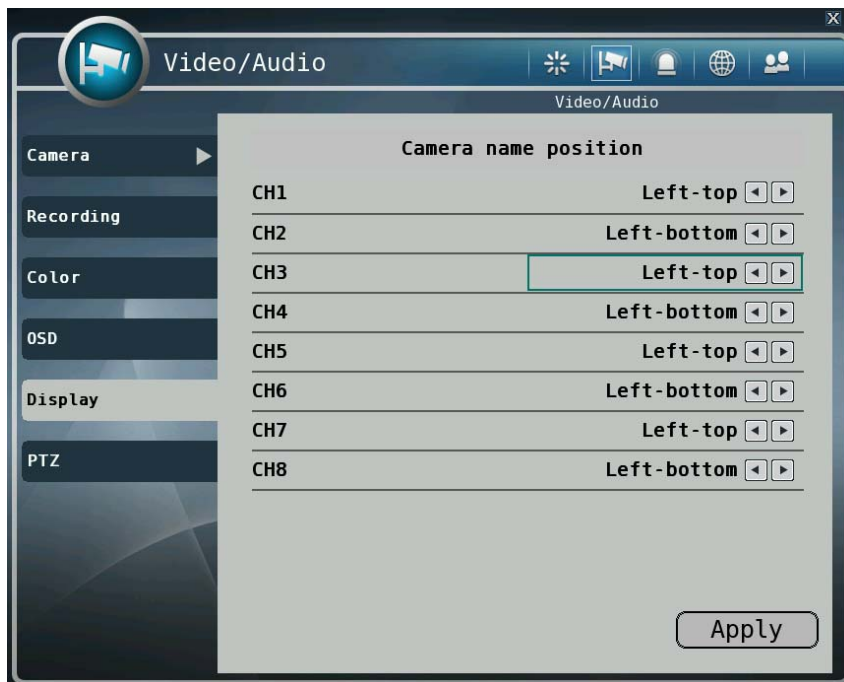
④ [OSD]

- You can set the items of OSD to be displayed, which are camera name, status icon, current date/time, video loss and transparency of OSD.
- If transparency is 10%, the OSD is displayed most transparently. On the other hand, if the transparency is 100%, the OSD is displayed as opaque.



⑤ [Display]

- You can set the position of current date/time and each channel name.



- A. Time bar position: Select one from "Left", "Center", and "Right".
- B. Channel name position:  
Select one from "Left-top", "Left-bottom", and "Right-bottom".

⑥ [PTZ]

- It is used to operate the PTZ camera connected to RS-485. It is needed to set the



- A. Selecting PTZ Camera
- B. Panning or tilting camera.
- C. Use OSD of camera.
- D. Zoom: Zoom in or out.
- E. Focus: Focus near or far.
- F. Iris: Iris in or out.
- G. Speed: Specify the speed of panning and tilting PTZ camera. (1~6)
- H. Protocol: Selecting PTZ protocol.(Supporting 15 protocols)
  - i. LG Multix\_E / LG Co.,Ltd
  - ii. LG Multix / LG Co.,Ltd
  - iii. LPT - A100L / LG Co.,Ltd
  - iv. LVC-C100 / C200HM / LG Electric Inc
  - v. HSDN251 / Honeywell Co.,Ltd
  - vi. MD200 / 2000 / 1200 / 800 / Sony Co.,Ltd
  - vii. New Born / NEW BORN HIGHTECH
  - viii. WVCS850 / Panasonic
  - ix. PELCO-D / PELCO Co.,Ltd
  - x. PELCO-P / PELCO Co.,Ltd
  - xi. SCC-641 / SCC-643 / SAMSUNG Co.,Ltd

- xii. SPD-2300 / 3000 / 3300 / SAMSUNG Co.,Ltd
- xiii. SUNGJIN / SUNGJIN Co.,Ltd
- xiv. DSC-200 / DYNACOLOR,INC
- xv. V1305R-DC / V1300RB / CRX – 1013 / VICON
- I. Device ID: Specify the device address of PTZ camera.
- J. Baud rate: Specify the speed of serial communication (bps).  
The default baud rate value is "9600 bps".  
※ It can be set as one of these values. (1200/ 2400/ 4800/ 9600/ 19200/  
38400/ 57600/ 115200 bps)

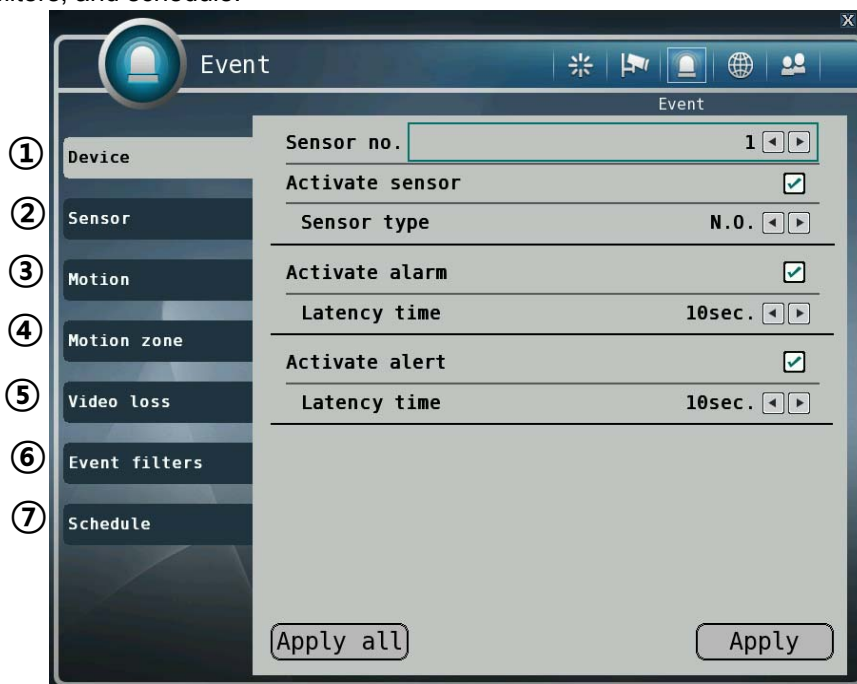


### Notice

Basically DVR support one RS-485 port for PTZ connection.

### 3) Event

You can specify the processing when event occurs like sensor, motion detection, video loss, event filters, and schedule.

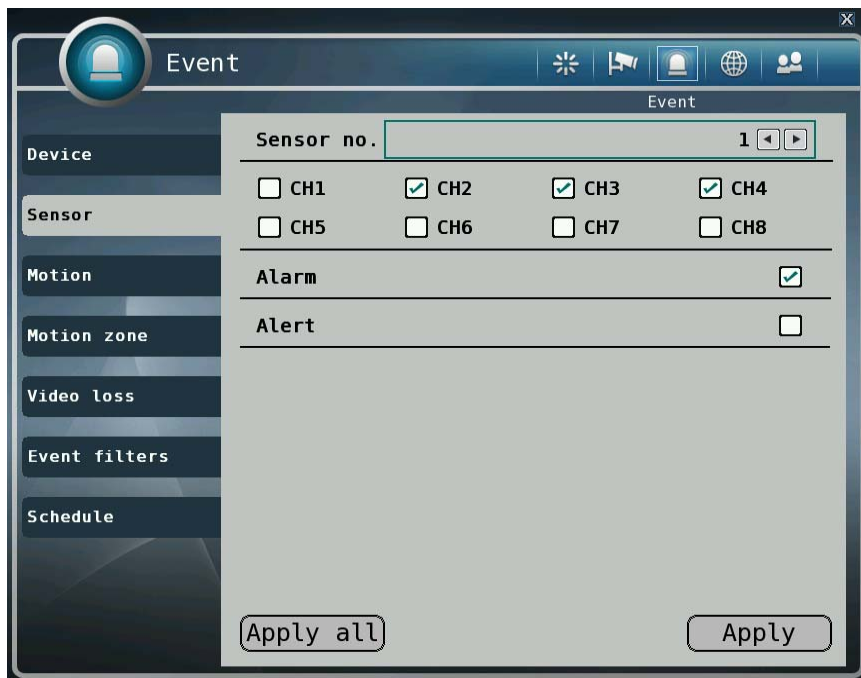


#### ① [Device]

- You can set enable or disable sensor, alarm, and alert.
  - A. Sensor no.: Select sensor no. (1 ~ 4)
  - B. Activate sensor: Check if you want to enable the sensor.
  - C. Type : Specify the sensor type is "N.O." or "N.C.".
    - i. N.O.(Normal Open): The type of input device is opened normally.
    - ii. N.C.(Normal Close): The type of output device is closed normally.
  - D. Activate alarm: Check if you want to use alarm when event occurs.
  - E. Latency time: Setting the duration time of alarm output from event occurs. (1~10 Sec., OFF)
  - F. Activate alert: Setting sound a buzzer when event occurs from input device. (On/Off)
  - G. Latency time: Setting the duration time of buzzer sound from event occurs. (1~10 Sec., OFF)

② [Sensor]

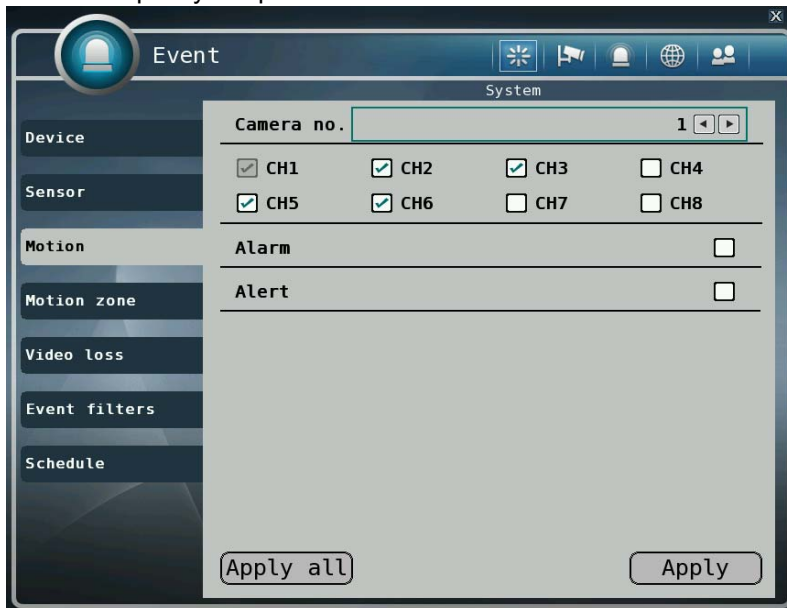
- You can specify the processing when event occurs from input device.



- A. Sensor no.: Selecting sensor number. (1 ~ 4)
- B. Channels: Setting association with selected sensor event.
- C. Alarm: Setting association with the sensor input.
- D. Alert: Setting sound a buzzer when event occurs from input device.

③ [Motion]

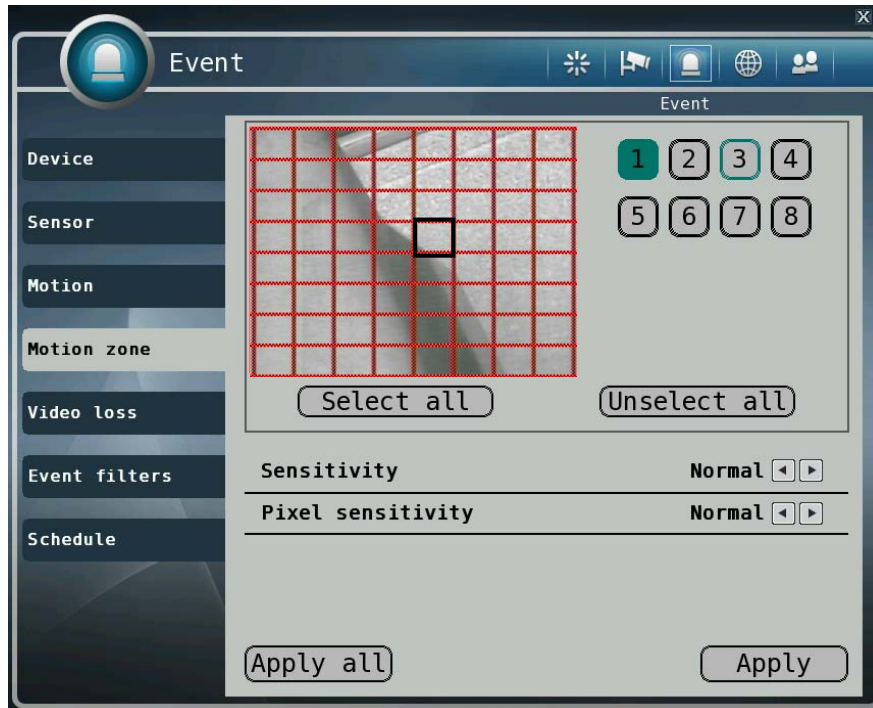
- You can specify the process when motion is detected.



- A. Camera no.: Selecting camera which is associated event.
- B. Channels: Setting association with selected motion detection event.
- C. Alarm: Setting association channel with motion detection.
- D. Alert: Setting sound a buzzer when event occurs with motion detection.

## ④ [Motion zone]

- Setting area of motion detection.
- Drag mouse while left button pressed to set or release the area of motion detection.  
( Red: motion zone, Grey : non motion zone )



- A. Channels: Selecting a channel to set motion zone.
- B. Sensitivity: Setting the motion sensitivity.  
(Very high/High/Normal/Low/Very low)
- C. Pixel sensitivity: Setting the detailed motion sensitivity by block unit.  
(Very high/High/Normal/Low)
- D. Select all: Selecting entire area.
- E. Unselect all: Unselecting entire area.



④ [Video loss]

- You can specify the processing when video loss.



- A. Camera no.: Selecting camera which is associated with video loss event.
- B. Channels: Selecting channels to record when video loss event occur from the specified camera.
- C. Alarm: Setting alarm out when video loss.
- D. Alert: Setting sound a buzzer when video loss.

## ⑤ [Event filter]

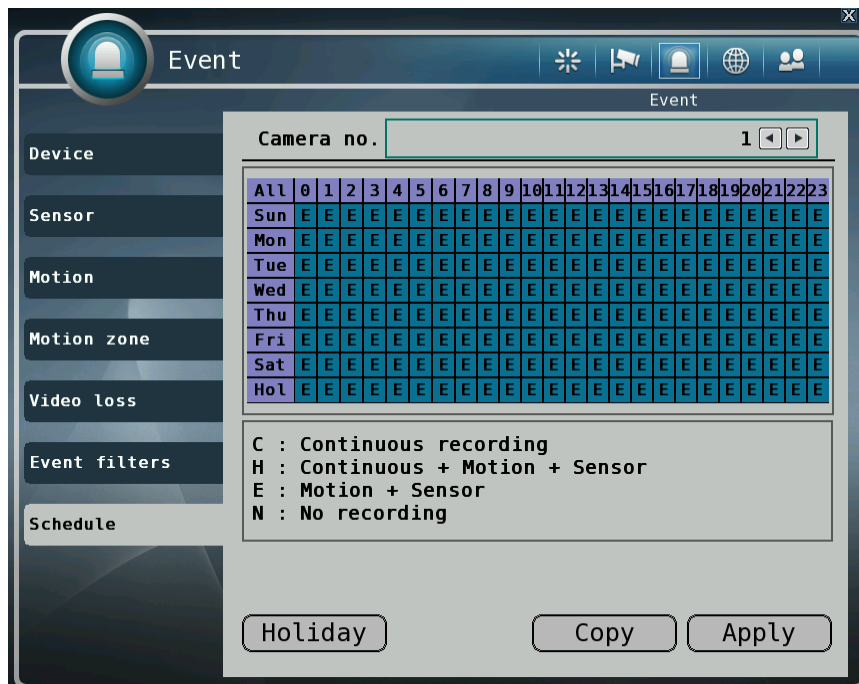
- Specifying the event which will be sent to the central monitoring center and E-mail.



- A. System start: Enabling or disabling the system start event.
- B. Setting change: Enabling or disabling the setting change event.
- C. Normal shutdown: Enabling or disabling the system shutdown event.
- D. Login: Enabling or disabling the login event.
- E. Logout: Enabling or disabling the logout event.
- F. HDD full: Enabling or disabling the HDD full event.
- G. Sensor: Enabling or disabling the sensor detection event.
- H. Alarm: Enabling or disabling the alarm output event.
- I. Motion: Enabling or disabling the motion detection event.
- J. Alert: Enabling or disabling the alert event.
- K. Abnormal shutdown: Enabling or disabling the abnormal termination event.
- L. Video loss: Enabling or disabling the video loss event.

⑥ [Schedule]

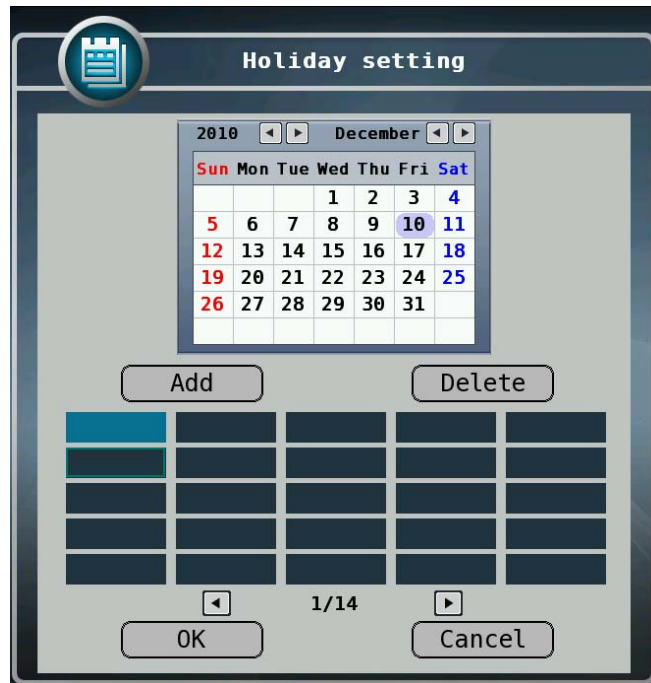
- You can specify recording method by schedule with date and time.



C: Continuous recording method  
 H: Continuous recording + event recording method (Motion, Sensor)  
 E: Event recording method: if event (Motion, Sensor) happens, recording works.  
 N: No Recording.

- A. Click time table to change recoding method.
- B. Click channel number to change recording method for all time.
- C. Click time label to change recording method for all days.
- D. Click "Apply" button to apply current setting to selected channel.
- E. Click "Copy" button to apply current setting to another channel.

F. Click "Holiday" button to specify date of holiday.

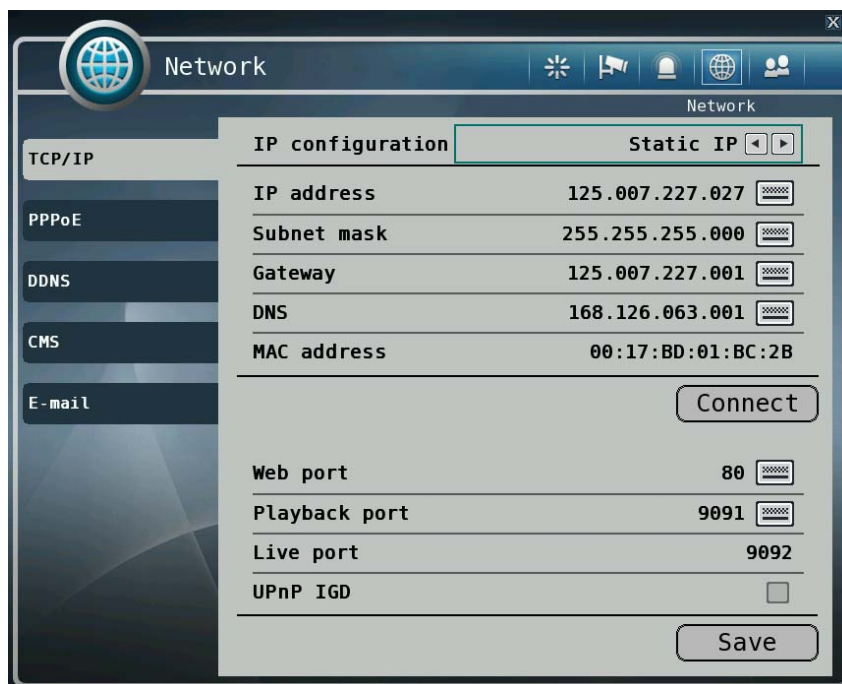


- G. To add specific date to the holiday list, select date on the calendar and "Add" button. Selected date shows as yellow colored rectangle.
- H. To delete specific date in the holiday list, select date on the holiday list and click "Delete" button. Selected holiday date shows as blue-green colored rectangle.
- I. Click "OK" button to save current holiday setting and back to schedule menu.
- J. Click "Cancel" button to cancel current holiday setting and back to schedule menu.

#### 4) Network

You can set the network environments.

##### 1. [TCP/IP]



- You can specify the TCP/IP setting according to network environment.
  - Specifying the TCP port number of Web, Playback and Live.
  - Default values: Web(80), Playback(9091), Live(9092)
    - For dynamic IP or PPPoE
      - All the items of IP address, subnet mask, gateway and DNS are disabled and set each value automatically.
    - For static IP
      - IP Address: Enter IP address received from ISP using screen keyboard.
      - Subnet mask: Enter subnet mask received from ISP using screen keyboard.
      - Gateway: Enter gateway received from ISP using screen keyboard.
      - DNS: Enter the DNS IP address received from ISP using screen keyboard.
      - MAC address: This is hardware specific unique address of network device, so user cannot set this value.
- ※ **8000~65535 port number is recommended.**
- ※ **Do not use the same port number with each other.**
- Web (80), playback (9091), live (9092), CMS (9100)**

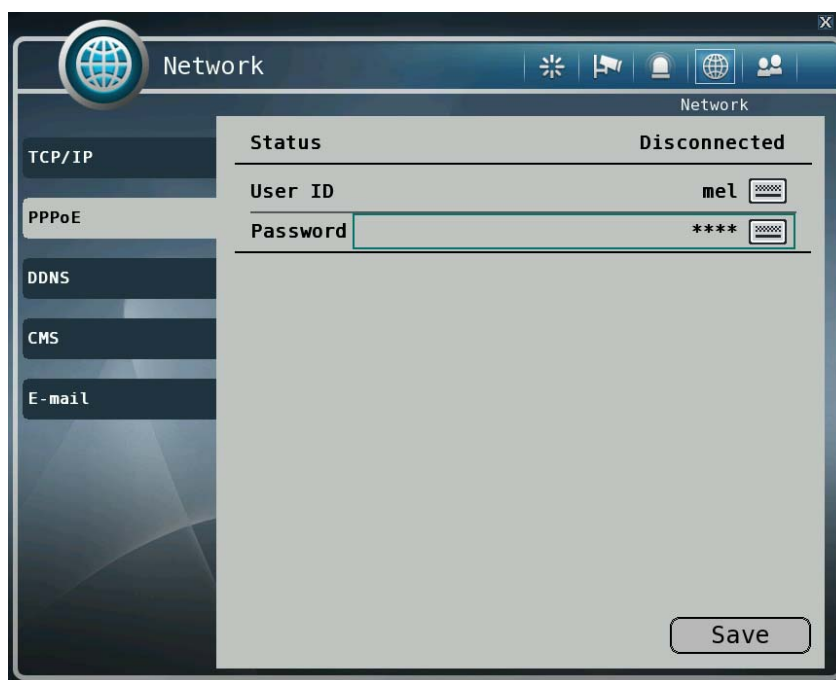
※ If the network of DVR is connected via router, you must set Configuration of port forwarding according to the router. (web, search, live ports) Please refer to user's guide of the router which you are using.

※ UPnP IGD : The IP router setting of port forwarding for web, playback and live ports can be done automatically.

**! Caution**

- UPnP IGD feature will be disabled if IP router does not support UPnP IGD or it turned off it in the router settings.
- UPnP does not work if DMZ feature of IP router is enabled.
- UPnP does not work if port forwarding of these ports is set in the

2. [PPPoE]



ii. Specifying user id and password for PPPoE.

1. Status: It displays current connection status of PPPoE.
2. User ID: Input user id for PPPoE account.
3. Password: Input password.

## 3. [DDNS]

- You can use DynDns or dvrDNS service : Visit [www.dyndns.com](http://www.dyndns.com) or [www.dvrDNS.net](http://www.dvrDNS.net) and And domain name.
- You can connect to DVR easily using host name instead of IP address with DDNS



4. Mode: Enabling or disabling DDNS.
5. Server: IP address of DDNS.
6. Port: TCP port number of DDNS.
7. Domain: The domain name of DVR device.
8. Interval: Setting the interval of IP address updating.

**\*In case of DYNdns, you must put User and Password**

**If you want more information about DYNdns, you can visit [dyndns](http://dyndns.com) website.**

## 4. [CMS]

- Specifying IP address and TCP port number of CMS.



9. Mode: Enabling or disabling event report to the central monitoring center when event occurs.

10.IP address: The IP address of the central monitoring center.

11.Port: The TCP port number of the central monitoring center.



## 5. [E-mail]

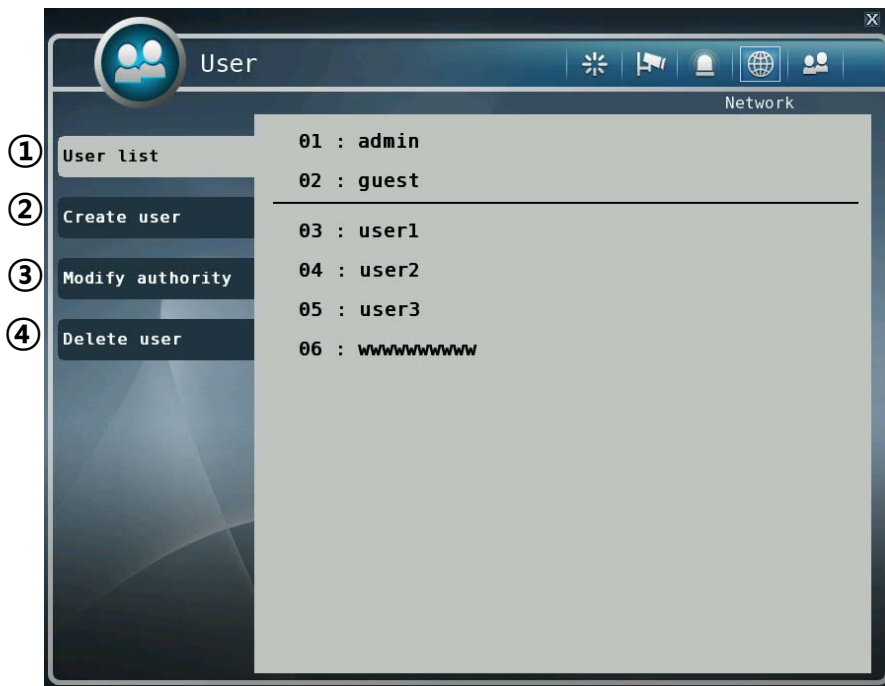
- You can set the E-mail notification when event occurs.



12. Mode: Enabling or disabling E-mail notification. (OFF / Authentication / Not authentication)
  13. SMTP server: Setting the IP address or domain name of SMTP server.
  14. Port: Setting the TCP port number of SMTP (Default value is 25).
  15. Account: Setting the E-mail account registered in SMTP server.
  16. Password: Setting the password of the E-mail account.
  17. Sender: Setting the E-mail address of sender.
  18. Receiver: Setting the E-mail address of receiver.
  19. Test E-mail: Click to send testing E-mail, then receiver can check the testing E-mail.
- ※ SMTP server does not support encrypted E-mail protocol.

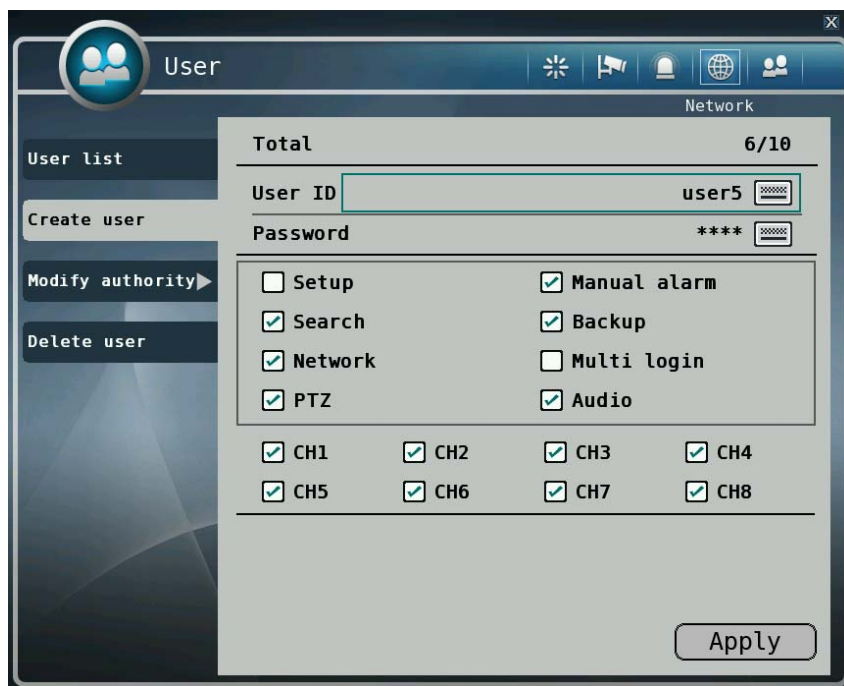
### 5) User

You can create new user, modify authority, delete user.



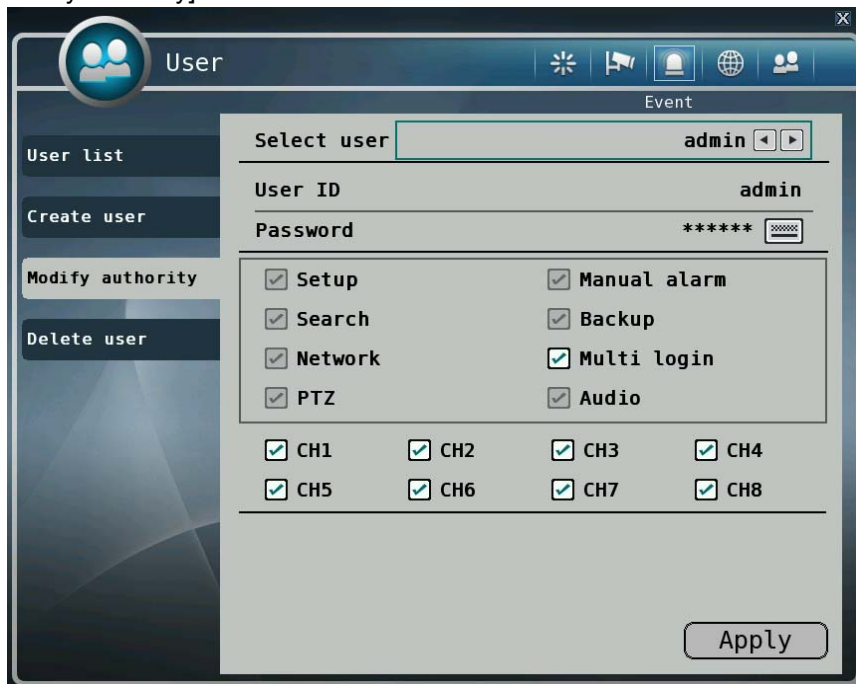
- ① [User list]
  - You can view the list of all users.

- ② [Create user]



- A. Total: It displays the number of registered users and the maximum number of users can be registered.
- B. User ID: Input user id to create.
- C. Password: Input password for the user id.
- D. Authority items: Specify each authority item for the user id.
  - A.Setup
  - B.Manual alarm
  - C.Search
  - D.Backup
  - E.Network
  - F. Multi login
  - G. PTZ
  - H.Audio
- E. Cameras: Specify the cameras which the user can see.

③ [Modify authority]



- A. User ID: Select a user id to modify authority.
- B. Password: Change password using keypad button.
- C. Authority items: Specify each authority item for the user id.
  - A. Setup
  - B. Manual alarm
  - C. Search
  - D. Backup
  - E. Network

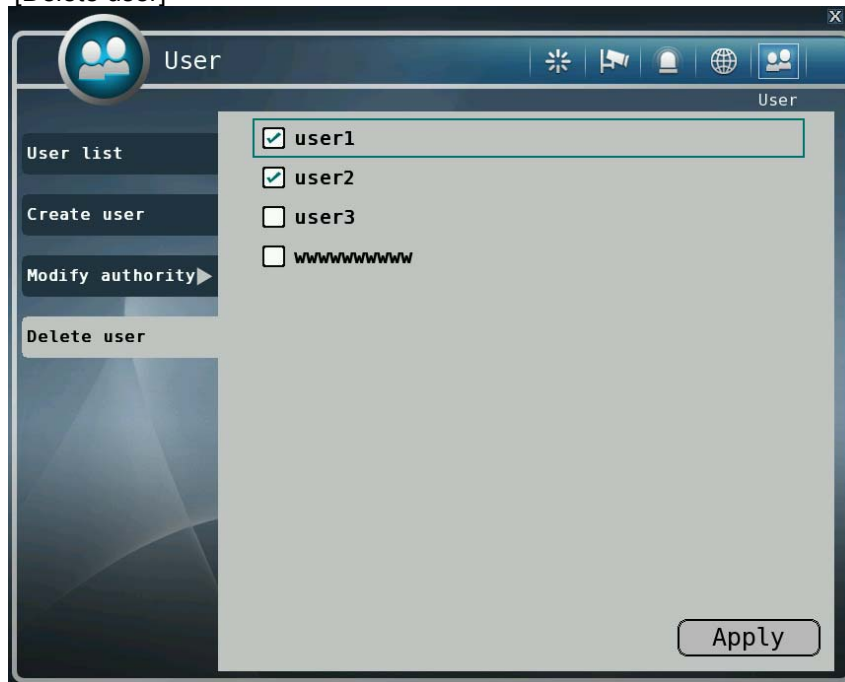
F. Multi login

G. PTZ

H. Audio

D. Cameras: Specify the cameras which the user can see.

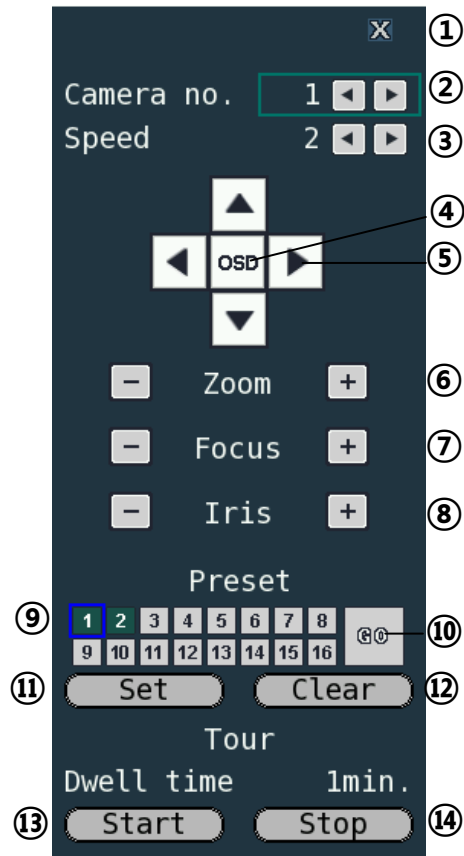
④ [Delete user]



Select user id to delete.

## 2-4. PTZ control

- It is used to control PTZ camera which is connected at RS-485 port. Settings of camera and DVR should be done if you are to control PTZ camera.
  1. Click the icon **PTZ** bar to control PTZ in first main menu.
  2. Control the PTZ camera using each item below.



- ① Click this button or press "CANCEL" button on the remote controller to close the PTZ control window.
- ② Click this spin control to select PTZ camera. (1~4)
- ③ Click this spin control to specify the moving speed of PTZ camera (1~6).
- ④ Click this button to show the OSD menu of camera.
  - ※ **Supported cameras** : LG-Multix, LG-Multix\_E, Pelco-D, Pelco-P
- ⑤ Click these direction buttons to pan or tilt camera.
- ⑥ Click to control zoom in or out.
- ⑦ Click to control the focus of camera manually.
- ⑧ Click to control the iris of camera manually.
- ⑨ Click to select preset number.
- ⑩ Click to move to selected preset position.
- ⑪ Click to set current position as a new preset position.

- ⑫ Click to delete specified preset number.
- ⑬ Click to start touring, which function traverse each preset position one by one according to dwell time.
- ⑭ Click to stop touring.

■ Setting a new preset position

1. Move camera position using direction button ⑤.
2. Select the preset number to set using button ⑨.
3. Click button ⑪ "SET".
4. Repeat process 1 ~ 3 stage to set another preset position.

※ **Preset numbers are available up to 16.**

※ **The maximum preset number is different according to the specification of camera.**

■ Moving camera to preset position

1. Select the preset number to move using button ⑨.
2. Click button ⑩ "GO".

※ **Moving camera to preset position is only available when the camera supports preset feature.**

■ Deleting preset position

1. Select the preset number to delete using preset number button ⑨.
2. Click button ⑫ "CLEAR".

※ **Deleting preset position is only available when the camera supports.**

■ Starting touring

1. Click button ⑬ "START".
2. Then it will start traversing each preset position one by one automatically.

■ Stopping touring

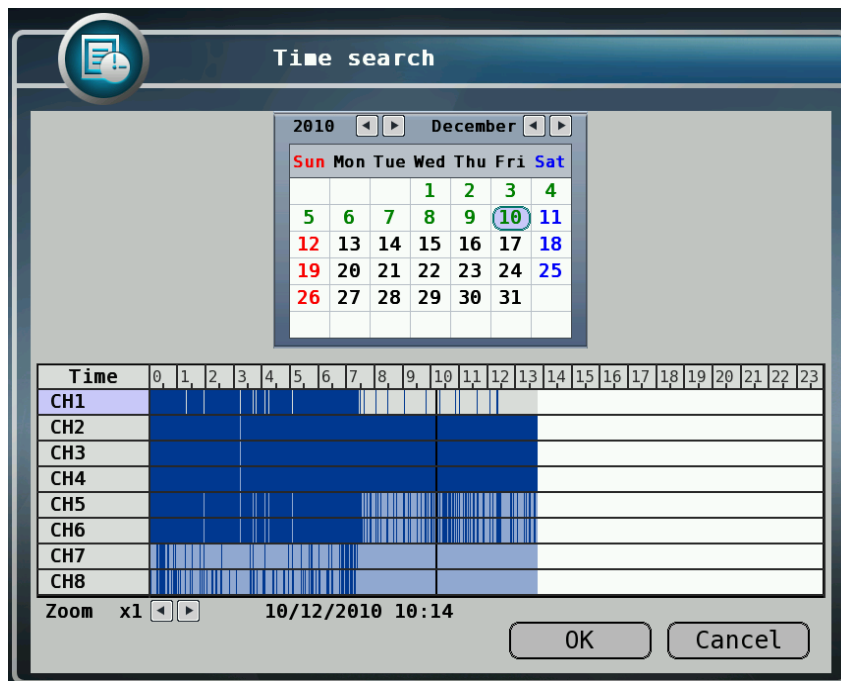
1. Click button ⑭ "STOP".
2. Then it will stop traversing.

## 2-5. Search (playback) and backup

Various features are available for user to search recorded data easily.

### 1) Time search

- You can search recorded data with date and time.




- How to search recorded data
  - Click Search bar on Main menu button on main menu bar.
  - Select the date you want to search on the calendar above.  
(The date with recorded data is displayed in bold.)
  - Then recorded time table will be displayed.
  - Select time you want to search whenever you click the recorded time table the preview window is shown.
  - Then click "OK" button to playback.
  - Click "Cancel" button to return to live view screen.
  - Move cursor by pressing "Up/Down" button on the remote controller.
    - Using remote controller on the calendar  
→ [Left/Right: change date], [ << >> change month]
    - Using remote controller on the timebar  
→ [Left/Right: change time], [ +, - : Timebar zoom control] [1~8: camera selection]
  - If there's multiple recorded data at the same time stamp, you can select one of them at popup window.
    - Bigger number of duplicated data stands for more recent data.

## 2) Event Search

- You can search recorded data using event occurrence time.

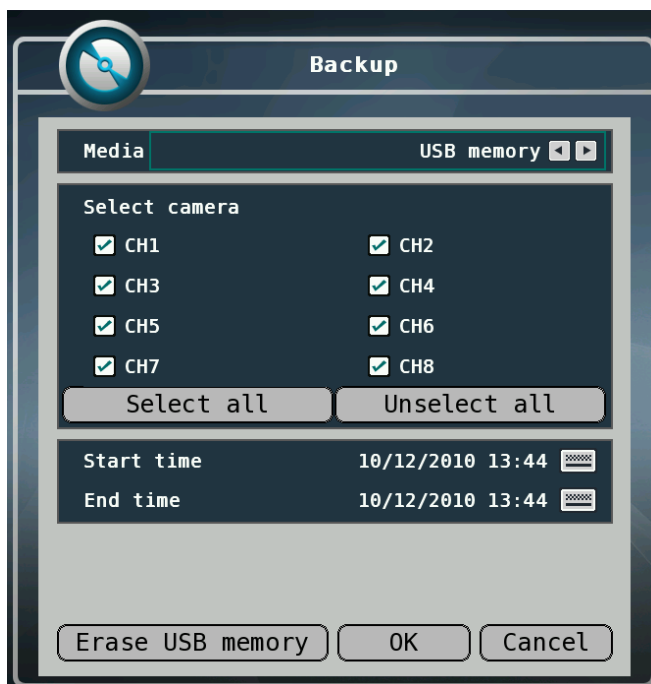


- Click the **Event Search** bar on search menu bar.
- Use  buttons on the upper right side to select camera to search.
- Check sensor, motion check box below to filter out the events.
- Move to previous or next page using – and + buttons.
- Select a data to search from the list. Click the mouse button to move to the corresponding recorded data.
- Click “Play” button and the searched data will be played.




### 3) Backup

- You can back up the recorded data which you select date/time and channels.



- Click mouse on the **Back up** bar on Search menu bar.
- Select a device to backup data will be stored.
- If you want to select cameras to backup, click “Set” button and select cameras you want. Then click “OK” button.
- Selected cameras will be displayed below.
- Specify starting date/time of backup period.
- Specify ending date/time of backup period.
- If duplicated data exists in the backup data period, select one data from “Start duplicated data” or “End duplicated data”.
- After finishing setting for backup, click “OK” button.
- When backup is started, the screen moves from search to real time live mode and the icon and text will be shown as backup progress.
- The message “Backup completed.” will be shown when backup is finished.

#### How to cancel backup

- If you press  cancel button when backup is running, “Are you sure to stop backup?” message will be shown. Then click “OK” to stop backup, otherwise click “Cancel” to continue backup.

**How to erase media**

- You can erase data in the storage media, like USB memory stick
- When you are to use USB memory, after connecting USB memory to USB port, click "Erase media" button to erase media.
- It is recommended to backup important data stored in USB memory before using this function.
  
- ※ **The backup process is not started if you specify invalid starting and ending date/time.**
- ※ **The backup period cannot exceed 24 hours.**
- ※ **The USB memory should be formatted as FAT32.**
- ※ **Maximum size of backup data is depends on the storage media to be used. In case of USB memory stick, only free space is used.**
- ※ **If there's duplicated data at the same time stamp, you can select specific data position with the dialog box as below. Select data position with spin box, and then click "OK" button to start back up. Bigger number of duplicated data stands for more recent data.**
- ※ **The other functions do not work when backup is running.**

**Notice**

Do not remove USB memory stick when backup is running.

# CHAPTER 3

## Web viewer

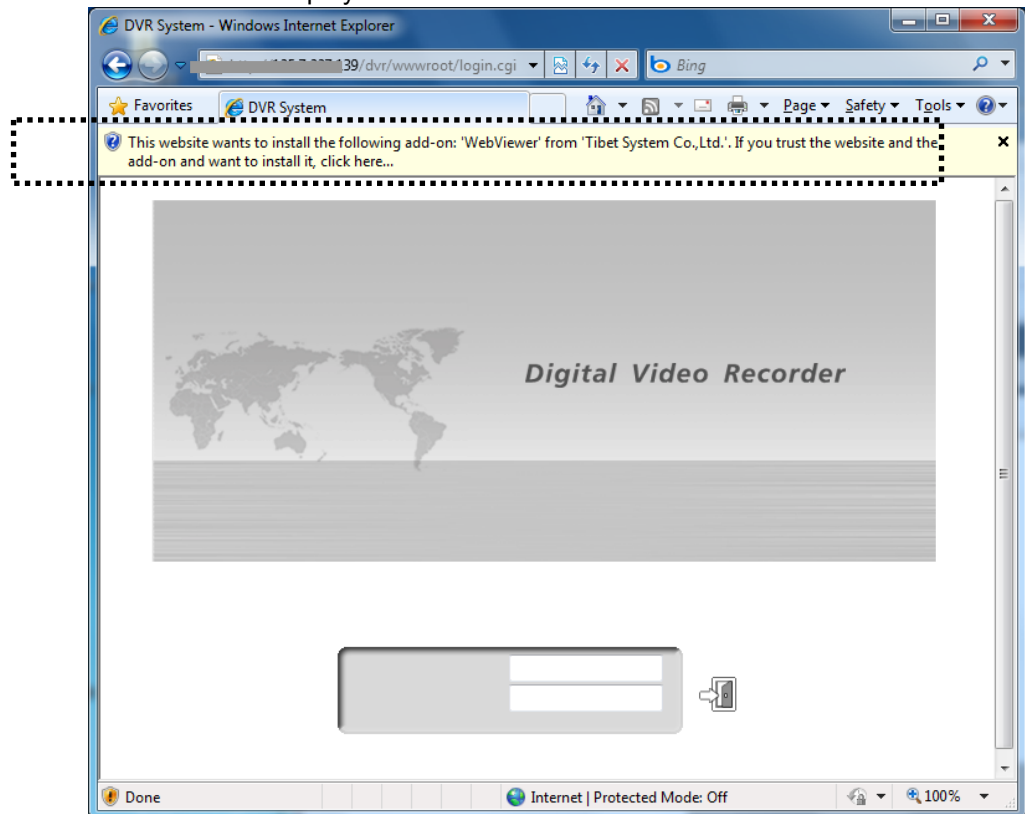
3-1 Installation .....	60
1. Web viewer installation .....	60
3-2 Functional description .....	62
1. Web viewer monitoring window .....	62
2. Web viewer search window .....	63
3. Search menu .....	64
4. Saving as AVI file dialog box .....	65

## 3-1. Installation

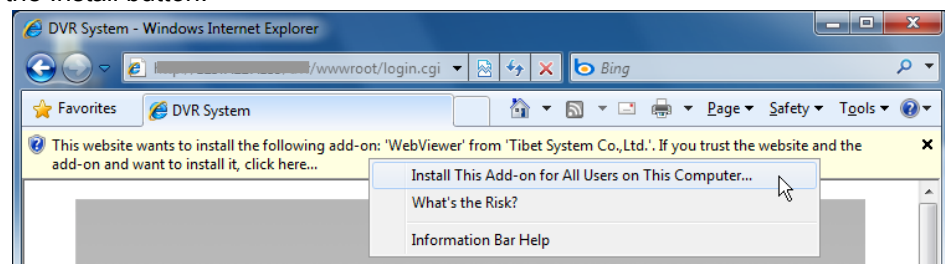
- Set up the network before the installation.

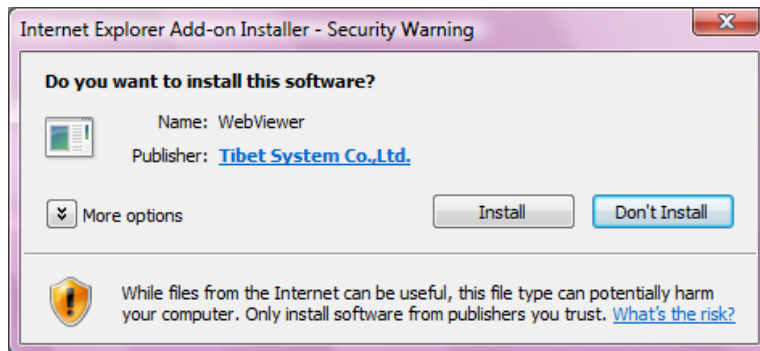
### 1. Web viewer installation

- ① Enter the DVR IP address in the Web address window, and then the following Active-X installation window will be displayed.

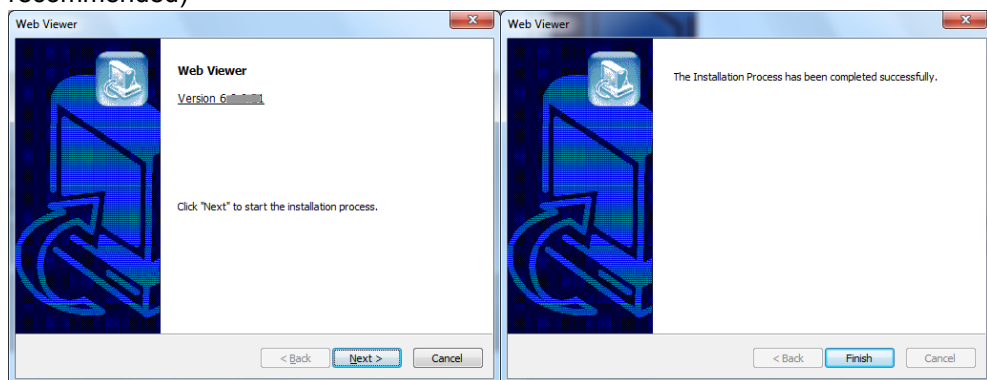


- ② When you click on the Active-X install button, the following window will be displayed. Press the Install button.

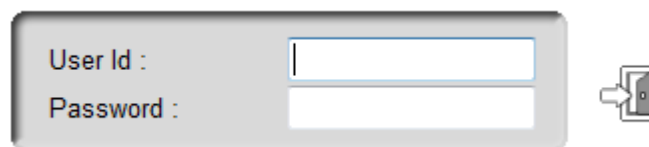




- ③ Press the Next button from the Web View installation window. When the installation is completed, the Web initialization screen will be displayed. (General installation recommended)



- ④ Enter the ID and password. (Multi-login is not enabled and you must log in to the DVR with an unused ID.)  
(Default: admin, user1, user2, user3)



**! Caution**  
Web Viewer and CMS cannot be used at the same time.  
Max 3 users are allowed to access DVR simultaneously.

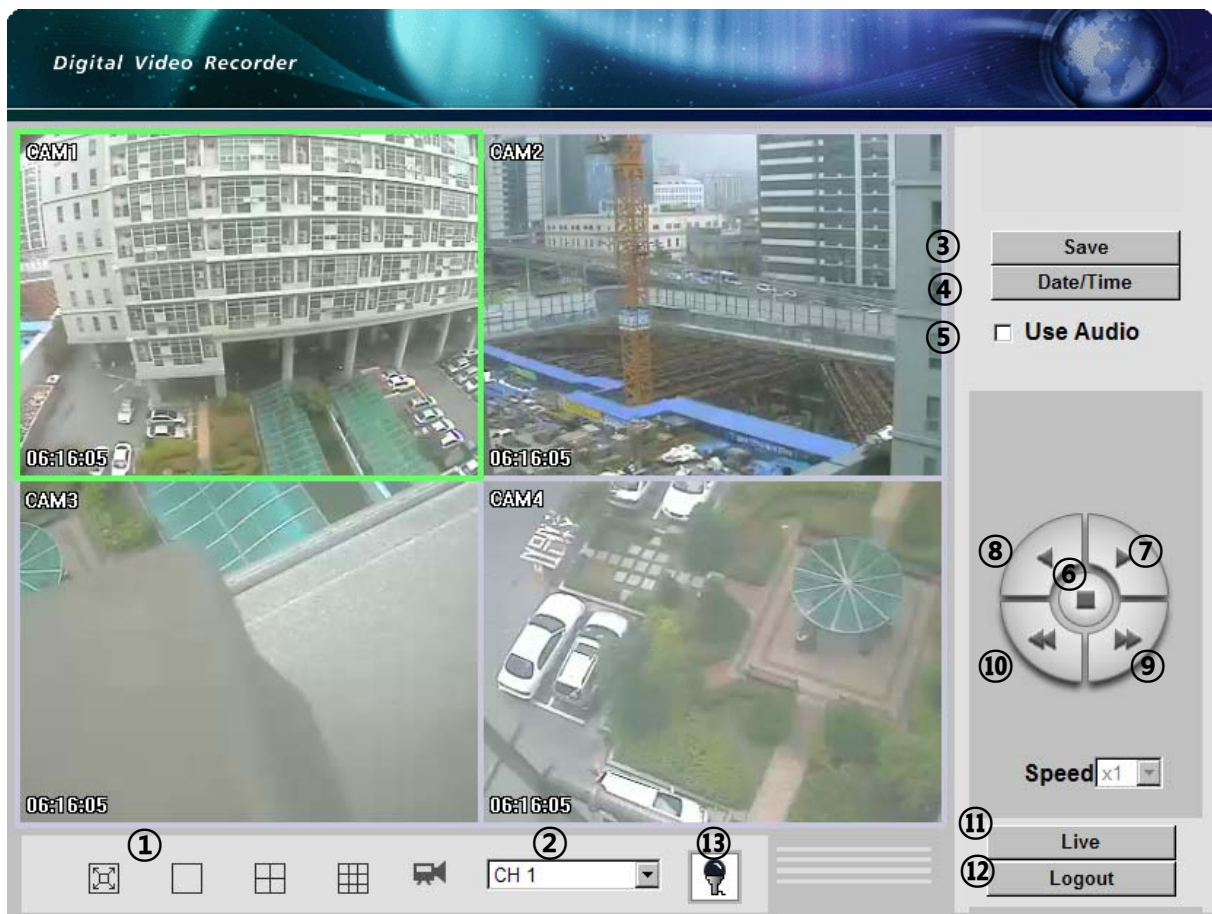
## 3-2. Functional description

### 1. Web viewer monitoring window



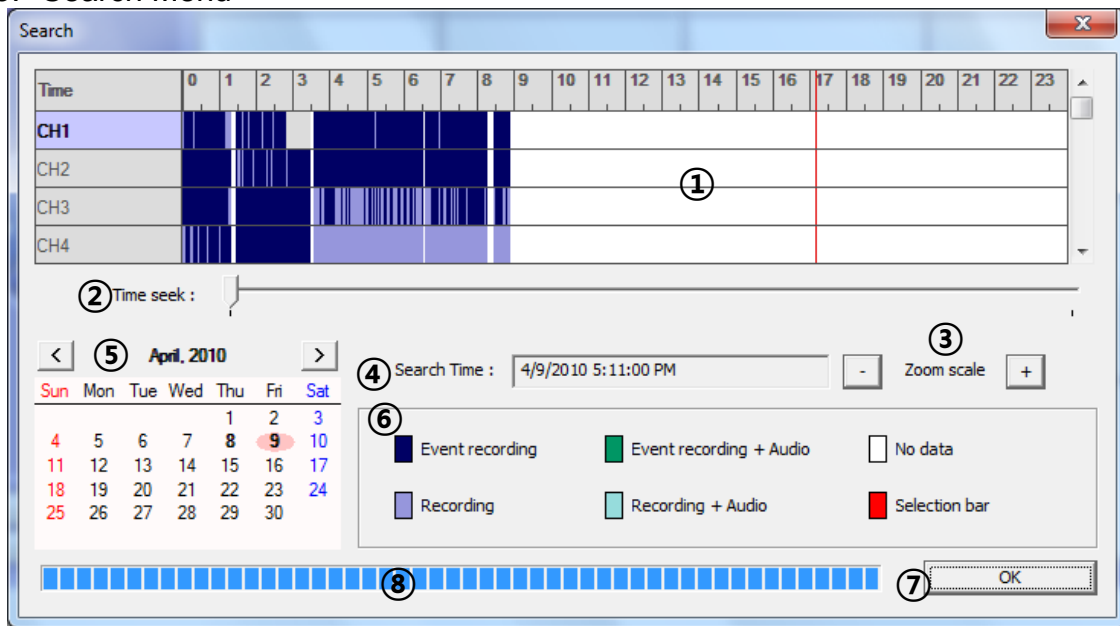
- ① Divide screen division (Full screen/1/4/ 9 in addition for HX08)
- ② Selecting a camera
- ③ Real time image capture (Save as JPEG)
- ④ Settings (It is available only when you logged in as admin)
- ⑤ Enable or disable incoming audio (Default value is disable.)
- ⑥ Zoom control
- ⑦ Focus Iris control
- ⑧ Iris control
- ⑨ Preset (Click "Go" button after selecting preset number at combo box)
- ⑩ Start/Stop touring (Rotation between each preset positions)
  - ※ Preset and touring are available after preset is set on the device.
- ⑪ Pan tilt control (Up, down, left and right buttons)
- ⑫ Controlling moving speed when pan tilt operation
- ⑬ Switching to search window
- ⑭ Logout

## 2. Web viewer search window



- ① Divide screen division (Full screen/1/4, 9 in addition for HX08)
- ② Selecting a camera
- ③ Saving video or still image (Saving as AVI/JPEG/BMP)
- ④ Date/Time selection button to play back (Refer to 3. Search dialog box)
- ⑤ Enable or disable incoming audio (Default value is disabled.)
- ⑥ Pause button
- ⑦ Forward play button
- ⑧ Backward play button (Displaying only key-frame)
- ⑨ Fast forward play button
- ⑩ Fast backward play button
- ⑪ Switching to monitor window
- ⑫ Logout
- ⑬ Click the mike icon, and you say microphone, DVR can export Audio but Audio export isn't recorded in DVR

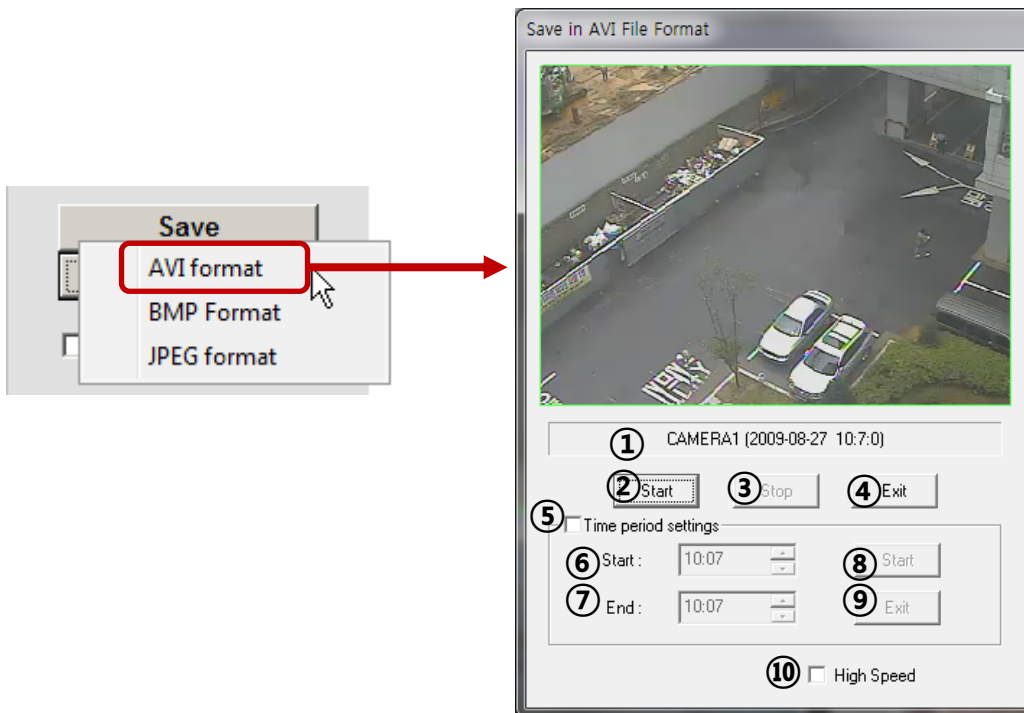
### 3. Search Menu



- ① Recorded data graph (Click on the data graph to select time to play.)
- ② Time scroll bar
- ③ Zoon in/out of graph (It can be scaled from 2 hours to 24 hours by minute unit.)
- ④ Displaying selected data/time
- ⑤ Displaying calendar (The dates are shown in bold if recorded data exist.)
- ⑥ Description of the color of the recorded data graph
- ⑦ "OK" button (Video is played immediately when you selected data/time which has recorded data.)
- ⑧ Progress bar which shows loading progress.



#### 4. Saving as AVI file dialog box



- ① Camera name/Date/Time which is currently displayed.
- ② Starting AVI saving (File name is requested when you click on this button.)
- ③ Stopping AVI saving
- ④ Closing Save as AVI dialog box (It will be closed automatically after stopping AVI file if it is being saved.)
- ⑤ Specifying time period to save AVI file.
- ⑥ Starting time to save AVI file.
- ⑦ Stopping time to save AVI file.
- ⑧ Starting periodic AVI file saving
- ⑨ Closing after finishing AVI file saving.
- ⑩ Increasing AVI saving speed with reducing displaying frame rate.

# CHAPTER 4

## Using smart phone

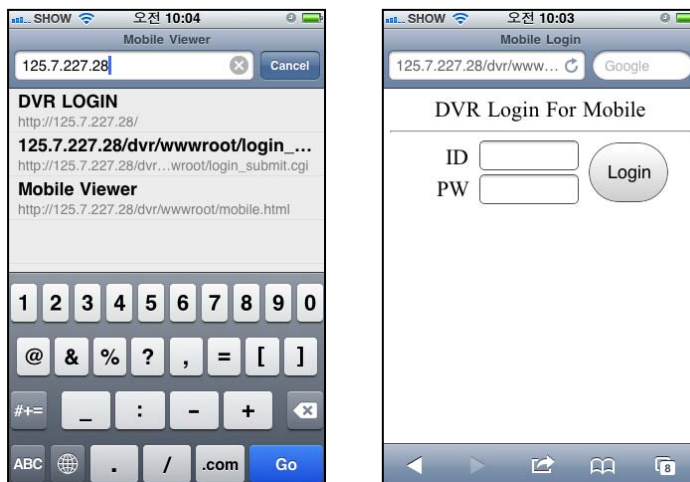
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# 4-1. Functional description

## 4. Real-time monitoring

If you can use Wi-Fi environments, you can view the real-time monitoring video from DVR with smart phone

- ① Run web browser at smart phone, and enter DVR IP address.



- ② Enter id and password, and click "login" button the real-time monitoring screen will be shown.



- ③ If you want to change the picture, Push A button, and you can change The pictures with B

### ★ NOTICE !

You can download smart phone application "i-Smart viewer" in application stores. please use smart phone application manual for using "i-Smart viewer".  
**Supporting smart phone : Blackberry, iPhone, Nokia, Android**

# CHAPTER 5

## Appendix

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## 5-1. Check before requesting for service

### Check before requesting for service.

If the following symptoms are observed when using the product, recheck the following. It may not be a problem.

Symptom	Checkpoint and resolution
I cannot turn on the power of the device	Check whether the power plug is correctly plugged.
	Check whether the voltage of the power supply is correct.
	If the power cannot be turned even when the power of the device is connected correctly, please contact your closest service center
The power of the device is turned on, but the screen on the monitor is not turned on	Check whether the power plug is correctly plugged.
	Check whether the monitor is turned on.
	Check whether the video cable between the monitor and device is connected correctly.
	Check the selected monitor type.
	Try disconnecting the power plug, and then plugging it again.
Camera number is displayed on the screen but the video of the camera is not displayed	Check whether the video output port of the camera is correctly connected to the device.
	Check whether the power supply of the camera is connected correctly.
	Check whether the resolution is set to 1024x768 in VGA environment setting.
	Check if there is any issue with the video cable between the device and the camera.
	Reboot this device.
Video of camera is displayed on the screen but I cannot record the video through the device	Check the recording setting from the recording setting menu.
	Check whether the hard disk is recognized from the system information window.
	If the hard disk is not recognized normally, check the format and connected condition of the hard disk.
	Check the available space on the hard disk.
I cannot search the recorded video.	During the search, check whether the video data currently being recorded exists.
	If the video data currently being recorded does not exist, check the recording setting of the menu.
	Check whether the hard disk is recognized from the system information window.
	If the hard disk is not recognized normally, check the format and connected condition of the hard disk.

Symptom	Checkpoint and resolution
I cannot hear the audio recorded with the video.	Check whether the recording audio channel is correctly set up.
	Check whether the connector on the rear side of the device is connected with external device (Line input) correctly.
	Check whether the connected external device is operating correctly.
Screen colors of some cameras are incorrect or the video is displayed in abnormal way.	If there is an object in the camera connected to the system, connect the camera to the video input port to check the video and check if there is any issue with the existing cameras connected to the system.
	Check whether the video format of the device is the same as that of the camera.
	The video format can differ by the region into PAL or NTSC format. IF the video format of the device is not the same as that of the camera, the video may not be recognized.
There is noise in the video.	If there is an issue with the camera connected to the system, connect a different camera to the video input port to check whether the existing camera connected to the system has an issue.
	Check whether the video cable connecting the device and the camera is damaged.
	Check whether there is a cable with high voltage near the video cable. It can cause noise in the video or cause deterioration in the video quality.
	Check whether the video cable connected between the device and the camera is the cable for correct usage.
	If the power cable is used for the usage of video cable, it can cause noises in the video.
The sensor connected to the device is not working.	Check whether the sensor type set in the sensor setting menu is the same as that of the sensor.
	From the schedule management item of the recording setting menu, check whether the recording using the sensor is set up.
	Check whether the sensor is correctly connected to the ALARM-IN port.
PTZ camera connected to the device is not working.	Check whether the PTZ camera is correctly set up from the camera setting menu.
	Check whether the power cord of the PTZ camera connected to the system is correctly connected.
	Check whether the signal cord connected to the PTZ camera connected to the system is correctly connected.
	Check the channel the PTZ camera connected to the system controls.
	Check the user type. General user cannot use the PTZ function.

Symptom	Checkpoint and resolution
<p>I cannot receive the E-mail sent from the device.</p>	<p>When the E-mail transmission fails without SMTP server setting.</p> <ul style="list-style-type: none"> <li>● Check whether the network is set up correctly.</li> <li>● Check whether the E-mail address is entered correctly.</li> <li>● Check the spam mail setting for the entered E-mail address. (If the spam mail is set, some mails may automatically be deleted or classified into spam mail box etc.)</li> <li>● Some SMTP mail server providers does not support sent email from the commercial SMTP server. In this case, use a public SMTP server.</li> </ul>
	<p>When the E-mail transmission fails even with the SMTP server setting.</p> <ul style="list-style-type: none"> <li>● If you see a message saying "Please check the SMTP information or internet cable".                             <ul style="list-style-type: none"> <li>-Check the SMTP server address..</li> <li>-Check the SMTP port number.</li> <li>-Check the network setting.</li> </ul> </li> <li>● If the E-mail cannot be received without any error message.                             <ul style="list-style-type: none"> <li>Check the E-mail address of the recipient.</li> <li>Check the spam mail setting for the entered E-mail address.</li> </ul> </li> </ul>
<p>I cannot see the video screen connected with iPhone/iPod.</p>	<p>Check if wireless internet is available.</p> <ul style="list-style-type: none"> <li>● If receive sensitivity is low, it can be disconnected or you cannot see the video.</li> </ul>

## 5-2. Recommended device to use

### ① List of recommended USB memory

Classification	Manufacturer	Model name	Capacity
1	ELECOM	MF-BU201GWH	1GB
2	BUFFALO	RUF2-E1GL-BL	
3	Scandisk	Cruzer Micro	8/16GB
		Cruzer Micro U3	
4	SONY	USM1GJX	1GB
		USM8GH	8GB
5	PRINCETON	PFU-ST51G	1GB
6	DATA	TB-ST1GB I-O	
7	FM Semiconductor	MLC gold	
8	SAMSUNG	SUM-M4GPV	4GB
		SUM-LWW	8GB
9	Transcend	JetFlash V10	
10	IMATION	Atom USB Drive MLC	
11	Sky Digital	SKY-DRVx2	32G
12	LG	XTICK	8GB

Notice!: USB flash drive not in the recommended list may not work properly even if it is detected by DVR.



### Caution

- For some monitor TCs, the screen output size may not fit.
- For monitors that do not support resolution of 1024x768, the output may not be normal.



■ List of supported PTZ camera

Protocol	Manufacturer	Pan/Tilt	Zoom	Focus	Iris	Preset	Tour
LG Multix_E	LG	x	o	o	o	x	x
LG Multix	LG	o	o	o	o	o	o
LPT-A100L	LG	o	x	x	x	x	x
LVC-C100/200HM/LG Electronics Inc	LG	x	o	o	o	x	x
HSDN251 / Honeywell Co., Ltd	Honeywell	o	o	o	o	o	o
MD200/2000/1200/800/Sony Co., Ltd	Sony	o	o	o	x	x	x
New Born / NEW BORN HIGHTECH	New Born	o	o	o	o	o	o
WVCS850 / Panasonic	Dongyang	o	o	o	o	o	o
PLECO -D / PELCO Co.,Ltd	PELCO	o	o	o	o	o	o
PLECO -P / PELCO Co.,Ltd	PELCO	o	o	o	o	o	o
SCC - 641 / SCC-643 / SAMSUNG Co.,Ltd	SAMSUNG	o	o	o	o	o	o
SPD - 2300/3000/3300/ SAMSUNG Co.,Ltd	SAMSUNG	o	o	o	o	o	o
SUNGJIN / SUNGJIN Co.,Ltd	SUNGJIN	o	o	o	x	x	x
DSC-200 / QUATECH	QUATECH	o	o	o	o	o	o
V1305R-DC / V1311RB/CRX-1013 / VICON	VICON	o	o	o	x	x	x

## 5-3. Factory default

1 Step	2 Step	3Step	4Step	INPUT	Default	
System	Overview	Language				
		Remote ID		00~99	00	
		Auto-switching interval		5~60sec.	30sec.	
		Spot-out		CH1 ~ CH4 / CH8	CH1	
		Button sounds		On/Off	On	
		Use retain data		On/Off	Off	
		Retain days		1 ~ 60days	30days	
		Use controller		On/Off	On	
		Device ID			0	
		Baud rate		1200/2400/4800/9600/19200/38400/57600/115200bps	9600bps	
	Date/Time	Date/Time				-
		Time zone			GMT + 00:00 ~ GMT -12:00	
		NTP Server			Off Pool.ntp.org	Off
		Format			YYYY/MM/DD 24Hours, YYYY/MM/DD AM/PM, MM/DD/YYYY 24Hours, MM/DD/YYYY AM/PM, DD/MM/YYYY 24Hours, DD/MM/YYYY AM/PM	
		F/W Update	File		File name/ None	-
	Setting update	Import			None / Disable / Enable	None
		Export			Disable / Enable	Disable
	Initialization	Remove system log			Check / Uncheck	Uncheck
		Remove settings			Check / Uncheck	Uncheck
		Remove recorded data			Check / Uncheck	Uncheck
		Remove all (Factory default)			Check / Uncheck	Uncheck
	Video / Audio	Camera	Camera no.		1 ~ 4 / 8	1
			Camera name		CH1~CH4 / CH8	CH1
			Audio1		Disable / CH1 ~ CH4 / CH8	Disable

		Audio2		Disable / CH1 ~ CH4 / CH8	Disable
		Audio3		Disable / CH1 ~ CH4 / CH8	Disable
		Audio4		Disable / CH1 ~ CH4 / CH8	Disable
	Recording	Resolution		CIF/ Half-D1/ D1	CIF
		Camera no.		1 ~ 4 / 1 ~ 8	1
		Quality		Very low Low Normal High Very high	Normal
		Event frame rate		1 / 2 / 3 / 5 / 7 / 10 / 15 / 20 / 25 / 30	CIF : 30, Half-D1 : 30, D1 : 15
		Normal frame rate		1 / 2 / 3 / 5 / 7 / 10 / 15 / 20 / 25 / 30	CIF : 30, Half-D1 : 30, D1 : 15
	Color	Camera no.		1 ~ 4 / 1 ~ 8	1
		Brightness		0~100	50
		Contrast		0~100	42
		Saturation		0~100	56
		Hue		0~100	51
	OSD	Camera name		Check / Uncheck	Check
		Icon		Check / Uncheck	Check
		Current date/time		Check / Uncheck	Check
		Video loss		Check / Uncheck	Check
		Transparency		10~100%	80%
	Display	Time bar position		Left / Center / Right	Center
		Channel name position	CH1 ~ CH4/ CH8	Left-top / Left-bottom / Right-bottom	Left-top
	PTZ	Zoom		- / +	
		Focus		- / +	
		Iris		- / +	
Speed			1 ~ 6	3	
Dwell time			5sec. / 10sec. / 20sec. / 30sec. / 1min. / 3min. / 5min.	1min.	
Device ID				0	
Protocol			LG-Multix_E LG-Multix LPT-A100L LVC-C100	Not use	

				HSDN251 MD200 New Born WVCS850 PELCO-D PELCO-P SCC-641 SPD-2300 SUNGJIN DSC230 V1305R-DC Not use		
		Baud rate		1200/2400/4800/9600/19200/38400/57600/115200bps	9600bps	
Event	Device	Sensor no.		1 ~ 4	1	
		Active sensor		Check / Uncheck	Check	
		Sensor type		N.O. / N.C.	N.O.	
		Active alarm		Check / Uncheck	Check	
		Latency time		1 ~ 10sec.	10sec.	
		Active alert		Check / Uncheck	Check	
			Latency time		1 ~ 10sec.	10sec.
	Sensor	Sensor no.		1 ~ 4	1	
		Camera link	CH1 ~ CH4 / CH8	Check / Uncheck	CH1	
		Alarm		Check / Uncheck	Uncheck	
		Alert		Check / Uncheck	Uncheck	
	Motion	Camera no.		1 ~ 4 / 8	1	
		Camera link	CH1 ~ CH4 / CH8	Check / Uncheck	CH1	
		Alarm		Check / Uncheck	Uncheck	
		Alert		Check / Uncheck	Uncheck	
	Motion zone	Camera		1 ~ 4 / 8	1	
		Sensitivity		Very low / Low / Normal / High / Very high	Normal	
		Motion zone		Select all / Unselect all	Select all	
	Video loss	Camera no.		1 ~ 4 / 8	1	
		Camera link	CH1 ~ CH4 / CH8	Check / Uncheck	Uncheck	
		Alarm		Check / Uncheck	Uncheck	
Alert			Check / Uncheck	Uncheck		
Event filters	System start / Setting change / Normal shutdown / Login / Logout /		Check / Uncheck	Uncheck		

		HDD full / Sensor / Alarm / Motion / Alert / Abnormal termination / Video loss				
	Schedule	Camera no.		1 ~ 4 / 8	1	
		Recording method		C / H / E / N	H	
		Day		SUN ~ SAT	-	
Network	TCP / IP	IP Configuration		Dynamic IP Static IP PPPoE	Dynamic IP	
		IP address			-	
		Subnet mask			-	
		Gateway			-	
		DNS			-	
		MAC address			-	
		Web port			80	
		Playback port			9091	
		Live port			9092	
		PPPoE	UPnP IGD		Check / Uncheck	Uncheck
			Status		Disconnect / Connect	-
			User ID		-	
			Password		-	
		DDNS	Server		<a href="http://www.dvrdns.net">www.dvrdns.net</a> / <a href="http://www.dyndns.com">www.dyndns.com</a>	www.dvr dns.net
			Mode		On/Off	Off
			Port			65500
			Domain			
			Interval		1~60min.	5min.
			Mode		On/Off	Off
			User ID			
			Password			
			Domain			
			Host			
		Interval		10min	10min	
		CMS	Mode		On/Off	Off
			IP address			-
	Port				0	
	E-mail	Mode		On/Off	Off	
		SMTP server			-	
		Port			25	
		Account			-	

User		Password			-
		Sender			-
		Receiver			-
		E-mail test			-
	User list	admin			-
		guest			-
		user1			-
		user2			-
		user3			-
	Create user	User ID			-
		Password			000000
		Authority	Setup	Check / Uncheck	Check
			Manual Alarm	Check / Uncheck	Check
			Search	Check / Uncheck	Check
			Backup	Check / Uncheck	Check
			Network	Check / Uncheck	Check
			Multi login	Check / Uncheck	Uncheck
			PTZ	Check / Uncheck	Check
	Audio	Check / Uncheck	Check		
	Channel	CH1 ~ CH4 / CH8	Check / Uncheck	Check	
	Modify authority	Select user			-
		User ID			-
		Password			-
		Authority	Setup	Check / Uncheck	-
			Alarm	Check / Uncheck	-
			Search	Check / Uncheck	-
			Backup	Check / Uncheck	-
Network			Check / Uncheck	-	
Multi login			Check / Uncheck	Uncheck	
PTZ	Check / Uncheck		-		
Audio	Check / Uncheck	-			
Channel	CH1 ~ CH4 / CH8	Check / Uncheck	Check		
Delete user	user1		Check / Uncheck	Uncheck	
	user2		Check / Uncheck	Uncheck	
	user3		Check / Uncheck	Uncheck	

## 5-4. Product specification

MODEL	HX04	HX08
OPERATING SYSTEM	Embedded Linux	
COMPRESSION	H.264 HARDWARE CODEC	
MULTIPLEX FUNCTION	Live, Record, Backup and Network at the same time	
RECORDING RESOLUTION	D1, Half D1, CIF	
RECORDING SPEED	120fps(NTSC), 100fps(PAL) at Half D1 Resolution	240fps(NTSC), 200fps(PAL) at CIF Resolution
VIDEO INPUT	4 BNC Composite	8 BNC Composite
VIDEO OUTPUT	2 BNC Composite (Main, Spot-out), 1 VGA(15PIN DSUB)	
AUDIO INPUT/OUTPUT	1 line / 1 line	4 line/ 1 line
SENSOR INPUT / ALARM OUTPUT	4 line(NC/NO selectable) / 1 line(NC/NO selectable)	
Display Mode	1/4 and auto sequential	1/4/9 and auto sequential
BACKUP MEDIA	USB storage, Network	
STORAGE MEDIA	1 SATA HDD	
RECORDING MODE	Continuous, Alarm, Motion, Instant panic	
OPERATION CONTROL	Mouse and Remote controller	
COMMUNICATION PORT	RS-485	
NETWORK	LAN(Ethernet RJ-45, 10/100 base), DDNS, TCP/IP	
SIZE(mm)	260(W)x210(D)x45(H)	
WEIGHT	3Kg	
POWER	DC12V ADAPTER	
POWER CONSUMPTION	Max. 23W	
OPERATING TEMPERATURE	0°C ~ 40°C	
OPERATING HUMIDITY	0% RH ~ 80% RH	

※ The detail and specification of this product can partially change for quality improvement.