# HD SDI DVR

USER's MANUAL

CE FC RoHS

Important Safety Instructions

- Read and Keep these instructions
- Heed all warnings
- Follow all the instructions
- Do not use this apparatus near water and Clean only with dry cloth
- Do not install near any heat sources such as radiators, heat registers, or other apparatus that produce heat
- Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- Unplug this apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE.
NO USER-SERVICEABLE PARTS ARE INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.
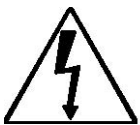
The lightning flash with an arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated " dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

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

FCC For Class A digital device

   A CLASS A digital device that complies with Parts 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.

FEATURES

This HD SDI(serial digital interface) DVR allows users to have HD level of video surveillance with 720P & 1080P resolution both in live and playback. like geneal analogue cameras and DVR, it doesn't require special network expertise and can be installed under coaxial cabling.

The coaxial cabling and cameras which meets the HD SDI standard are recommended for performance.

HD SDI cabling specification: SMPTE 292M standard, 5C-HFBT or above

- HD SDI DVR with H.264 compression

- HD video over coaxial cable : No latency & no loss of frame

- 720P and 1080P HD cameras are supported simultaneously

- HDMI, VGA outputs, and BNC out(Test Mode)

- Individual channel setup for recording & network stream (resolution/frame rate)

- Event text + image notification to FTP server and E-mail address

- Easy network : UPNP (Universal plug & play) support

- User control : Up to 20 users can be generated with various access authority

- Calendar/Time search & Thumbnail search

- Smart phone application (Live, PTZ, Search)

- E-SATA is supported

- RAID 1 (Mirroring) and auto-backup is supported

- VGA and BNC programmable spot outs : just supported by "TS" Type

- Up to 4 internal SATA HDD : just supported by "TS" Type

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4. MENU

1. Introduction

1.1. Packing

When you first open the product, please check out whether there are all contents as follows.

If any of these items is missing or damaged, contact your supplier immediately before using the product.

As Optional Mouse and HDD Drive could be included or excluded in packing according to seller's option, they must be checked before DVR is used.

DVR Product

(ES Type)
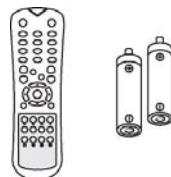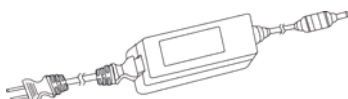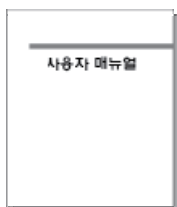
(TS Type)

Remote control & Battery(AAA)
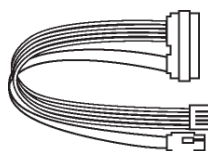
Power (Adaptor and Power cable)

Software CD

User's Manual

HDD SATA & Power cable

- ES Type : installed inside DVR

- TS Type : SATA 4 pcs & Power cable 2 pcs

USB Mouse(Option)

Screws to install HDD

- ES Type : 4 pcs

- TS Type : 16 Pcs

HDD (Option)

*. Capacity and installation status could be differenct according to seller's sales method.

1.2 Front

1.2.1. ES Type
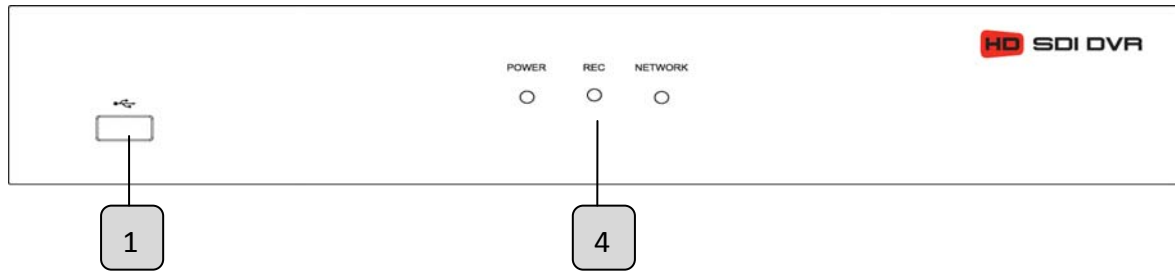
1.2.2. TS Type
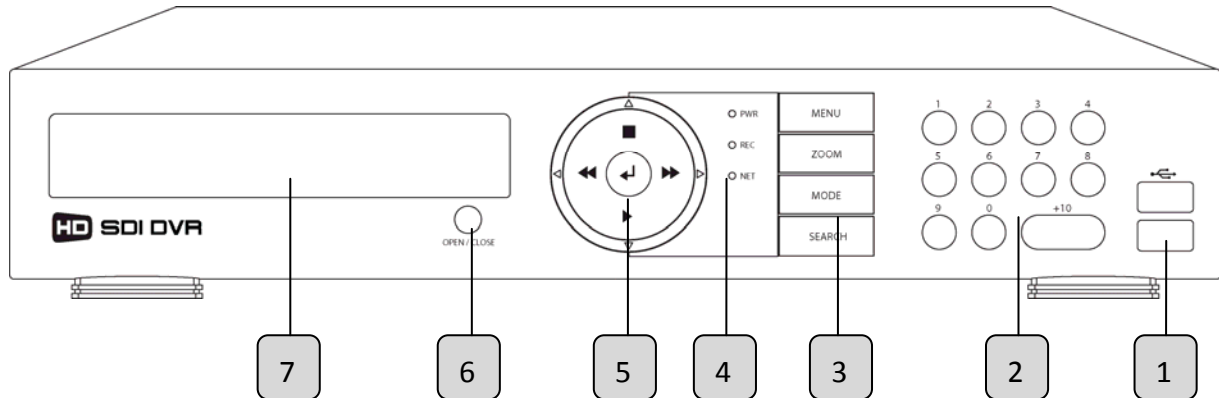
No.	Name	Description
1	USB port	Connect USB device to 2 ports
2	Channel	Select numbers to select certain channel or input numbers in menu
3	Menu	Access to main menu
	Zoom	Access directly to digital zoom mode (in Live & playback)
	Mode	Change screen split mode
	Search	Access directly to search menu
4	LED indicator	PWR : Light on when power is on REC : Light on when DVR is recording NET : Light on when a user is connected via network
5	Direction & Selection keys	Select directions in menu Play, FF(fast-forward), RW(rewind), stop/pause buttons
6	DVD open/close	Not used
7	DVD door	Not used

1.3. REAR

1.3.1. ES Type

1) 4 Channel
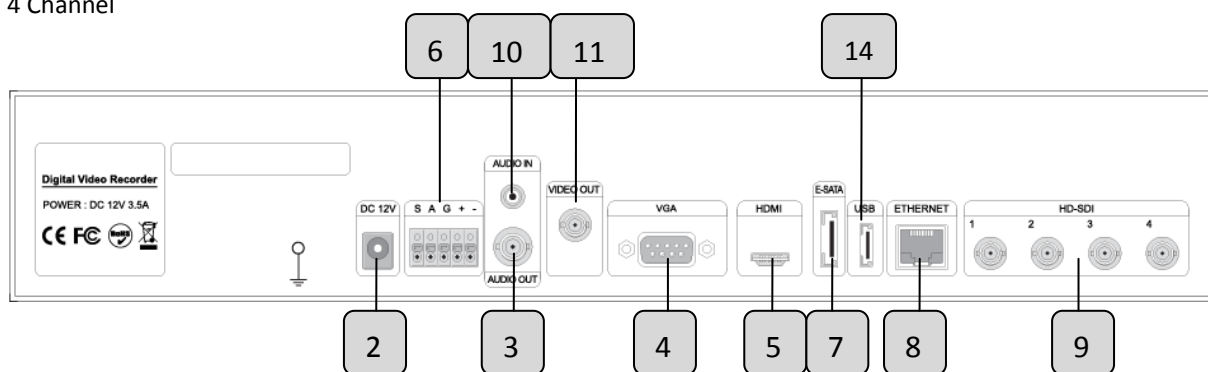
2) 8 Channel
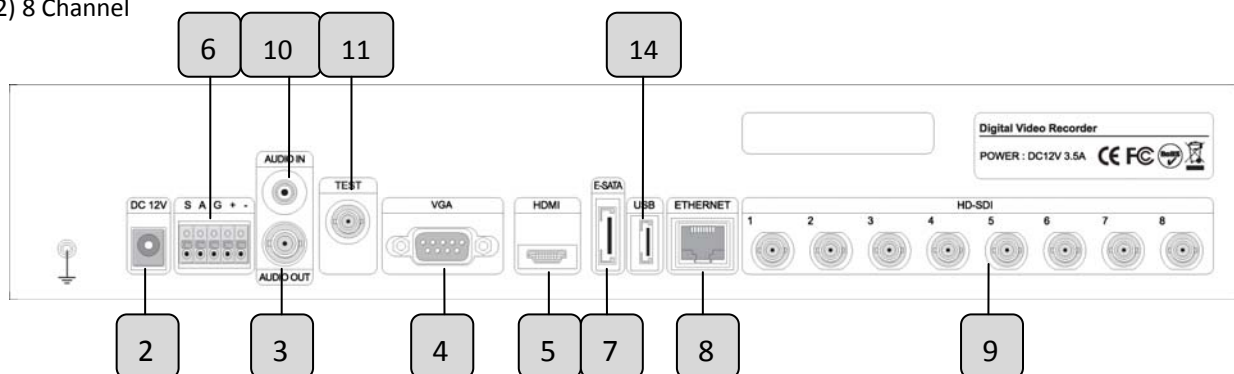
1.3.2. TS Type

1) 4 Channel
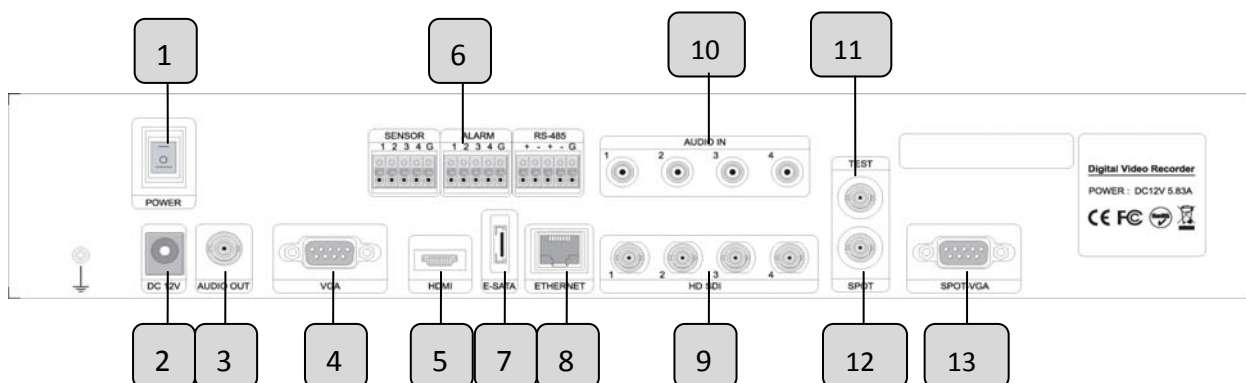
2) 8 Channel
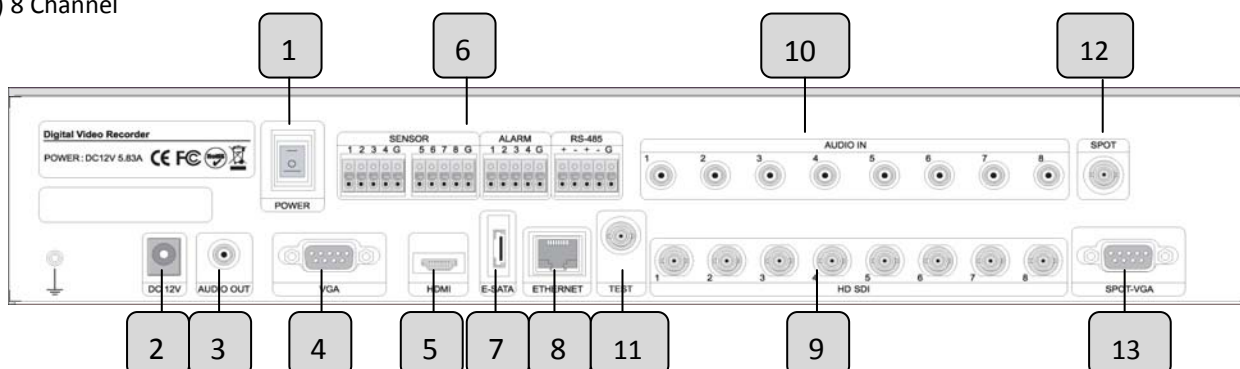
3) 16 Channel
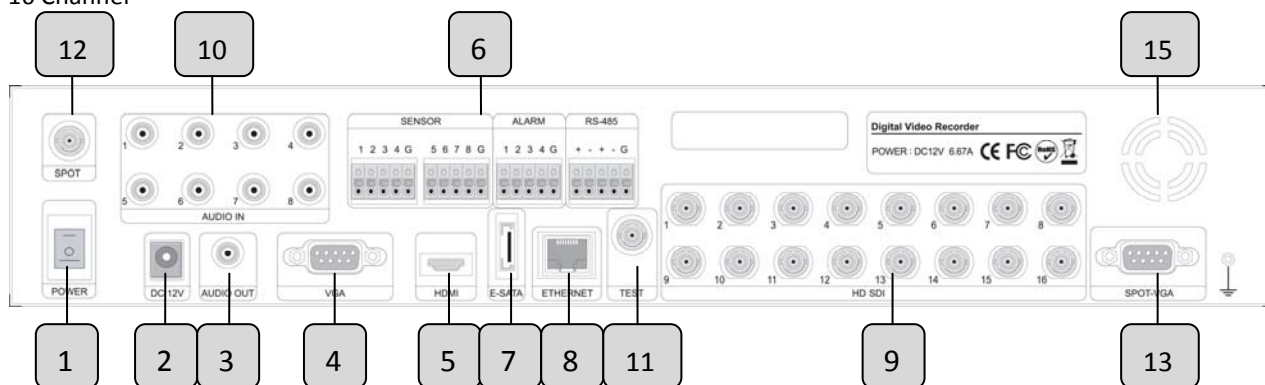
	Name	Description
1	Power switch	Turn on/off the product
2	DC 12V	Connect power adaptor provided with the product
3	AUDIO OUT	Connect audio out device such as speaker
4	VGA	VGA connection port
5	HDMI	HDMI connection port
6	SENSOR	Sensor input ports
	ALARM	Alarm output ports
	RS-485	RS-485 communication
7	E-SATA	E-SATA port
8	ETHERNET	10/100MB or 1GB LAN port
9	HD SDI	HD SDI type video in
10	AUDIO IN	Connect audio in device such as MIC
11	TEST	Composite Video ou, just is used for Test
12	SPOT (BNC)	Spot out
13	SPOT VGA	Spot Out
14	USB	Used for USB Memory stick, HDD, Mouse
15	FAN	FAN out Hole (just in 16 Channel)

2. Installation

2.1. Installing HDD

- If HDD is not installed in DVR which you purchased, Please install HDD first inside it.
- One(1) internal HDD in ES Type, four(4) internal HDD can be installed inside DVR.
- Please prepare cables and screws before installation.
- Please be careful not to be harmed by sharp edges of the products
- Please follow the below steps to install HDD inside DVR without difficulty.

(1) Loosen screws on both sides and back to detach the product cover.
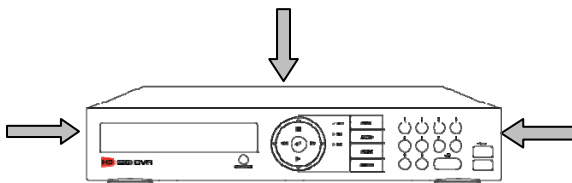
(2) Lift the end of top cover and pull out from product.
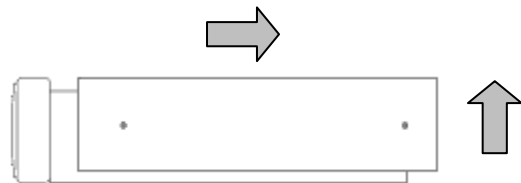
(3) Installing HDD

- ES Type : Turn DVR upside down and thighten 4 screws   to holes in the bottom of DVR.
- TS Type : Loosen screws of HDD bracket from DVR. Put HDD in HDD bracket and tighten screws to 4 holes of bracket.
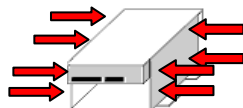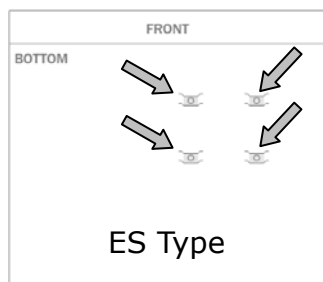
(4) Connect HDD power cable and data cable to HDD.
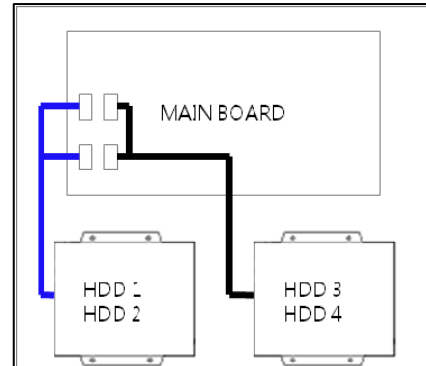
ES Type   TS Type

(5) Insert top cover to product as side picture
   Them, tighten screws again.
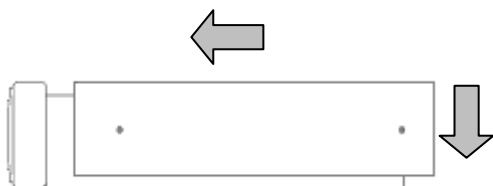
2.2. How to connect Devices to products

2.2.1. ES Type
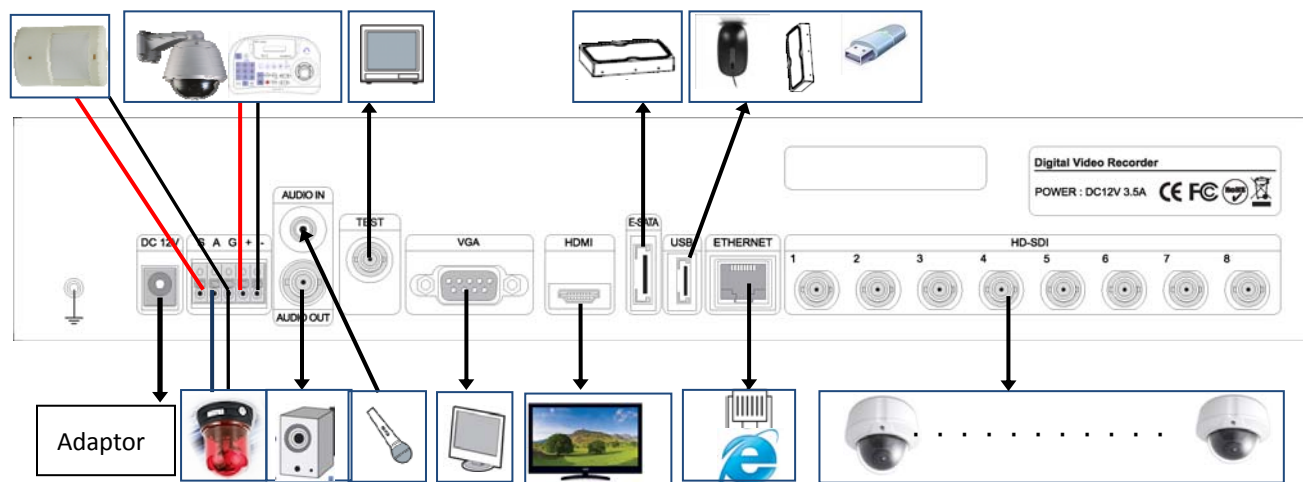
2.2.2. TS Type
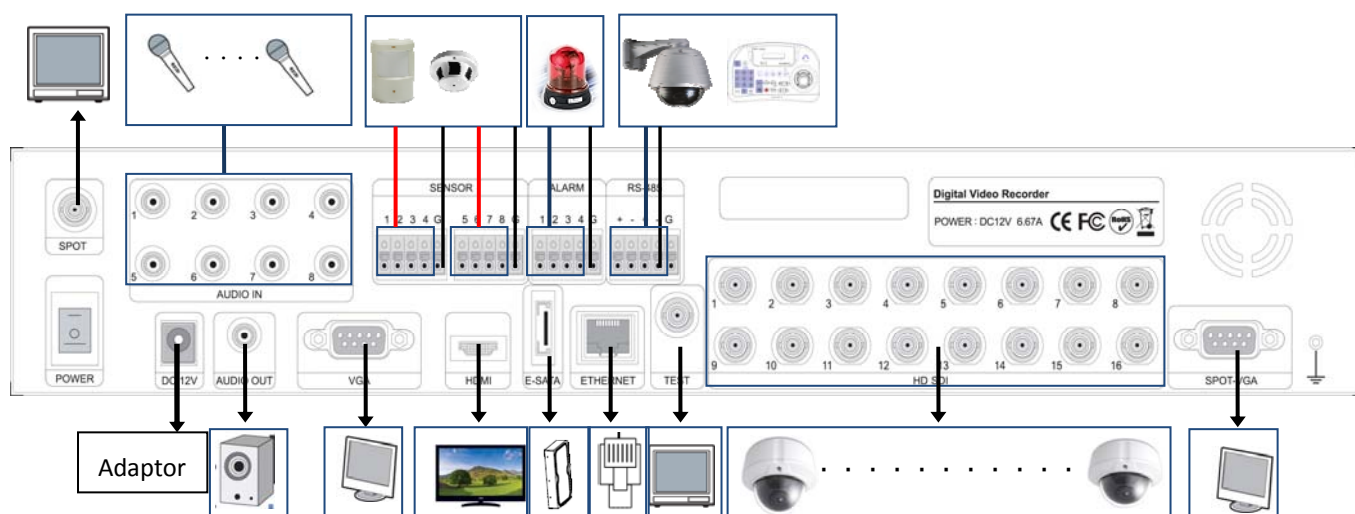
2.2.3. Connection of main devices

1) Adaptor

   The adaptor supplied together with product is surely used.

   Other adaptor can do serious harms to DVR, which causes problems to DVR, it could be not repaired or

   the extra cost could be charged for repairment.

2) Camera

   Only two kinds of camera(720P and 1080P HD SDI) are supported.

   Analogue camera is not supported by DVR, the camera type should be checked before connected to DVR.

   In case that camea is connected to DVR during power on, which may cause serious problem to DVR,

   Therefore please connect camera to DVR in state of powr-off.

   A camera resolution wouldn't be recognized automatically by DVR, please disconnect the camera from

   and connect it to DVR after Vloss is displayed in screen, then it works well.

   When the wrong connection casues the problems to DVR, it could be not repaired or the extra cost could

   be charged for repairment.

3) Audio, Sensor, Alarm, and RS-485

   Please refer the previous page to connect devices to DVRs.

   Sensor device should be connected to S and G port.

   Alarm devices should be connected to A and G port.

   The type of Alarm (NC/NO) should be used selected in DVR MENU in accordance with alarm device.

   PTZ camera or keyboard control is connected to RS-485(+,-) port. Device doesn't work when the polarity is

   wrong. Please be careful not to connect it to different polarity.

4) Video Out

   3 kinds of Video (HDMI, VGA, BNC) are supported by DVRs. But, BNC is just used for test mode to check

   whether camera is normmaly connected to DVR. Please don't use it as Live viewing.

   SPOT (VGA , BNC) is supported just by TS Type.

   When Video out is connected to VGA port of Monitor, the monitor must support resolution of over **1920 ***

   1080. If not, the video can't be seen in monitor. Please use monitor which can support HD resolution.

5) E-SATA

   Some brand of E-SATA HDD Rack are not supported.

   Please ask or check whether HDD Rack is supported or not before usage.

6) USB Port

   USB Mouse, USB memory stick, USB HDD, or external ODD drive can be connected to USB port.

   External USB ODD doesn't support multisession format, please check the CD capacity and backup data

   capacity first before you backup recorded data to CD.

7) Ethernet Port

   It is used to connect DVR to PC or internet .

3. How to start DVR

PLEASE MAKE SURE THAT THE HDD MUST BE INSTALLED AT FIRST FOR RECORDING BEFORE USING DVR.

3.1. Turning on

Please connect　Adaptor provided with DVR　to DC terminal port of rear.

As ES Type doesn't have any power switch in rear, please connect adaptor to DVR after all devices are connected.

Please trun on the power switch in TS type after adaptor is connected.

3.2. Remote control
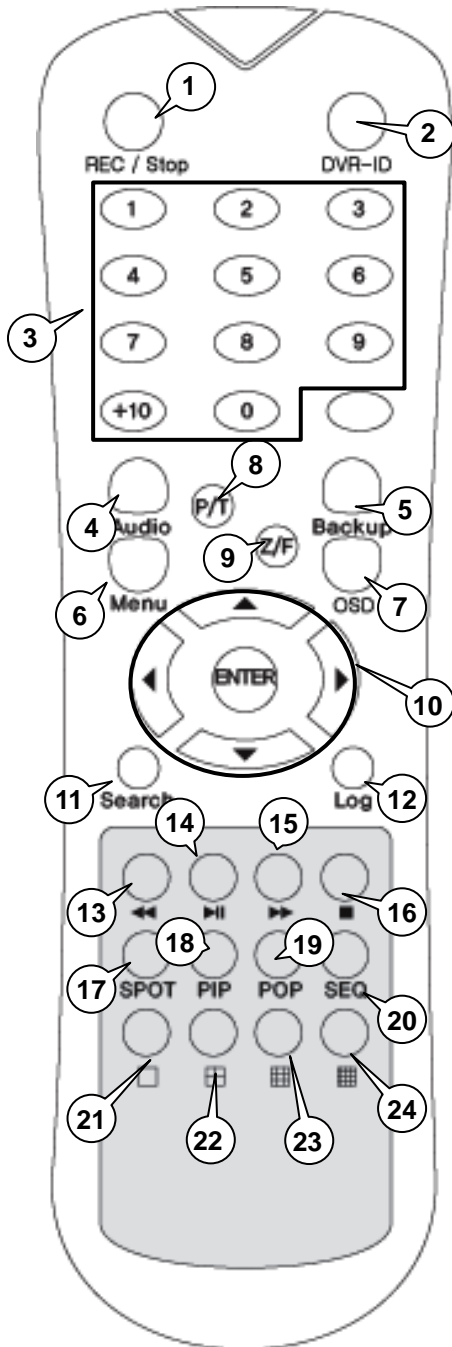
1) **REC** : Instant record button

2) **DVR ID** : selecting controlled DVR

3) **Number button** : Input channel number

4) **AUDIO** : Audio ON / Mute

5) **BACKUP** : Access directly to backup menu

6) **MENU** : Access to main menu

7) **OSD** : Show or Hide OSD

8) **PTZ** : Control Pan/Tilt/Zoom camera.

9) **Z/F:** Access to digital zoom mode

10) **Direction** (▲,▼,◀,▶) & **ENTER**

11) **SEARCH** : Search recorded video

12) **LOG** : Show running status of DVR system

13) ◀◀ : Reverse play

14) ▶I : Play or Pause during playback

15) ▶▶ : Fast forward play

16) ■ : Stop playback and go to Live mode

17) **SPOT** : Not Operated in this model

18) PIP ~ 19) POP : Not used

20) **SEQ** : Show each camera rotation

21) **Full screen mode**

22) **Quad screen mode**

23) **9 Division screen mode :** Operated only for 8 or 16 ch

24) **16 Division screen mode :** Operated only for 16 ch

3.3. MOUSE

A mouse is used after connected to USB terminal in front or rear without installation.

	Click on left button	Popup Login window/Selecting Icons/its values
		Selecting sub-menu in setup menu and values in each menu
	Click on right button	Popup Main Menu/Back from menu to live mode
	Double click on left button	Change one ch to multi ch or multi ch to one ch mode.

3.4. Key Operation

3.4.1. MENU

Function	Remote control	Front Key	MOUSE
Popup Menu	Press <MENU> Key	Press <MENU> Key	Click on right button
Move & Selecting	Move : ▲,▼,◀,▶ Selecting : <ENTER> Key	Move : ■, ▶, ◀◀,▶▶ Selecting : ↵	Selecting by click on left button

3.4.2 ZOOM

Up to 10 times digital zoom is supported .

Zoom function works just in one channel mode, please change channel mode to one channel first.

Function	Remote control	Front Key	MOUSE
ZOOM Start	Press <Z/F> Key	Press <ZOOM> Key	Click 🔍 Icon in the middle of upper screen
Selecting	. Selecting one area by press <ENTER> Key one time, multi areas are selected by direction key. .Zooming the area by press <ENTER> Key	Selecting area by ↵, multi area can be selected by direction key . Zooming the area by press ↵	Click on left button on the area. The multi areas are selected by drag during clicking. The areas are zoomed by unclick
Go back	Press <MENU> Key	Press <MENU> Key	Click on right button
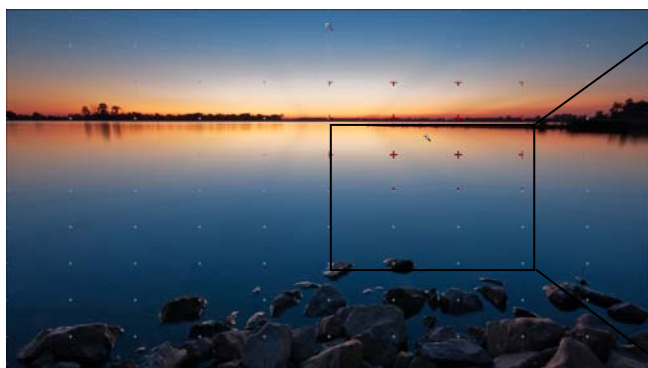
Normal screen   **Digital zoom mode**

3.4.3. OSD

It is used to appear or disappear information of cameras and ICONS in screen.

Press <OSD> key in remote control, or click <OSD> in Main menu to use   OSD function.

3.4.4. Sequence Mode

If you press **SEQ** button in Full screen split, screen will rotate automatically

Default value of cannel rotating interval is 2 seconds, which can be changed from 0 to 99 second .

The"0" interval time skip the selected channel without display.

3.4.5. Channel Selection

Function	Remote control	Front Key	MOUSE
Channel Selection	Press Mode, or Numeric key	Press MODE , numeric key	click in screen
1 channel mode	Press ☐ Key, or channel number key	Press channel no. key	Double click the channel number mode
4 channel mode	Press ⊞ Key,	Select 2X2 in MODE	Select ⊞ in
9 channel mode	Press ⊞ Key	Select 3X3 in MODE	Select ⊞ in
16channel mode	Press ⊞ Key	Select 4X4 in MODE	Select ⊞ in

3.5.   Log in

The Log-in window will popup after booting is over.
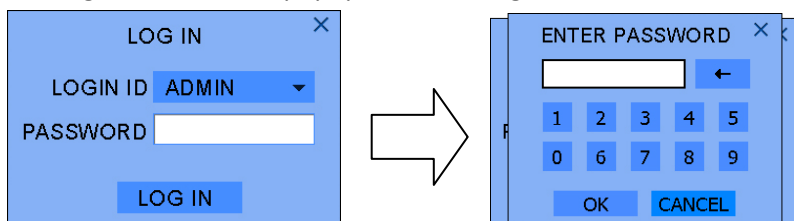
Please move the pointer into password window with mouse or up/down key of remote controller, and then press enter button in remote control or right button of mouse.

If you first start DVR, input Initial password is "0000" (4 zeros).   We recommend strongly that you visit page 37(MENU-SETUP-SYSTEM-USER) to change the initial password. Even if you change the password, when you select "OFF" of the value of Log-in windows in [MENU-SETUP-SYSTEM-USER], the initial log-in window doesn't appear.

(The Log-in windows active/inactive function depends on seller's option, please check if the function is supported or not before using it.)

3.6.   Screen Layout

You can see the below items according to your selection on function.
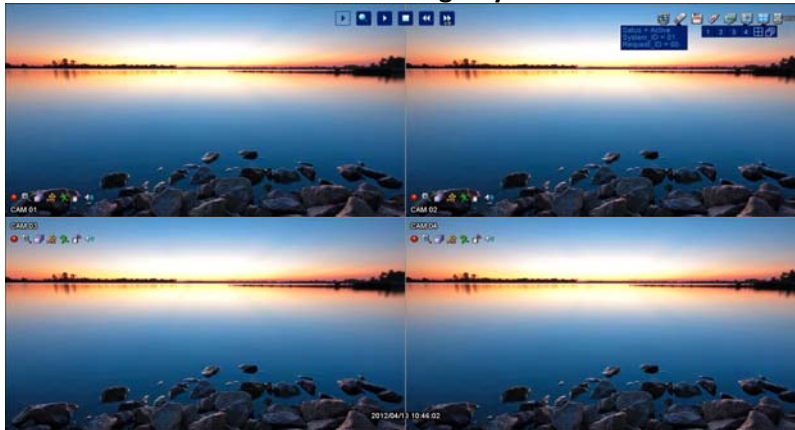
3.6.1. **Icons in Live Mode**

In Live display mode, icons will be indicated to notify the system mode or status.

Below are the icon categories, which are indicated on the monitor.

Icon for system		Icon for each channel	
	Selects specific 1ch with full screen		When Motion Detected
	Screen-Division mode		When Sensor Activated
	Check auto-backup with external USB HDD (status, capacity)		Channel with audio connected
	HDD capacity usage status		When PTZ mode entered
	When USB memory stick & HDD is inserted into DVR		When channel is recording
	When DVR is connected via network		When panic record is activated
	When DVR is not connected via network		
	System ID for remote control		
	Instant Playback (10sec, 30sec, 1min, 3min, 5min, 10min ago)		
	Start/stop Panic(manual) record		
Icon in full screen mode			
	Channel sequence mode		
	Digital x10 Zoom		

3.6.2. Icons in playback mode

In search mode, the status will be shown in the upper side of screen. You can control playback using the buttons.
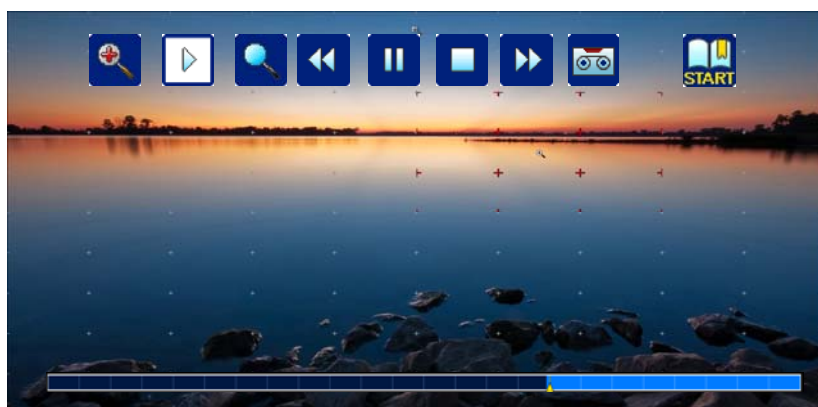
ICON	Name	Description
▷	Current status	This icon shows the current status in playback. If you select ▶, the mark will be ▶, Ex) If you select FF (fast-forward), ▶▶ will be shown.
◀◀	Backward	Select backward and control speed (x2, x4, x8, x32 and x128) In pause status, this button moves frame by frame reversely
▶	Play	Play button. Select this button in pause mode
❚❚	Pause	Pause button. Select this button in play, rewind or FF mode.
▶▶	Fast Forward	Select fast-forward and control the speed (x2, x4, x8, x32 and x128) In pause status, this button moves frame by frame forward.
■	Stop	Stop the playback and go to Live mode Menu button also stop playing.
🔍	Search menu	Selecting this button, the Search sub-menu will pop up
🔍+	Digital zoom	Digital zoom button in playback. Select this button to 1ch full screen mode
▶▶ x8	Play speed	Indicates speed of rewind or fast-forward
📼	Backup	Access to backup function
START	Bookmark start	During playback, click this Icon and starting time is saved for bookmark list
STOP	Bookmark stop	Click this Icon and bookmark ending time is saved for bookmark list
Time Bar	Playback time	The color means whether the data is recorded or not in the time Click the time by mouse, the data of the time is displayed

4. MENU

4.1. How to open MENU

Press MENU button on front keys or remote control, or click on the right button of mouse in any position.

Before access to main menu, DVR asks you login ID and password.

When you first start DVR, input ADMIN for ID and 0000 for password as Initial ID & password are ADMIN & 0000 respectively. Main menu consists of following ICONS : Setup, Search, Audio, Backup, Log view, REC, OSD & Log out, SPOT.   SPOT is supported in only TS type

4.2. Set up

The followings are contenst of sub-menu.

DISPLAY	CAMERA	RECORD	EVENT	STORAGE	SYSTEM
OSD	GENERAL	PARAMETER	MOTION	HDD FORMAT	CONFIG
SEQ-FULL	PRIVATE ZONE	SCHEDULE	SENSOR	HDD SMART	TIME
	PTZ	GENERAL	VLOSS	AUTO BACKUP	INPUT DEVICE
	PRESET		E-MAIL		USER
	TOUR		FTP	**NETWORK**	UPGRADE
			E-MAIL SCHEDULE	SET UP	TURN OFF DVR
			ALARM SCHEDULE	STREAM	
			FTP SCHEDULE	DDNS	
			MISC	MOBILE	

4.2.1. Display

Configuration related to OSD and Sequence patterns of main/spot monitors can be set.

4.2.1.1. OSD

OSD items that displays on monitor and language are selected.
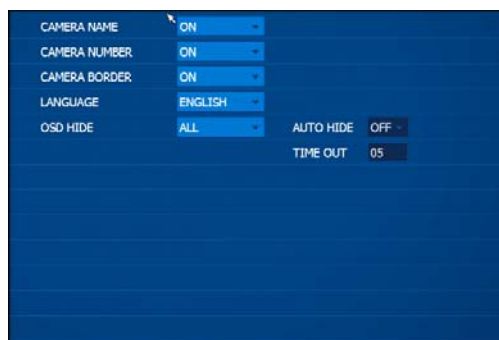
Camera Name	Show camera name on screen.
Camera Number	Show each camera numbers on the screen
Camera Border	Show outline of channel
Language	Select OSD language
OSD HIDE	ALL, Time bar, Icon
AUTO HIDE	ON : Hide ALL, time bar or icon
Time out	automatically after selected time-out.

4.2.1.2. SEQ-FULL
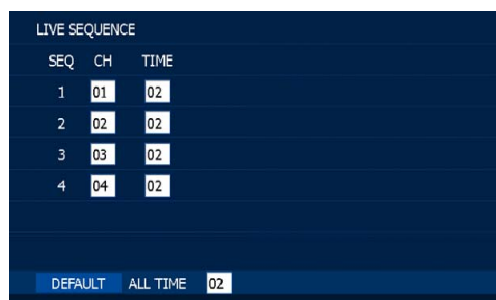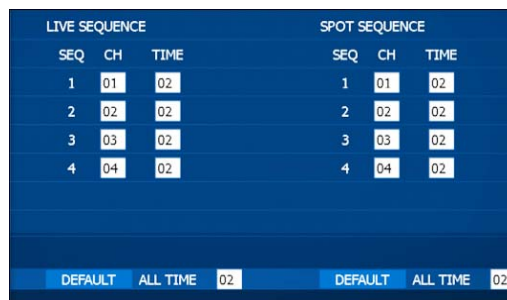
ES Type   TS Type

LIVE SEQUENCE: Set order of sequence channel and dwell time by second for main video out.

SPOT SEQUENCE: Set order of sequence channel and dwell time by second for spot out(TS Type)

CH	Input channel number.
TIME	Diplaying time on the channel from 0 to 99 : 0 means not to display the channel
DEFAULT	The times are defaulted factory option. Default value is 2 second
All time	Same time is applied for all channels. Maximum time is 99 second

4.2.2. Camera

General camera configurations such as camera name, Private zone can be made.

4.2.2.1. General

NAME	Input name of each camera using virtual keyboard. Maximum 15 digits in English can be used.
COVERT	Show or hide camera image in live mode ON: Hide camera, OFF: show camera
AUDIO	Select connected audio channel
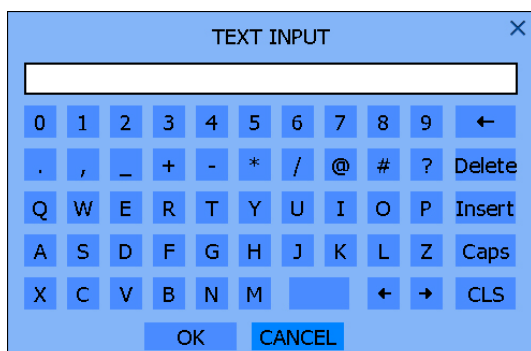
How to input letters or numbers on TEXT INPUT box

- Move the pointer to the name box (Blank) and click.
- Click letters or numbers with direction button.
- Click OK button after you complete input.

4.2.2.2. Private Zone
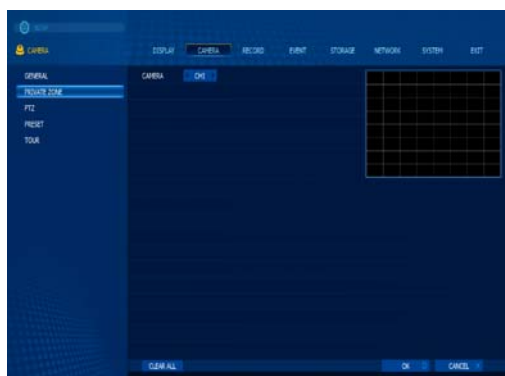
To protect privacy, User can choose the zone which is not seen for each camera.

- Camera : select the channel that user want to adjust private zone
- Click on left button of mouse to select the zone.
- Separarted zone can't be selected
- All users can't see the selected private zone

Remark : The selected zone can not be seen in both live mode and recorded data

4.2.2.3. PTZ

CH	ID	PROTOCOL	BAUD
1	000	PELCO_D ▼	4800 ▼
2	000	PELCO_D ▼	4800 ▼
3	000	PELCO_D ▼	4800 ▼
4	000	PELCO_D ▼	4800 ▼

ID	Input ID of connected PTZ camera
PROTOCOL	Select protocol type of PTZ camera
BAUD	Select baud rate of PTZ camera

This information can be found in manual of PTZ camera.

4.2.2.4. Preset

CAMERA 1 ▼			PAGE 1 ▼			
# NAME			# NAME			
1 PTZ01	SET	CLE	9 PTZ09	SET	CLE	
2 PTZ02	SET	CLE	10 PTZ10	SET	CLE	
3 PTZ03	SET	CLE	11 PTZ11	SET	CLE	
4 PTZ04	SET	CLE	12 PTZ12	SET	CLE	
5 PTZ05	SET	CLE	13 PTZ13	SET	CLE	
6 PTZ06	SET	CLE	14 PTZ14	SET	CLE	
7 PTZ07	SET	CLE	15 PTZ15	SET	CLE	
8 PTZ08	SET	CLE	16 PTZ16	SET	CLE	
CLEAR ALL						

CAMERA	Select　PTZ camera to set up preset position : PTZ camera should be connected.
PAGE	If more site is needed, please go to next page.
NAME	Preset position name can be written by virtual key board
SET	Move camera focus to the postion and save the position
CLE	Clear the preset
CLEAR ALL	Clear all of preset .please be careful when it is used.

Please follow the below steps to settle the preset.

① Select PTZ camera to settle preset in camera.

② Press "SET" ICON to pop up PTZ control window

③ Move camera to desired point by using Pan, tilt and Zoom in and out button.

④ Click **Advance** icon or Press ENTER Key in remote controller to save.

⑤ Click any other position on screen by mouse or press **MENU** Key to cancel.

　　 If you like to cancel the setting, please click the CLE icon of the channel will be cleared.

　　 If you click "CLEAR ALL" button, all value of channels will be cleared.

◆ **NOTE : Before using this function, please make sure that camera supports preset.**

　　 Total 64 preset points can be saved to each channel.

　　 You can enter position name to each saved preset position.

4.2.2.5. TOUR

CAMERA	Select camera to set up scan point
LIST	Create another SCAN list reset
PRESET	Select desired preset potion
CLEAR ALL	Cancel all saved scan points
SEC	Dwelling time at the position

◆ **NOTE**

In SCAN point menu, you can set up PTZ tour route(SCAN-LIST) using saved PRESET position.

You can create 4 scan lists for each camera. You should setup PTZ protocol and PRESET before setting Scan-List.

Maximum 4 SCAN lists can be set and 1 SCAN list can be composed of up to 16 preset points

The left pictue is the operation example.

- 1CH camera move like the followings.

- PTZ01 (3 second staying)

    >> PTZ02 (3 second staying)

     >>PTZ03 (3 second staying ……

4.2.3. RECORD

Recording setup such as parameter, schedule and pre/post recording can be made in RECORD menu

4.2.3.1. PARAMETER

- Recording Resolution

CAMERA INPUT	RESOLUTION	
720P	1280 X 720	
1080P	1920	08
	0	

Resolution	Recording resolution is determined automatically by HD SDI camera input and cannot be changed.
EVENT	Select the recording picture quality and frame rate for EVENT occasions. Event occasions mean when motion is detected or alarm is triggered. Each channel can have separate picture quality and frame rate.
CONTINUOUS	Select the recording picture quality and frame rate for continuous recording Each channel can have separate picture quality and frame rate The frame rate in CONTINOUS cannot exceed that of Event mode. If frame rate of EVENT is set up as 8, and that of CONTINUOUS mode cannot exceed 8.
ALL	Apply the same picture quality & frame rate for all channels.

◆ **NOTE: When connecting 720P camera, please make sure you turn off DVR and hook camera cable to DVR**

  Otherwise, the unit will not recognize 1280x720 resolution and cause recording problem.

◆ **NOTE: The higher recording quality, the more HDD drive space needed.**

Record Quality	Picture Quality	Disk Space Need
BASIC	Low	Least
NORMAL	Fair	Medium
HIGH	Good	Big
BEST	Excellent	Most

4.2.3.2. **SCHEDULE**

DVR always records according to schedule.

Please make sure to set recording schedule during installation
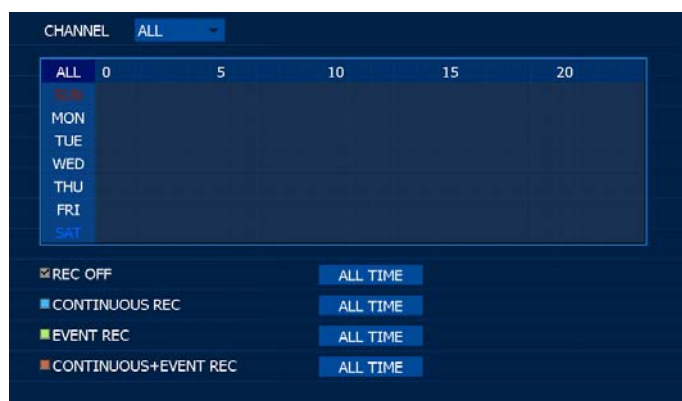
REC OFF	No record, just monitor during selected hours.
CONTINUOUS REC	DVR records continuously during selected days and hours.
EVENT REC	DVR records only when Motion/Sensor/Video Loss is triggered during selected hours.
CONTINUOUS+EVENT REC	DVR records continuously or by events during selected days and hours. If no event, it will record video as continuous mode and If event, it will record video as event mode as you set.

◆ **NOTE**: Recording schedule can be set by hour. The time in the first column of each line means one hour.

4.2.3.3. GENERAL
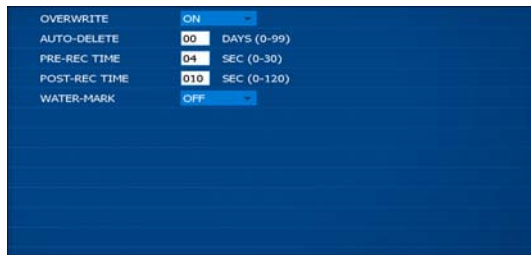
OVERWRITE	When HDD gets full, the oldest record data will be erased and replaced (overwritten) by new data. : ON is for [use OVERWRITE], OFF is for [not use OVERWRITE] If it is set OFF, DVR stops recording when HDD gets full.
PRE-REC TIME	Recording time before events (0~30 sec)
POST-REC TIME	Recording time after events (0~120 sec)
WATER-MARK	Generate water-mark in recording data Authenticity can be verified in backup-viewer.
AUTO-DELETE	HDD only keeps the data of the the selected date. The value of zero(00) means to diable auto-delete function. If 10 is selected, the data of 10 days from today is kept.

4.2.4. EVENT
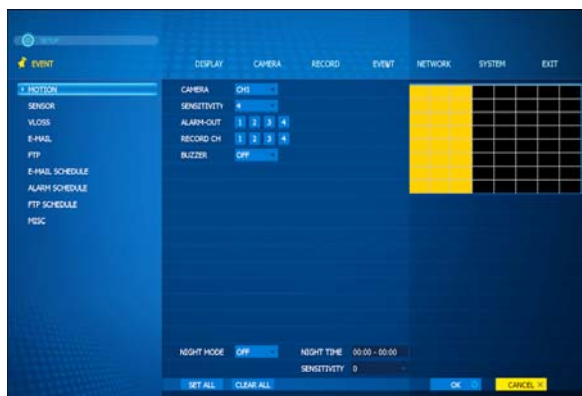
4.2.4.1. MOTION

CAMERA	Select camera for motion setup
SENSITIVITY	Adjust motion sensitivity from 0~9 The higher number, the more sensitive detection
ALARM-OUT	Select alarm-out number which will be triggered when motion is detected.
RECORDCH	Select channels which will record when motion is detected.
BUZZER	Set ON/OFF for buzzer when motion is detected
NIGHT MODE	Set separate sensitivity for day and for night. This option can be used in order to avoid false motion event caused by camera noise at night.
SET ALL	All area (8x8 Grid) will be enabled for motion detection.
CLEAR ALL	All area (8x8 Grid) will be disabled for motion detection.

4.2.4.2. SENSOR

TYPE	Select NO(Normal open)/NC(Normal closed)
RECORD	Select camera channels which will record when sensor is activated.
ALARM-OUT	Select alarm-out number which will be triggered when sensor is activated.
BUZZER	Set ON/OFF for buzzer when sensor is activated.

4.2.4.3. VLOSS

ALARM-OUT	Select alarm-out numbers that will be triggered when video loss occurs.
BUZZER	Set ON/OFF for buzzer when video loss occurs.
ALL	Apply the same settings to all channels.

4.2.4.4. E-MAIL

DVR can send e-mail notification when events occur.

EVENT E-MAIL	Select ALL time or SCHEDULE for email notification
IMAGE	Check the box then DVR sends image as well as text when events occur.
EVENT TYPE	Select event type from MOTION, POWER ON, SENSOR, HDD ERROR, VLOSS
SENDER ID DVR	DVR sends email with this name.
E-MAIL ADDRESS	Input up to 2 email addresses receive email. ➢ Example: anyone@gmail.com
SECURE TYPE	NORMAL: Standard email transfer, Port 21 SSL(485): Secure email transfer, Port 485 TLS(587): Secure email transfer, Port 587
SERVER NAME	In case of using SSL or TLS, input SMTP server name.
ID/PASSWORD	In case of using SSL or TLS, input ID and password of SMTP server.

◆ **NOTE:**   **You can find SMTP server information usually from POP3/SMTP, IMAP/SMTP setup menu of the server. Otherwise, you need to ask the server manager**

> ➢ **EXAMPLE: If you have an account in Gmail, Input smtp.gmail.com in SERVER NAME and ID/PASSWORD of your Gmail account. If normal is selected, you don't need to input in SERVER NAME and ID/PASSWORD.**
> ➢ **EXAMPLE: Email message**

From : DVR@dvr.com

To : anyone@gmail.com

Sent: Friday, July 24, 2011 6:11 PM

Subject: EVENT MESSAGE

　　[2011/07/24 18:10:11] [testdvr/192.168.001.121] MOTION ch 1 ON

4.2.4.5. FTP

DVR can send text + image to designated FTP server when events occur.

FTP	Select OFF,TEXT or TEXT + IMAGE
EVENT TYPE	Select event type to send to FTP.
FTP address	Input IP address or domain name of FTP server.
Account ID	Input ID to access FTP server
Account PW	Input password to access FTP server FTP
Directory Name	Directory of FTP server that will save transferred text or image
PORT	Input port number to use transfer to FTP FTP normal uses port 21.

4.2.4.6. **. E-MAIL/ALARM/FTP SCHEDULE**

Make a schedule for e-mail transfer, alarm-out and ftp transfer for events.

Schedule can be arranged by day and by hour. Only during checked day and time, e-mail will be sent and alarm out will be activated and ftp transfer will work

- Select the date and hour by clicking the hour and dragging mouse
- Click all can activate all date and hours

4.2.4.7. MISC

DWELL TIME	Dwelling time for alarm-out
EVENT POPUP	Channel where event occurs pops up in full screen mode.
POPUP OUT	NORMAL: Popup in main monitor SPOT: Popup in spot monitor
POPUP SEQ TIME	Popup dwelling time

◆ Note: if event occurs during dwell time of another event, dwell time will be ignored and newer event will pop up.

4.2.5. STORAGE

Up to 4 internal hard drives can be installed in the unit. Additionally 1 E-SATA hard drive can be attached to the unit using E-SATA port in the rear.
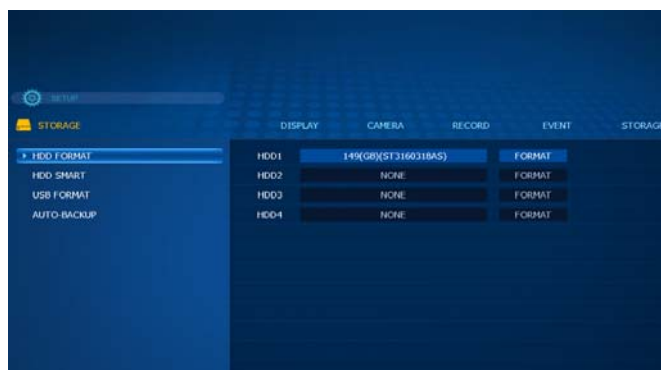
4.2.5.1. **HDD FORMAT**

HDD must be formatted when installed in order to record properly.

Select HDD to format and click **FORMAT** button. When format is completed, DVR will reboot automatically.

Time to format can be different depending on size of HDD but it usually takes a few minutes to complete.

E-SATA information is always indicated after internal hard drive(s).

4.2.5.2. **HDD SMART**

Temperature of HDD can be checked. If the temperature gets higher than certain point, DVR can notify user of that. Select ON in **SMART to use this funciton**
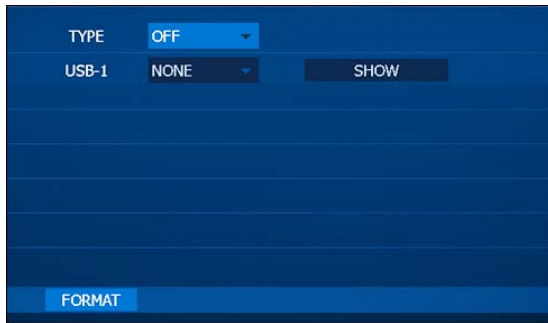
THRESHOLD	Set the limit temperature of HDD.
INSPECTION CYCLE	Set the interval to check HDD temperature. Every 10 minutes, Hourly and Daily
DAILY TIME	In case you select "Daily" in inspection cycle, set time to check HDD temperature during a day.
ALARM OUT	Select ports which will activate when HDD temperature exceeds over set threshold.
BUZZER	Select ON/OFF of buzzer sound when HDD temperature exceeds over set threshold.

4.2.5.3. **AUTO-BACKUP**
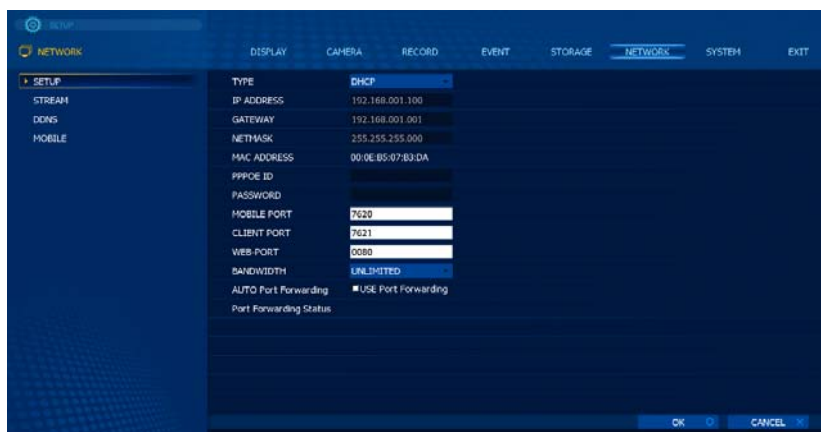
Once USB HDD is connected to DVR, HDD status is indicated.

Recording file list can be checked by selecting SHOW.

EXTEND	When internal HDD(s)(including E-SATA HDD) gets full, HDD starts to overwrite and eldest data will be erased from internal HDD and saved in USB HDD at the same time. This works when owerwrite is set to "ON" in [MENU-SETUP-RECORD_MISC]
MIRROR	Same data of internal HDD will be recorded in USB HDD.

INTERNAL	. ES TYPE
	  E-SATA must be installed. Same data is recorded to Internal HDD and E-SATA.
	. TS TYPE
	  To use this function, more 2 internal HDD must be installed. Same data is recorded to paired internal HDDs : HDD1 and HDD2, HDD3 and HDD4 works as pairs.
	  Example) supposed HDD1, HDD2, HDD3 are installed and set as INTERNAL function,
	  HDD1 and HDD2 record same data as RAID 1, but since there is no pair to HDD3,
	  Data recorded to HDD3 is not mirrored to HDD2. HDD2 is not pair of HDD3.

4.2.6. NETWORK

4.2.6.1. Setup

TYPE	Select network type among STATIC, DHCP and ADSL(PPPOE) DHCP:　DVR automatically gets IP address, gateway and subnet mask. STATIC:　Check your network environment and input IP address, gateway and subnet mask manually. ADSL : Input PPPOE ID and PASSWORD.

. IP ADDRESS, GATEWAY, NETMASK : Activated only when TYPE is set to [STATIC].	

.PPOE ID, PASSWORD : Activated only when TYPE is set to [ADSL]	

MOBILE PORT	Default is 7620, and used transfer Jpeg stream to mobile viewer.
CLIENT PORT	Default is 7621, and used to transfer video stream to Netclient.
WEB-PORT	Default is 0080, and used to transfer video stream to web viewer.
BANDWIDTH	Selected as 64, 128, 256, 512 Kbps, 1,2,4,10Mbps, and unlimited speed.
Auto Port Forwarding	Check port forwarding for network connection from outer network. Automatically Router allocates IP to DVRs and does port forwarding. To use this function, Router should support uPnP function.
Port Forwarding status	Port Frowarding OFF, ON is displayed according to status of uPnP. When it is changed to ON, the port is allocated succeed.

◆ **All the ports numbers can be input from 0001~9999 without duplication.**

4.2.6.2. **STREAM**

When dual stream is activated, DVR sends separate network stream of resolution, picture quality and frame rate. When dual streaming is set OFF, DVR should send stream according to resolution, picture quality and frame rate set in recording parameter.

According to HD SDI video input resolution (1080P or 720P), 1080P supports 960*540 & 480*270 for network resolution and 720P supports 640*360 & 320*180 for network resolution.

Resolution	Value	Frame
960*540	Basic	1,　2,
480*270	Normal	4,　8,
640*360	High	15, 30
320*180	Best	

4.2.6.3. DDNS

DVR supports DDNSCCTV.COM, DDNSCCTV(AUTO), DYNDNS.COM and NO-IP.COM for DDNS connection.

● Using DDNSCCTV.COM(AUTO)

If you choose DDNSCCTV.COM(AUTO) in SERVER, DVR creates HOST NAME using DVR using MAC address of DVR.

1) Click DDNSCCTV.COM(AUTO) in SERVER

2) Then USER ID, PASSWORD and HOST NAME are generated automatically using MAC address.

3) USER ID, PASSWORD and HOST NAME are formed in DVR + last 6 letters of MAC address

EX) If MAC address of DVR is 00:0E:B5:02:8A:5F, USER ID & PASSWORD are dvr028a5f and HOST NAME is dvr028a5f.ddnscctv.com

● **Using** DDNCCTV.COM, DYNDNS.COM or NO-IP.COM

SERVER	Select DDNS server
USER ID	Input DDNS server account ID
PASSWORD	Input DDNS server account password
HOST NAME	Input domain(host) name that you made at DDNS server
CONNECT	Click the button to check connection to DDNS server. If connection is ok, STATUS shows DDNS OK

◆ NOTE: To use DDNS function, you must first visit www.ddnscctv.com, www.dyndns.com site or www.no-ip.com on PC and create an account and make a domain (host) name.

◆ NOTE: If DDNS connection fails, check if all information has been input correctly (especially USER ID and PASSWORD) and check network status.

◆**How to register DDNSCCTV**

■ Input http://ddnscctv.com on web browser of PC to use DDNS service before you make configuration on DVR

■ Click Registration button if you don't have an account.

■ Fill in E-mail address, password, name and etc. Then, click Submit button

- Input domain name you wish to create and click Request Domain button.
- Domain name can be created with combinations of alphabets, numbers and marks. (You must not put a mark on first letter of domain name.)
- Click Logout button after domain name has been successfully registered.
- You can sign in with E-mail and password you registered.

◆DDNS setup on DVR

①Move to SETUP → NETWORK → DDNS

②Select DDNSCCTV.COM (3 options : DDNSCCTV.COM, NO-IP.COM, DYNDNS.COM)

③Input E-mail address & password you registered at http://ddnscctv.com on USER ID and PASSWORD.

④Input domain name you registered at http://ddnscctv.com on HOSTNAME.

◆DDNS use

Input domain name you registered on web browser.　=>　Example: http://abc.ddnscctv.com

For WAN connection, DVR web port/client port should be forwarded. (Port-forwarding)

⇨ Example) If webport is set 1000 on DVR, 　http://abc.ddnscctv.com:1000

4.2.6.4. MOBILE

When connecting to DVR remotely from mobile devices, DVR sends out JPEG stream.

Resolution & frame rate of JPEG stream can be set up. Resolution options are 960 x 540 and 480 x 270 in case of 1080P camera. For 720P camera, resolutions of 640 x 360 and 320 x 180 are available.

Maximum frame rate/channel can be set by resolution is as the below table.

* Maximum frame rate by resolution

Channel	960x540 (640X360)	480x270 (320X180)
Total Frame	60fps	120fps
4Channel	15pfs/CH	30fps/CH
8Channel	8fps/CH	15fps/CH
16Channel	4fps/CH	8fps/CH

4.2.7. SYSTEM

Configurations for time, user and etc. can be made.

Software version can be checked and upgrade process can be made
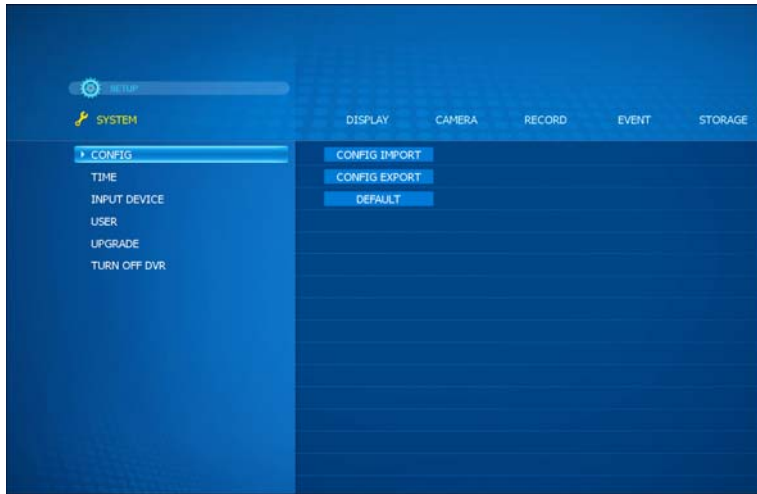
4.2.7.1. **CONFIG**

System setting values from one DVR can be copied to others.

Insert USB device into USB port of DVR to import (load) or export (save) the setting values.

CONFIG IMPORT & CONFIG EXPORT can be used to make several DVRs to have the same setting values.
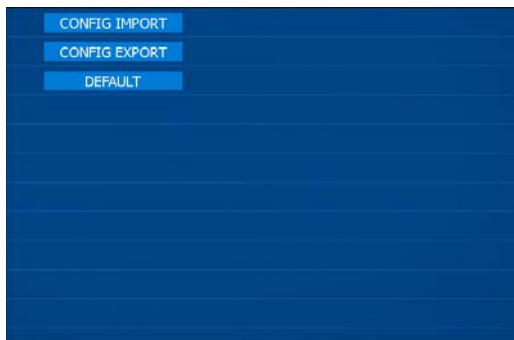
CONFIG IMPORT	Load the saved configuration file from USB device.
CONFIG EXPORT	Save the configuration file to USB device to copy it to another DVR
DEFAULT	Change all configuration values back to factory default.

4.2.7.2. TIME

DATE FORMAT	Select date format : YY/MM/DD,MM/DD/YY
TIME FORMAT	24HOURS or AM/PM
TIME ZONE	Select time zone of your location
TIME SYNC	System time will be synchronized with selected time server if it is turned ON.
SERVER IP	Input IP or domain name of time server. Click TEST if connection with server is OK. DVR checks time server for correct time every 1 hour. Ex) time.bora.net (http:// is no needed)
CHANGE TIME	Change time manually

4.2.7.3. INPUT DEVICE

SYSTEM-ID	00	
KEYBOARD	NONE	▼
KEY-TONE	OFF	▼

SYSTEM-ID	Input the number that you want to register in this DVR.
KEYBOARD	DVR system can be connected with control keyboard.
KEY-TONE	Beep whenever button is pressed if ON is selected.

◆ **How to set up System-ID status**

System-ID status shows whether the system will accept key from remote-control or not.

SYSTEM-ID is used when user operates several systems with one remote control.

SYSTEM- ID will be displayed when SYSTEM- ID is other than 0(zero).

By using DVR-ID button of remote control, remote control can be matched to SYSTEM- ID, or if SYSTEM-ID is 00, system-ID is not displayed and system accept key from remote control.

If SYSTEM- ID color is white, the system accepts remote-control key input.

If SYSTEM- ID color is red, the system does not accept remote-control key input.(No beep)

How to match SYSTEM- ID by remote control

(1) Press DVR-ID button of remote control.(You can hear short double-beep.)

(2) Then, press desired System-ID by using 2 numeric button. (E.g. 02 or 03 or 01)

Activated status   :   Inactivatived status :

R : 01   Not working

Active ID : 02

R : 02   Working
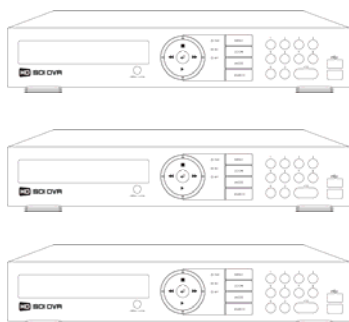
R : 03   Not working
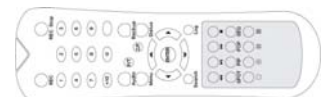
4.2.7.4. USER

There are 2 fixed users, ADMIN & NETUSER. Their name & access authority cannot be changed. Additionally, you can create up to 20 more users and give different access authority level to each user.

USER	ADMIN
USERNAME	ADMIN
PASSWORD	****
SETUP	■
DVR FUNCTION	REC PLAY BACKUP PTZ
NETWORK	■
COVERT CH	1 2 3 4 5 6 7 8

START UP LOGIN	ON	
TIME OUT	ON	05 (min) MONITOR OFF

OK   CANCEL

- **USER –** There are two unchangeable user IDs (ADMIN, NETUSER), to create new user or modify settings of existing users, click arrow button.

- **PASSWORD –** Initial password for each user is set '0000'. When you create a new user, make sure that you have to enter new password and do not forget the newly input password. Up to 8 digits of numbers can be used for password (EX: 123456)

- **SETUP –** Check this box then the user is authorized to go into setup menu

- **DVR FUNCTION–** Click DVR function button of REC (Recording setup), PLAY (SEARCH), BACKUP and PTZ (Control) to give each user access authority.

- **NETWORK –** Check this box then the user is authorized to access to DVR via network (Web, CMS or mobile)

- **COVERT CH –** Select covert channels by each user. Marked channels will be hidden by the user

- **START UP LOGIN** – Log-in Windows pop up when it is set to "ON", if it is changed to " OFF" , the intial Log-in Windows doesn't pop up any more.

  Remark : this function may be not included under seller's option.

- **TIME OUT –** When this is set to ON, LOGIN window will re-appear after entered time from any signal input. If you want to log out, you need to go to MENU and select LOG OUT like right picture.

- **MONITOR –** First select ON to give monitoring authority to each user. Then click CH button to
   Select monitoring channel the user can access.

4.2.7.5. **UPGRADE**

You can check version information of software and firmware upgrade can be done.
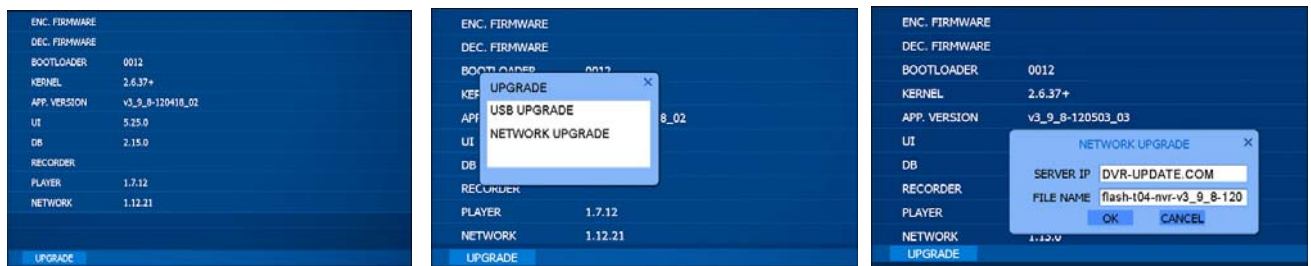
◆**USB UPGRADE**

   Please select USB upgrade in upgrade window

① Copy provided firmware file to your USB memory stick

② Insert USB Memory which includes Firmware into USB Port.

③ Enter UPGRADE button to upgrade firmware, then small windows will appear.

④ Please click OK Icon and the message dialogue to confirm will popup,

⑤ And please click OK, or CANCEL to proceed.

⑥ It will take some minutes to upgrade, and then DVR will be rebooted automatically after upgrade is finished.

◆**Network upgrade**

　　Please select network upgrade in upgrade window

① Check out whether Server IP and FILE NAME are correct.

　　If shown information is wrong, correct SERVER IP and FILE NAME and press ENTER button to input new information by text input Dialog box.

　　NOTE : Make sure the information of Server IP & File name through your supplier.

② Select OK and press ENTER button to start S/W upgrade.

　　After completing upgrade, the system will reboot automatically.

4.2.7.6. **TURN OFF DVR**

　Select TURN OFF DVR and software of DVR will be shutdown.

　In order to completely shut down DVR, turn off the power switch in the rear.
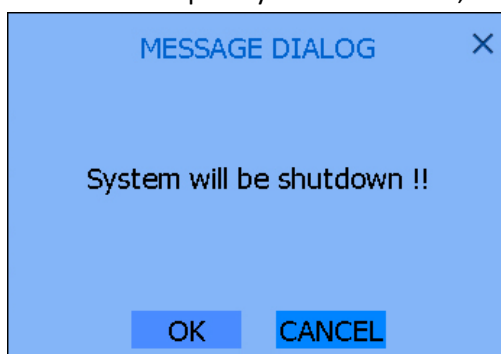
4.3. **SEARCH**

Time search using calendar/time bar and event search using event logs are supported.
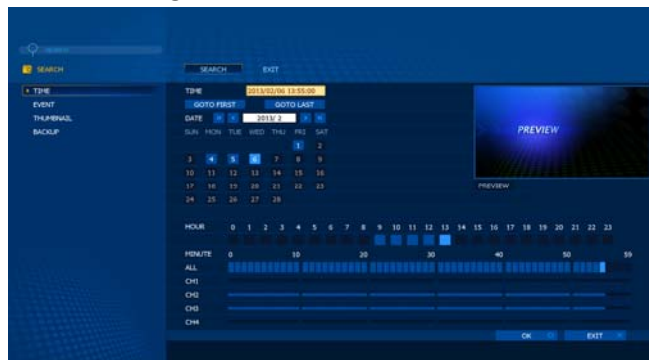
4.3.1. SEARCH BY TIME

- Select date on calendar and then hour & minute on time bar
- Click "PREVIEW" button after selecting minute and channel no.
  Click "PLAY" while running preview and it enlarges into full screen.
- To watch playback without preview, just click "PLAY" after selecting minute.
- GOTO FIRST/ GOTO LAST:　Playback of earliest/ latest data.

◆　**NOTE: Dates with recording data are showed in yellow, Hour/minute with recording data are in bright blue.**

4.3.2. **SEARCH BY EVENT**
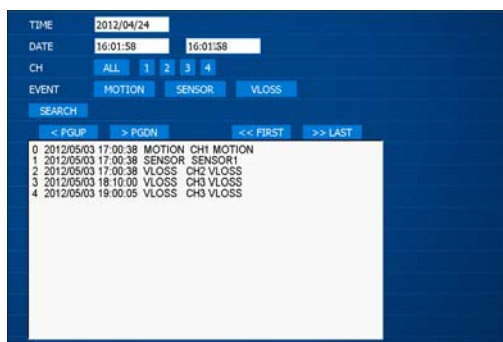
- ■ Select **DATE** & **TIME** to get event logs
- ■ Select CH to get event logs
- ■ Select **EVENT TYPE** to get event logs
- ■ Select **SEARCH** button and event log list will be written.
- ■ **<PGUP, >PGDN**: Page up & down of list
- ■ **<<FIRST, >>LAST**: Go to first page or last page of list
- ■ Click an event log on list then DVR goes to the time when the event happens in search mode.

4.3.3. THUMBNAIL SEARCH

Thumbnail search is effective and quick search option. You can search recorded file of certain channel by displaying 9 screens at a time by selected time interval.

CH	Select channel number to view
TIME	Select time to start "Thumbnail search"
INTERVAL	Select time interval from 1 sec, 10sec to 1 minute & 1 hour.
VIEW	Capture image by selected interval starting from selected time shows up
	If 1 hour is selected, each screen shows by 1 hour of the same channel.
NEXT, PREVIOUS	Previous or next page of recorded file by selected interval.

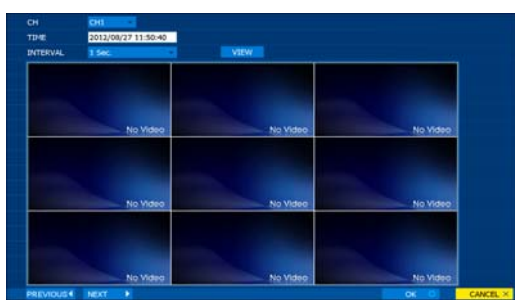Seeing the capture image, double-click on certain screen then it will be divided in smaller interval.

If you set 10:00AM in TIME and 1 hour in INTERVAL then first screen shows 10:00AM and second 11:00AM. Double-click on second channel and it will be divided again in 9 screens by 10 minute (1 minute, 10 seconds and 1 second) starting from 11:00AM.

4.3.4. **BACKUP**

Recorded data can be archived in USB device or CD/DVD using backup function

First, insert USB device or CD/DVD and select backup menu from main menu or press backup button on remote control and below popup will show up.
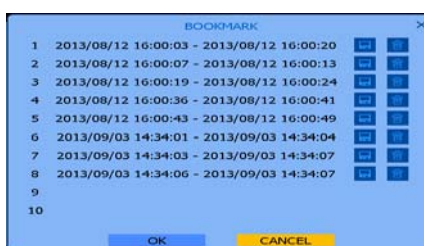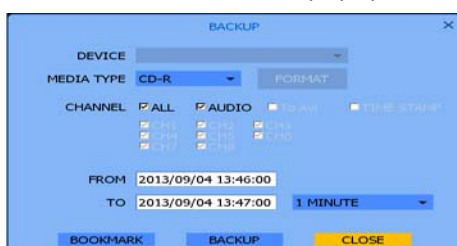
DEVICE	Select device for backup
MEDIA TYPE	Select connected device to backup
CHANNEL	Select channel(s) to backup
To AVI	Data will be archived in AVI format If unchecked "To AVI", data will be archived in PS format and backup viewer program will be automatically copied.
TIME STAMP	Insert time stamp into AVI file
FROM/TO	Select starting time/End time to back up. Without inputing time directly, 1 minute ~ 60 minutes of backup can easily be made.
BOOKMARK	Go to bookmark list that have been made in playback mode

4.3.5. PLAYBACK MODE

When DVR is in search mode, you can play, pause, rewind & fast-forward (x2, x4, x8, x32 and x128)

If you move mouse cursor at the bottom of screen, time bar pops up and you can drag and move the time in the bar. Time bar contains 24 hours and time of recording data is indicated in brighter blue. By bookmark icon you can select starting and ending time of backup file here.

For more detailed description of icons, please refer to page 20, **4.3.2. Controlling playback using the buttons**
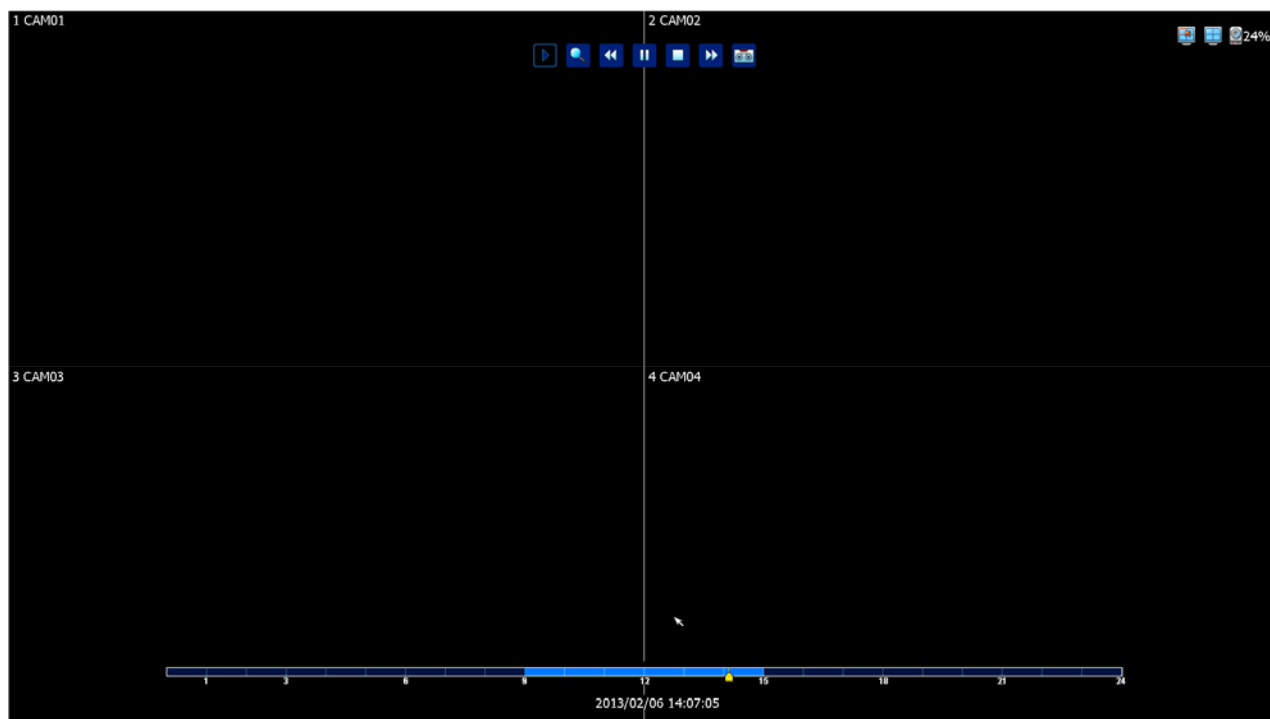
4.4. **Other functions**

PTZ, backup, log view and audio settings can be made

4.4.1. PTZ

If you press ⒫ button of remote control or select PTZ in main menu, screen will be changed to FULL screen mode and you can control PTZ camera.

If you press advance button in PTZ window, PTZ- ADVANCE window will pop-up.

4.4.1.1. PTZ BASIC
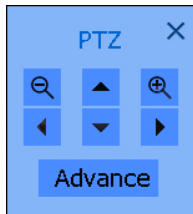
- Press ◀ ▶ ▲ ▼ button and camera will pan to left / right or tilt up / down.
- Press ◀◀ / ▶▶ button or search / log button of remote control or click (+), (-) button and camera will zoom in or out.
- Press numeric button of remote control and target camera will be changed.

4.4.1.2. PTZ ADVANCE
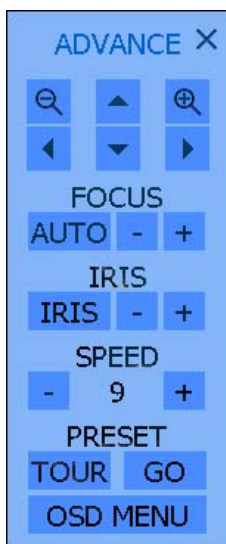
FOCUS	+ : FOCUS-IN.
	- : FOUCS-OUT
	AUTO : AUTO FOCUS MODE.
IRIS	+ : OPEN IRIS.
	- : CLSO IRIS.
	AUTO : AUTO-IRIS MODE
SPEED	+ : The control speed will increase.
	- : The control speed will decrease.
PRESET	If you want to go to a specific PRESET-position, select "GO" button.
	If you want to scan PRESET-positions, select "SCAN" button

◆ NOTE:

- The PRESET-positions are set by PRESET menu [MENU → SETUP → CAMERA → PRESET]

- The SCAN-lists are set by SCAN-POINT menu [MENU → SETUP → CAMERA → SCAN-POINT]

◆ OSD MENU

If you click OSD MENU icon in case that Camera itself has OSD function, The OSD will be shown in accordance with Camera's OSD. If OSD is not supported by Camera, OSD MENU does not work.

4.4.2. Audio
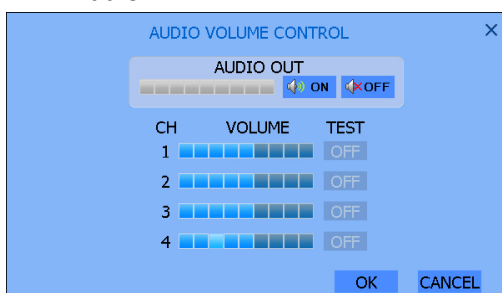
Before using this function, make sure audio in/out device has been installed correctly. (Refer to page

- Audio out works only in 1CH full screen mode
- Test audio by TEST ON/OFF button

4.4.3. LOG VIEW

System log status can be found or saved into USB memory to check on PC.
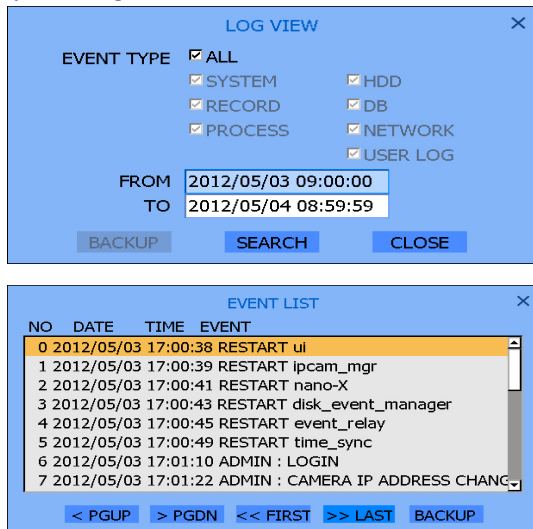
EVENT TYPE	Select event type to see logs.
FROM	Input staring time.
TO	Input ending time.
BACKUP	Save log data into USB memory.
SEARCH	Click SEARCH button and log list will be shown.
EVENT LIST	Logs of checked EVENT TYPE will be listed.

4.5. OSD OFF

Select OSD OFF then OSD (icons or time) will disappear/appear.

Please see the page 21 to get more information. [SETUP->DISPLAY->OSD]

4.6. REC

Select REC button on main menu, on remote control or on front panel. Then, all channels will record regardless of previous recording schedule setup. This function can be used when unexpected incident occurs in channels that are not recording by operator, it is said to be panic or instant recording. Pressing One more REC button makes DVR go back to the previous recording schedule setup. During Panic recoding, 🅟 Icon is displayed in each channel.

➢ Example: While only channel 2,3 and 4 are recording by the current recording schedule, unexpected incident is happening on channel 1, so channel 1 needs to be recorded.

In this case, select REC function instantly on remote control or on front key. Then all channels will be recorded as panic recording status.

4.7. LOG OUT

Select LOG OUT button and DVR will go in logged out status.

You cannot control DVR and change settings of DVR in logged out status. In order to log in again, press any button of remote control or front key or click mouse button on any spot of screen.

NOTE: When DVR goes in logged out status, all channel might be blocked by covert according to settings in page 40. (If USER >> MONITOR is on, all channel will be blocked by black screen in logged out status)

4.8. SPOT (TS Type)
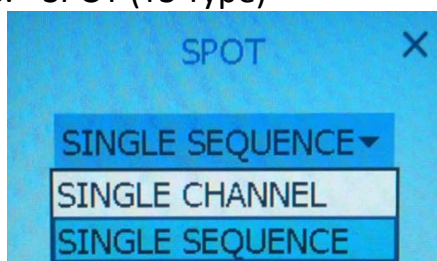
Single Channel	Only selected channel is dispayed as sopt.
Single Sequence	Selected all channel are displayed as spot. The setting on SPOT is refered to [4.2.1.2.SEQ-FULL] in page.23.

5. SPECFICATION
5.1. ES TYPE

MODEL		4CH	8CH
Compression Algorithm		Video : H.264, Audio : G726	
Operating System		Embedded Linux	
Multi-Operation		Pentaplex (Live, Recording, Playback, Backup, Network)	
Video	**Input**	4CH	8CH
	Input Signal	HD SDI	
Video Out	**HDMI**	1	
	VGA	1	
	Composite(TEST MODE)	1(just used for test mode)	
Audio	**Input**	1	
	Output	1 (HDMI, RCA)	
Interface	**USB 2.0, RS-485**	2 x USB, 1 x RS-485	
	E-SATA	1	
	Ethernet	1	
	Sensor Input	1	
	Alarm Output	1 (Relay)	
	SATA	1 x SATA HDD	
Live	**Resolution**	1920 x 1080	
	Display Mode	1, 4	1, 4, 9
	Digital Zoom	Up to x 10	
Recording	**Speed & Resolution**	Total 60FPS@ 1080P or 120FPS@ 720P (NTSC)	
	Mode	Manual / Continuous / Schedule / Motion / Sensor & Pre/Post, Panic	
Playback & Backup	**Speed**	Fast Forward/Backward, Step Forward/Backward	
	Search	Search by Time, Calendar , Events and Thumbnail search	
	Backup Device	USB Memory Stick/HDD & Backup by Network	
	Backup File Format	AVI (With or Without Timestamp), PS (Playback in Backup-Viewer)	
Events & Alarm		Email & FTP Notification / Alarm-out / Buzzer for Events & Video Loss Warning Message & Buzzer for HDD Over-Temperature	
Network	**Transmission**	Video Dual-Stream (Local recording & Network Transmission)+Jpeg(mobile) Bandwidth adjustable (64/128/256/512Kbps, 1/2/4/10Mbps, Unlimited)	
	Netclient/Web(I.E.)	Live ,Playback, Backup , PTZ, DVR Setup	
	Mobile viewer	Supported by Android OS, iOS(Iphone)	
Operating Temperature and Humidity		5~40 ℃ / 20~80% RH	
Power and Dimension (WxDxH)		DC12V, 3.5A and 380 x 342 x 67, Packing: 450 x 425 x 170　(mm)	

This specification are subject to change without notice

5.2. TS Type

MODEL		4CH	8CH	16CH
Compression Algorithm		Video : H.264, Audio : G726		
Operating System		Embedded Linux		
Multi-Operation		Pentaplex (Live, Recording, Playback, Backup, Network)		
Video	Input	4CH	8CH	16CH
	Input Signal	HD SDI		
Video Out	HDMI	1		
	VGA	1		
	Composite(TEST MODE)	1(Just used for Test mode)		
Spot Out	VGA	1		
	BNC	1		
Audio	Input	4	8	8
	Output	1 (HDMI, RCA)		
Interface	USB 2.0, RS-485	2 x USB, 1 x RS-485		
	E-SATA	1		
	Ethernet	1		
	Sensor Input	4	8	8
	Alarm Output	4 (2 x Relay, 2 x TTL)		
	SATA	Max. 4 x SATA HDD		
Live	Resolution	1920 x 1080		
	Display Mode	1, 4	1, 4, 9	1,4,9,16
	Digital Zoom	Up to x 10		
Recording	Speed & Resolution	Total 60FPS @ 1080P or 120FPS @ 720P		120fps@1080P
	Max.fps/ch	30fps/CH	15fps/CH	15fps/CH
	Mode	Manual / Continuous / Schedule / Motion / Sensor & Pre/Post, Panic		
Playback & Backup	Search	Search by Time, Calendar , Events, Thumbnail and First/Last Search		
	Backup Device	USB Memory Stick/HDD, DVD-RW & Backup by Network		
	Backup File Format	AVI (With or Without Timestamp), PS (Playback in Backup-Viewer)		
Events & Alarm		Email & FTP Notification / Alarm-out / Buzzer for Events & Video Loss Warning Message & Buzzer for HDD Over-Temperature		
Network	Transmission	Video Dual-Stream (Local recording & Network Transmission) Bandwidth adjustable (64/128/256/512Kbps, 1/2/4/10Mbps, Unlimited)		
	Netclient/Web(I.E.)	Live , Playback, Backup , PTZ, DVR Setup		
	Mobile Viewer	Supported by Android OS, iOS(Iphone)		
Power		DC12V, 5.83A		DC 12V, 6.67A
Operating temperature & humidity		5~40 ℃ / 20~80% RH		
Dimension (W x D x H)		380 342 x 67, Packing: 450 x 425 x 170 (mm)		

. This specification are subject to change without notice

6.Trouble shooting

In the event of a product malfunction, please check the following list for a usual and possible solution before requesting service.

1. Product is not turned on.
Check out whether the power is being supplied well.

2. Product continues displaying "Loading" or "Starting UI…."
Check the product can boot without HDD
If product continues displaying "Loading" or "Starting UI…." Without HDD, you can try emergent upgrade. Please refer method of factory default in provided CD

3. Camera video is not displayed on monitor
Check the video input / output connections on the product rear panel.
Check the camera status and the connection between camera video/power cable.
Check if **CAMERA STATUS** in menu is **SHOW.**

4. I cannot hear Audio
Check the audio input/output connections on the rear panel of DVR.
Audio works only in full screen mode.

5. I can't stop recording by remote controller or REC button
Check out that RECORD CONTINUOUS of REC OPTION of MENU is OFF.

6. I can't find previous recording data.
The product operates automatically **O**VERWRITE function. It deletes the oldest recording data to overwrite when HDD is full.

7. Product is not compatible with external USB device.
Please check if USB memory stick is in protection (password) function. Protection function of USB device should not be discharged.

8. I can't connect to network.
Check if network of menu is setting correctly such as Network port, ID, Password
Check if your internet line is available. Please ask your service provider to check internet line.

If the problem you are experiencing persists or is not mentioned above, please contact service center or your local distributor.