XX186-50-01

VDR-404&408&416 USER MANUAL
Digital Hard Disk Recorder

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INSTALLATION & OPERATION MANUAL

VICON

Vicon part number 8009-8186-50-01

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President

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1 SYSTEM OVERVIEWS

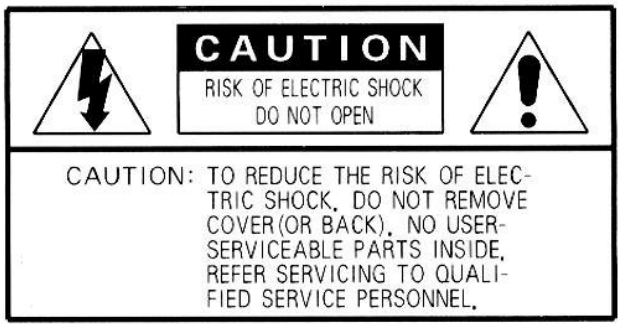
1.1 Safety

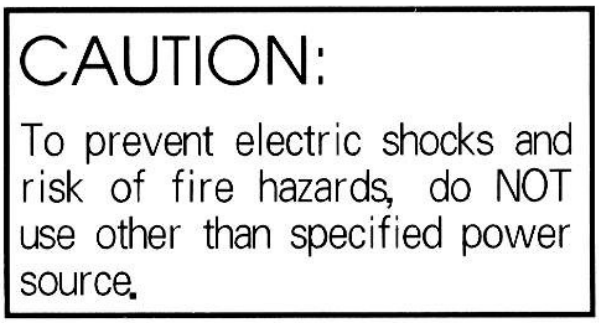
WARNING

Please follow instruction to prevent any kind of damage or loss.
If you do not follow this instruction, it might bring severe damage or loss.

The symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the unit.

The symbol 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.





Warning -- 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 its own expense.

Caution -- Any changes or modifications in construction of this device which are not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Caution -- Danger of explosion, if battery is incorrectly replaced.
Replace only with the same or equivalent type.

Warranty will be made void if the product is disassembled or manipulated by the user.

Safety Instructions

1) Read these instructions.
2) Keep these instructions.
3) Heed all warnings.
4) Follow all instructions.
5) Do not use this apparatus near water.
6) Clean only with dry cloth.
7) Do not block any ventilation openings.
   Install in accordance with the manufacturer's instructions.
8) Do not install near any heat sources such as radiators,
   heat registers, stoves, or other apparatus (including amplifiers)
   that produce heat.
9) Do not defeat the safety purpose of the polarized or grounding-
   type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10) Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11) Only use attachments/accessories specified by the manufacturer.
12) Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13) Unplug this apparatus during lightning storms or when unused for long periods of time.
14) Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

1.2 Components & Option

The following items are included with the 4 & 8 & 16 Channel DVR. Please be certain that all items are included as soon as you open the box:

1.2.1 Components

- VDR (CD-RW is installed as a basic equipment)
- Power cable
- DSUB-25 connector for AUX / ALARM / SENSOR
- Quick Manual
- Software CD (RAMS_RT, UniPlayer_RT, Quick Installer_RT, Multi Viewer_RT, Manual)

1.2.2 Options

- Remote Control Unit (two batteries included)
- RS-232 Serial cross cable

1.3 Features & specifications

1.3.1 Features

- 8/16 channel Standalone Digital Video Recorder
- Recording & Playback
  - 4CH : Full D1 Real Time(NTSC : 120 FPS, PAL : 100 FPS)
  - 8CH : CIF Real Time(NTSC : 240 FPS, PAL : 200 FPS)
  - 16CH : CIF (NTSC : 480 FPS, PAL : 400 FPS)
- MPEG-4 compression
- Stable Operation System(Embedded Linux)
- Quadplex operation modes : Simultaneous recording, Playback, Back up, Network transfer
- Remote monitoring & access and control, back up via network
- Dynamic IP support (DHCP & PPPoE)and DDNS server available
- CMS (Central Monitoring Station) supports up to 128 channels
- Monitoring by Internet explorer
- Alarm triggered E-mail alert function
- Alarm function for Motion detection, Video loss, Sensor detection
- Various Event Notification (Video POP-UP, Icon, Buzzer, Relay Output)
- NTP (Network Time Protocol) support
- Recording frame and image quality control function
- Various back up support (CD-RW, USB, Network)
- All channel audio recording support
- Various recording models : Time laps, Event recording(Motion, Sensor), Schedule, Manual and continuous recording
- Capturing of still image, Search and Back up
- Calendar search is available.
- Convenient search by alarm, time and date
- Detail and convenient search, using Jog Shuttle
- Multi Level User Management support
- Recording status monitoring (Recording Warning, Recording Fail) support
- Watermark function (during RAMS back up)
- PTZ control, using RS-485 communication
- Quick & easy setup, using RS-232 communication
- SATA HDD support
- Easy software update via USB port, CD-RW or DVD-RW and Network
- Keyboard Controller support
- Matrix function support (16ch VDR only)
- Multi language support
- Convenient operating, by using of remote controller
- Convenient operating, by USB MOUSE support
- Both is NTSC & PAL video system are available.
- Available to install lack: 2U
- Free volt power input (100 - 240VAC, 50Hz/60Hz, 70W)
- Support various Video Out (CVBS out, VGA out, SPOT out, S-VIDEO out)

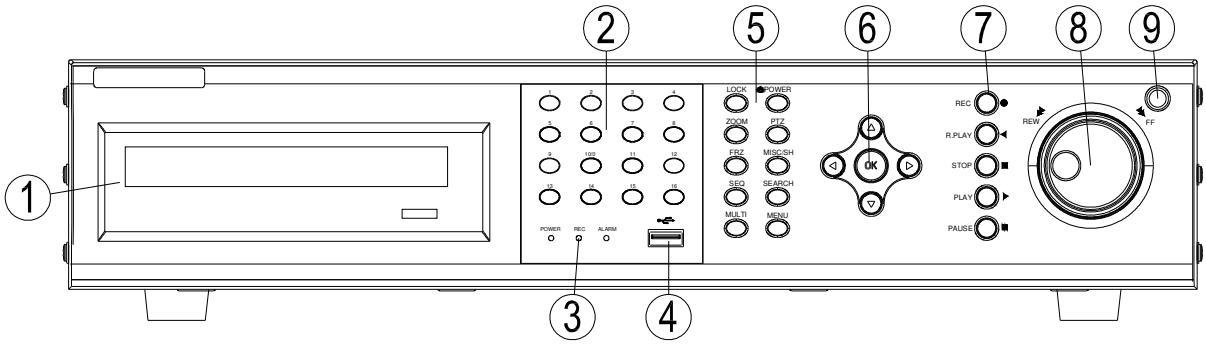
1.3.2 Specifications

Model	4ch VDR	8ch VDR	16ch VDR
Image System	NTSC, PAL selectable		
Multi-tasking	Quadplex		
Video Channel	4CH Composite, 4CH Loop through, BNC	8CH Composite, 8CH Loop through, BNC	16CH Composite, 16CH Loop through, BNC
Video Output	1CH Composite BNC, 1 CH S-VIDEO, 1CH Spot (Single/Multi), 1CH VGA		
Video Compression	MPEG-4		
Recording Resolution	720x480, 720x240, 36x240 (NTSC) / 720x576, 720x288, 360x288 (PAL)		
Recording Quality	4 Levels (Normal, Enhanced, Fine, Super Fine)		
Max Display Speed	120 fps (NTSC) 100 fps (PAL)	240 fps (NTSC) 200 fps (PAL)	480 fps (NTSC) 400 fps (PAL)
Max Recording Speed	120 fps at Full D1 (NTSC) 100 fps at Full D1 (PAL)	240 fps at Half D1 (NTSC) 200 fps at Half D1 (PAL)	480 fps at CIF (NTSC) 400 fps at CIF (PAL)
Time Laps Recording Interval (fps)	1,2,3,4,5,6,8,10,15,30 (NTSC, 10 Steps) 1,2,3,4,5,7,9,13,20,25 (PAL, 10 Steps)		
Recording Mode	Schedule, Event (Sensor, Motion Detection), Manual, Continuous, Continuous+Event		
Playback Search	Calendar, Event (Sensor, Motion Detection)		
Playback Speed	x1, x2, x4, x8, x16, x32, x64, x128, Field by Field (Forward, Backward)		
Slow Motion	x1/4, x1/2 (Forward Only)		
Sensor Input	4 (NO/NC Selectable)	8 (NO/NC Selectable)	16 (NO/NC Selectable)
Alarm Output (Relay)	1 (NO/NC) , 4 TTL		
Audio In/Out	4 ch	4ch (4ch option)	4ch (12ch option)
Network	10/100Base-T (Static, DHCP, PPPoE, E-mail), DDNS server available		
Motion Detection	22x15 (NTSC) / 22x18 (PAL), 8 Level Sensitivity		
Hard Disk	Max. 2 EA		
Backup	USB(Ver2.0), CD-RW/DVD-RW, Network		
Watermarking	Still Image Backup		
PTZ Control	RS-485		
Serial Port	RS-232(Console, Reserved)		
System Log	Video Loss, Power On/Off, HDD Full, REC Warring, REC Fail, Menu Called, Reset HDD Format, Reset SW Upgrade, Email Fail		
Language	Korean, English, Japanese, French, Spanish, German, Polish, Italian, Russian, Slovak, Turkish, Czech		
S/W Upgrade	Network, USB Memory Stick, CD-RW		
Password Function	Power OFF, MENU, Record OFF, Key Lock		
Power Source	Free Voltage (100 – 240VAC, 50Hz/60Hz, 70W)		
Dimension	433(W) x 385(D) x 88(H)		
Operating Temperature	5℃ ~ 40℃		
Weight	7Kg (net)		

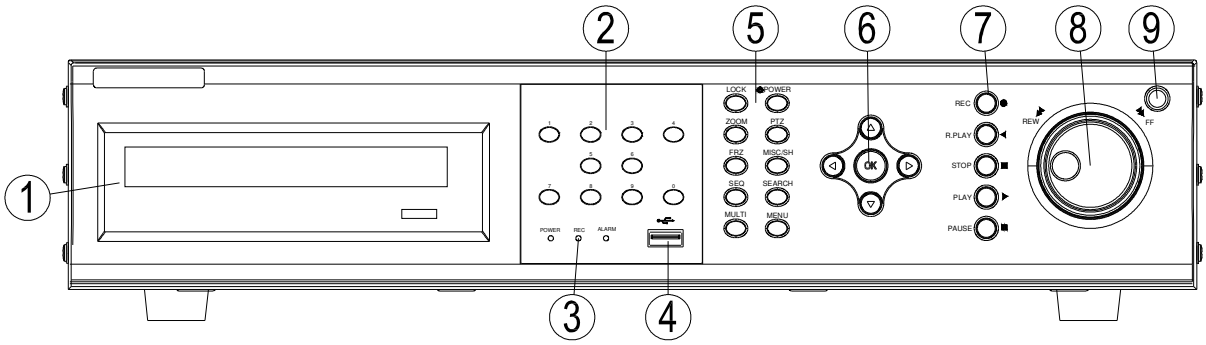
- Design and specifications are subjected to change without notice.

1.4 Name, function & connections

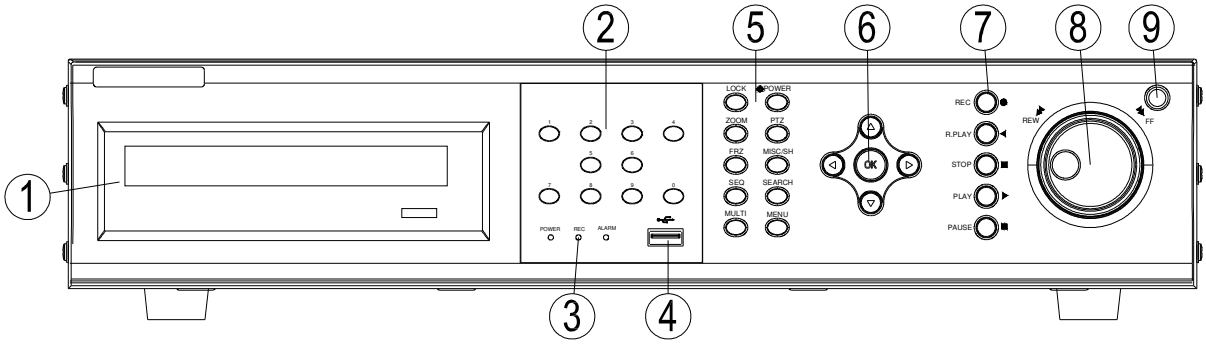
1.4.1 Front view



< 16ch VDR >



< 8ch VDR >



< 4ch VDR >

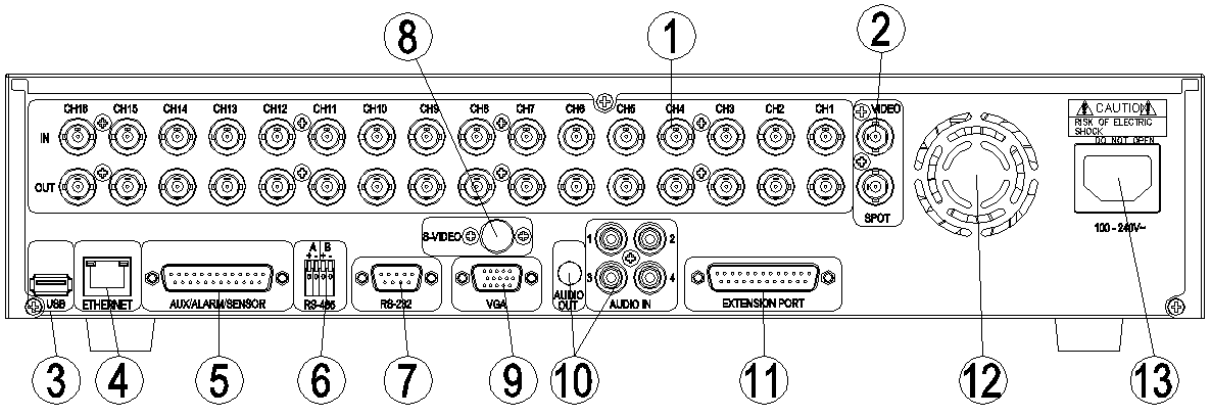
Description of Front Panel

Number	Name	Function
1	DVD-COMBO / DVD-RW	Provides recording and playback of CD or DVD media.
2	Numeric push-buttons	**16-channel VDR:** 1, 2, 3, 4, 5, 6, 7, 8, 9, 0(10), 11, 12, 13, 14, 15, 16. Enable channel selection for live view or playback mode, and password input. **8-channel VDR:** 1, 2, 3, 4, 5, 6, 7, 8. Enable channel selection for live view or playback mode, and password input. **4-channel VDR:** 1, 2, 3, 4. Enable channel selection for live view or playback mode, and password input.
3	LED indicators	**POWER:** During Standby mode, red light on; during operation, green light on. **REC:** Green light flashes to indicate recording. **ALARM:** Green light on indicates that alarm is triggered.
4	USB connector	Provides USB connection for Flash memory or USB drive backup.
5	Function push-buttons	**POWER:** ON/OFF switch. As a precaution, user must input password, before Power off. **LOCK:** Press this button to lock/unlock the buttons of VDR. If the LOCK button is pressed, VDR is locked, and can only be unlocked by inputting correct password. **ZOOM:** Allows zoom in/out of the images during Live Viewing. **FRZ:** Freeze. Provides the following functions: ▪ Press button once to freeze the frame in Live mode. Press again to return. ▪ Press button to take a still image capture at playback mode. ▪ To change video input type from NTSC to PAL: Press POWER button with FRZ button to switch from NTSC to PAL or PAL to NTSC. **MISC/SH:** Miscellaneous functions or Shuttle Hold. Provides the following functions:

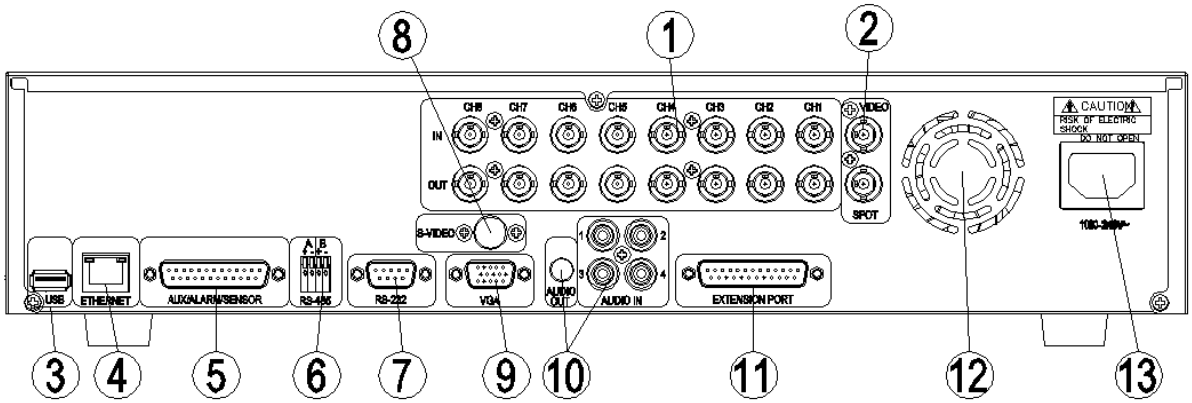
Number	Name	Function
		▪ **MISC:** Provides access to functions that can only be accessed by the buttons that are on the remote control. The functions are: NET, OSD, Audio Mute, HDD and LOG. When the MISC button is pressed, a window will appear on the display and the user can access these functions through a series of menus. ▪ **SH:** Press button while using the Shuttle function to maintain shuttle the speed. **SEARCH:** Press once to open the menu and search for recorded files. **PTZ:** Pan/Tilt/Zoom. Press once to access the Pan/Tilt/Zoom/Focus control mode. Press again to exit. **MENU:** Press button to access Main Menu. Press again to return. **MULTI:** Selection button to divide screen into 4, 8, 9 or 16 screen segments. Pres MULTI again to return to single screen after selecting a specific channel. In Playback mode, screens are displayed in order of precedence. **SEQ:** Allows viewing of all active video input channels sequentially. It functions as follows: ▪ Click SEQ one time each to sequentially display single channels. ▪ Double-click SEQ to display 4, 8, 9 or 16 screen segments. ▪ Click SEQ again to return to original display.
6	Direction/Selection cursor control	**Up:** Moves the cursor up. Used to change values in the setup menu; or in PTZ control sub-menu, used to move camera; or used to adjust focus. **Down:** Moves the cursor down. Used to change values in the setup menu; or in PTZ control sub-menu, used to move camera; or used to adjust focus. **Left:** Moves the cursor left**.** Used to change values in the setup menu; or in PTZ control sub-menu, used to move the camera left; or used to zoom out. In Playback mode, used

Number	Name	Function
		to decrease playback speed. **Right:** Moves the cursor right**.** Used to change values in the setup menu; or in PTZ control sub-menu, used to move the camera right; or used to zoom in. In playback mode, used to increase playback speed. **OK:** Used to confirm selections. In PTZ control sub-menu, used to change from P/T mode to Z/F mode and.
7	Record and Playback pushbuttons	**REC:** Press once to begin recording all active channels. Press again to end recording. **RPLAY:** Reverse Playback. Press to begin reverse playback. In PTZ control sub-menu, it is used to decrease t Pan, Tilt, Zoom or Focus speed. **STOP:** Stops playback. **PLAY:** Press to begin or resume playback. Playback button can be configured to start playing the oldest recorded images or more recently recorded video. This option is set using the Playback setup menu. In PTZ control sub-menu, it is used to increase Pan, Tilt, Zoom or Focus speed. **PAUSE:** Press to pause playback.
8	Jog/Shuttle control	**Shuttle:** Multi-speed forward/reverse playback. In Network Setup sub-menu, used to input parameters quickly. **Jog:** Provides frame-by-frame search.
9	IR receiver	Remote control signal receiver.

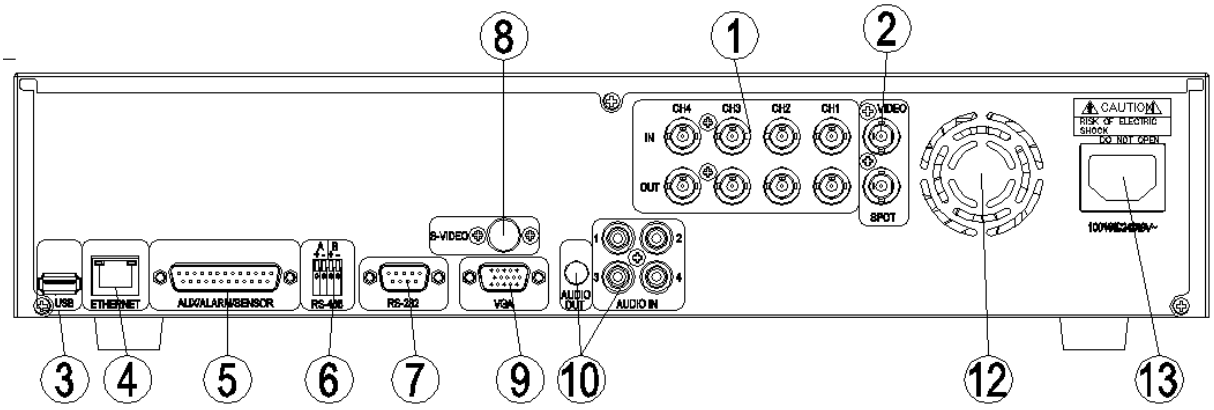
1.4.2 Rear panel view



< 16ch VDR >



< 8ch VDR >



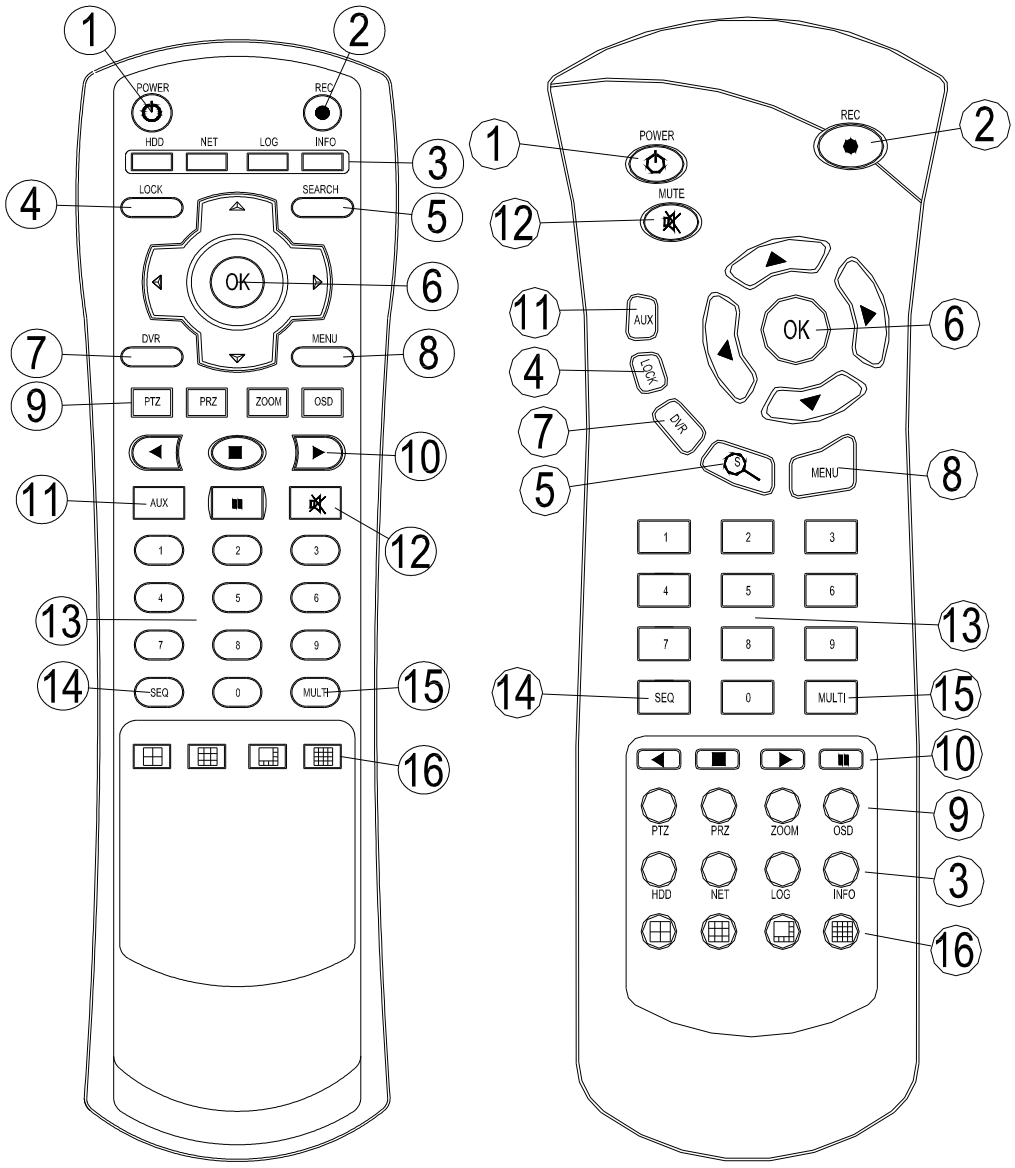
< 4ch VDR >

Description :

1. VIDEO IN
   - IN : CAMERA INPUT TERMINAL. This is for CVBS signal input.
   - OUT : LOOP OUT TERMINAL. This is for other VDR connection or other device's input channel.
2. VIDEO OUT
   - VIDEO : VIDEO OUT TERMINAL. CVBS signal is exported.
   - SPOT : SPOT VIDEO OUT TERMINAL. CVBS signal is exported.
3. USB
   - This is USB memory stick terminal to back up HDD video screen.
   - USB Mouse is available.
4. ETHERNET
   - This is to connect 10/100 Base-T network connection port (RJ-45 port).
5. AUX/ALARM/SENSOR
   - This is to connect AUX IN/OUT, Alarming devices and sensor devices. (DSUB-25 male connector)
   - DC 5V power is provided to connect other devices.
6. RS-485
   - 485 A Port : This is to connect PTZ devices, Keyboard controller.(RS-485 port).
   - 485 B Port : Reserve
7. RS-232
   - SERIAL : This is to connect RS-232 port on PC to use console function or for Quick Installer. (DSUB-9 male connector)
8. S-VIDEO
   - Standard S-VIDEO signal is exported.
9. VGA
   - VGA : Standard VGA Video-Out signal is exported. (DSUB-15 male Connector)
10. AUDIO IN/OUT
    - IN : Audio Line Input terminal.
    - OUT : Audio Line Output terminal.
11. EXTENSION PORT
    - In addition to standard 4 Audio inputs, extra audio input terminals are provided for 8CH and 16CH VDRs.
    - It supports analog input/output port for implementation of matrix function.
      - Matrix Function : When multiple VDRs are installed, it is able to implement matrix function without matrix device, using optional cable.

12. FAN
    - This is to cool down the internal heating.
13. POWER INPUT
    - This is for main power input. (Free Voltage,100-240VAC, 50Hz/60Hz)

1.4.3 Remote controller function



① POWER : button for power on/off. (VDR should be standby or on working status)

② RECORD : button for forced recording (If it's pressed again, recording stops)

③ INFO BUTTON GROUP : button group for HDD, NET, LOG, INFO.

If each button is pressed, the relative information shows and press Menu button for exit

④ LOCK : Remote control lock button. Same function as Lock button in the front panel.
To unlock, press any button and input password.

⑤ SEARCH : Button to search data in HDD. Press the button to enter, and repress for exit

⑥ Up/down, Right/left & OK button

Status	OK	Up/down	Right/left
Menu	Selection, sub menu	Menu move	x
Sub Menu	Selection	Move Menu	Adjust value
Play	x	Channel Coverting	Low speed and playback speed

⑦ VDR : To use multiple VDR, using remote controller. Input different numbers in VDR ID (in Menu) -> Press “DVR” button in the remote controller-> Press VDR’s ID, which you would use -> Press OK button

⑧ MENU : Button for menu. Various sub menu can be selected

- To exit, press again the button

⑨ Functional Key Group : A group for “PTZ”, “FRZ”, “ZOOM” “OSD” from the left. Remote control, Rock button. Same function as Lock button in the front panel.

⑩ Play Group: Playback, Start, Stop, Pause, R.Play. All buttons are the same as front panel.

⑪ AUX : Reserved

⑫ MUTE : - Press one time : Off audio output .

- Press 2nd time : on audio output

⑬ Number Keypad : button for specific channel you want to see

Ex) If you put the number “7” and “OK” button , it will show channel number 7.

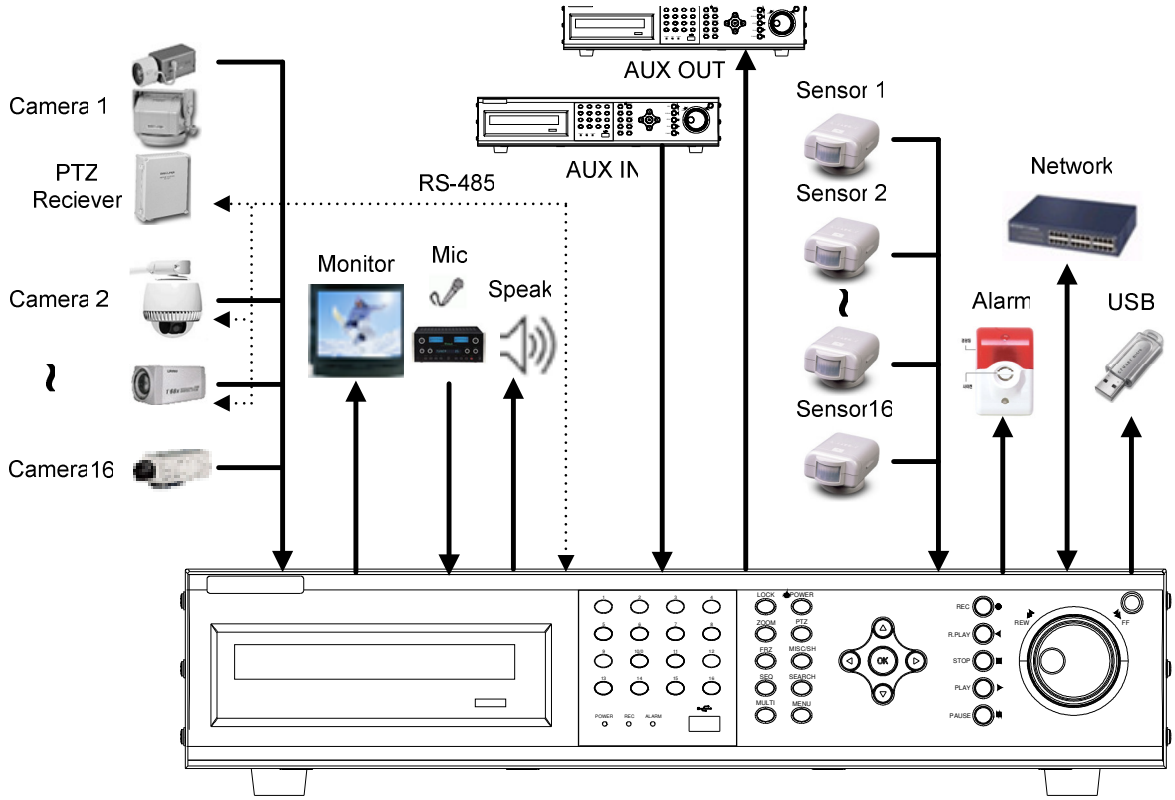
⑭ SEQ : The same function as on the VDR front panel.

⑮ MULTI : The same function as on the VDR front panel.

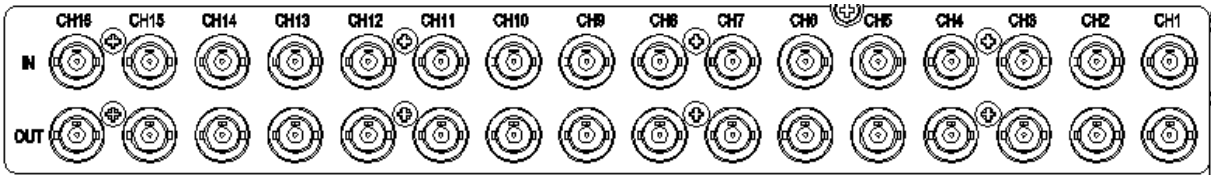
⑯ Screen division Group : Similar with “MULTI” Key but these keys play nothing , so makes it possible to move back related divided screen . From the left it provides , 4 divided screen, 8 divided screen , 9 divided screen and 16 divided screen.

1.5 INSTALLATION

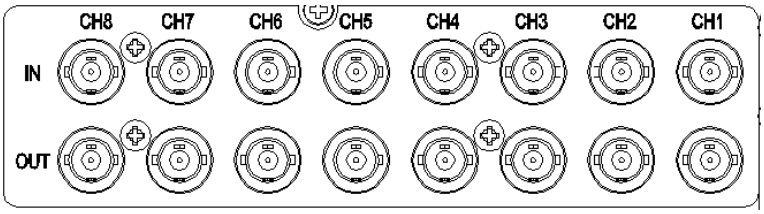
1.5.1 Installation and connection



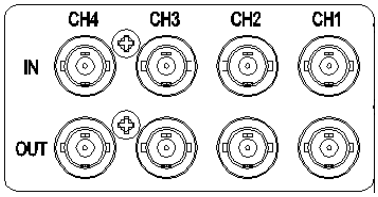
1.5.1.1 Camera In



- 16ch VDR : It supports 16channel's Video Input. Upper side is Video Input terminal and lower side is Loop Out terminal.

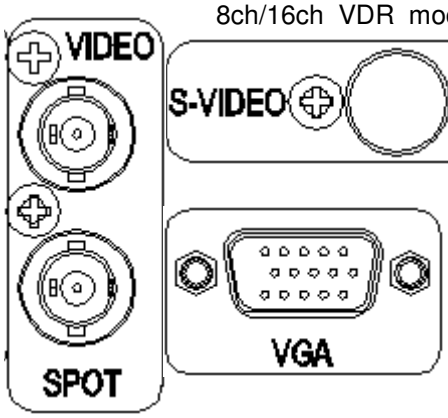


- 8ch VDR : It supports 8channel Video Input. Upper side is Video Input terminal and lower side is Loop out terminal



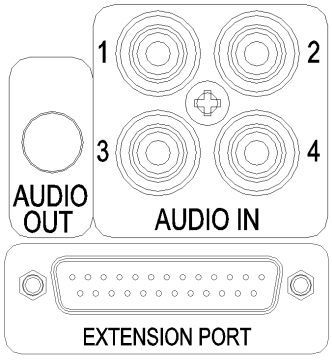
- 4ch VDR : It supports input. Upper side is Video Input terminal and lower side is Loop Out terminal.

1.5.1.2 Video Out



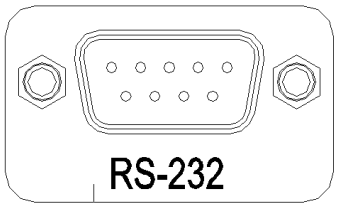
8ch/16ch VDR models support various type's output.. Simultaneous output of CVBS signal, S-VIDEO signal and ANALOG RGB(VGA). It makes users to select appropriate output type, as they prefer. And SPOT output also allows to focus on surveillance function.

1.5.1.3 Audio



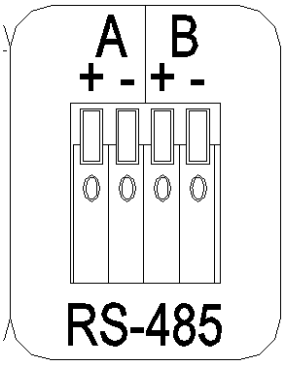
4 channel Audio Input of RCA standard terminal is basic. 8 & 16channel Audio input is an option and it supports through separate "EXTENSION PORT".

1.5.1.4 RS-232



Using RS-232 protocol, connects to serial port of PC to control VDR system or to set up system more easily , connecting with PC, which is installed Quick Installer. You can refer to left picture for connection and use Cross cable for connection.

1.5.1.5 RS-485



It supports 2EA port, which supports RS-485 standard. It is available to control internal PTZ, external KEYBOARD connection and other various purpose. Also it is more easy to connect, as it is provided with Terminal Block type, which is available to be connected directly.

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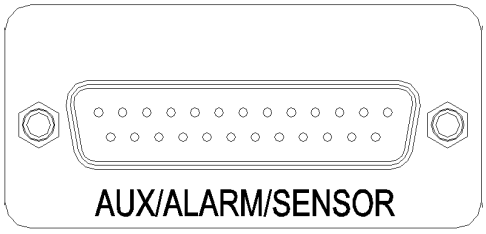
1.5.1.6 AUX/ALARM/SENSOR



1.5.1.6.1 AUX1~4

It provided total 4 AUX Out Port and it is able to select proper function of the each port in the menu, as user need. It is able to connect with external devices(VDR, Controller), using provided DSUB-25.

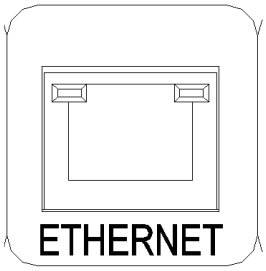
1.5.1.6.2 Alarm Out (NO, COM, NC)

When alarm is occurred, it provides dry contact output in relay, while alarm is triggering. User is able to select a type of dry contacts such kind of NO, COM, NC, in accordance with working type of alarming device. NO(Normal Open) is apart from COM(Common) in normal status and it dry-contacts, when alarm is occurred., NC(Normal Close) is connected with COM in normal status and it is apart, when alarm is occurred.

1.5.1.6.3 Sensor(16ch VDR : 1~16, 8ch VDR : 1~8, 4ch VDR : 1~4)

It is able to connect with two kind of sensors(NO/NC) up to 16pcs(8ch VDR is available up to 8pcs, 4ch VDR is available up to 4pcs). It is able to set up connection with input channel and select mode in the menu.

1.5.1.7 Network



It supports 10 / 100 Base-T Ethernet. Connects with cable, which supports 10/100 Base-T Ethernet.

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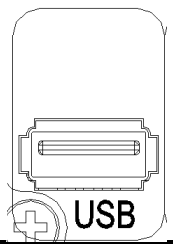
1.5.1.8 USB



Back up recorded image, using USB memory

2 Basic operation procedures

2.1 Power On/Off

2.1.1 Power ON

Using either the keypad or the remote control, press the “POWER” button. (Note: In case of power outage or rare instance of system failure, the VDR will reboot automatically)

The Power LED light will turn from red to green when it has turned on properly.

In a standby mode, the LED is red.

2.1.2 Power OFF

In order to shutdown the system, you must type in the password. The default password for shutdown is “111111”.

2.2 Date & time setting

Set the date and time for the VDR.

(**System Setup in Main Menu → Time/Date**)

2.3 Password setting procedure

Change your password for the VDR. The password must be a 6-digit combined number consisting of numbers 1 ~ 8.

(**System Setup in Main Menu → System Password**)

2.4 Network setting

There are three types of network setting for the VDR: STATIC, DHCP, or PPPoE. Please set the network type. (**Network Setup in Main Menu**)

2.5 Recording

Select recording related parameters in the Record Setup in the main menu.

2.5.1 Recording types

Enter in Recording setup of menu. For resolution, select either 720*480, 720*240, 360*240 (NTSC) or 720*576, 720*288, 360*288 (PAL). Audio channel is synchronized with the selected video signal. Select Audio recording and Video input quality (Enhance/ Normal/ Fine/ Super fine), Frame rate (480 fps(NTSC) / 400 fps (PAL)), and recording mode. 8 or 16 channels can be selected at the same time.

2.5.2 Recording modes

Recording mode are made up of MANUAL, CONTINUOUS, MOTION, SENSOR, MOTION+SENSOR, SCHEDULE and CONTINUOUS+EVENT mode. A red record light (●) on the top LEFT corner of each channel will indicate VDR recording.

In the MANUAL mode, the VDR starts to record on/off whenever the RECORD button is pressed. Refer to the article 3.2.6 for details of Record mode.

2.6 Playback

2.6.1 Press the Play button

When you push "Play" button, playback will begun according to channel, playback beginning point and audio of playback setting mode.

2.6.2 Audio Play

You will hear audio when video files containing audio is selected for playback.

2.7 Search

2.7.1 Search mode

The VDR has 3 types of search modes:

- Search by Calendar: For user's convenience, we provide calendar type search mode.
- Search by Event: Search the recording file according to sensor, motion, schedule.
- Still Image Search: Displays recorded still images.

2.7.2 Search method

- Calendar Search

  When you press Search, select from three options listed:

  Among these three options, select calendar mode.(Click "OK" button)

  Then "Year, Month, Date" will be shown on the screen , when you click each one, hour and minute column will be shown accordingly. Then you can view all selected recorded file at the same time.

- Event Search

When you press Search, select Event Search from three options listed. Select Date and Time and Channel and you can find recording file list. Please click" OK" button to playback.

2.8 Backup

The VDR has various types of backup methods:

2.8.1 DVD-COMBO / DVD-RW

- After inserting of CD or DVD disk into DVD-COMBO/DVD-RW driver, push Menu button & go to Backup menu, and back up the moving picture of HDD by CD or DVD disk for the selected time.
- In the backup menu, select backup time → start backup, and backup for capacity of CD or DVD disk
- The backed-up CD or DVD disk can be play-backed by our own provided Uniplayer or Simple Player S/W program.

2.8.2 USB flash memory Stick

- User can backup manually from internal HDD to USB memory stick by connecting one to USB port equipped at rear side of VDR
- Connect USB Memory Stick into USB port → Input the start of backup date and time at backup menu → Input the end of backup date and time at backup menu → Select the channel → Select event condition.
- Video data & still image are available in the USB back up.
- Our own Simple Player included during back up, it is easy to playback at other P.C
- User can replay backup files at proprietary UniPlayer client program.

2.8.3 Network

- from the remote site it will be backed up to user's P.C

2.9 Client Program

2.9.1 RAMS_RT (Remote Access & Monitoring System Real Time)

- Remotely access, monitor, and operate the VDR for real-time live viewing, playback, backup,

on-the-fly recording, and control over the LAN/WAN

- Upgrade the S/W(Kernel, Ramdisk) of VDR
- Install the RAMS program as referred to in section 4.2 of Operation Manual.
- Execute RAMS program and register selected VDR's IP address & Port number from the VDR list by clicking following button .
- After selecting the target VDR, enter "**admin**" for ID and **"111111"** for default password. This will enable you to access the VDR.

2.9.2 UniPlayer_RT

- A viewer program with functions for recording, capturing, & backing up files.

2.9.3 MultiViewer_RT

- This program allows to monitor multiple VDRs.

2.9.4 Quick Installer_RT

- To setup configuration template for quick & easy, multiple unit setup using RS-232 or network
- To upload/download VDR menu setting from/to VDR as file form using pc.

2.9.5 Unimap

- Indicate camera location in the Map image, showing and monitoring of VDR's status in real time.

2.9.6 Mobileviewer_RT

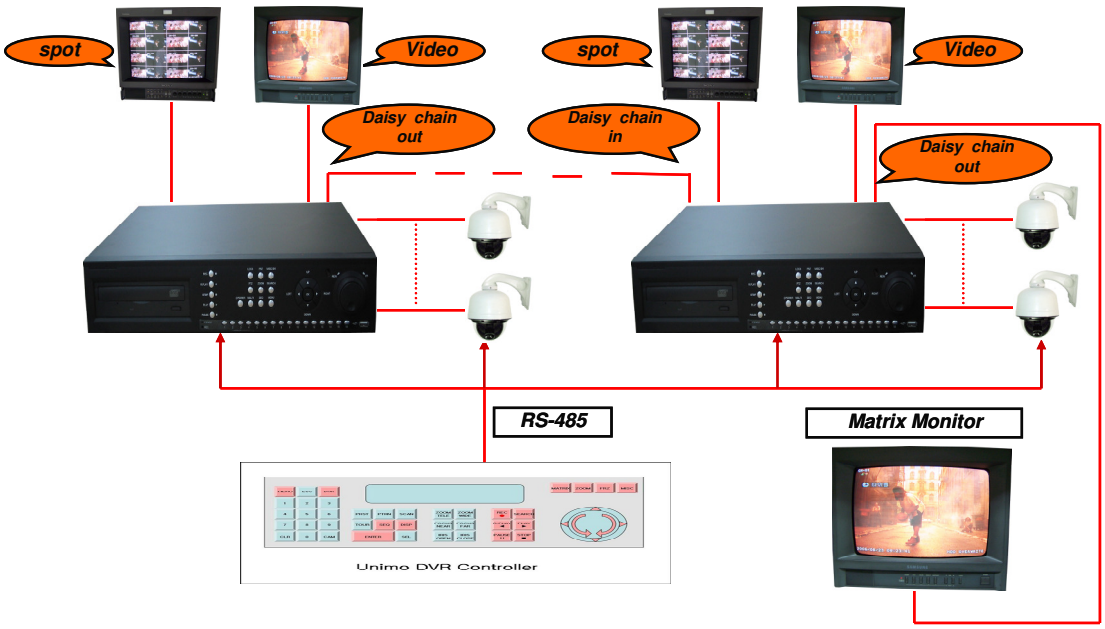
- Monitor VDR's status in real time, using mobile devices, such as PDA and Smart phone.

2.10 Matrix Function

It supports matrix function for convenient operation of multiple VDRs.

Connect multiple VDR with optional cable and connect PTZ controller as below picture.

If user connect monitor with Daisy chain's Video output port of the last VDR, then it is available to view all the screen of camera and VDR through the monitor, including operating of the camera and VDR by controller.



3 Main Menu screen.

Figure. 3-1 Main Setup screen

3.1 Camera Setup menu

Figure. 3-2 Camera setup screen

3.1.1 Channel

An user can select targeted camera. After setting this, live viewing picture will be changed to selected channel automatically.

3.1.2 Camera Name

Figure. 3-3 Camera name edit screen

User can edit camera name indicated button part of each channel. as explained paragraph 3.1.1. According to above picture 3-3, after keyboard type's window which is enterable or editable as displayed, user can set channel name with entering new letters and it is available 12 letters at maximum. Selected name at this paragraph will be displayed at the left side of top portion on window.

"CAPS" button: user can shift a letter to capital one and/or inversion.

"◀—" button: user can delete miss-entered characters .

"OK" button: entered name will be applied after that and revert to previous menu.

"Cancel" button, entered name will be discharged and maintain the present name & reverted to prior menu.

Key	Explanation
Direction Key	Move the button
OK	Click selected button
0~9 Figures	Input Figures
SEQ	'.' Input
MULTI	Capital letter & Small letter(CAPS)
PLAY(▶)	Input Space
R.PLAY(◀)	Input back space
MENU	Move to "OK" Button

Meaning of Key

3.1.3 Camera hide

User can make the live screen appear or not by channel with this function.

If user sets up "ON" in this function, the live screen of the selected channel does not appear.

In case of recording, the recording continues, although screen does not appear.

3.1.4 Picture Setting

Figure. 3-4 Picture setting screen

3.1.4.1 Contrast, Brightness, Hue,

Contrast, Brightness, Hue will be managed & each parameter has 16 level steps adjustable.

3.1.4.2 Default

Users can restore the factory default setting of Contrast, Brightness & Hue.

Confirmation box on picture setting default will appear after entering default. User can restore the factory default setting after entering 'YES' key button.

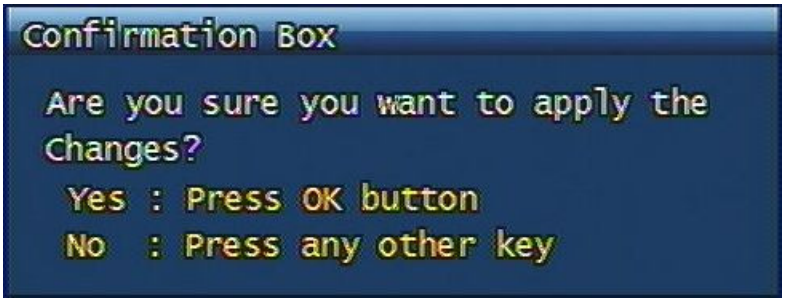


Figure. 3-5 Confirmation box on Picture Setting Default

3.1.5 PTZ setup

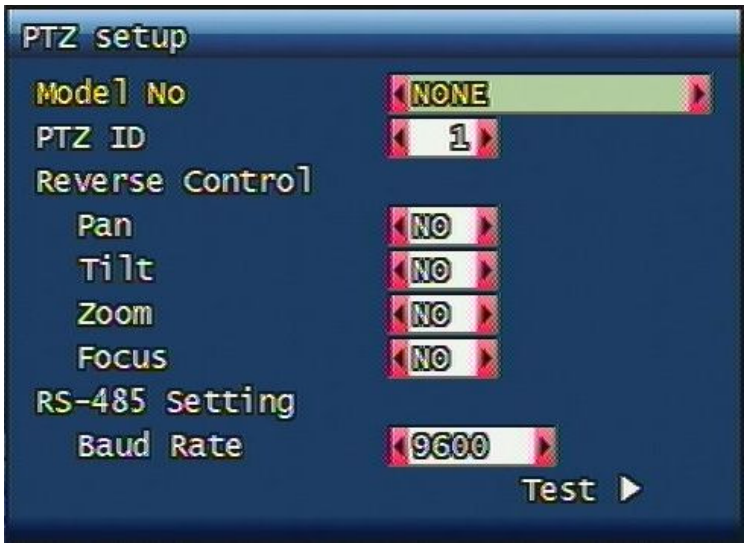


Figure. 3-6 PTZ setup screen

It sets PTZ protocol of targeted channel in the Camera Setup. (Please refer to paragraph 3.1.1 for channel selection)

3.1.5.1 Model No

Select the PTZ model or choose "NONE".

3.1.5.2 PTZ ID

Set the PTZ ID: 0 ~ 255

The PTZ ID must match the ID number that has been set by the PTZ Controller. Please verify the ID on the Controller first before setting the PTZ ID.

3.1.5.3 Reverse Control

Without any further changing of cable connection, user can control PTZ controller by changing reverse direction of PTZ. Each PAN, TILT, ZOOM, FOCUS will be selectable to reverse direction and each parameter will be selectable ON /OFF.

3.1.5.4 RS-485 Setting

Choose from the following to set PTZ RS-485 baud rate: 2400, 4800, 9600, 19200, 38400, 57600, 115200 bps.

3.1.5.5 TEST

Users can test the PTZ control after setting the parameters. After clicking the TEST button, PTZ control will be available and tested by up/down key. Pan/tilt and Zoom/Focus mode will be controlled after entering OK key button.

PTZ control speed will be controlled by PLAY button for higher speed or by R.PLAY button for precision control

Users can access prior menu with PTZ key entering after finishing test.

3.1.5.6 Additional PTZ Menus

Users can access additional PTZ menu after pressing Menu button in the PTZ mode.

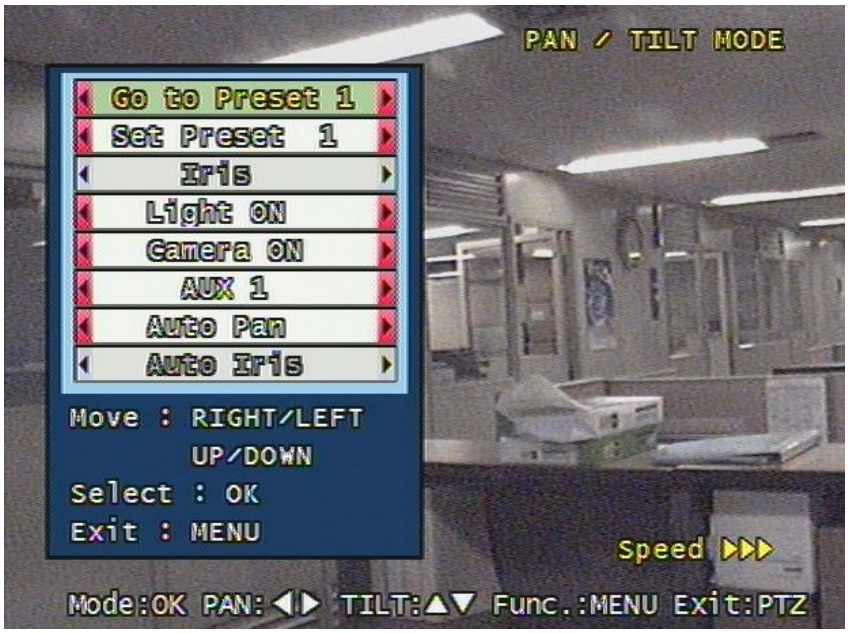


Figure. 3-7 Additional PTZ Menu

- Go to Preset : To move the Pan/Tilt drive to the position preset in Set Preset mode. Preset numbers are selected by Left/Right buttons and the Pan/Tilt drive moves to the preset position after pressing OK button.
- Set Preset : To preset the position of the Pan/Tilt drive. Users can preset 1-99 positions selected by Left/Right buttons and save the preset by pressing OK button.
- Iris : To open/close the camera Iris by Left/Right buttons.
- Light : To turn on/off the camera lighting selected by Left/Right and OK buttons.
- Camera : To turn on/off the camera itself selected by Left/Right and OK buttons.
- Aux : To turn on/off the AUX (six) connected to the camera. On/off are selected by Left/Right and OK buttons.
- Auto Pan : To automatically pan the camera. Pan speed is selected by Left/Right and OK button.
- Auto Iris : To automatically Iris the camera.

3.1.6 Spot

It is a spot monitor output channel and it designates specific channel user want to see.

Ref.1.4.2.

3.1.7 Sequence Time

It decides the viewing time of each channel during sequence mode at live mode.

2, 4, 5, 8, 10, 15, 30 sec are all selectable.

3.2 Record Setup menu

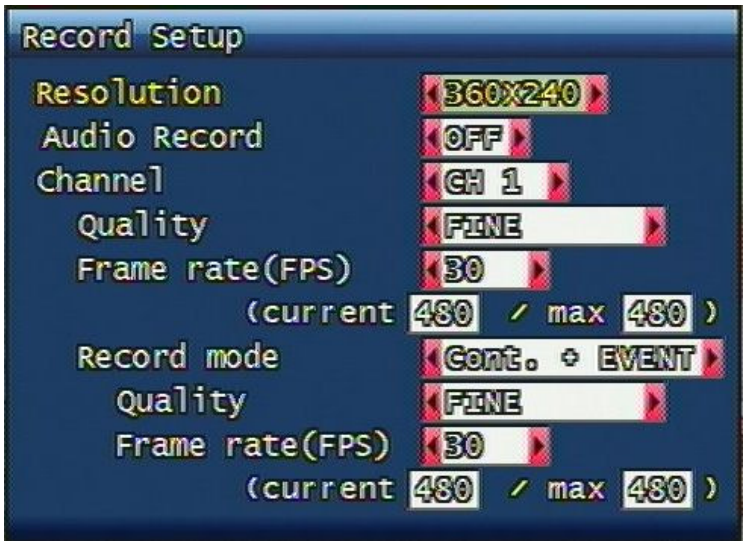


Figure. 3-8 Record setup screen

3.2.1 Resolution

Resolution for NTSC is “360 x 240”, “720 x 240”, “720 x 480”. PAL is “360 x 288”, “720 x 288”, “720 x 576” selectable and selected resolution will be applicable to all channels simultaneously.

3.2.2 Audio Sync

Select Audio recording. If you set this function OFF, the recording data do not include audio

3.2.3 Channel number

Quality, frame rate, record conditions will be selected per channel. So users can choose targeted channel. All means all of channels.

3.2.4 Quality

Recording quality of each channel will be selectable & Normal, Enhanced, Fine, Super Fine 4 steps are available now.

3.2.5 Frame rate

User select channel’s recording frame rate and none (no recording), 1, 2, 3, 4, 5, 6(7), 8(9), 10(13), 15(20), 30(25)fps [NTSC(PAL)] will be available. The total for all the cannels is max 480fps(400fps). But, with 720x240 (NTSC), 720x288 (PAL) resolution, user should not set to exceed 240(NTSC), 200(PAL) frame per second with accumulated total channel recording.

And, with 720x480 (NTSC), 720x576 (PAL) resolution, user should not set to exceed 120(NTSC), 100(PAL) frame per second with accumulated total channel recording

3.2.6 Record mode

User will choose recording mode channel by channel and selectable parameters and meaning are below.

- Manual: Manual recording function that starts record and/or stop recording manually by pushing REC key on remote controller or on front key.
- Continuous: Continuous recording mode that starts to recording automatically after turning on the systems.
- Motion: Start to record under motion detection. Under Motion, it starts pre-alarm recording around 2 or 3 second and maintains it until no of motion event. Post-alarm recording will be controlled at Post alarm recording time on Event Setup Menu. (Refer to paragraph 3.3.4)
- Sensor: Start to record under sensor input. As same as motion mode, it starts pre alarm recording around 2 or 3 second and maintain it until no of sensor input. Post-alarm recording will be controlled at Post alarm recording time on Event Setup Menu. (Refer to paragraph 3.3.4)
- Motion + Sensor: Start to recording under motion detection or Sensor occurrence. The detailed will be referred to previous motion detection & sensor occurrence.
- Schedule: This mode supply user defined time and date schedule recording in advance detailed recording schedule will be referred to paragraph 3.2.7 record schedule.
- Cont. + Event : User can set the recording frame rate and the image quality differently during Continuous condition and Event condition. This will give you the method to get the high recording frame rate and the high image quality when the event happened. And It is efficient using the hard disk space. The possible maximum frame rate is 480 fps (NTSC) / 400 fps (PAL).

3.2.7 Record Schedule Setup

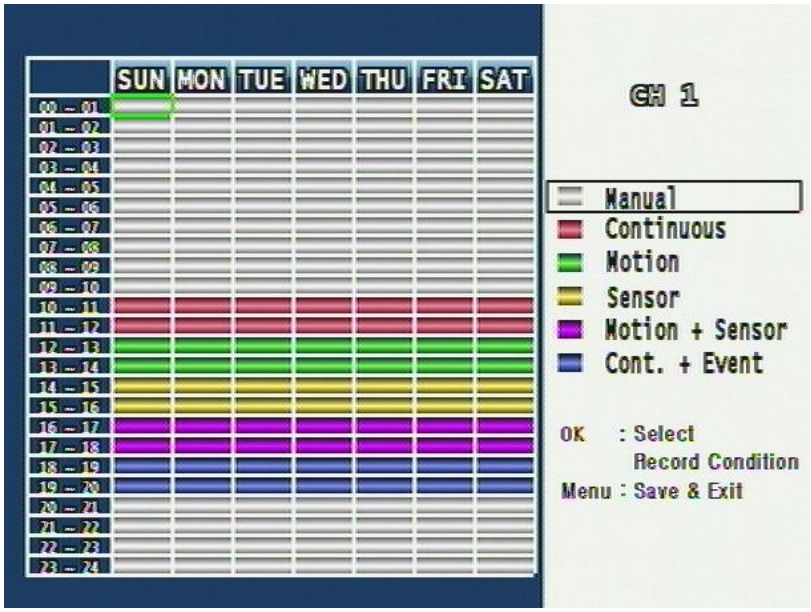


Figure. 3-9 Recording schedule setting screen

User can select to set recording schedule targeted date, time based week & 24Hours.

Move the cursor to the desired position of time by pressing up/down key and set the recording mode at the desired position of time by pressing the OK button with referring to the Help Message per Record Mode on the right position. After the setup, store the set schedule and exit to the top menu by pressing the Menu button.

3.3 Event Setup Menu

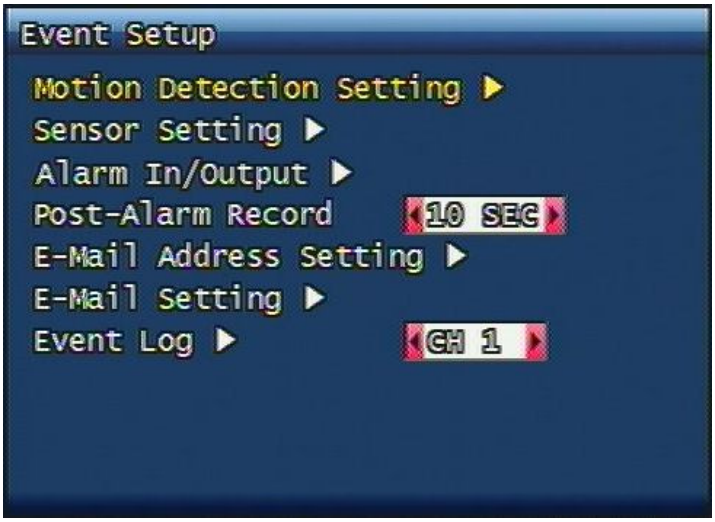


Figure. 3-10 Event Setup screen

3.3.1 Motion Detection Setting

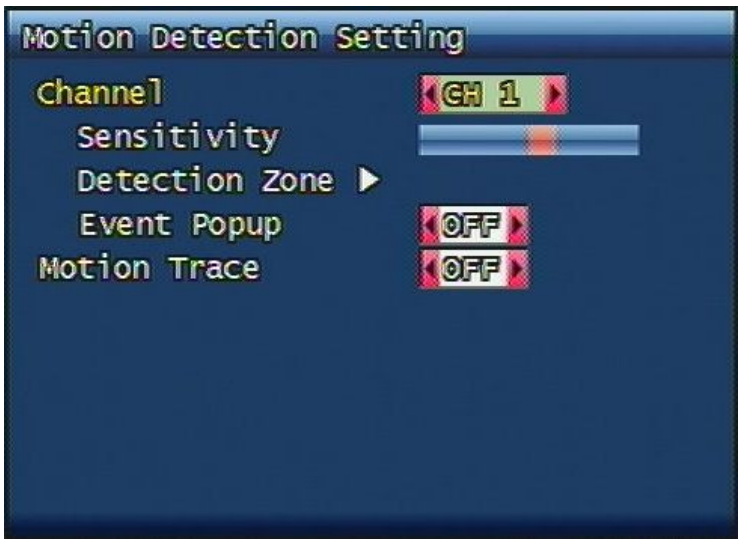


Figure. 3-11 Motion Detecting Setup screen

Sets up the motion detecting area and sensitivity.

3.3.1.1 Channel

Sets up the motion detecting area and sensitivity for each channel.

3.3.1.2 Sensitivity

Sets up the motion detecting sensitivity. The lower the sensitivity gets the closer to the left the red bar gets.

3.3.1.3 Detection Zone

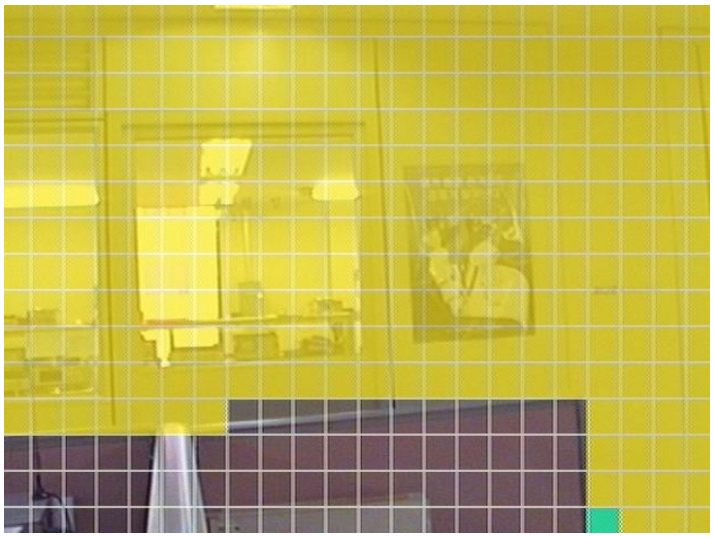


Figure. 3-12 Motion Detecting Area Setup screen

Selects the motion detecting area. The sky blue square implies the current cursor and the yellow square implies the area that was already selected as the motion detecting area.

When the cursor positions on the area that was selected as the motion detecting area, it turns green.

Full screen shall be as the motion detecting areas after entering “MULTI” button. The reverse key button is “SEQ” erasing motion detecting area.

3.3.1.4 Event pop up

It shows full screen, when the event is happened on the channel. When the events are happened on multi channels, then the full screen of 16 channel would be pop-up.

3.3.1.5 Motion trace

It shows the section of motion in the live screen.

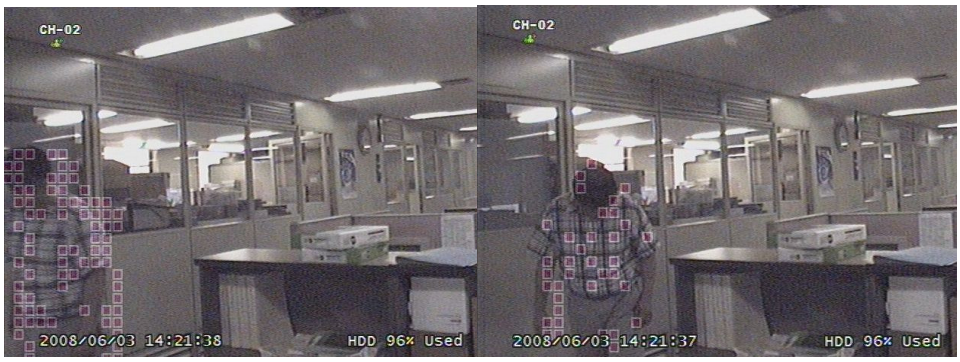


Figure. 3-13 Motion trans screen

3.3.2 Sensor Setting

Figure. 3-14 Sensor Setting screen

3.3.2.1 Sensor Type

N.O.: Normal Open. Operation mode for the installed sensor's contact point is usually open in normal condition and changed from open to close at sensor's detect event.

N.C.: Normal Close. Operation mode for the installed sensor's contact point is usually close in normal condition and changed from close to open at sensor's detect event.

3.3.2.2 Channel Link

Assign sensors to designated Camera Channels.

3.3.2.3 Event pop up

It shows full screen, when the event is happened on the channel. When the events are happened on multi channels, then the full screen of 16 channel would be pop-up.

3.3.3 Alarm input/ Output

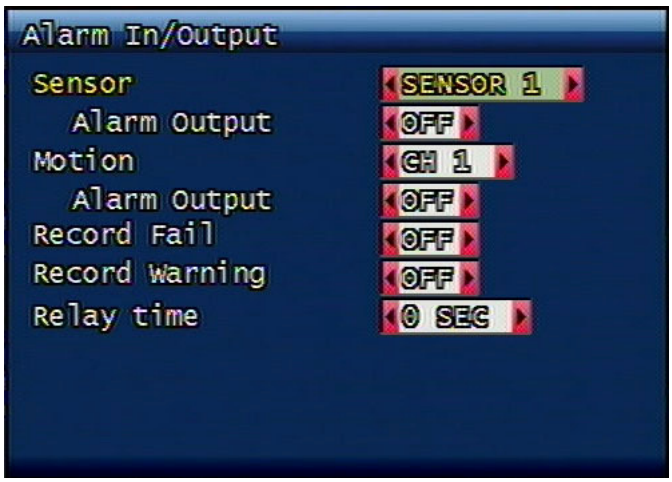


Figure. 3-15 Alarm Output Setting

3.3.3.1 Sensor

Configure the alarm out on/off activated by the sensor.

3.3.3.2 Motion

Configure the alarm out on/off triggered by the motion detection.

3.3.3.3 Record Fail

When it set-up at ON, Alarm output is able as following cases

- Not getting the compressed file from system
- Not recording in HDD
- Even it shows “REC” icon in the screen, but it is not recording in HDD in real.

3.3.3.4 Record Warning

When it set-up at ON, Alarm output is able as following cases

- No change on the capacity of used HDD’s size for a day i.e. It’s not recording for one day
- There might be potential problem on HDD, Recommend you to check HDD periodically and replace with a new HDD if it is needed.

3.3.3.5 Relay Time

Configure the alarm duration time. It can be set up from 0 second to 60 seconds in the unit of 5 seconds.

3.3.4 Post Alarm Record Time

Configure the recording continuation time after starting an event recording. It can be set up from 10 seconds to 60 seconds in the unit of 10 seconds.

3.3.5 E-Mail Address Setting

Transmits the content of an event log periodically through e-mail. Configure up to four e-mail address to transmit under event status simultaneously.

You can set up to 4 person's addresses and e-mails will be sent to all of these four at one time. The e-mail address can contain maximum of 31 characters, and the event logs transmitted through e-mail will be deleted in the DVR unit.

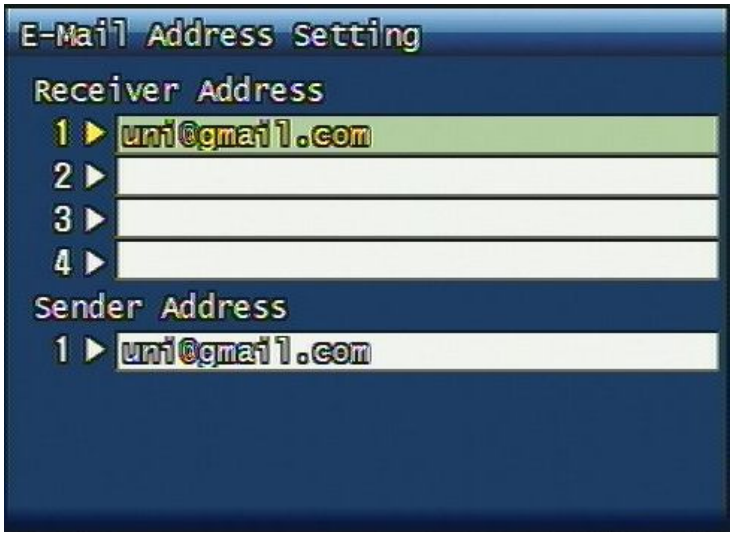


Figure. 3-16 E-Mail Address setting

3.3.6 E-Mail Setting

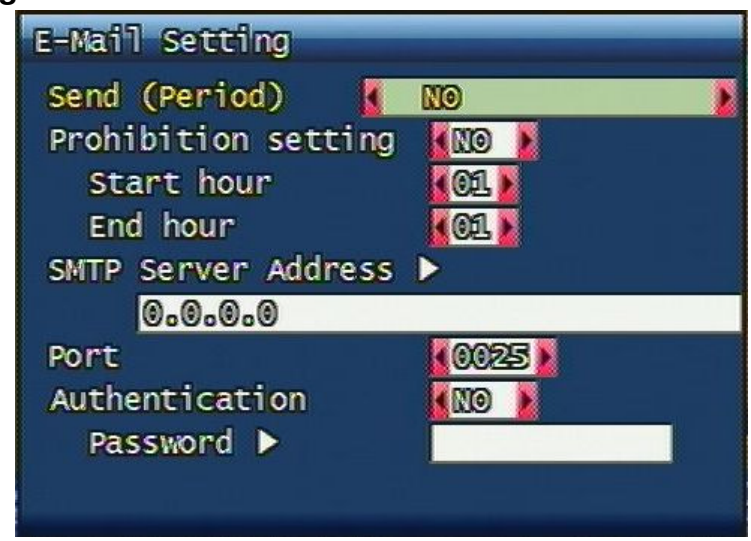


Figure. 3-17 E-Mail Setting

3.3.6.1 Send (Period)

Configure the e-mail transmitting cycle. It does not transmit when it is set to NO. The setting time can be set up at the units of within 2 minutes after event, 30minutes, 1, 2, 5, 12, 24 hours.

3.3.6.2 Prohibition setting

Set up prohibition time to transmit the e-mail. Users can enter prohibition time from the starting time and the ending time of transmitting the e-mail

3.3.6.3 SMTP Server IP address

If you click SMTP address , key board shaped will turn on the screen.

Put the suitable server address (ref.3.6.4.6(STATIC)& 3.6.6.4(PPPoE))

If you want Domain name instead of IP address under PPPoE, STATIC , a suitable DNS server address should be at the network setting menu.

If you do not know your SMTP server IP address then go to Command Prompt in Windows, then use ping and SMTP name address eg smtp.yahoo.com as below to get your SMTP IP address.

3.3.6.4 Authentication

Users can select authentication process dependent on SMTP server requirement.

Selects on/off for authentication process do authentication process whenever transmitting e-mail messages through SMTP server.

3.3.7 Event Log

Shows the event log of the selected channel. It can reset periodically by setting e-mail as described in paragraph 3.3.7.

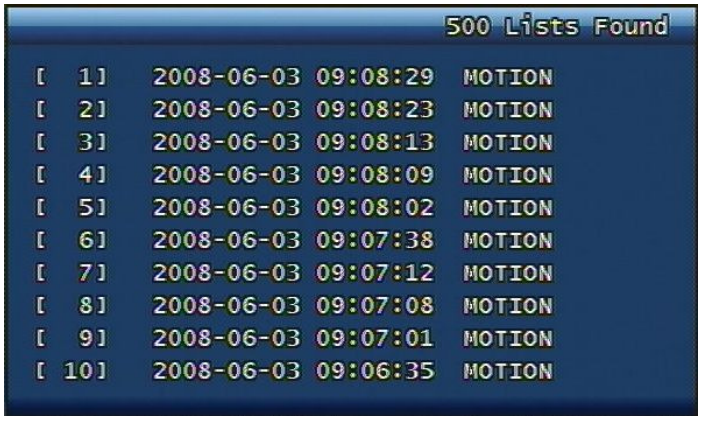


Figure. 3-18 Event Log Display screen

3.4 Playback Setup

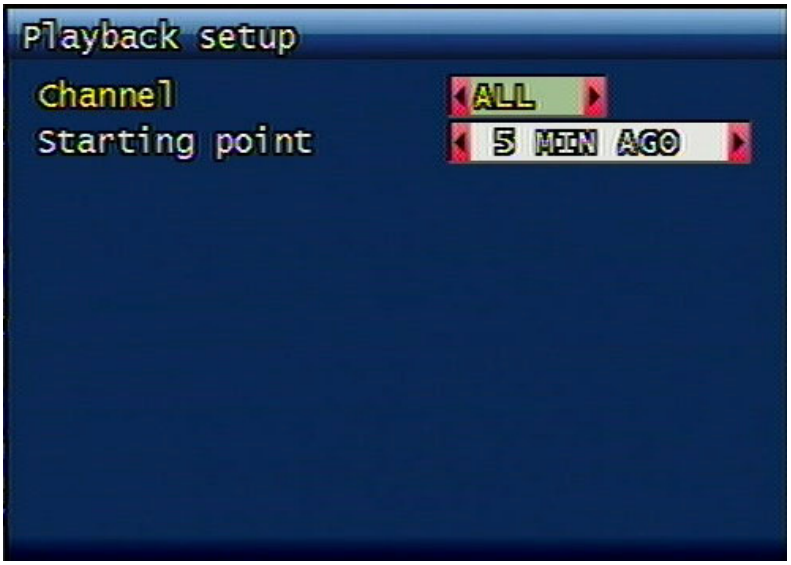


Figure. 3-19 Playback setup screen

3.4.1 Channel

Designate the channel to be viewed when the “PLAY” button is pressed.

3.4.2 Starting Point

This starting point configures the starting position when the “PLAY” button is pressed.

- FIRST: This can search for and replay the oldest recorded images from the selected channel.
- 5 Min/30Min/1HOUR/6HOUR/12HOUR/24HOUR AGO: This can search for and replay the previous recorded images from the selected channel.

3.5 Display Setup

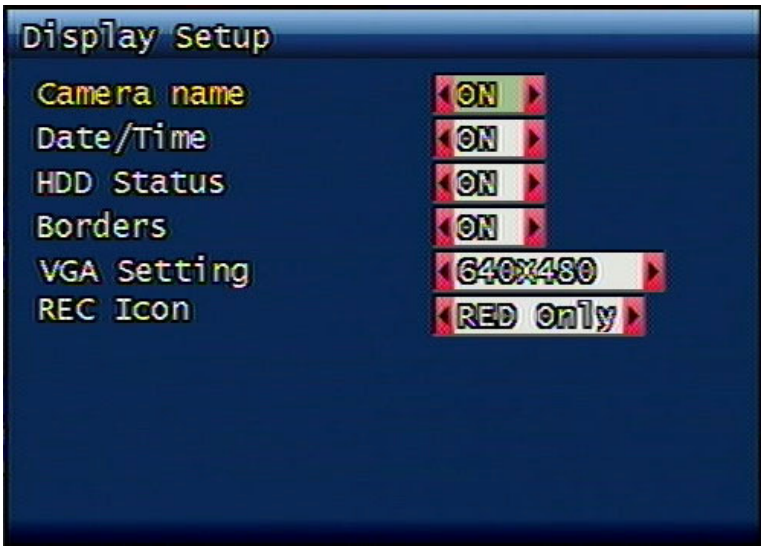


Figure. 3-20 Display setup screen

Determine whether to have the following be shown on the monitor: Camera name, Time/Date, HDD status, Borders. Select either ON/OFF for each item.

3.5.1 VGA Setting

Providing suitable VGA port which is suitable to user’s P.C

3.5.2 REC icon

When you set R/G/Y, it shows only red color for manual or continuous recording , it shows green color for motion recording and it shows yellow color for sensor recording.

3.6 Network Setup Menu

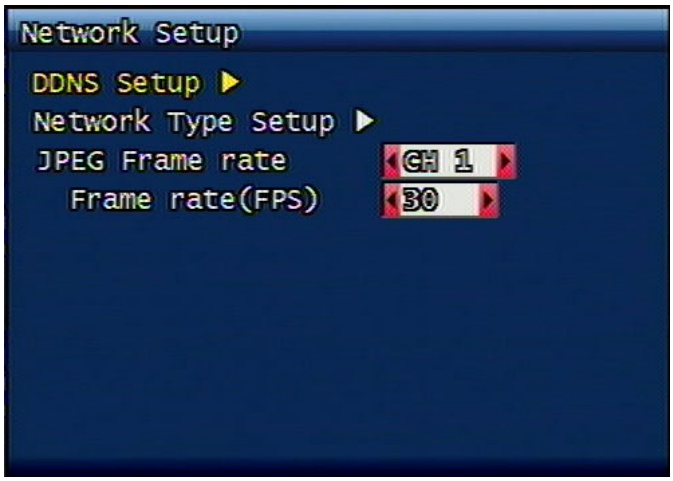


Figure. 3-21 Network Setup screen

3.6.1 DDNS setting

Set up DDNS (Dynamic Domain Name System) server address & port number.

Users can set up two DDNS server address and port, for the faster setting jog shuttle can be used, too.

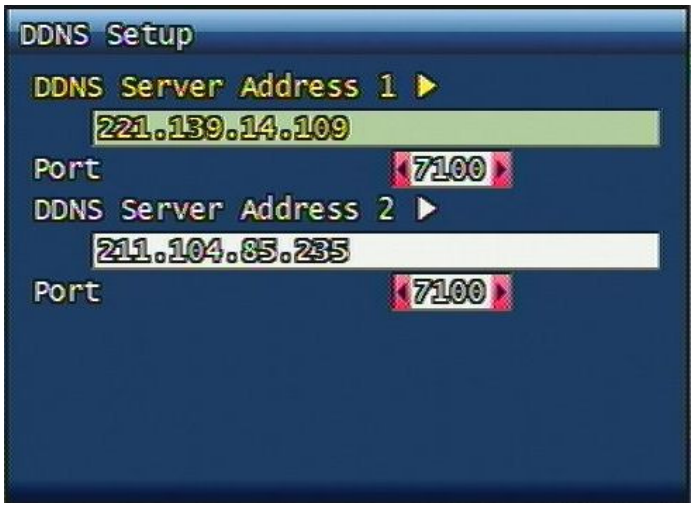


Figure. 3-22 DDNS setup screen

Under DHCP or PPPoE configuration using IP Router, the DVR will receive an IP address periodically, and each time, the IP address can be different. Therefore, in order for users to access the DVR over the network, it must update its IP address to the DDNS Server.

Under IP router configuration, IP of DVR must be setup as static IP address and it must

update its IP address to the DDNS server. Therefore DDNS Link on NETWORK SETUP menu should be on. (When IP router is connected from static IP, it is no necessary to setup DDNS link on)

By indicating the address of a DDNS Server, the DVR will update its IP address and its MAC address periodically. Therefore, when users access the DVR over the network, the same URL can be used. For example, if the DVR has a MAC address of “00:09:F8:12:34:56” and the domain name of the DDNS server is “ns.udrdns.net ”, the users can access the DVR with the URL “u123456.udrdns.net” The DDNS will know which machine to resolve the URL because it would contain an updated IP address and MAC address list.

The factory default value of the DDNS server address from UNIMO Technology Co, Ltd. is as follows:

- DDNS address 1 : 221.139.14.109
- DDNS address 2 : 211.104.85.235
- DDNS connection port: 7100

If users wish to operate the DDNS server by themselves, please contact us.

3.6.2 Network Type

Choose one type from the following: STATIC, DHCP, & PPPoE.

Static mode uses fixed assigned IP address in the network.

DHCP (Dynamic Host Configuration Protocol) receives an IP address from the DHCP Server, and it may change according to the lease period.

PPPoE (PPP over Ethernet) mode is used for network using PSTN such as ADSL.

Please refer to paragraph 3.6.3.1, 3.6.3.2, 3.6.3.3 for detailed network type setup process

3.6.3 STATIC

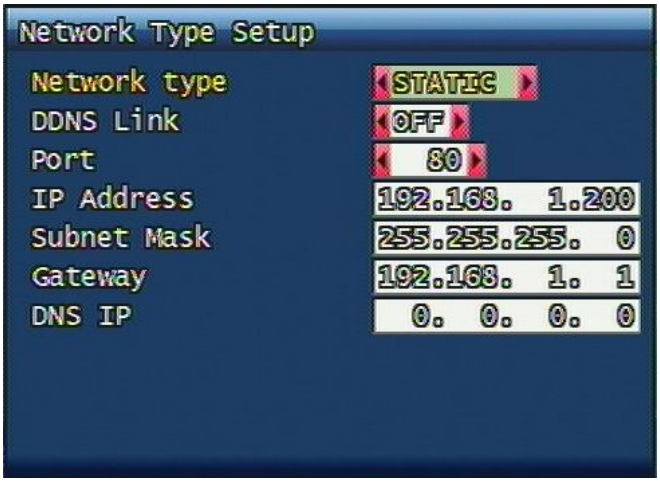


Figure. 3-23 STATIC Network setting

3.6.3.1 DDNS Link On/off

You can decide if you want to use Dynamic DNS or not under static network type with on/off button.

3.6.3.2 Port

Configure the Port number to be used to connect to the DVR system using RAMS (Remote Access & Monitoring System). The default Port number is port 80. Change easily by using Jog/shuttle equipped in front panel.

3.6.3.3 IP Address

Assign a fixed IP address to the DVR. Change easily by using Jog/shuttle equipped in front panel.

3.6.3.4 Subnet Mask

Assign the Subnet Mask. Change easily by using Jog/shuttle equipped in front panel.

3.6.3.5 Gateway

Assign the Gateway address

Change easily by using Jog/shuttle equipped in front panel.

3.6.4 DHCP

Figure. 3-24 DHCP setup screen

3.6.4.1 Port

Please refer to paragraph 3.6.4.2 for Port setting of STATIC.

3.6.5 PPPoE

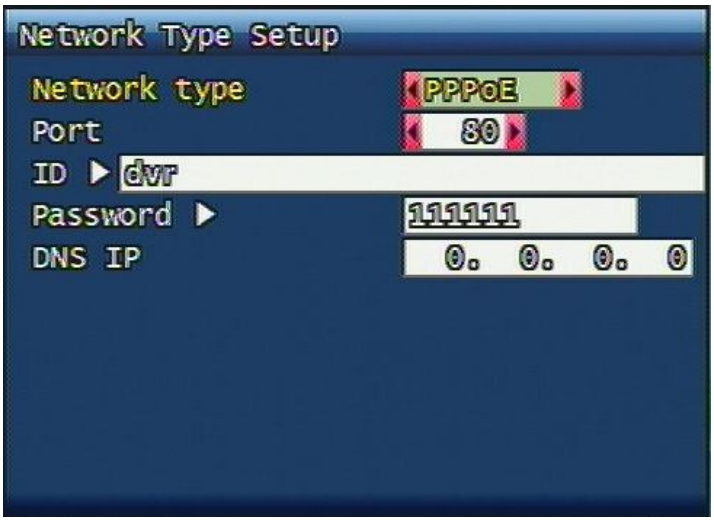


Figure. 3-25 PPPoE setting

3.6.5.1 Port

Please refer to the port setting in paragraph 3.6.4.2

3.6.5.2 ID

Type in your user ID for the ADSL account (PPPoE).

The password can contain maximum of 31 characters.

Figure. 3-26 ID input screen

3.6.5.3 Password

Type in your user Password for the ADSL account (PPPoE),

The password can contain maximum of 12 characters.

Figure. 3-27 Password input screen

3.6.5.4 DNS IP

Setting DNS address of DVR currently used. You can use jog shuttle or number button at front panel.

3.6.6 Changing the Network configuration

If users want to change network type of DVR, users must reboot the system. User can restart the new network mode setting after entering “YES” key button.

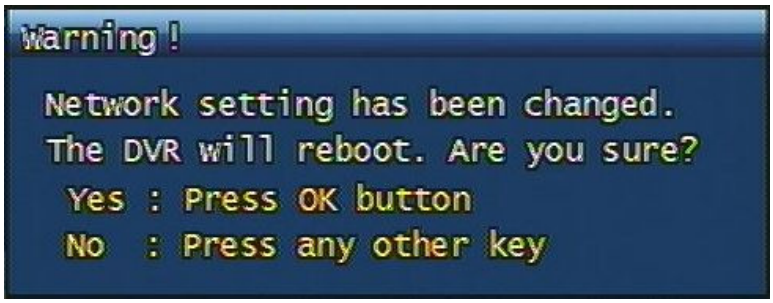


Figure. 3-28 Changing the Network setting screen

3.6.7 JPEG Frame rate

It shows maximum FPS of JPEG image of each channel for network transfer. Actual FPS of JPEG image for network transfer is limited by more lower FPS, set up in the recording setup menu and in this JPEG frame rate menu.

3.7 System Setup screen

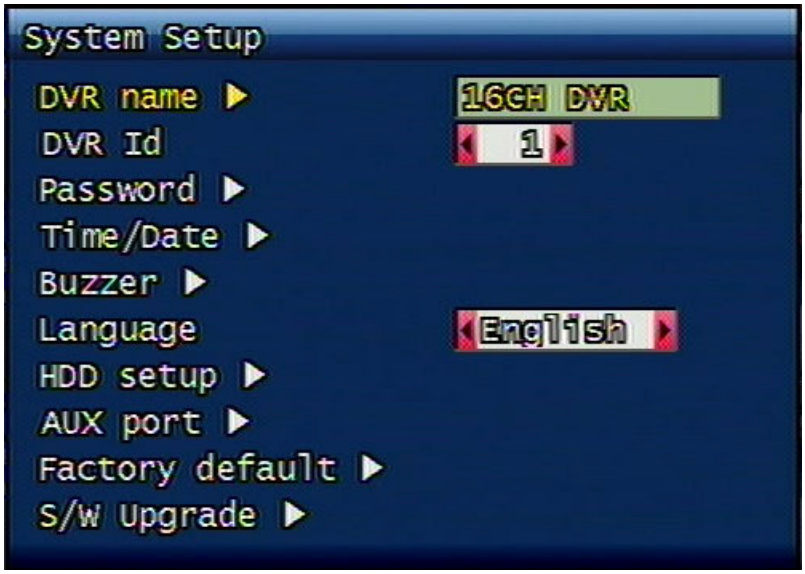


Figure. 3-29 System Setup screen

3.7.1 DVR Name

Type in the name of the DVR you wish to assign. The name can contain maximum of 12 digits.

Figure. 3-30 DVR name screen

Name the DVR : type in the DVR name. Up to 12Ccharacters.
Click “OK” when finished.

3.7.2 DVR ID

Set up DVR ID.

User is able to use only one DVR unit of multiple DVR units, when user control DVR by remote controller. Also this is utilized to control keyboard for Matrix function for separating of DVR units.

3.7.3 Password

Figure. 3-31 System password set up

3.7.3.1 User account

Set different authorization for operating of system and network by users.

Able to select ADMIN and USER1~5 with user account.

3.7.3.1.1 ADMIN

ADMIN is able to change on password and authorization for other users.

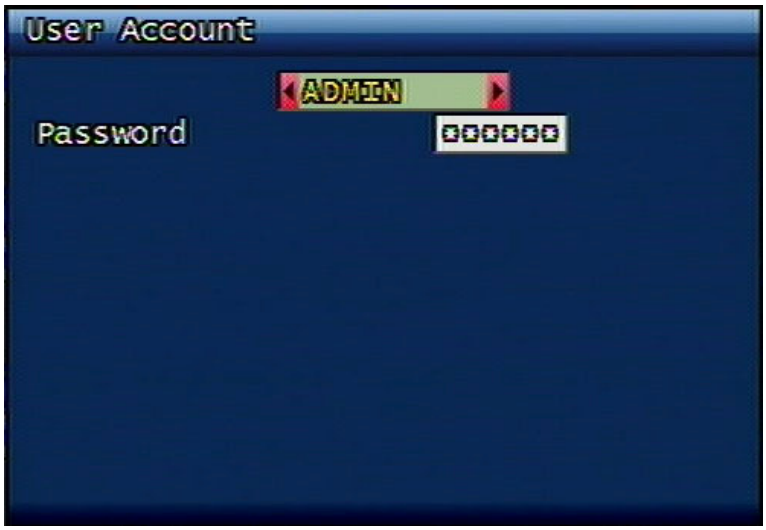


Figure. 3-32 User Account setup

- Password Setting

To change ADMIN password: The default password of ADMIN is 111111.

First, type-in the current password, confirm. Then if it is correct, type-in the new password twice. If they match, the password has been changed.

Users can use any numeric number from 1~8, combined 6 units.

Password input screen (present, new, confirm, if it is wrong -twice, confirm to change)

Figure. 3-33 Password input screen

3.7.3.1.2 USER1~5

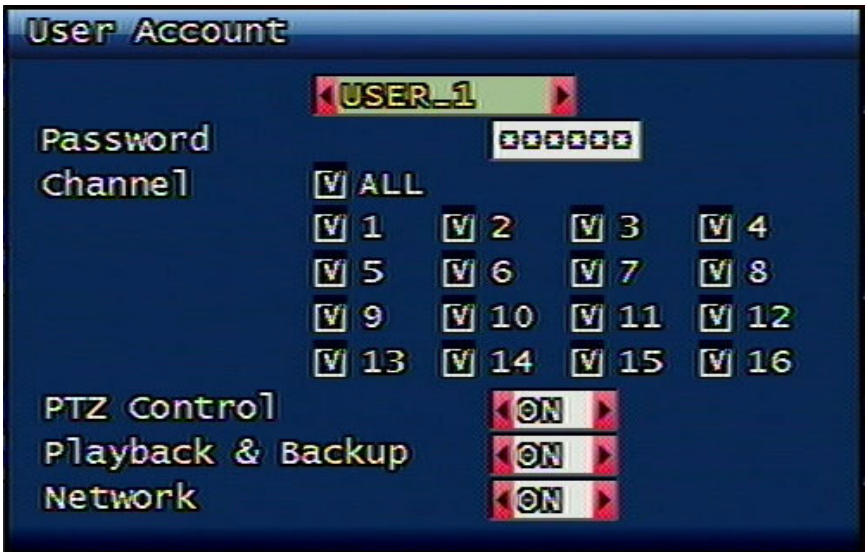


Figure. 3-34 User authorization set up

Set up authorization for USER_1~USER_5

- Password Input

  Change password for each user. The default password for USER 1~5 is 111111.

- Channel

  Setup the channels, able to be accessed from System and Network.

- PTZ control

  Select, if allow to control PTZ for the channels, able to be accessed from System and Network.

- Playback and Backup

  Select, if allow to backup for the channels, able to be accessed from System and Network.

- Network

  Select, if allow to be accessed from Network

3.7.3.2 Auto Key Lock

Possible Setting time is every 30sec, 1 min, 3min, 5min, 10 minutes. If users choose setting time among them, auto key lock function will start exactly after the setting time and lock key type icon will be displayed at the bottom of window. Users can access system operation after

release from key lock state by entering right current password..

3.7.4 Time / Date

Users can configure the view of time & date on the system, as well as, Day Light Saving Time.

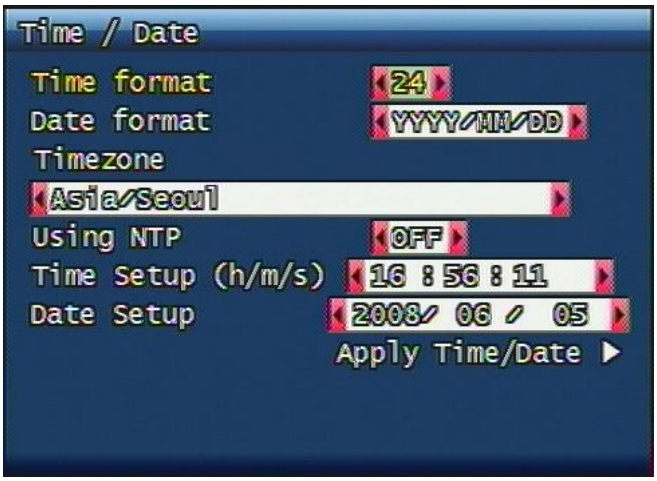


Figure. 3-35 Set up Time/Date

3.7.4.1 Set up Time / Date

Set up date and time on the system

3.7.4.2 Time / Date Format

Set up format for date and time. There are two types of time: 24hr circle/ 12hr circle. Date format can be set up as the following: YYYY/MM/DD, MM/DD/YYYY, DD/MM/YYYY.

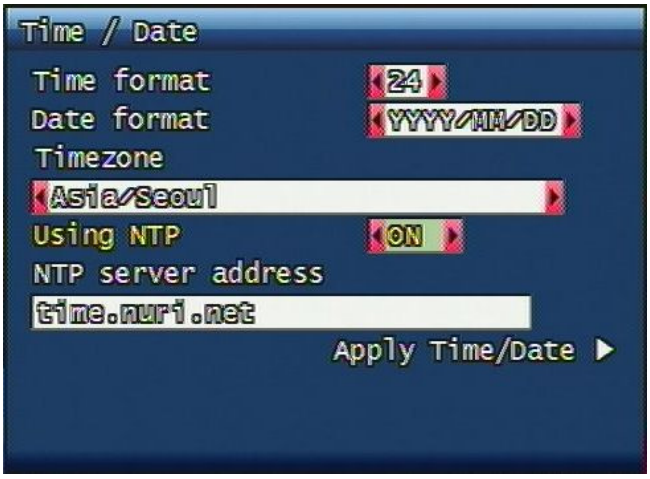


Figure. 3-36 NTP Usage

3.7.4.3 NTP usage

Set up same time, which is set up in the time server on DVR.

The summer time would be applied automatically for the countries, where the summer time is applied.

3.7.4.4 NTP server address

Input the server address, which would synchronize the time on DVR. Default address is time.nuri.net.

3.7.4.5 Apply date and Time

Set up time on DVR. If you do not press " Apply date/Time", the NTP setting would be not saved.

3.7.5 Buzzer

Users can turn the buzzer ON/OFF depending on the situations. Usable situation is Sensor, Motion, & Video Loss, Record fail, and Record Warning. When users activate the buzzer, buzzer will make a sound when there any event occurs. There would be no sound if the buzzer is turned Off.

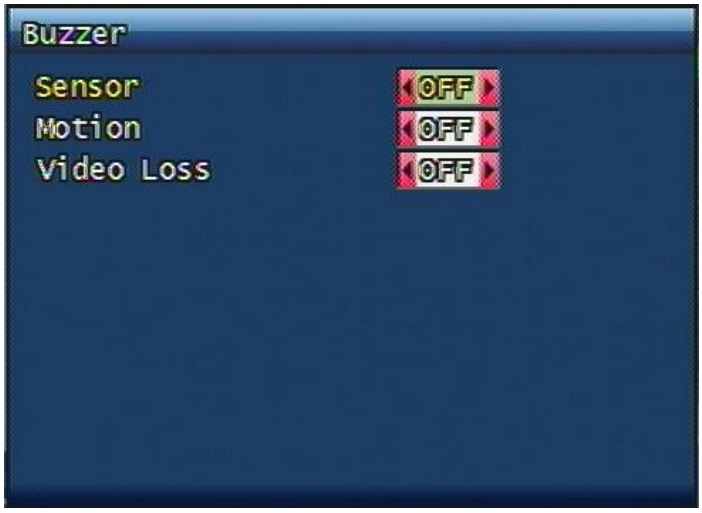


Figure. 3-37 Set up buzzer

3.7.6 Language

Twelve Languages (English, Korean, Japanese, Spanish, French, Germany, Italian, Polish, Russian, Slovakian, Turkish, Czech) are available.

3.7.7 HDD Setup

Set up for Internal HDD and Removable HDD, See the information.

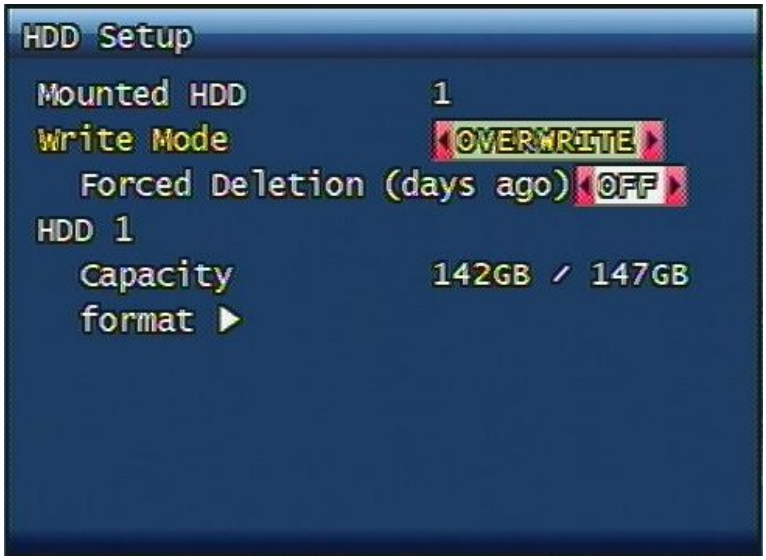


Figure. 3-38 HDD Setup image

3.7.7.1 The number of HDD

Show the HDD quantity that is built –in.

3.7.7.2 Write Mode

Set up writing type in recording.

Types are ‘Once’ and ’Overwrite’. If set up by ‘Once’, HDD can record until the Full state.

If set by ‘Overwrite’, HDD will record continuously by start overwrite oldest data.

3.7.7.3 Forced Deletion(Previous few days)

The images recorded earlier than specific date can be erased by force.

The number of dates for erasure can be selected from 1 ~ 100.

In case that “OFF” is setup, the recorded images shall not be erased,.

In case that “30” is setup, the images recorded 30 days earlier than today shall be erased.

3.7.7.4 Hard Disk

3.7.7.4.1 Capacity

Indicate the used part and total capacity of Internal HDD.

Used part of HDD (GB) / Full capacity of HDD (GB)

3.7.7.4.2 Format

This is function for internal HDD formatting and you must reboot the system after this instruction. Confirmation box on format will appear after entering format key. User can format and erase all information of HDD, after entering “YES” key button.

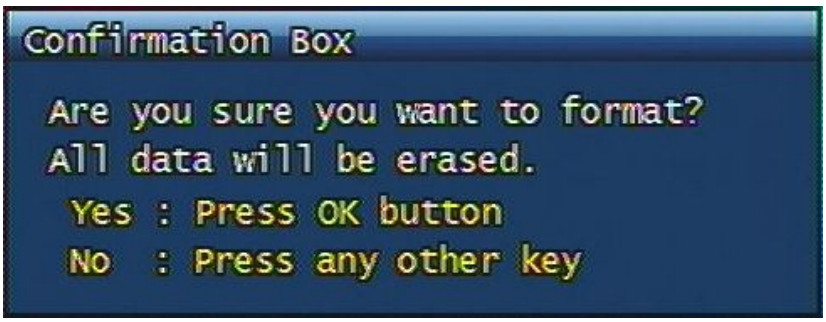


Figure. 3-39 Confirmation box for HDD format

Max 2 HDD can be installed. The added HDD works as a HDD, together with first HDD

3.7.8 Aux Port

Set up for Aux Port

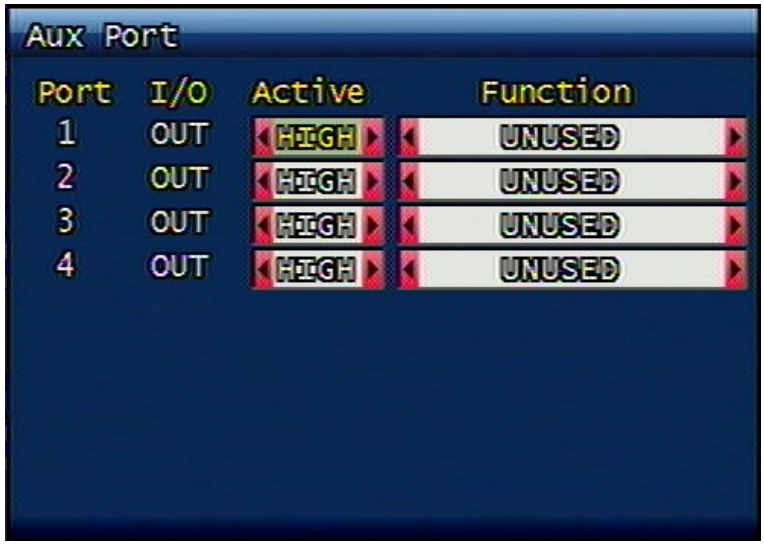


Figure. 3-40 Set up AUX port screen

3.7.8.1 Port & Direction

Available for AUX output port max 4.(1~4)

3.7.8.2 Active

Set up Active state. Low/High will be different depend on machine..

3.7.8.3 Function

The following list contains a brief description of each function.

- REC Fail: Notice, when it is not recording in HDD
- REC Warning : It is recording in HDD, but it notice, it might be happened REC Fail due to HDD in the future.
- DISK Full : It signal, when HDD capacity is more 90% full.
- RECORDS Status: It signal, if it is recording now
- ALARM CH-ALL : It signal, when there is happened a ALARM of all channels
- ALARM CH1~16 : It signal, when there is happened a ALARM of the channel.

3.7.9 Factory Default

All of set-up date of system comes back to Factory default.

Confirmation box on picture setting default will appear after entering default. User can restore the factory default setting after entering ‘YES’ key button.

Please refer to paragraph 5.3 for factory default.

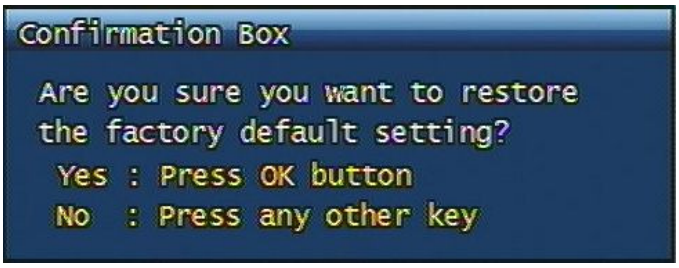


Figure. 3-41 Confirmation box for Factory Default

3.7.10 Software Upgrade

Users can upgrade the software of Ramdisk and Kernel using the USB flash drive (thumb drive) by the following steps.

- Get the latest version of software (Ramdisk/Kernel) from distributor
- Copy the downloaded files from the PC to the USB memory.
- Connect the USB memory to the USB port.
- Go to 'System Setup' then 'S/W Upgrade' then select Ramdisk or Kernel to upgrade.

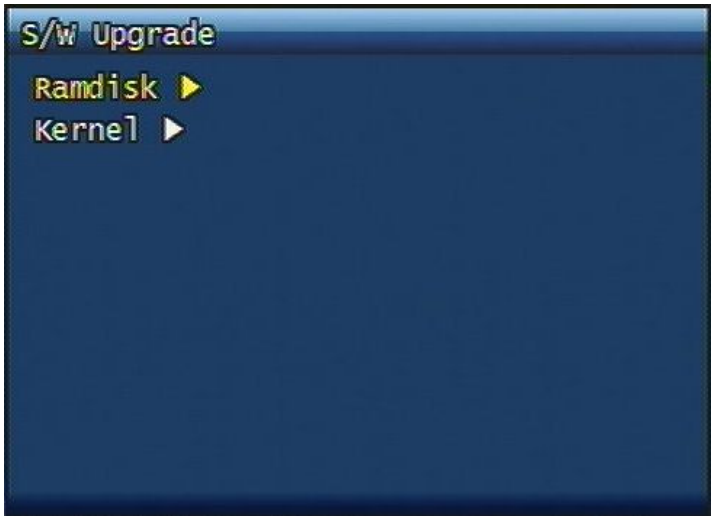


Figure. 3-42 Software Upgrade

- After the unit recognizes the USB flash drive and upgrading end, the unit will reboot.

Figure. 3-43 Ramdisk Upgrade

3.8 Backup

Backup recording data to CD-RW or USB Flash Drives

Figure. 3-44 Backup screen

3.8.1 Backup Device and Data Format

Set up the device for backup. USB/USB(AVI)/CD-RW/CD-RW(AVI) are available.

It is divided into USB/USB(AVI)/CD-RW/CD-RW(AVI), according to Backup data.

It is recorded in UMV(UNIMO MPEG Video) or AVI file, upon backup.

3.8.2 Start Time

Input the start of backup date and time.

3.8.3 End Time

Input the end of backup date and time.

3.8.4 Channel

Choose the channel to backup.

3.8.5 Event

Choose the event to backup. In case of none mode, selected files according to time will be backed-up.

3.8.6 Backup Start

Based on the input date, time, channel and event & other condition search the images will be backed-up to the chosen device. Back up progress rate is marked on the bottom right side of the screen.

3.8.7 Format

This menu is used only when backup device is CD-RW. In case that backup device is CD-RW, format command has to be done by this menu, before starting backup.

However, with CD-R media, backup can be started without format.

3.9 System Log

It is for displaying major system events.

The items that manage by Log are Video Loss, Power On, Power Off, Menu entry, HDD Full, failure of E-mail transmission

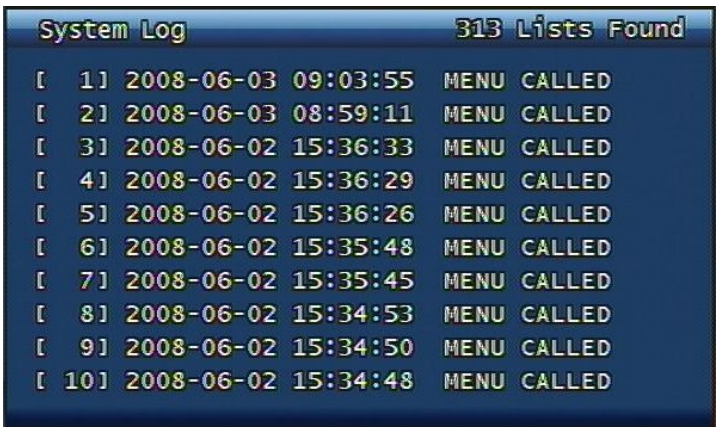


Figure. 3-45 System Log

3.10 System Information

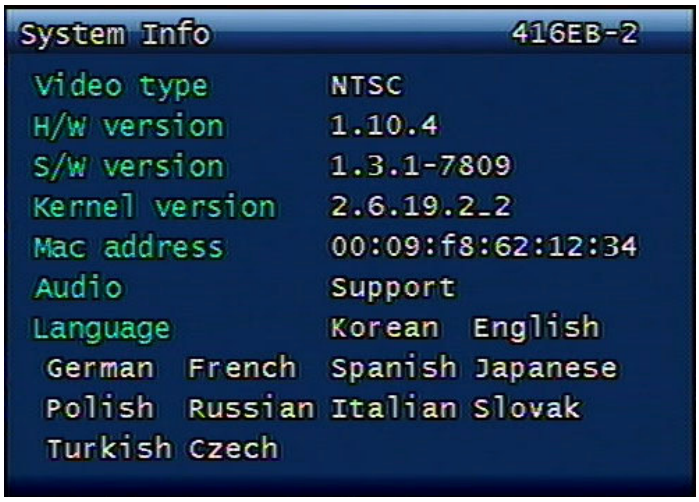


Figure. 3-46 System Information

3.10.1 Video type

It shows that present Video type of System is NTSC or PAL.

3.10.2 H/W version

It shows the H/W Version of system.

3.10.3 S/W version

It shows the S/W Version of system.

3.10.4 KERNEL version

It shows the S/W Version of KERNEL.

3.10.5 Mac Address

It shows Mac Address of system.

3.10.6 Audio

Shows audio part availability.

3.10.7 Language

Shows supporting language.

3.11 Search Menu

When you click ”SEARCH” button below screen will be shown on the screen.

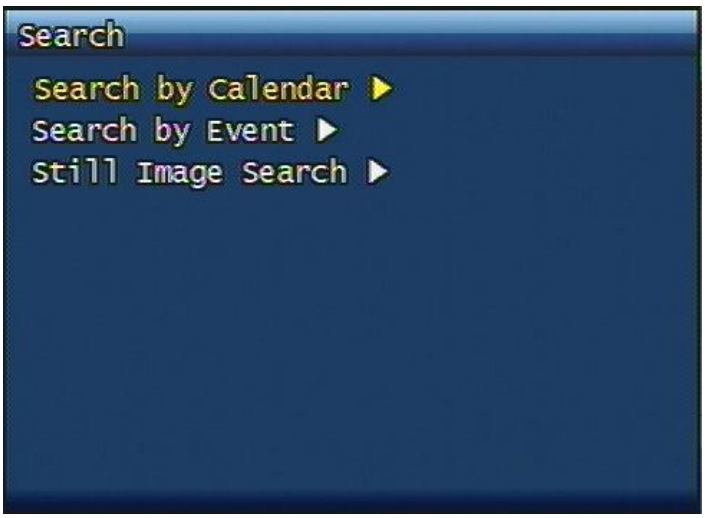


Figure. 3-47 Main Screen of Search

3.11.1 Search by Calendar

Figure. 3-48 Search by Calendar

3.11.1.1 Calendar View

When you click specific date, it will be showing recorded data as drawing.

3.11.1.2 Drawing Color

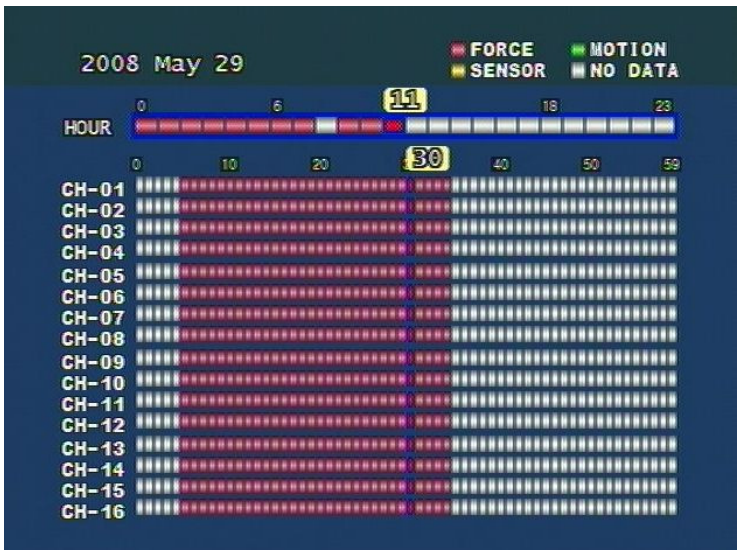


Figure. 3-49 Calendar Search Screen

- Red : Enforced Recording
- Green: Motion Event Recording
- Purple: Sensor Event Recording
- White : No Recording

3.11.1.3 Hour(Time)

It is composed of 24hours. Recording status can be distinguished by color. Even though Your recording mode is Motion plus Sensor mode, but if motion recording is bigger than Sensor, then the color will be green.

3.11.1.4 Display by minutes

- If there are some recording on a specific time and channel, it shows suitable color on a specific minute time zone.

3.11.2 Event search

It shows event occurring time.

Figure. 3-50 Event Search Image

3.11.2.1 Start time

Key in the time you would search from 1970 to 2037(No more or less than that)

3.11.2.2 Ending Time

Key in the time you would search from 1970 to no more 1970 to 2037.

3.11.2.3 Channel

Select the channel you want to look at.

3.11.2.4 Sample of Search

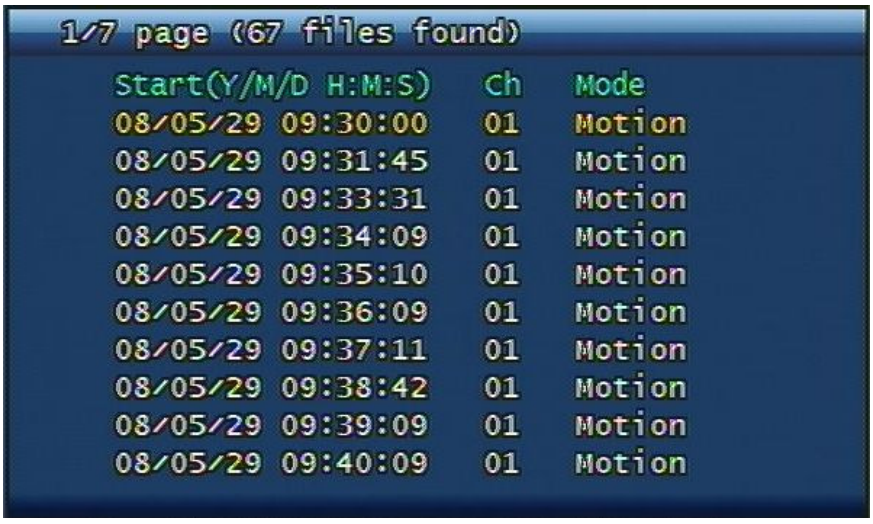


Figure. 3-51 Sample of Search Image

3.11.3 Still Image Search

You do not need to put any channel number, from the oldest data images will be shown . Up to 999 images can be recorded and saved. To save steel image, press ‘ PAUSE’ button on live screen of the channel.

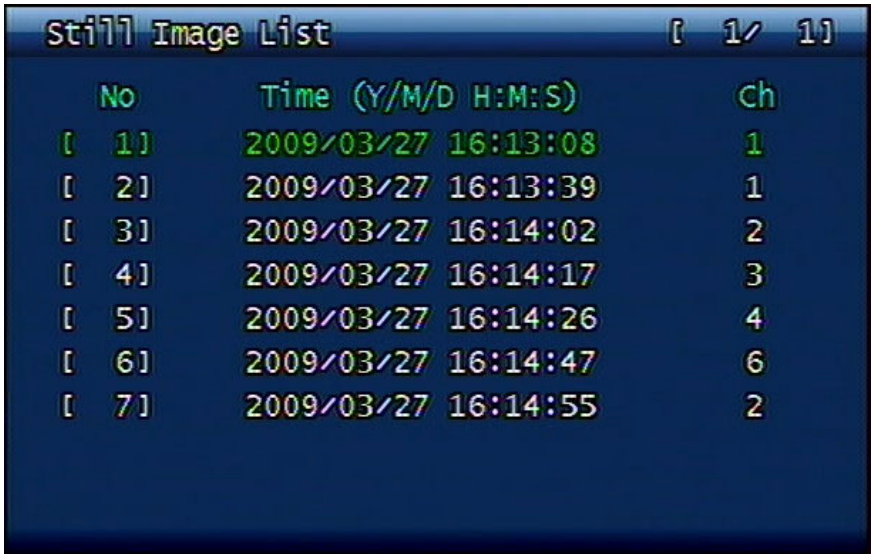


Figure. 3-52 Still Image search Screen

3.11.3.1 Still Image USB back up

Click the specific file and push “PLAY” button, still image will be copied.

3.11.3.3 Converting Still image file into JPG format.

- Execute SimplePlayer_RT.exe file.
- Open the file to change into jpg.
- Click the second disc button of Toolbar menu #2 and save it as jpg or bmp type.

3.12 PLAYBACK

3.12.1 PLAYBACK of recorded Images

This function means that the images recorded in the system are searched by Time or Played back directly.

3.12.1.1 Method of playback

Move the cursor on searched specific time zone and push “OK” button, then playback will be begun with audio if you record it together.

3.12.1.2 Screen of played back.

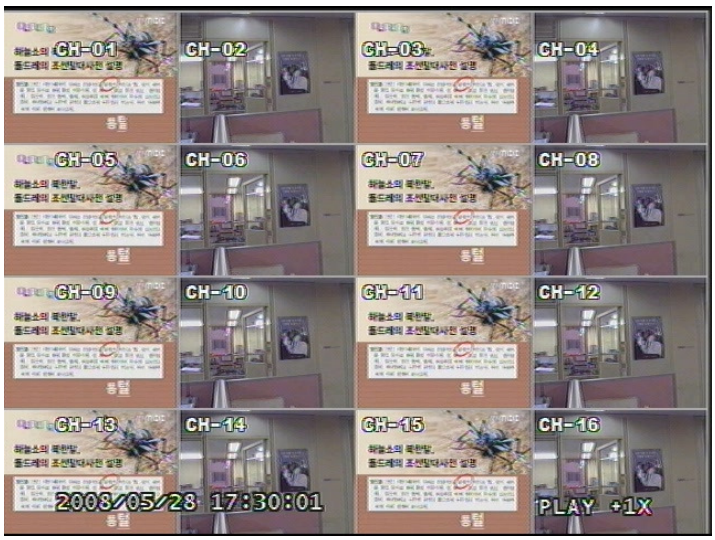


Figure. 3-53 Screen of playback

3.12.1.3 Control during playback

3.12.1.3.1 Stop of Play back

If user needs to stop playback, user should press button “STOP”

in the remote controller of in the system, and play back stops and live screen is coming back.

In case of calendar search, “SEARCH “ button let it turn to previous search screen.

3.12.1.3.2 Temporary Stop during Playback

In order to stop temporarily playback, press button “PAUSE”.

If users press the button “PAUSE” again, play back continues.

3.12.1.3.3 Speed level of Play back

There is 7 Speed levels for playback (Normal, Fast mode) in the forward and backward direction as well.

There is 2 speed levels for slow playback mode in the forward and backward.

If user needs faster speed of playback, users press button “RIGHT” and speed is controlled.

If user needs slower speed of playback, users press button “LEFT” and speed is controlled.

3.12.1.3.4 Change of Direction of Playback

There’s forward and Backward directions.

In order to change direction from Forward to Backward, user press the button “REVERSE PLAY” and backward playback starts with normal speed. On the contrary, to change direction from Backward to Forward, user press the button “PLAY” and Forward playback starts with normal speed.

3.12.1.3.5 Select of channel of Playback

This function is to change the other channels during the same time .You can use remote control to change the other channel. In case of channel # 1, You can put the channel # 1 button for about 3 seconds or push “OK” button.

3.12.1.3.6 Audio ON / OFF

In case of recorded image with Audio, user can on or off by using the button “AUDIO MUTE”. The Icon in the top of screen shows the status (ON / OFF) of AUDIO.

3.12.2 Playback of still image

3.12.2.1 Method of playback

As the paragraph 3.11.2, users put the curser to contents. In the searched still Image Lists, and press Button “OK”.

The screen of search list disappears and still image is played back as the paragraph 3.11.2.

3.12.2.2 Screen of playing back

Figure. 3-54 Still Image of playing back

3.12.2.3 Control during Still Image Play back

3.12.2.3.1 Stop of play back

To stop the playing back, User press button “STOP” or “ SEARCH”.

Playback stops and screen of search list appears.

3.12.2.3.2 Next screen

Press Button “RIGHT” and next screen is played back.

3.12.2.3.3 Previous screen

Press Button “LEFT” and previous screen is played back.

3.13 Mouse Menu

Once you click right mouse button after a mouse installs, you can call up the Mouse Menu as below.

Figure. 3-55 Mouse Menu Screen

3.13.1 DVR Menu

It operates the same as when you pushed MENU button of DVR.

3.13.2 Search

It operates the same as when you pushed SEARCH button of DVR.

3.13.3 Playback

It operates the same as when you pushed Play button of DVR. If you move mouse pointer to the downside middle, you can call up playback related Icon as below.

Figure 3-56 Playback related Icon

3.13.4 PTZ

It operates the same as when you pushed PTZ button of DVR.

3.13.5 DVR Lock

It operates the same as when you pushed LOCK button of DVR.

3.13.6 Channel Zoom

It operates the same as when you pushed ZOOM button of DVR.

3.13.7 Manual Recording

It operates the same as when you pushed REC button of DVR.

3.13.8 Network Information

It operates the same as when you pushed NET button of remote controller.

3.13.9 Hard Disk information

It operates the same as when you pushed HDD button of remote controller.

3.13.10 Power Off

It operates the same as when you pushed POWER button of DVR.

3.14 Miscellaneous Menu

Figure. 3-57 Miscellaneous Menu

This menu is to use the five functions that are placed only on the remote control but on the keypad of the unit

3.14.1 NET

Displays the current network IP and the user connected to the network.

(It substitutes the NET button on the remote control).

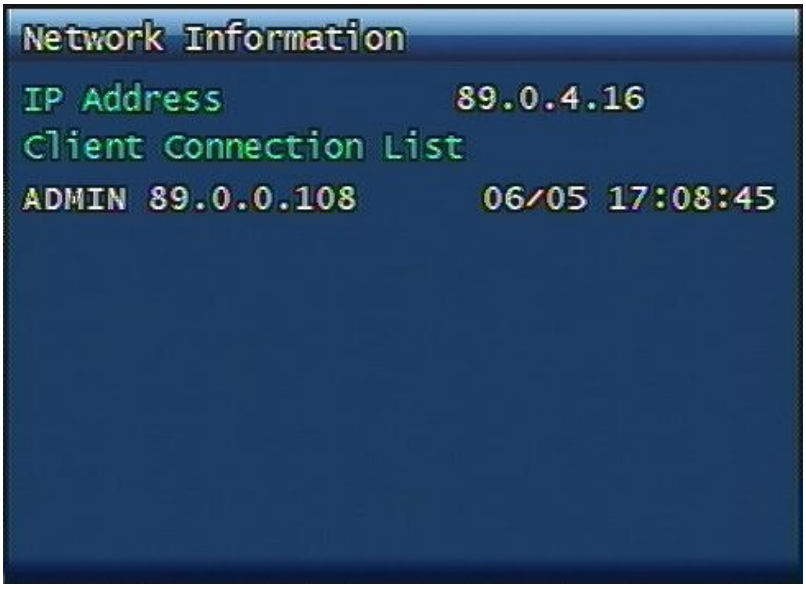


Figure. 3-58 Network Information

3.14.2 OSD

Turns on/off the OSD (On Screen Display). It substitutes the OSD button on the remote control.

3.14.3 Audio Mute

Turns on/off the audio. It substitutes button on the remote control.

3.14.4 HDD

Displays the HDD information. It substitutes the HDD button on the remote control.

3.14.5 LOG

Display the System Log. It substitutes the LOG button on the remote control.

4 Client Programs

4.1 Overview of Client Programs

- **RAMS_RT**(Remote Access & Monitoring System Real Time) is used to remotely access, monitor, and operate the DVR for real-time live viewing, playback, backup, on-the-fly recording, and control over the LAN/WAN.
- **UniPlayer_RT** is a viewer with functions for recording, capturing, & backing up files.
- **QuickInstaller_RT** is a setup configuration template for quick & easy, multiple unit setup using RS-232 or network. It can used to derive setting parameters of DVR system and to save setting parameters to DVR system. Up to 8 users can access to it at the same time.

4.1.1 PC requirement (minimum)

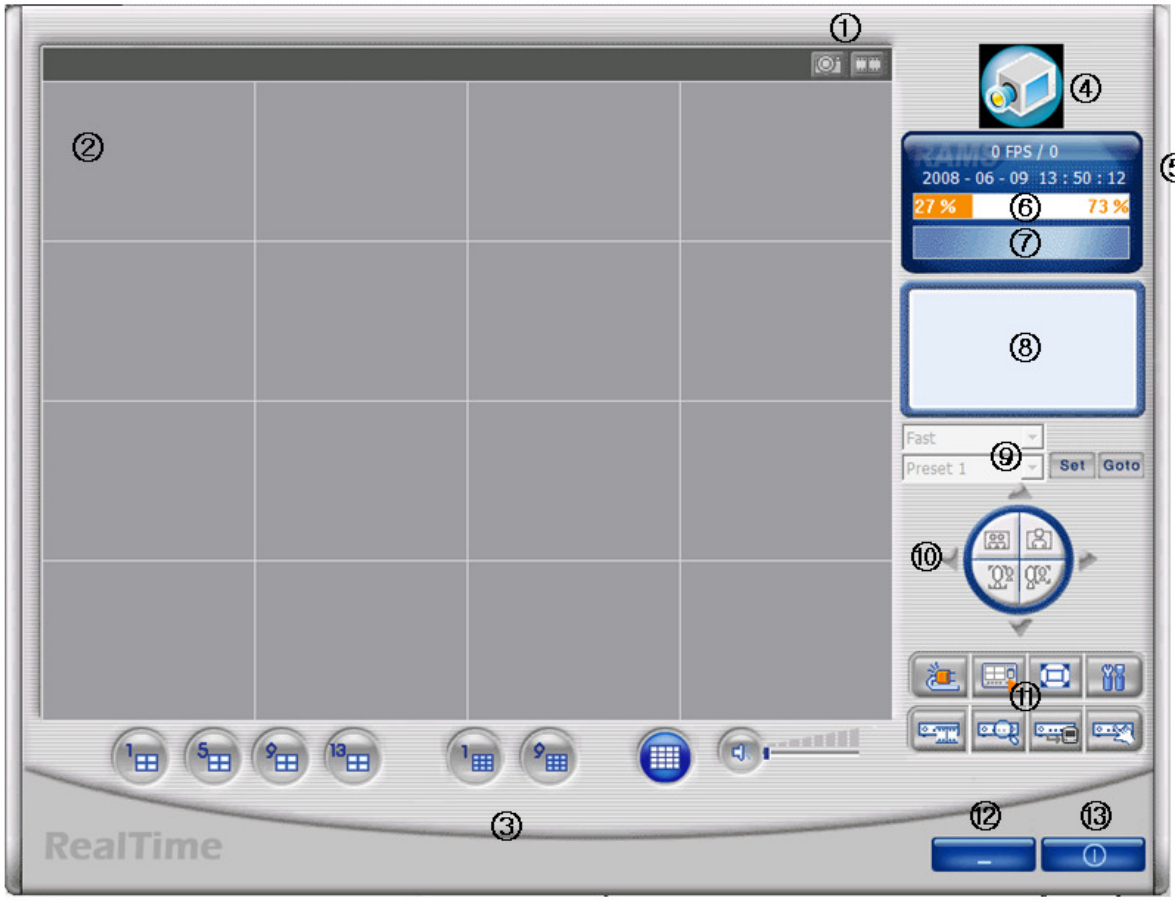
- Window 98
- DirectX 8.0
- Explorer 5.0
- VGA Card for over 2 x AGP
- Video card memory 64MB memory (the latest graphic cared driver)
- Resolution 1024 x 768

4.2 Installation & execution of program

- Please use DirectX 8.0 or newer.
  - http://www.microsoft.com/windows/directx/default.aspx - English
  - http://www.microsoft.com/korea/directx/default.aspx - Korean
- To ensure optimal performance, install the latest graphics driver.
- Install DVR by clicking on the RTDVR_Verx.x.x_Setup.exe file.
- RAMS_RT.exe, Uniplayer_RT.exe, QuickInstaller_RT.exe icons will be placed on the desktop after a successful installation.
- UDR-400 Series's PC Program (RAMS_RT, UniPlayer_RT, QuickInstaller_RT) are compatible with UDR-300 Series.

4.3 RAMS_RT (Remote Access & Monitoring System Real Time)

4.3.1 Screen and button



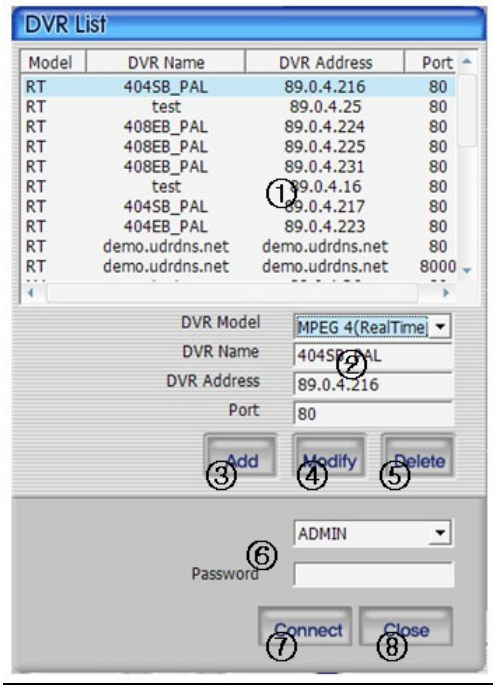
① D-Zoom button, Screen capture button, Video record button
② Screen display
③ Channel display button, Sound control button
④ If logo is clicked, program version window appears.
⑤ Time indicator
⑥ PC HDD information indicator
⑦ Live or Playback mode indicator
⑧ Connected DVR information indicator
⑨ PTZF Speed, Preset
⑩ Pan/Tilt, Zoom/Focus button
⑪ DVR Connect button, UniPlayer_RT link button, Full Screen button, Parameter setting button, DVR recording button, DVR search & playback button, DVR retrieve & backup button, DVR Setting button

⑫ Minimizing button

⑬ Close program

4.3.2 Connecting to DVR

Click icon to open the DVR list.



① This box allows the user to select the IP address assigned to the selected unit. This is required for making a network connection.

② To create a new IP address & DVR selection, enter DVR model, DVR name, DVR address, and port number.

③ To Click to add the newly entered DVR information into the DVR list

④ After selecting a DVR Name from the list and making changes, click Modify to update the changes made to the item.

⑤ To remove an IP address/DVR Name , click and highlight the desired name, then press the Delete button to remove.

⑥ Enter the correct password for either Admin or User for the target DVR.

⑦ Click Close to exit the DVR List

⑧ Click Connect after correct password has been entered to connect to the desired DVR.

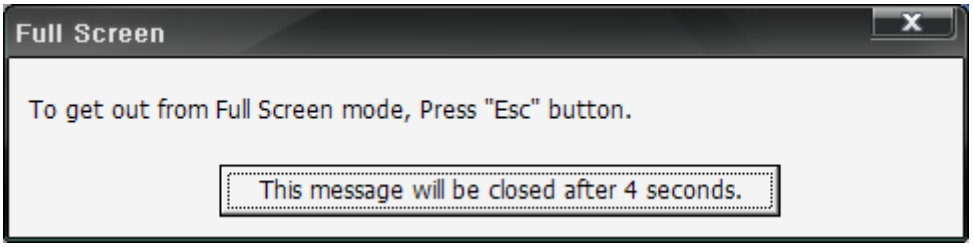
4.3.3 UniPlayer_RT link

If you click this button on main menu, UniPlayer_RT program will be executed.

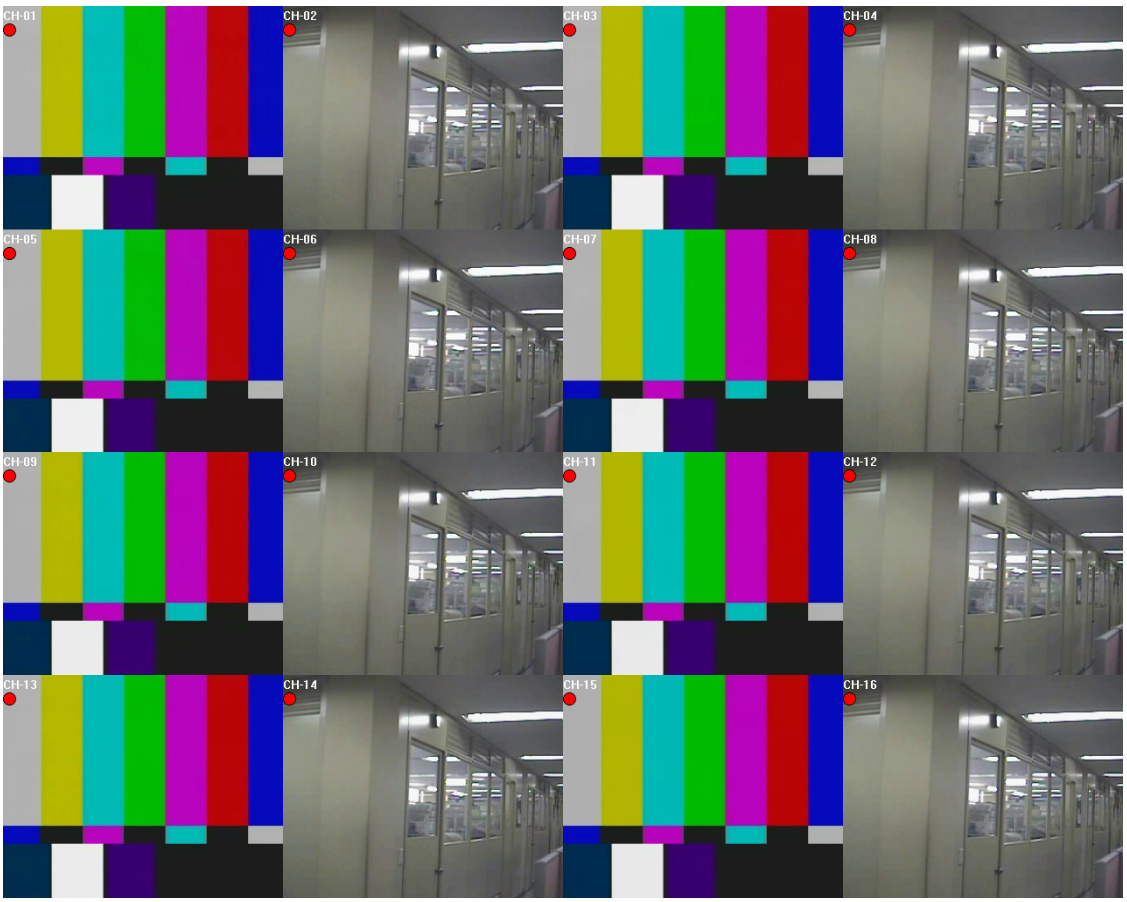
Regarding the UniPlayer_RT program, please refer to the article

4.3.4 Full-screen display

If you click button on the main menu, you can see full screen pictures.



If users press the key of ESC, you will return to the selected screen.

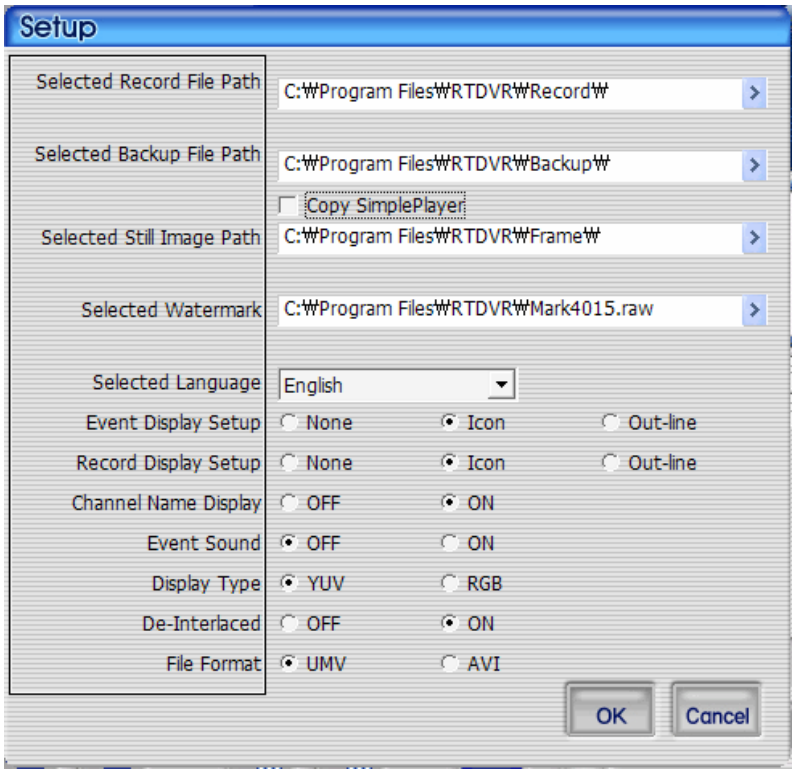


OSD in the screen is same as that of DVR

(Channel name, recording on/off, Motion icon, Sensor icon)

4.3.5 Program setup

If users click this button in the main window, window of program setup appears.



① Capture a still image and select a folder where the image is recorded

② Select the image of water mark to be input in the still image

③ Set up a program by user's language

④ Set up whether alarm occurrence is on or off when motion detection or sensor icon activated.

⑤ Close the window without saving the setup

⑥ Close the window after saving the setup

⑦ Stream Type : Set up receiving encoding type from DVR(Mpeg4 / JPEG)

4.3.6 DVR recording

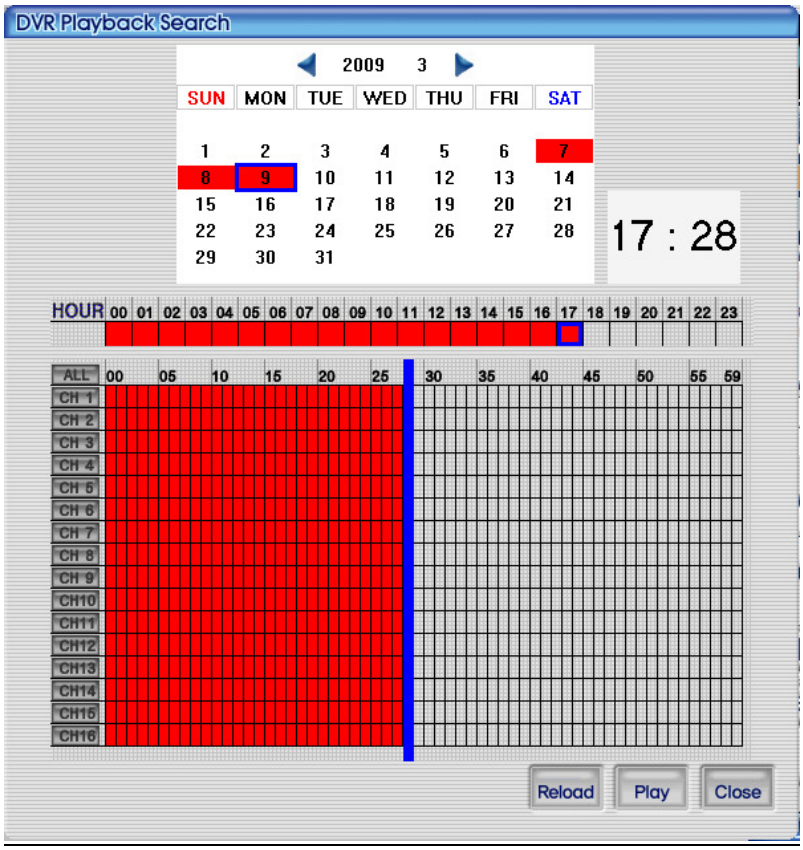
It works as recording button of DVR system. After logging in admin, button will be activated. Under recording mode at DVR, red icon will be displayed at the top of right at the window.

=> DVR (live viewing)

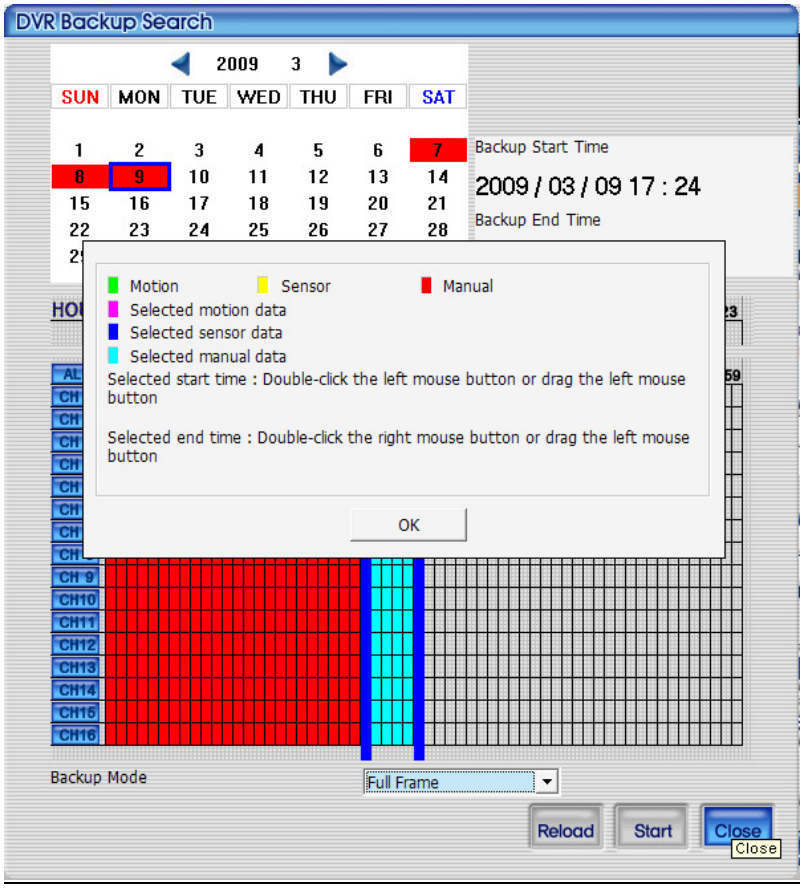
=> DVR (Recording mode)

4.3.7 DVR playback search

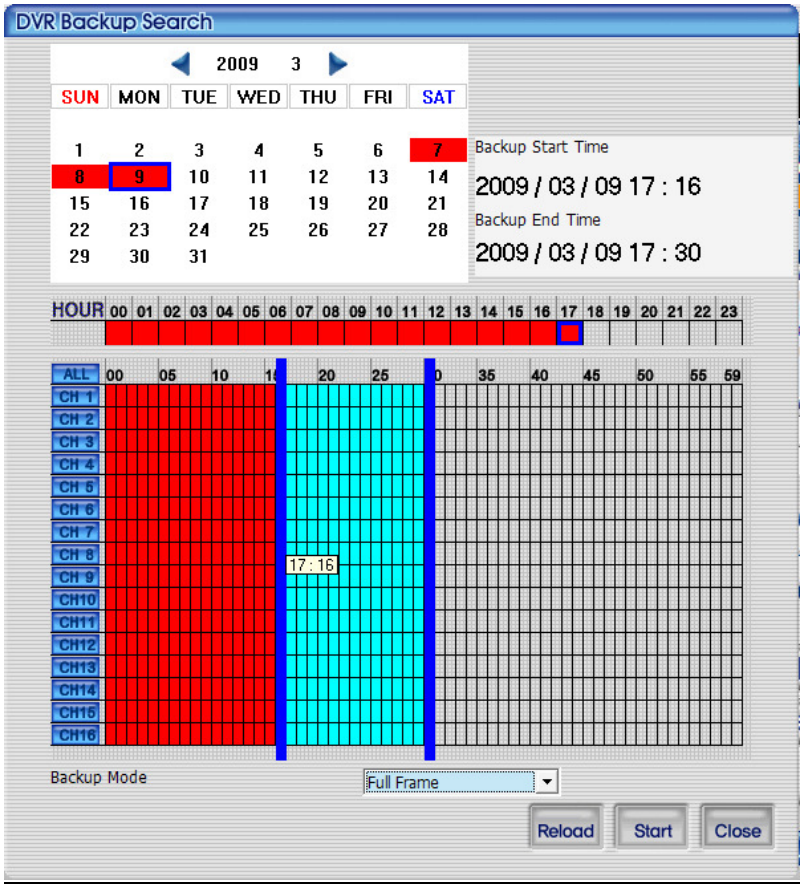
This button is used for playback search, playback, and backup functions for DVR and after logging in by admin. Only the user who has authority in DVR is available.



< Recorded data by search function >



< Tips for DVR backup search >



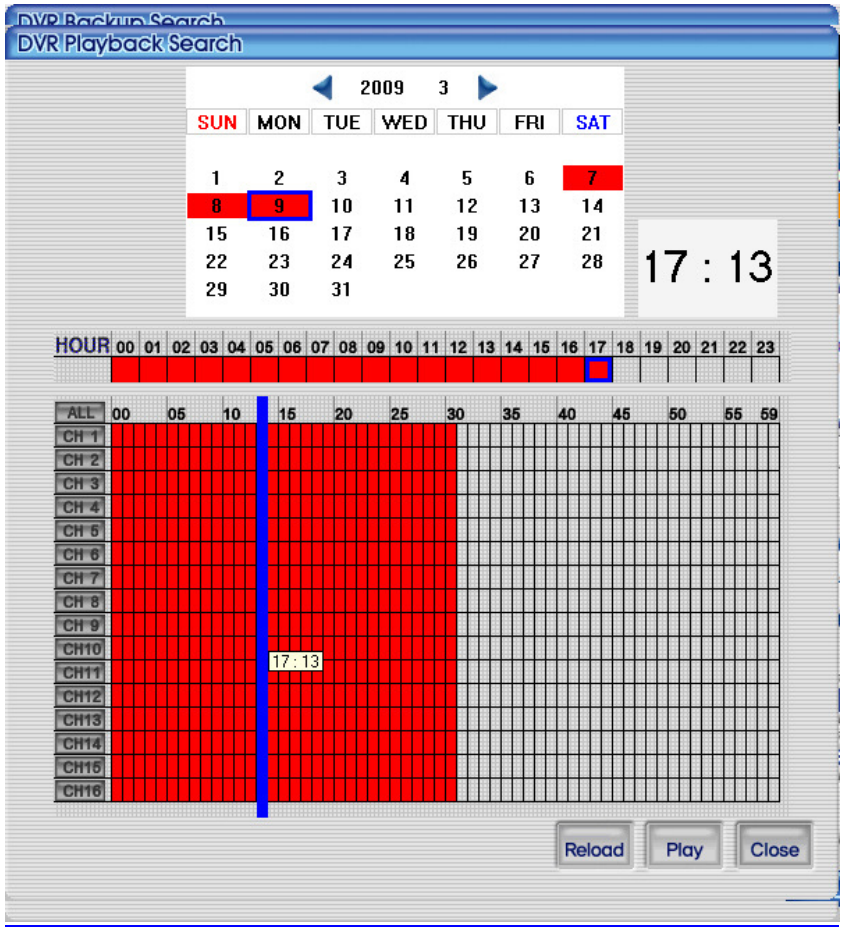
< Searched screen, when pushed backup button >

4.3.8 DVR playback

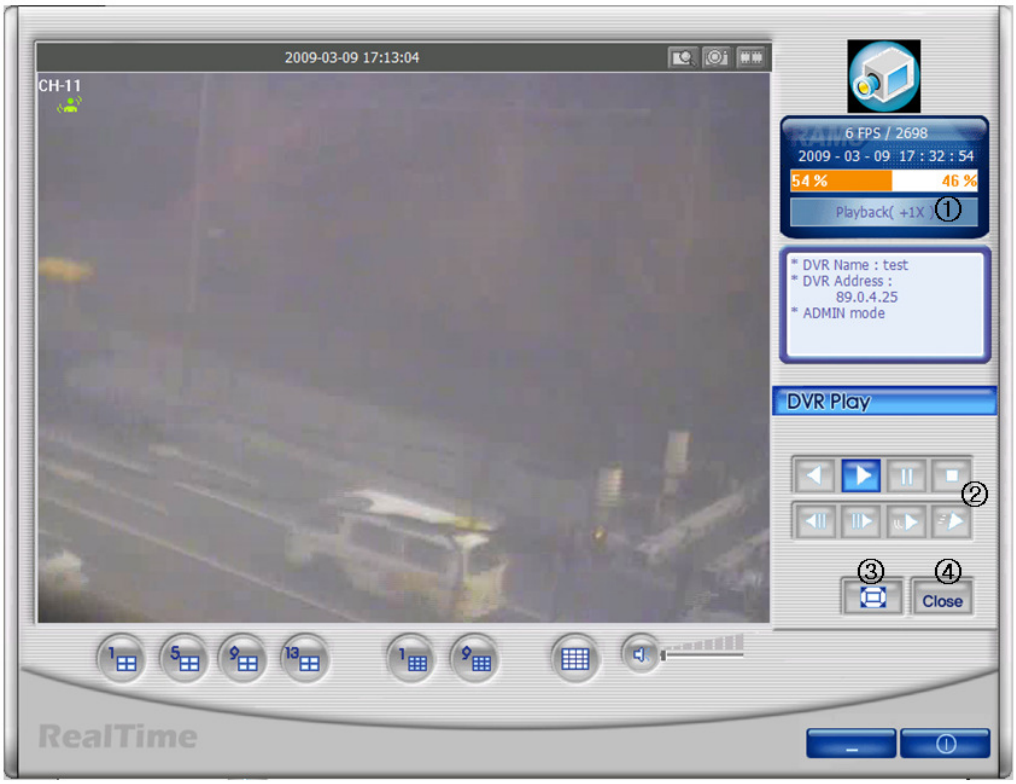
It shows recorded data by date and time on the time table. It starts playback, upon press the Play button, after selecting of date and time in order.

To recall the current calendar data from DVR, press the Reload button.

To close the screen, press the Close button.



After selecting a file at list, push play button or do double clicks in order to watch playback pictures.



① This is to be converted into Playback from current status.

② Those buttons are for converse-playback, playback, temporary stop, stop, backward one screen, forward one screen, Slow, Fast

③ This is to view of whole screen. Above picture on the screen is whole screen.

④ This is to close DVR playback and converted into Live mode.

Reverse playback button

Playback button

Temporarily pause button

Still image button

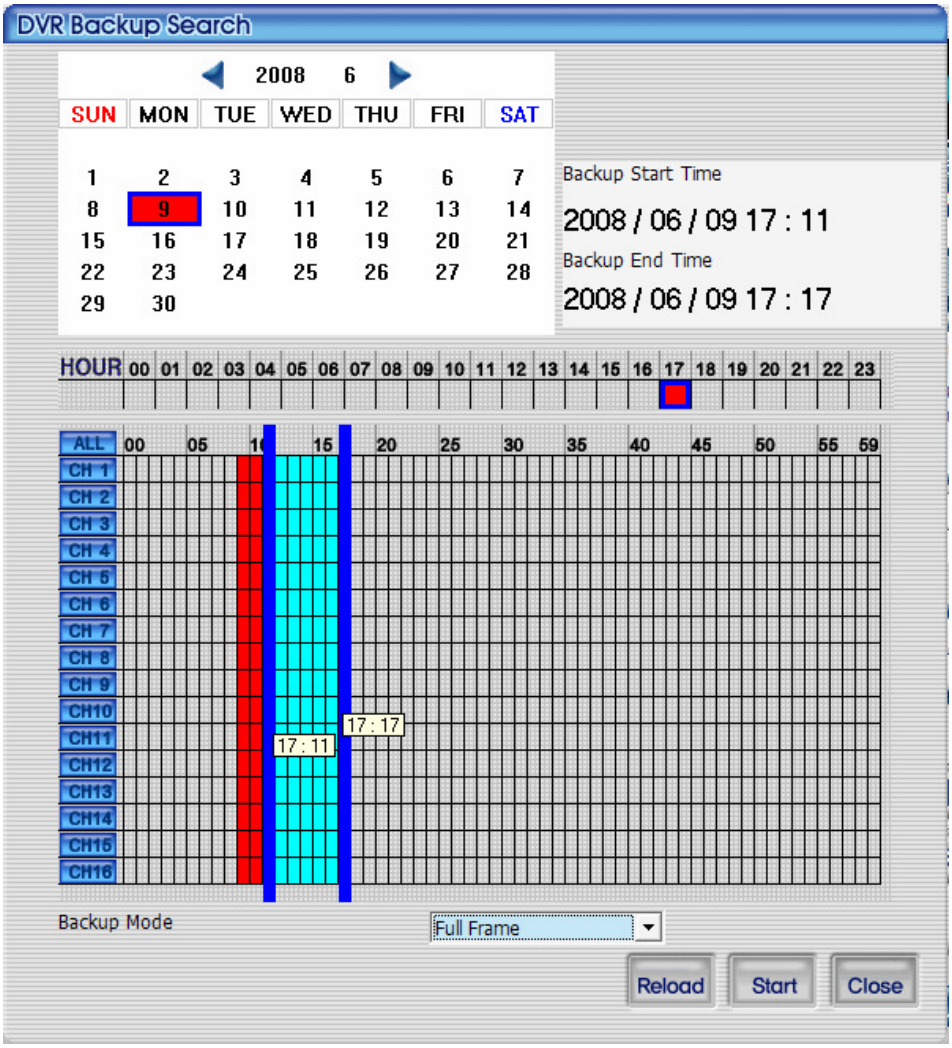
When user use temporarily pause image file move to backward

When user use temporarily pause image file move to forward

Play stored files slowly. User can control by clicking this button

Play stored files quickly. User can control by clicking this button

4.3.9 DVR backup



It shows recorded data in the calendar and time table. It is able to select stating time and closing time of backup by mouse.

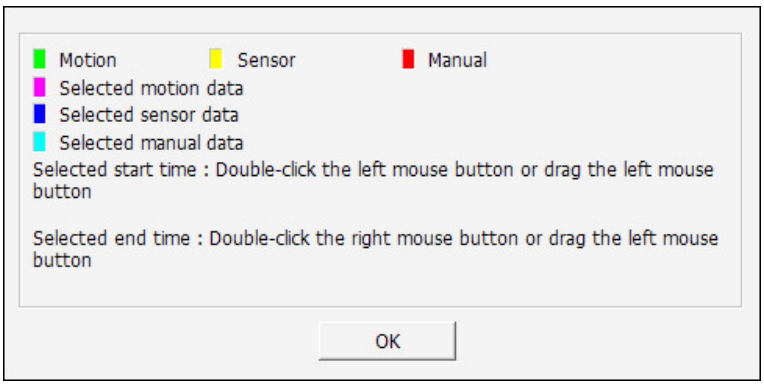
It is available to select backup mode by Full Frame or Skip Frame. It may be taken longer time to backup by Full Frame, as it backup all of recorded data. It makes backup time more shorten, as it backup only some parts of recorded data.

To recall current calendar data from DVR, Press Reload button.

To close calendar search screen, press Close button.

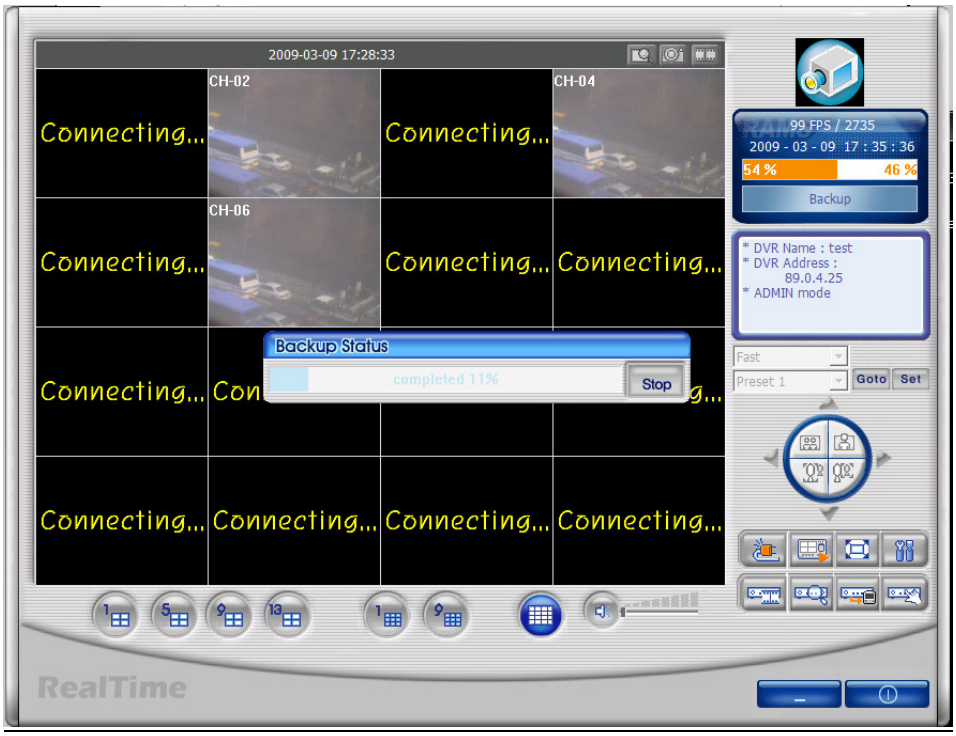
.

Below screen shows the indication by recording status.



Start After selecting a file at DVR backup list, user can start to backup with pushing start button

The destination of backup files is below of backup folder located in directory of program installed. After starting backup, Start button changes Stop button, displays backup progress rate. Even backup, users can stop it by pushing Stop button. Close DVR backup window with pushing Close button. (Even backup mode, it will be stopped & closed.)



< This screen shows backup status of recorded CH2, CH4 and CH6's data >

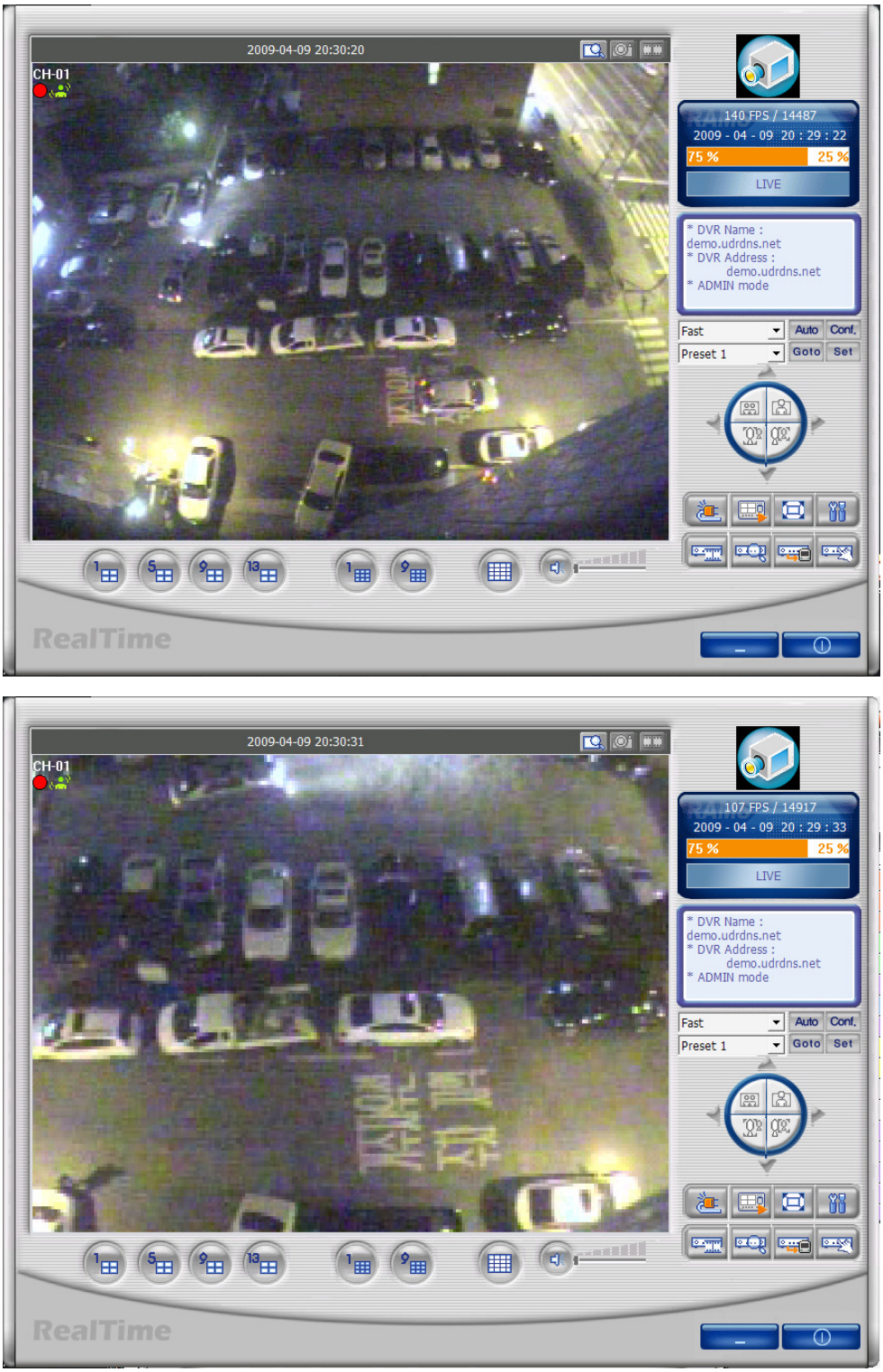
4.3.10 DVR Setting

This button is for linking into quick installation program, which is used to manage setting parameter of DVR easily. It can be activated after logging in by admin.

The setting parameter of DVR are displayed.

4.3.11 D-Zoom function

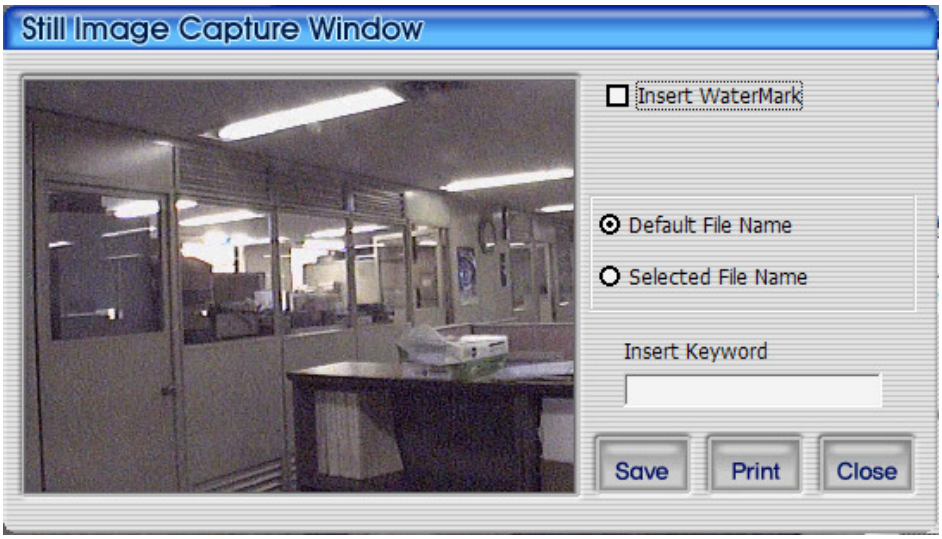
When you push this button on channel 1 screen, you can drag the screen according as mouse cursor is changed. The area to choose becomes Zoom when you drag and click off the mouse. The chosen area becomes Zoom mode release when you push this button again.



< The image of D-Zoom Mode >

4.3.12 Still image Capture

Yon can save playing image such as live viewing image, DVR playback image, into still image by capture. Besides users can capture image by pushing capture button for each channel or push capture button at the foot of a screen. Still image will be saved in a path frame directory established in RAMS_RT's setup section screen. If user change storage path of still image at setup window, still image will be recorded to destination in the future.



① Watermark insert : Select check box to insert watermark to still image.
② Fixed file name : It is stored still image, which was fixed by program.
③ Select file name : It stores still image with preferable name in preferable folder.
④ Keyword insert : It is able to insert keyword to do easy search in Uniplayer_RT.
⑤ Close : To close still image .
⑥ Print : To print captured still image.
⑦ Save : To save still image. It is stored in the folder of still image on the screen.

4.3.13 Watermark insertion

Click the watermark checkbox then push the save button to save still image with watermark.

4.3.14 Printing still image

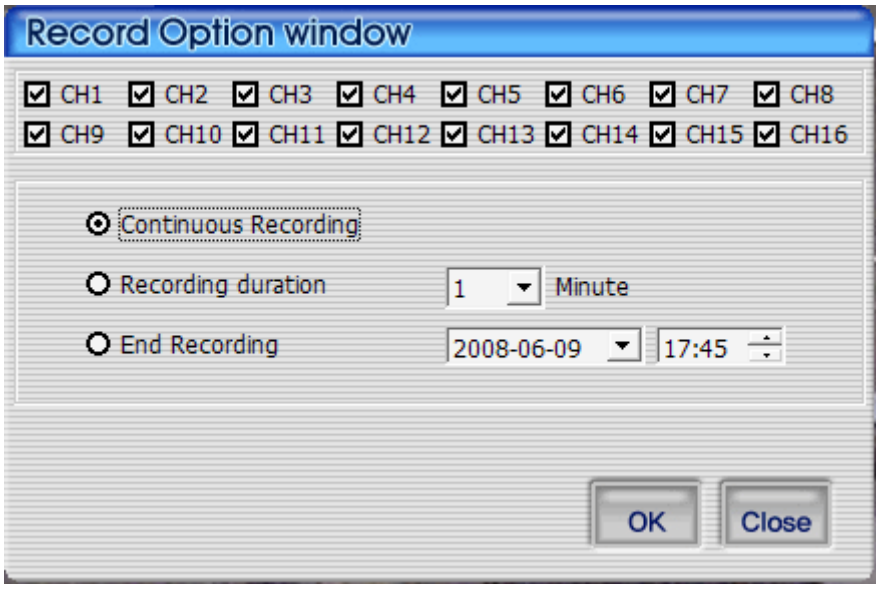
To print still image, please push

icon in capture screen.

4.3.15 Motion picture recording

With live viewing picture, motion picture recording and saving at local PC

User can record each channel by pushing record button on top right side of channel or pushing record button at below side of window. After pushing recording, record time setting window will be popup. Users can change it or not.



① Select the channel, you desire to record.

② Continuous recording : It keeps recording, until user make the recording stop.

③ Recording duration time : It keeps recording, while it is set up. User is able to make the recording stop manually.

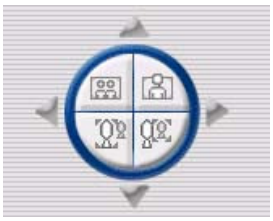
④ Recording close time : It keeps recording, until the time is set up. User is able to make the recording stop manually.

⑤ OK : It starts recording, after screen closing of recording time setting

⑥ Close : Close the screen.

It converts into orange color , when recording starts. To close recording ,press the recording button and it is stored in file. The file is stored in a folder and the folder is stored in the Record folder, where the program is installed .

4.3.16 PAN/TILT, ZOOM/FOCUS.

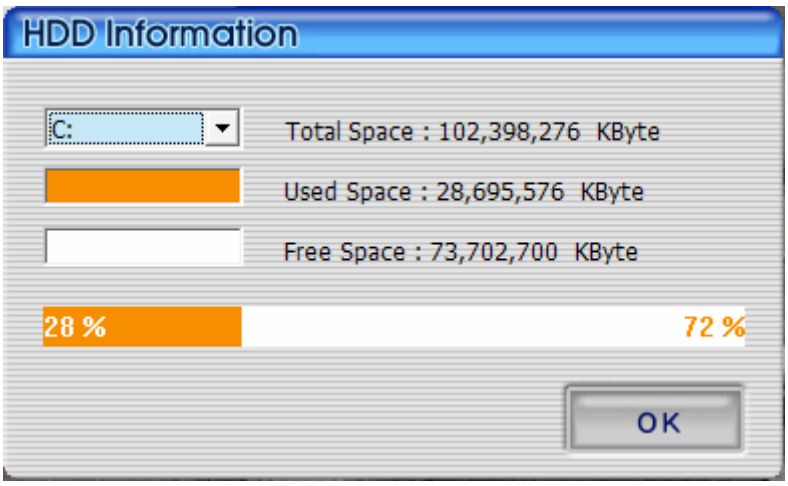


These buttons are for PAN/TILT, ZOOM/FOCUS function of DVR and after logging in by admin and/or one channel selected. It will be only activated the user who has authority for PTZ in DVR.

4.3.17 HDD Information

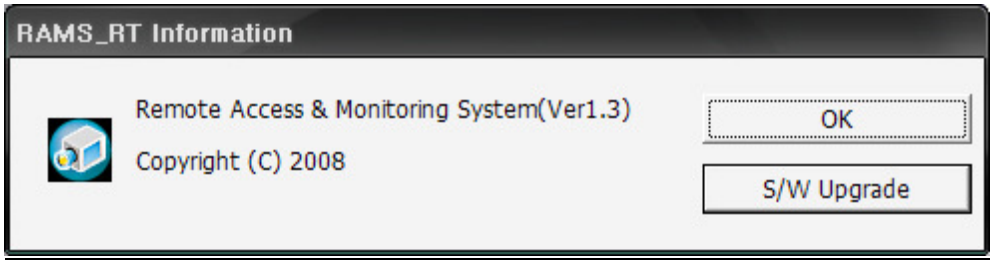
The orange color part of above box means used Hard Disk and the rest of white color means remaining unused part of the HDD. If you click the white color part, then the window of HDD information pops up.

You can select HDD there, which you want to check and it shows rest capacity of the HDD at KByte. Press OK button to close this pop-up window.



4.3.18 Check the program version

Click Logo right upper part icon to check program version or do S/W upgrade of DVR system



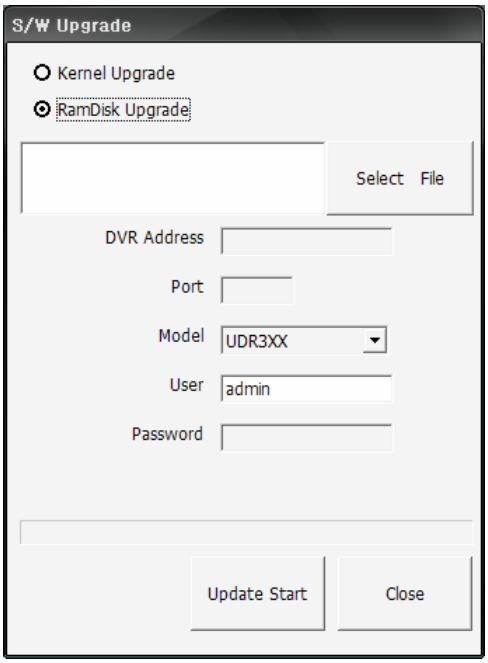
① Display the name & version of program

② Close the RAMS_RT information window

③ Display S/W update window of DVR system

4.3.19 S/W upgrade of DVR

S/W upgrade window is activated on pushing S/W upgrade button in the program version check screen



① : Select targeted files to upgrade

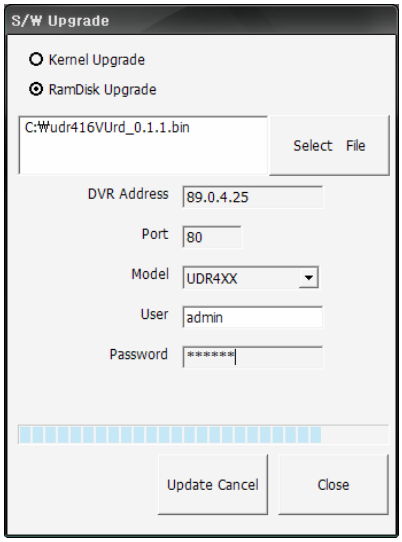
② : Select targeted files saved in local PC

③ : Enter targeted DVR information such as DVR address, Port, user, and password (admin only)

④ : Indicator of targeted file's transmission status

⑤ : Close upgrade window

⑥ : Transmit targeted files. After that, changed to upgraded cancel (cancel of upgrade transmission)



< Display status of SW Upgrade >

4.3.20 Program minimizing

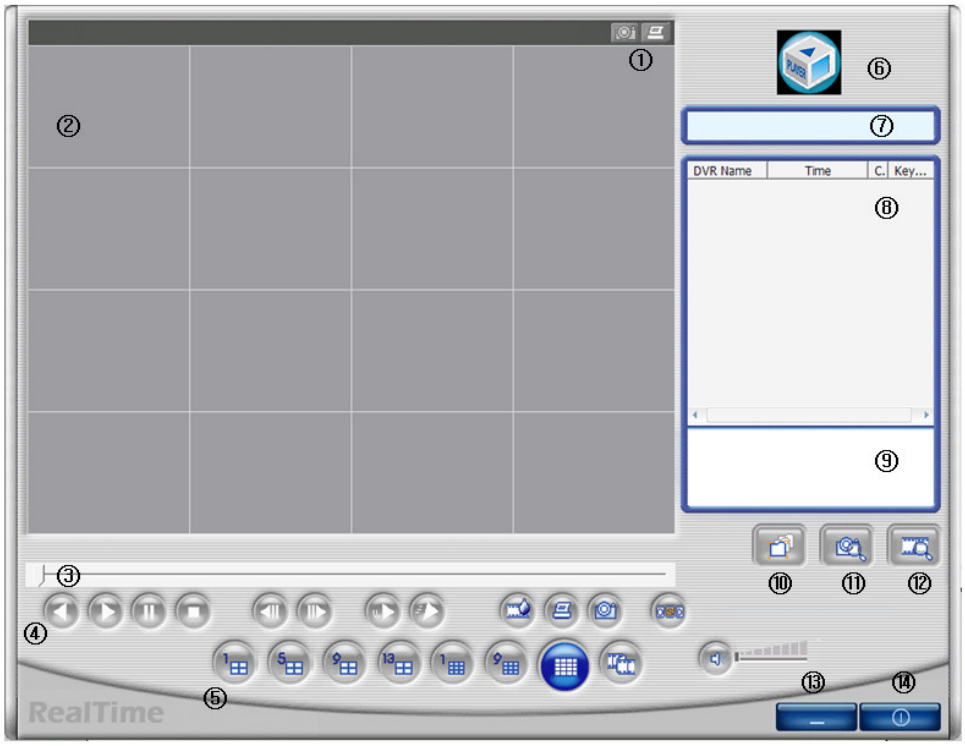
RAMS_RT program is minimized

4.3.21 Close program

Closed RAMS_RT program

4.4 UniPlayer_RT

4.4.1 Screen and button



① Button per channel (Capture, Print)

② Playback picture

③ Indicator for playback progress rate

④ Reverse playback, playback, still, pause, reverse phase, forward phase, slow, fast

⑤ Channel selection button, Panorama playback button

⑥ Click the logo to check program version

⑦ UniPlayer_RT's status

⑧ Search list

⑨ File path is displayed if selected at search list

⑩ Button for playback of UMV file directly, after file opening.

⑪ Button for searching of still image

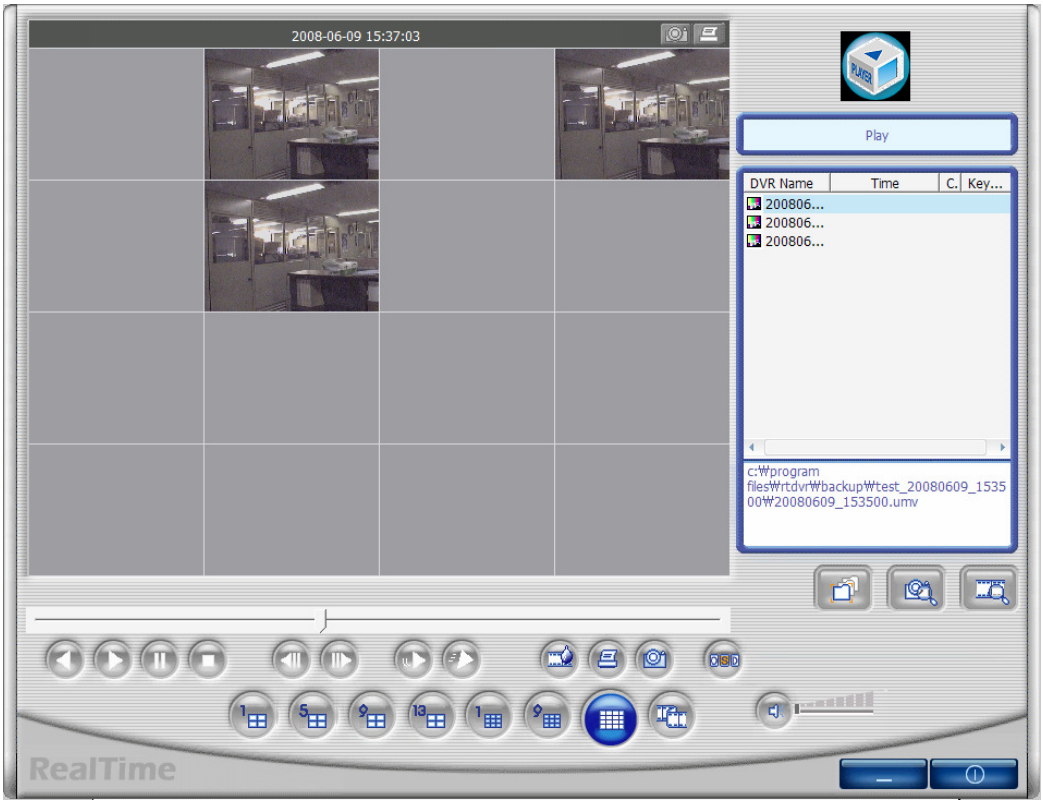
⑫ Button for searching of stored file in the PC in type of calendar.

⑬ Button for minimizing

⑭ Button for closing program

4.4.2 Directory search

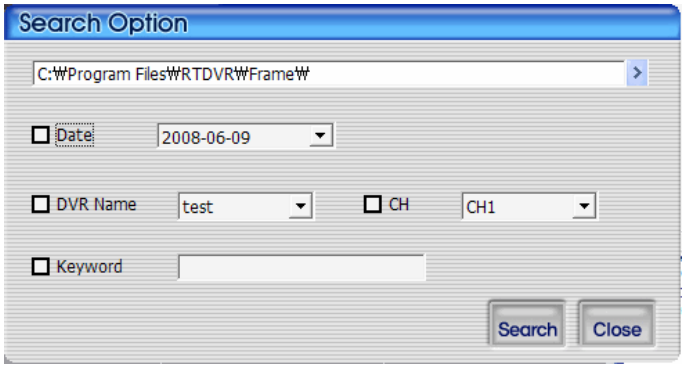
User searches directory directly and playback recorded file.



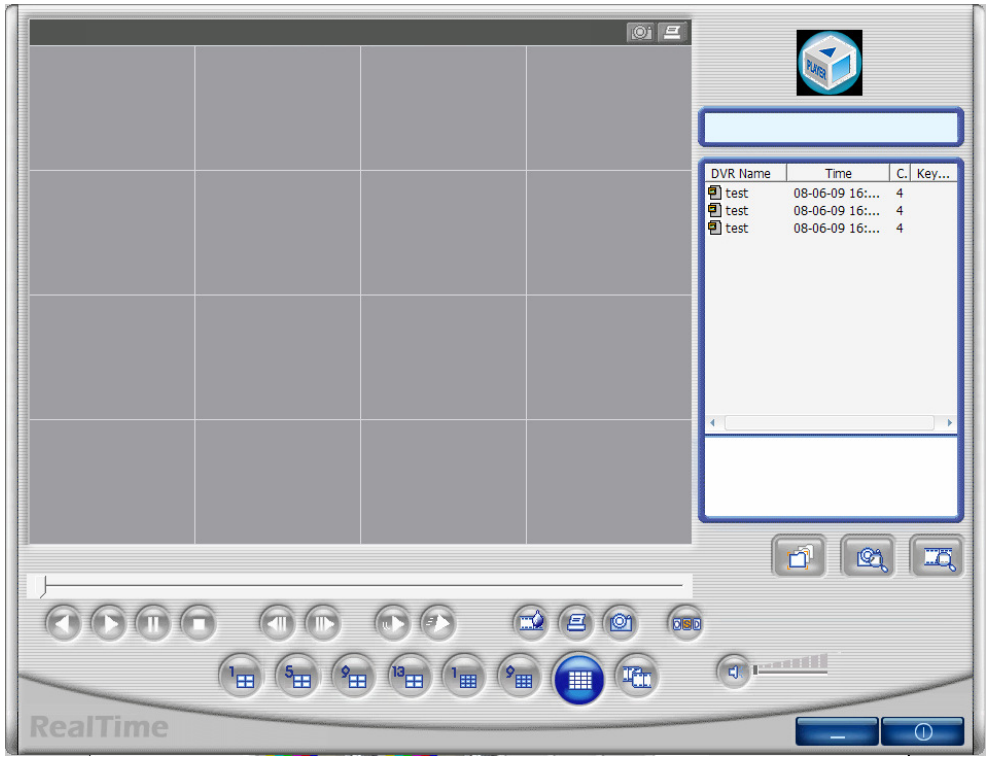
It shows all file list, which is stored in the selected folder.

.

4.4.3 Search of still image



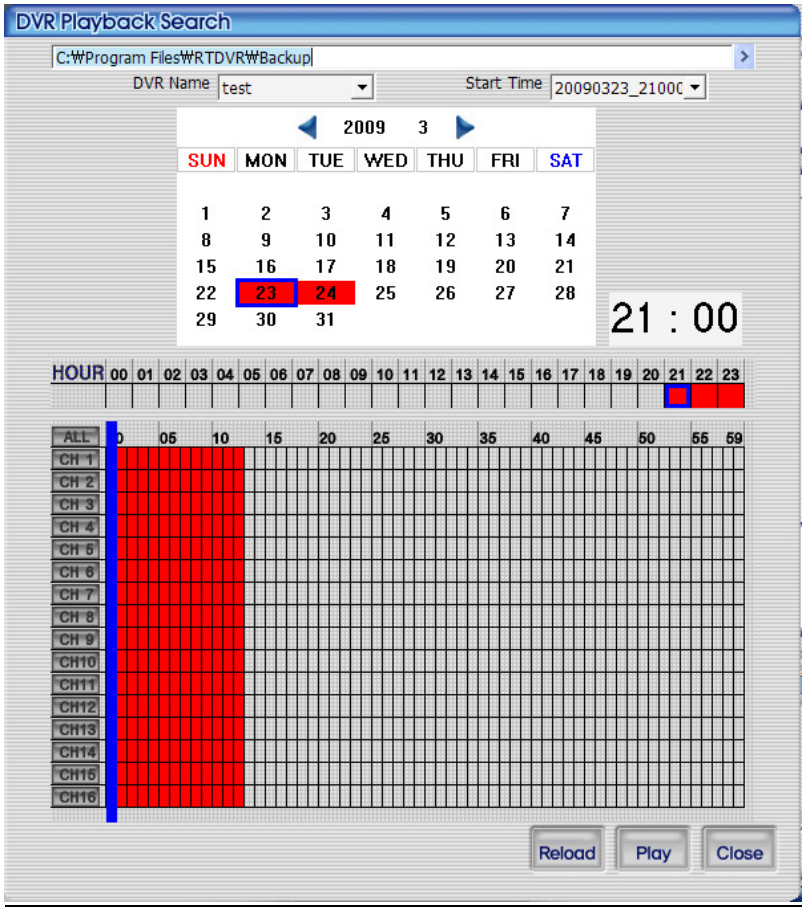
It is able to search by the folder of still image, stored date, DVR name, channel and keyword information.



<Searched screen by channel 4 >

4.4.4 Calendar search

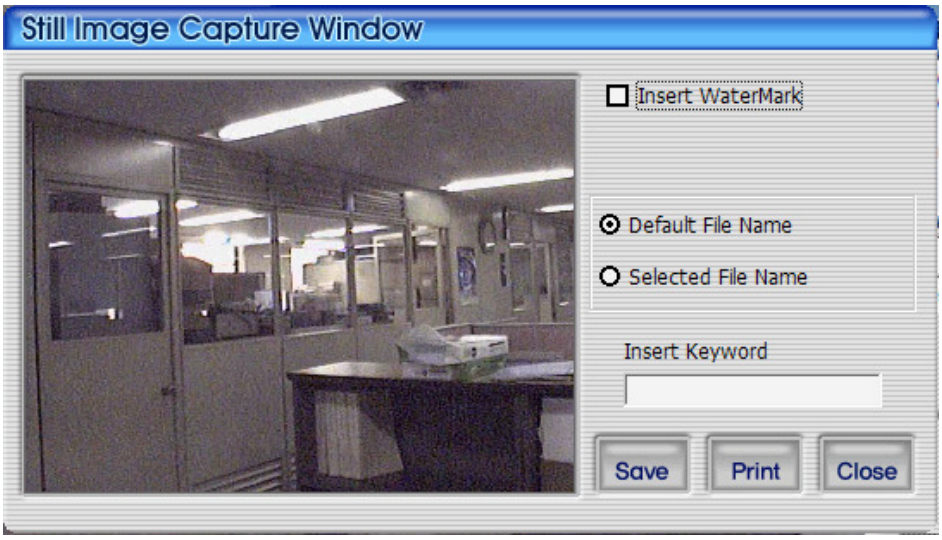
It shows recorded data or backup data in type of calendar.



<Playback screen of real-time image, after search >

4.4.5 Still Image Capture

Save replaying images into still image by capture. Besides users can capture image by push capture button for each channel or push capture button at the foot of a screen. Still image will be saved in a path of which is established in RAMS_RT's setup section screen



① Watermark insert: Select checkbox, if you want to insert Watermark to still image..

② Still file name : It stored still image with the given name by program.

③ Select file name : User is able to store the still image with desired name in the desired folder.

④ Keyword insert : To do easy search in UniPlayer_RT, it is able to insert keyword.

⑤ Close : To close still image.

⑥ Print : To print out still image

⑦ Save : It saved in the still image folder of the screen.

4.4.6 Input water mark

Click the Water Mark checkbox then push the save button to save still image with watermark.

4.4.7 Printing still image

To print still image, please push the

button in capture screen. Then use this button in main page. But In the motion picture state, this button only is

applicable to pause or temporarily pause mode.

4.4.8 Moving picture file playback, playing, pause, temporarily pause, move by interval of frame, fast forward Playing

Playing-back image file

Playing image file

Temporarily pause image file

Pause

When user use temporarily pause image file, move to backward

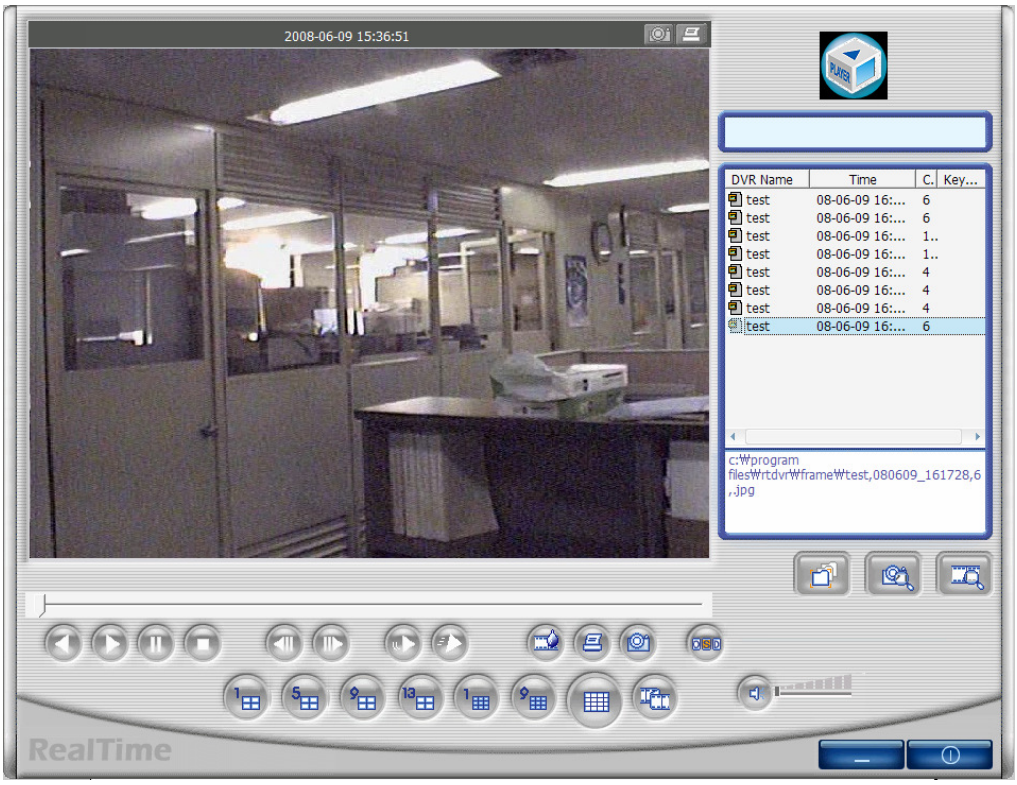
When user use temporarily pause image file, move to forward.

Play file slowly. Users can control by click this button.

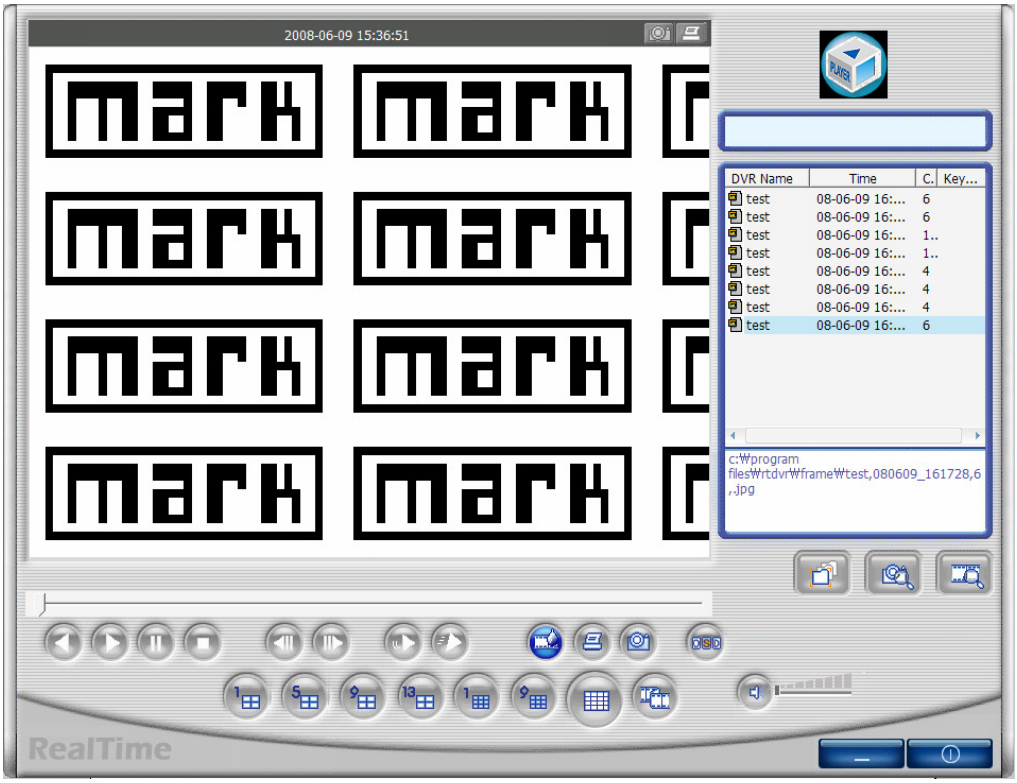
Play file quickly. User can control by click this button.

4.4.9 Water mark drawing

When still image is display, if push this button watermark will be drawn. If you find other color except black, white, blue color, image file must get damaged. Push this button one more time, reverts to original image state.



=> Still image Display screen. Push this button , water mark will be drawn.

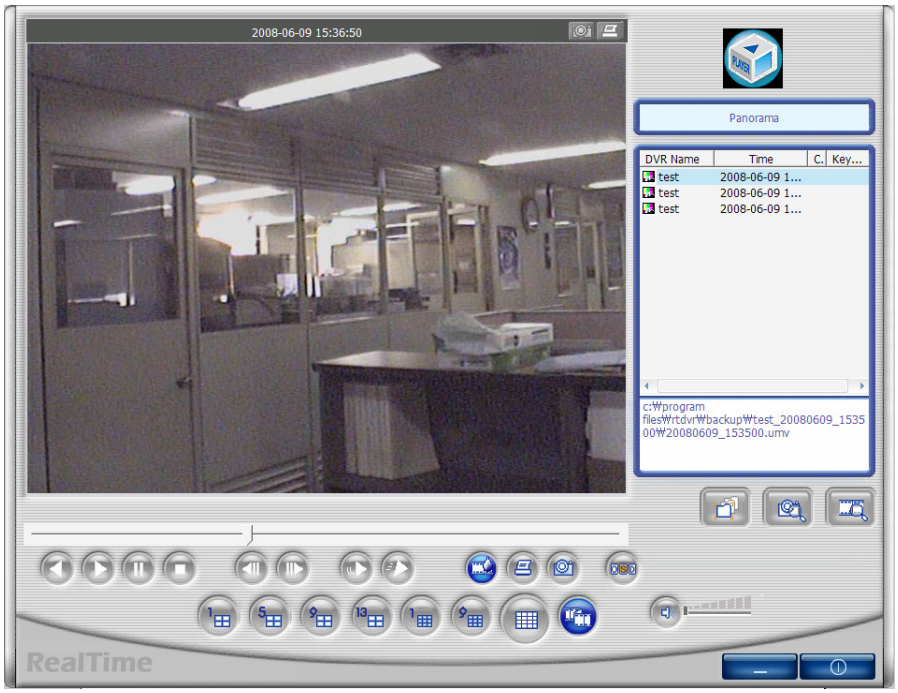


⇨ Watermark viewing screen. If you find other color except black, white, blue color, image file must get damaged.

4.4.10 Panorama

You can see the panorama screen when you push this button while file playing. (Button will change into like this button. . And & button can help user to view screen while control screen back and forth. And click the one screen which is one of the 16 channel, you can see 640x480 image. If you want to come out of the panorama mode, click button. Then program will go back to former state.

< Screen in panorama mode. >



< Image when click one screen in panorama mode.>

4.4.11 Check the program version.

Click right part of logo to confirm version.

4.4.12 Program minimizing

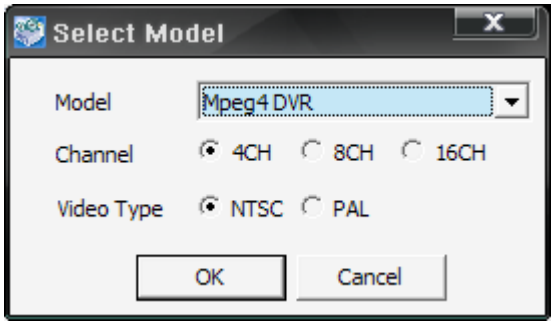
UniPlayer_RT program is minimized

4.4.13 Close Program

Close UniPlayer_RT program

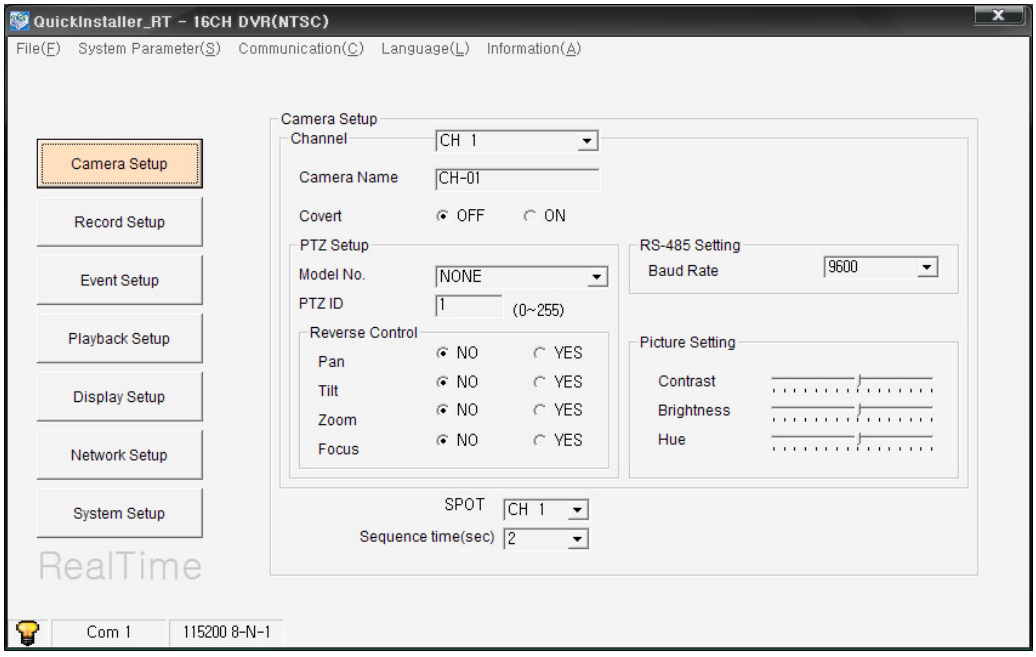
4.5 Quick Installer

4.5.1 Select model



Clicks to select DVR model name and video type in order to set system parameters.

4.5.2 System parameter setting



* Right parts on System parameter setting window is same form as Main menu used in DVR system. Users can change DVR system parameter by entering each menu.

* Main menu description

* File ->Open: Read to display saved parameter values from DVR system.

1. File ->Save: Click to save setting parameter values as file.
2. File->Close: Click to close program
3. System parameter-> Read parameters from DVR: Derive to display setting parameter values

4. System parameter-> Write parameters to DVR: Transfer to save setting parameters of DVR.
5. System parameter->Default value setting: Initialize parameters values.
6. Communication->Network: Communicate data through network.
7. Communication->Serial: Communicate data through serial port (Setting preferable Com Port)
8. Language: Click to select preferable language
9. Information: Click to display program version information.

4.5.3 Communication over Network or serial port

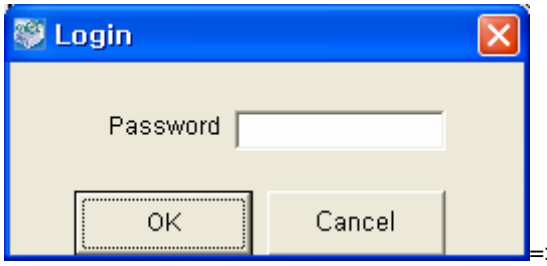
Click to open system parameter -> Write to DVR

The below window will be activated on

- After Setting system parameters
- Derive system parameters from DVR

=> Network mode as communication media

Enter assigned network access password for Admin. After authenticated, users can communication between DVR using network.



=>Serial mode as communication media

Enter assigned network access password for Admin. After authenticated, users can communication between DVR using serial port.

4.6 Connection by Internet Explorer

4.6.1 ActiveX Control Download

Type the DVR address in Internet Explorer.

You will see another window asking permission to download the ActiveX Controls.

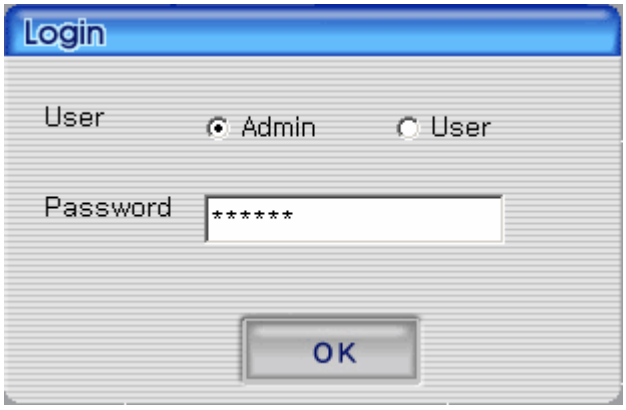
Please click on the “Install” button to continue. The ActiveX will be installed.

(If you click on the “Don’t Install” button, program does not be operated.)

4.6.2 Connection with DVR

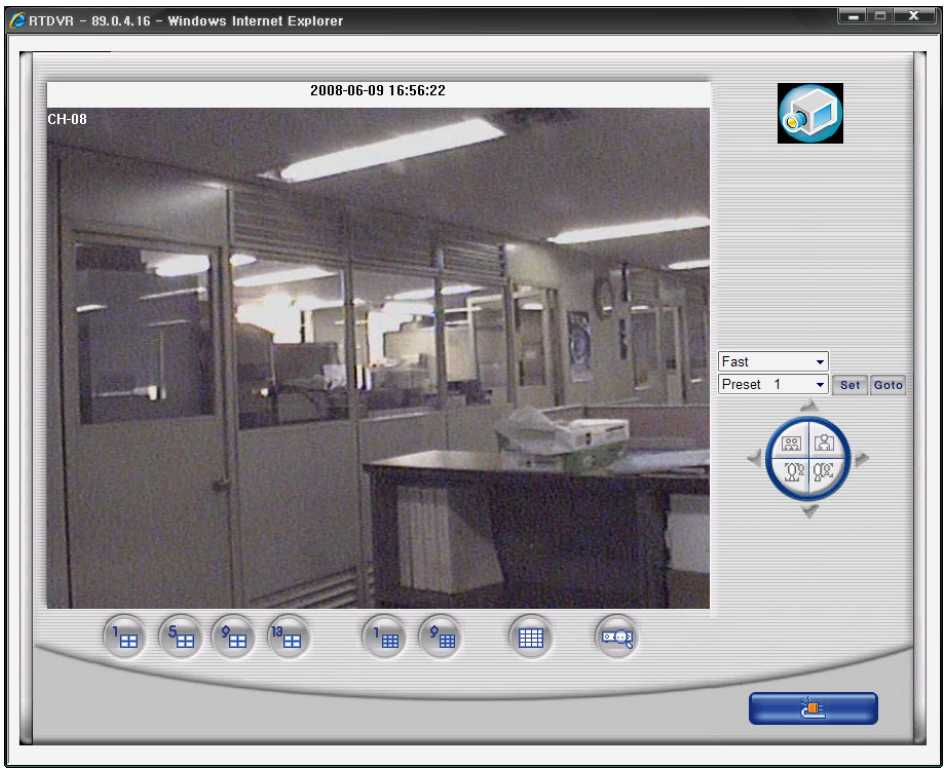
Fill the address of DVR Mac address or IP up in the address window of Internet Explorer.

4.6.3 Login



Fill network password of DVR and press “OK” button, same as RAMS_RT program.

4.6.4 Connected screen



1. In the lower part of screen, there are buttons

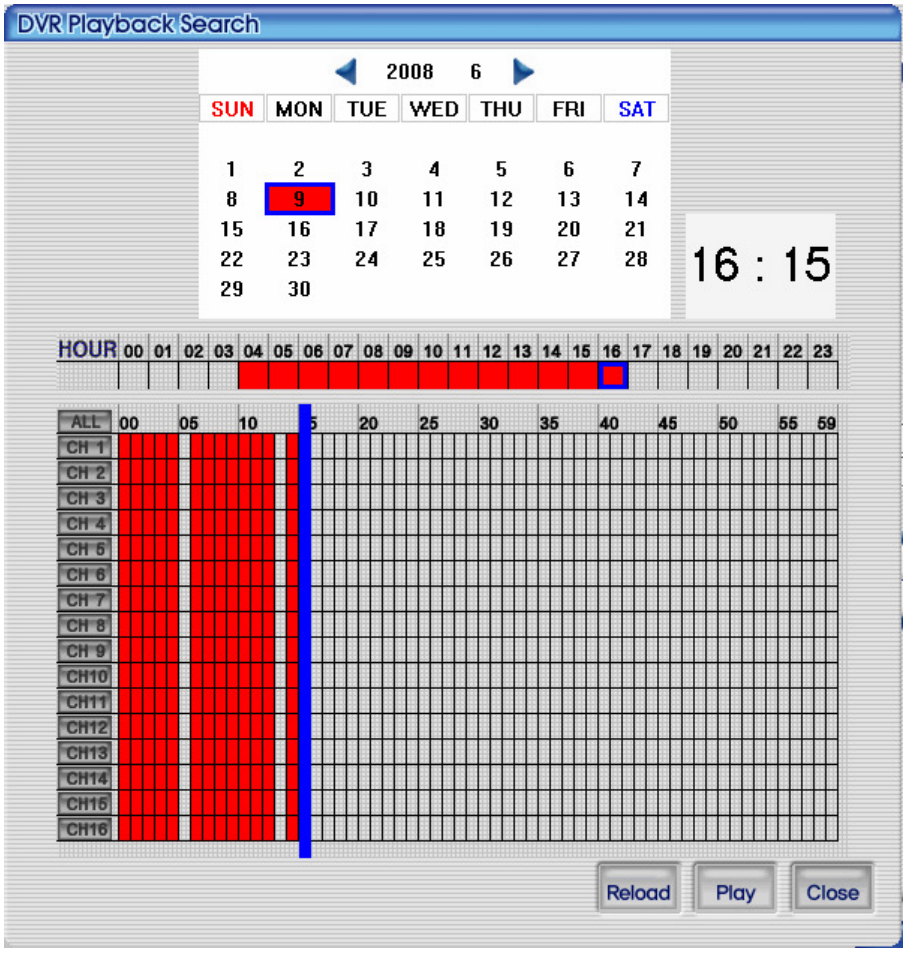
   - button to select the screen division & button to search the moving picture..

2. In the right part of screen, there is a button to control PTZ.

   - PTZ control is available when one screen is selected,

   - In order to select one screen, double click the required channel.

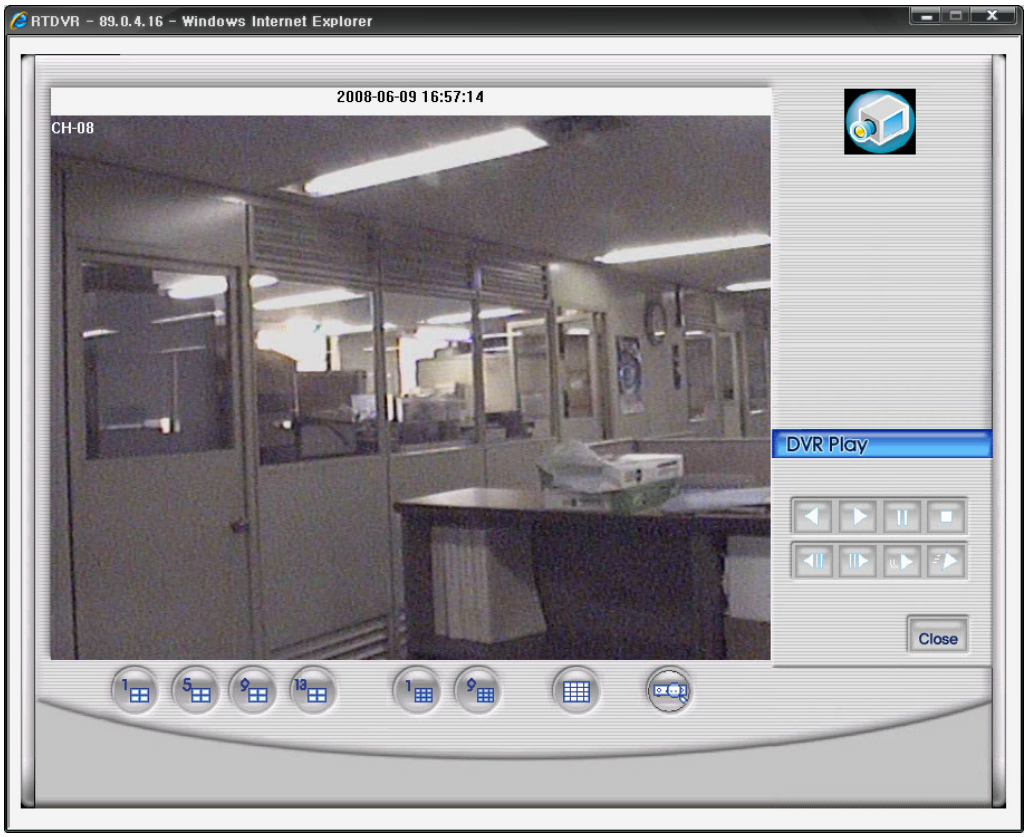
4.6.5 Search



Same function as search of DVR playback search

Please refer to the article 4.3.7

4.6.6 Playback



This is the screen when it's playback.. Playback control button in the right parts has same function as DVR playback in RAMS_RT. Please refer to the article 4.3.8 (DVR manual)

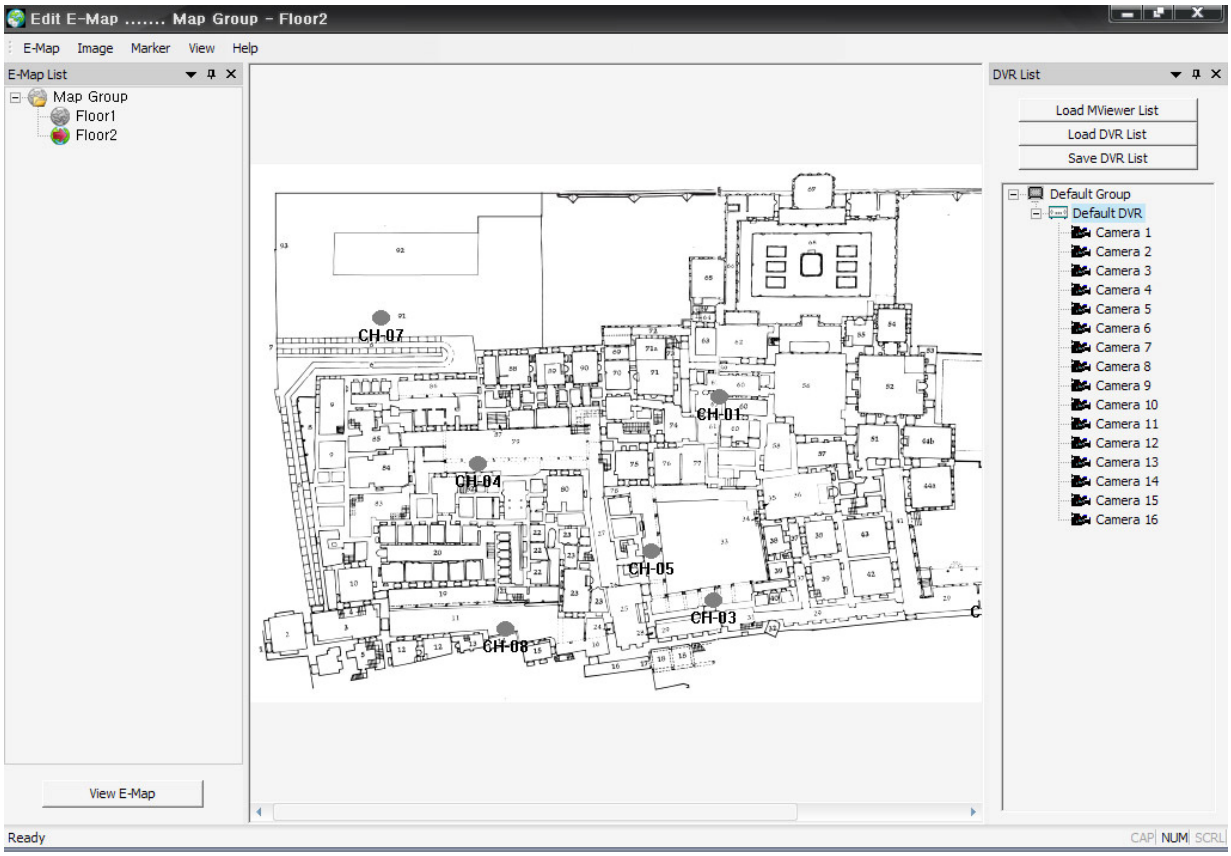
4.7 Unimap Program

4.7.1 Definition

- By using map image, you can locate camera position and monitor DVR status on a realtime basis.
- As an example, when the DVR is installed in the same building, you can upload 1st Floor, 2nd Floor, 3rd e-Map and monitor the status in real-time situation.
- You can indicate the camera location on the map as you want in a very user-friendly way.

4.7.2 Edit Mode

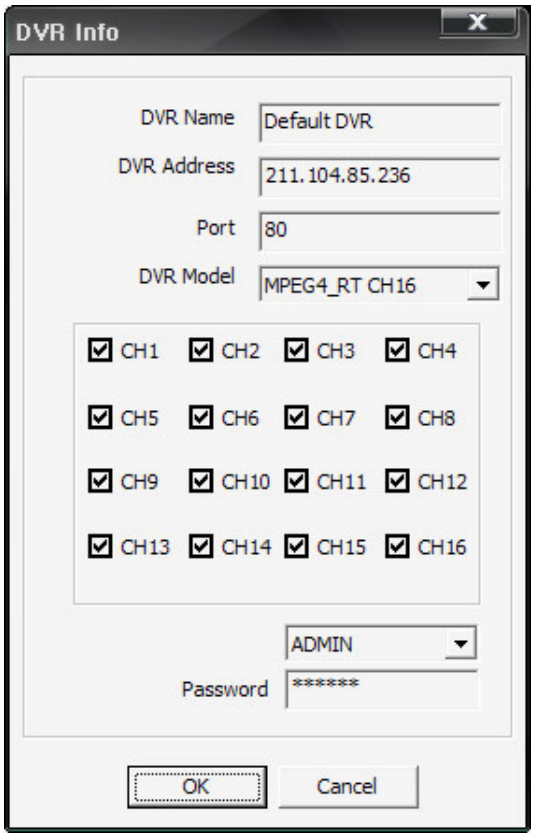
- You can use after input the presetting password. (Default Password : 111111)
- You can change the password on your own.



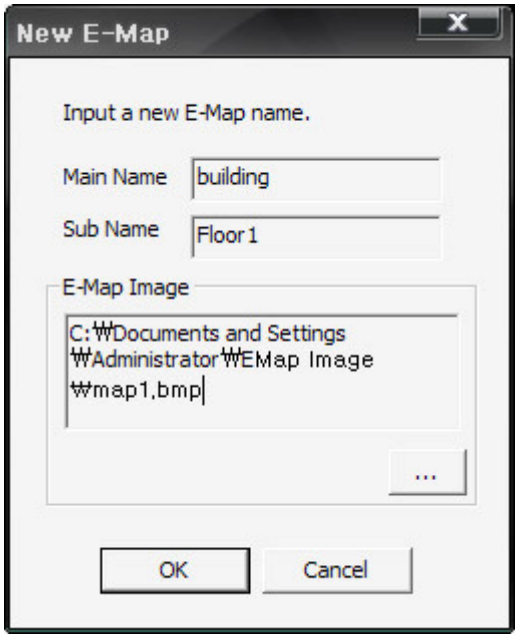
1. Configuration of DVR List

   - If you're using Multiviewer, you can retrieve MultiViewer list.
     - Please click/use LoadMViewer List button.
   - You can configure out the list only for Unimap use.
     - Please click/use Load DVR List button and save DVR List button.
   - Once you click right mouse button on DVR List, you can call up the menu.
     - Read Camera name from DVR : You can modify the list by calling up the selected DVR camera names.
     - Add Group : You can add DVR Group.
     - Modify Group : You can modify the selected Group.
     - Delete Group : You can delete the selected Group.
     - Add DVR : You can add DVR.

- Modify DVR : You can modify the selected DVR.
- Delete DVR : You can delete the selected DVR.



2. Creation of e-Map
    - Menu -> E-Map -> New

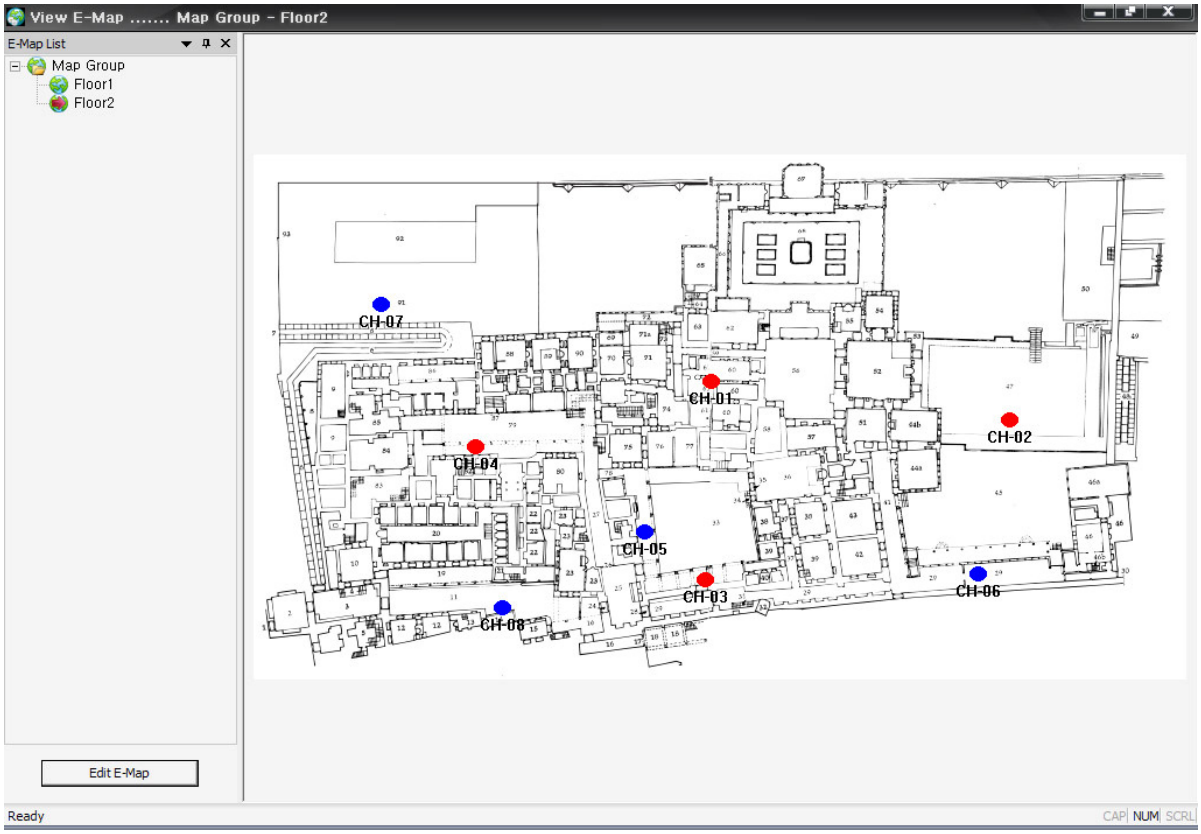


- Please input your wished E-Map name.
  - You can input both Main and Sub, or you can input single name.
- Please select the image (JPG, BMP) that you want to use on E-Map.
  - By entering menu, you can change the current image into new one Image -> Change
- Addition of Camera
  - Please drag the each cameras on DVR list by using the right button of mouse and drop it on the map.
- Deletion of Camera
  - Please select the camera on the map and drag it out to the outside of the map by using the right button of mouse. You will find the “delection confirmation” message.
  - If you really want to delete it, select Yes.
- Change of Camera Location
  - Like addition and deletion, please use the mouse to drag it and drop it for its location change.

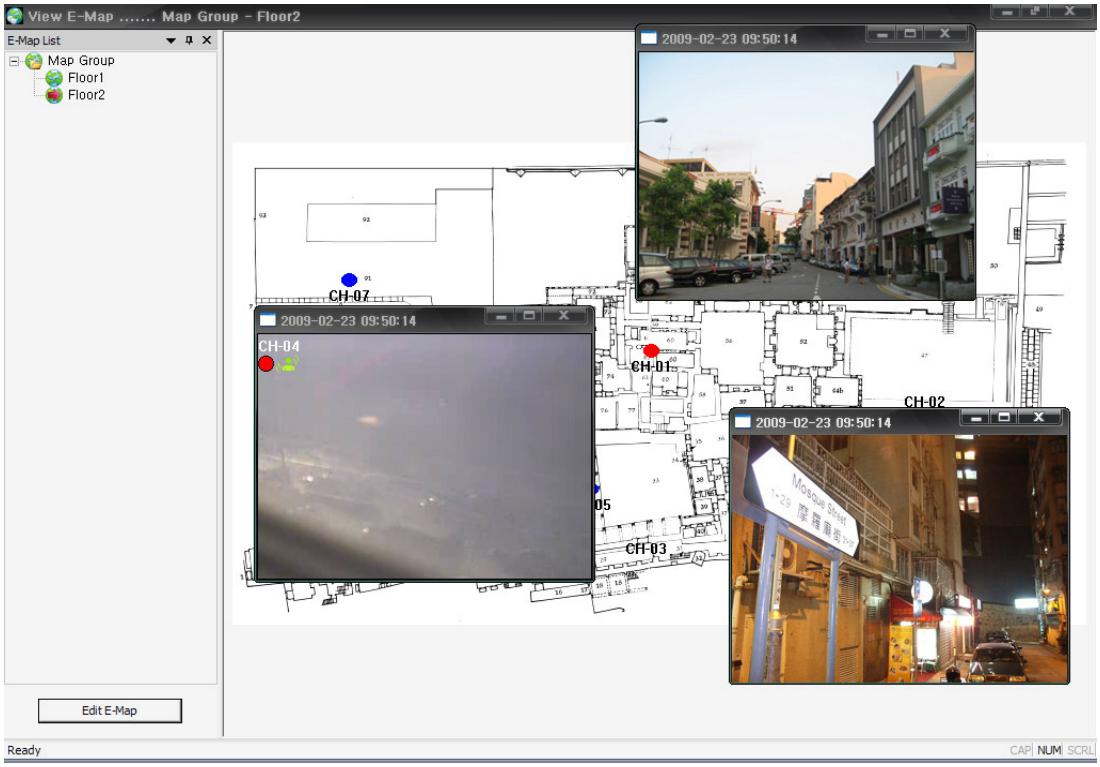
3. Saving the created e-Map
    - Menu->E-Map->Save
    - You will find the added e-Map on the left side of e-Map List.
4. Deleting the e-Map
    - Menu->E-Map->Delete
    - You will find the current E-Map deleted.
5. Changing the current e-Map image
    - Menu->Image->Change(JPG, BMP)
    - Once you select the image to change, then e-Map will be changed.
6. Deleting all cameras on e-Map
    - Menu->Marker->Delete All
    - Please click Yes to delete all cameras on e-Map.

4.7.3 View Mode

- Actual status of camera on its location is being monitored by icon (Recording, Event Status)
- DVR camera names are displayed.
- Once you double-click the camera on its location, you can see the video streaming.



1. DVR Status View
    - Please double-click the e-Map on e-Map list.
        - Once you select the e-Map in its Group, being all linked together, you can check the status of DVR.
2. Full View of E-Map
    - You can display or hide e-Map list window by using right mouse button.
3. E-Map with Real-Time Video Display at the same time
    - Once you double-click the camera location, you can see the real-time Video streaming display.
    - You can control the size of window display at your own.



4.8 MobileViewer

- MobileViewer receives JPEG data (not MPEG4 data) from DVR and displays on a real-time basis.
- Set up fps value of JPEG data on DVR.
    - Please set up appropriate value on DVR by entering Menu/Network Setup/JPEG fps.
- Set up DVR network so that PDA device can access to WLAN/LAN.
- You can check if JPEG data is coming up from DVR by selecting “Stream Type” as JPEG on RAMS Setup Menu.
- Once you finish DVR setup, please download pertinent MobileViewer software program onto your Mobile Device.
    - Currently Unimo DVR supports the following Platform.
        - Windows Mobile 5.0 Pocket PC (ARMV4I)
        - Windows Mobile 5.0 Smartphone (ARMV4I)
        - Windows Mobile 6 Professional (ARMV4I)

- Windows Mobile 6 Standard (ARMV4I)

- Now you can execute downloaded MobileViewer software program.

4.8.1 Using MobileViewer

Here mentioned Firmware (S/W) Program Version is as following.

- UDR4XX_1.3 Above (RAMDISK)
- MobileViewer.exe : FTP uploaded program for PDA use.

4.8.1.1 Menu Configuration

- Connect
  - Connect - You can select or add DVR to be connected.
  - Disconnect - Termination of currently connected DVR.
- Channel - Changing connected DVR channel.
- PTZ Control - Controlling connected DVR's relevant PTZ camera channel.
- DVR Information - Checking currently connected DVR information.
- About MobileViewer - Checking MobileViewer's version.

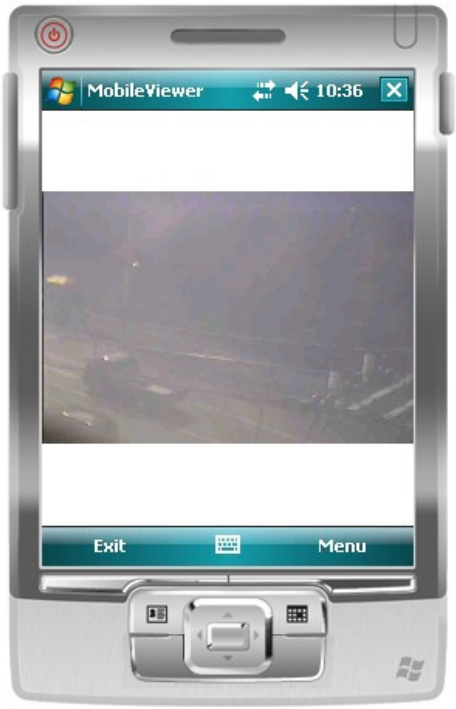
4.8.1.2 Connecting DVR

- Select "Connect" on Menu.

- By using Add button, please input DVR address to be connected.
  - Once you input User & Password, it's automatically saved on PDA device for next easy connection.
  - If you don't input them by now, you need to input them when connecting DVR.

MobileViewer
10:28
ok
Name
DVR1
DVR Address
211.104.85.236
Port
80
Channel
CH-01
User
ADMIN
Password
******
OK
Cancel

MobileViewer
10:29
ok
Name
Address
Port
CH
User
DVR1
211.104....
80
1
ADMIN
Add
Delete
User
ADMIN
Password
******
Connect
Cancel


MobileViewer
10:36
Exit
Menu

4.8.1.3 Changing Channel

- Currently connected channel is being displayed.
- Select the channel to be changed on menu.

4.8.1.4 Controlling PTZ

- Select PTZ Control from the menu.

- To close PTZ menu, select “Close PTZ” from the menu.

4.8.1.5 Checking DVR Information

- Select DVR Information from the menu.

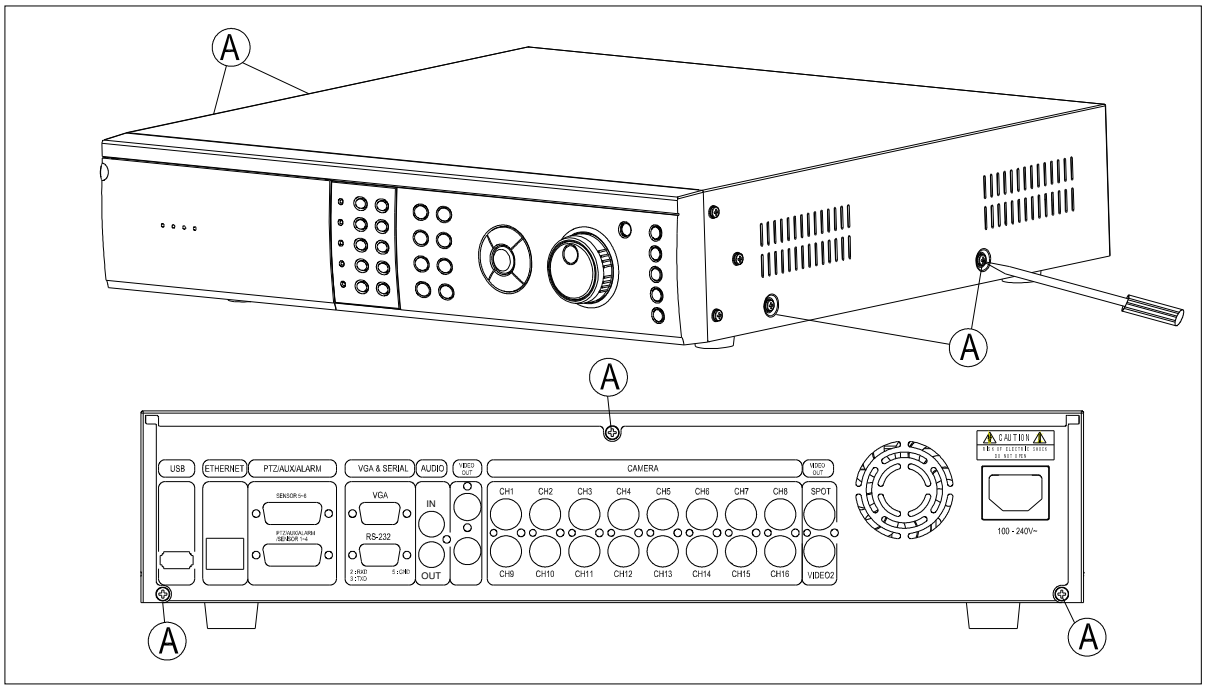
- Check up the connected DVR information.

5 Appendix

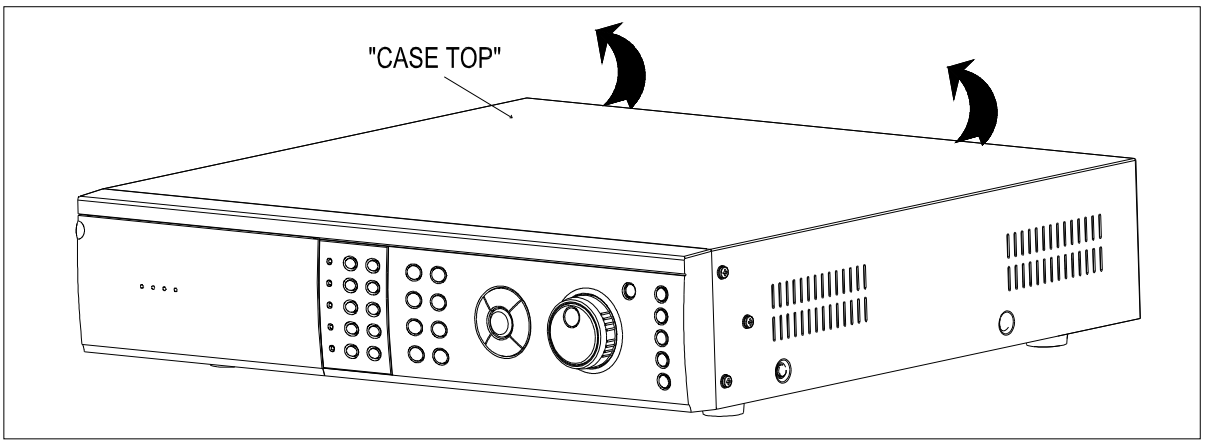
5.1 Installing HDD

5.1.1 Installing HDD

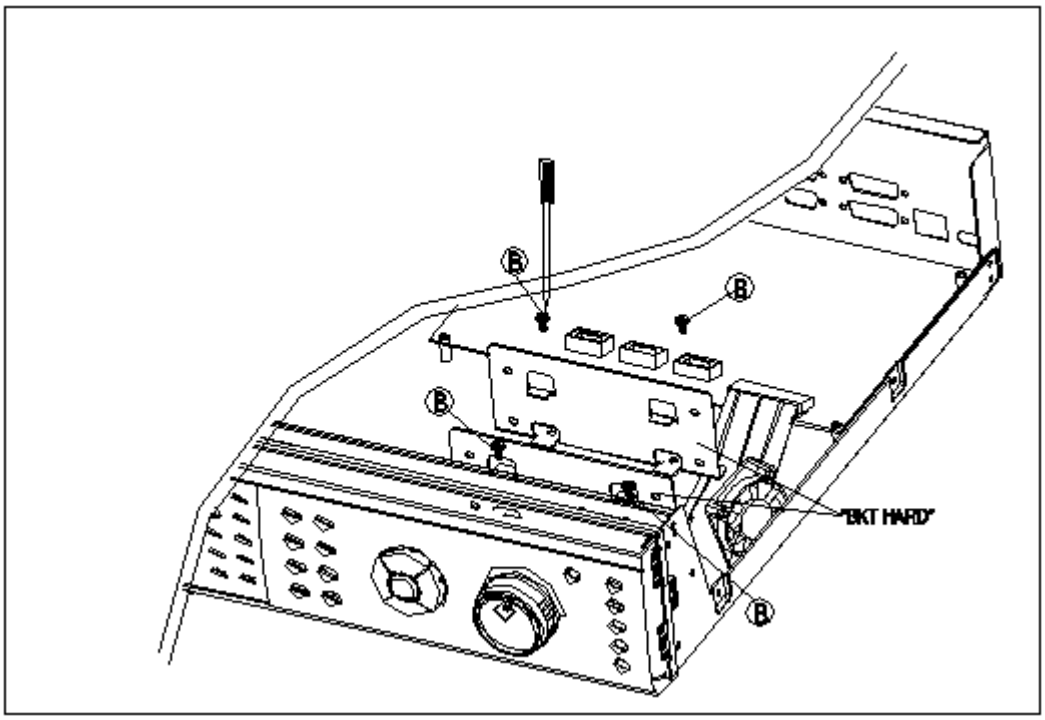
- It is available to install maximum 2pcs SATA Interface's HDD.



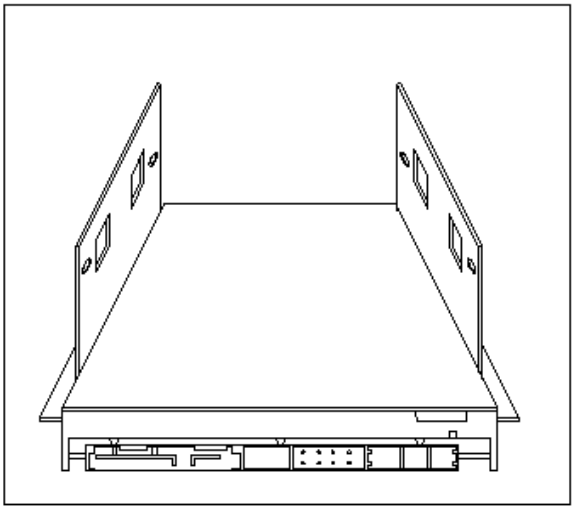
- Bolt the "A" part out, using driver.

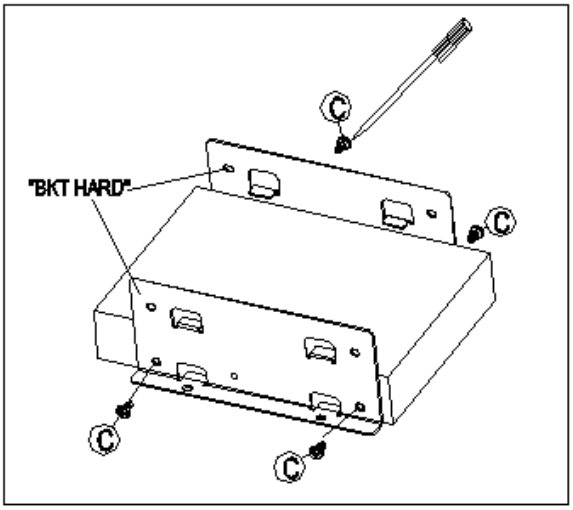


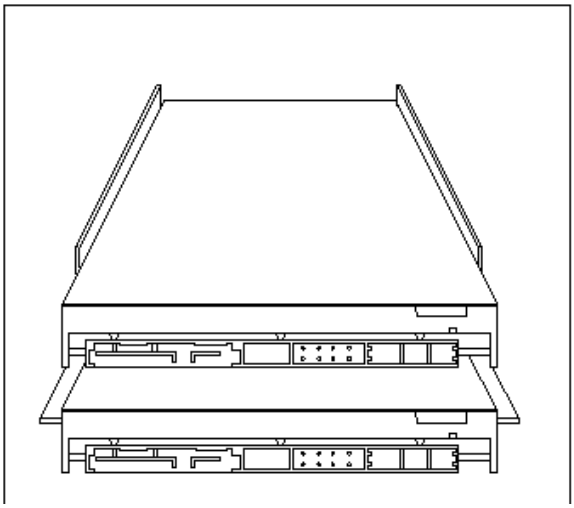
- TOP COVER is able to apart from BOTTOM CASE.

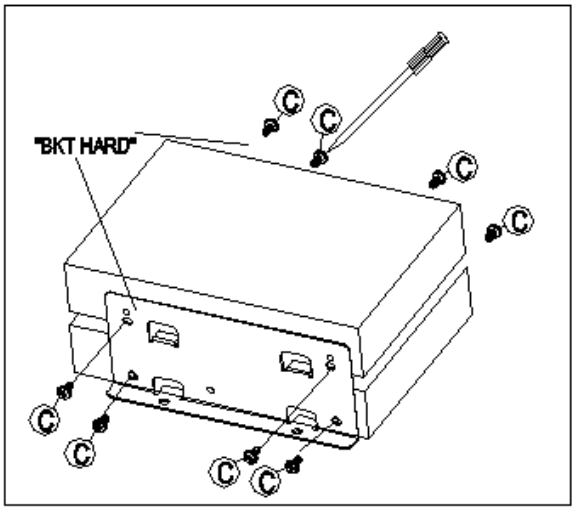


- It is assembled bracket for HDD inside of DVR.
- Bolt the ‘B’ part out. (Separate of BRACKET)

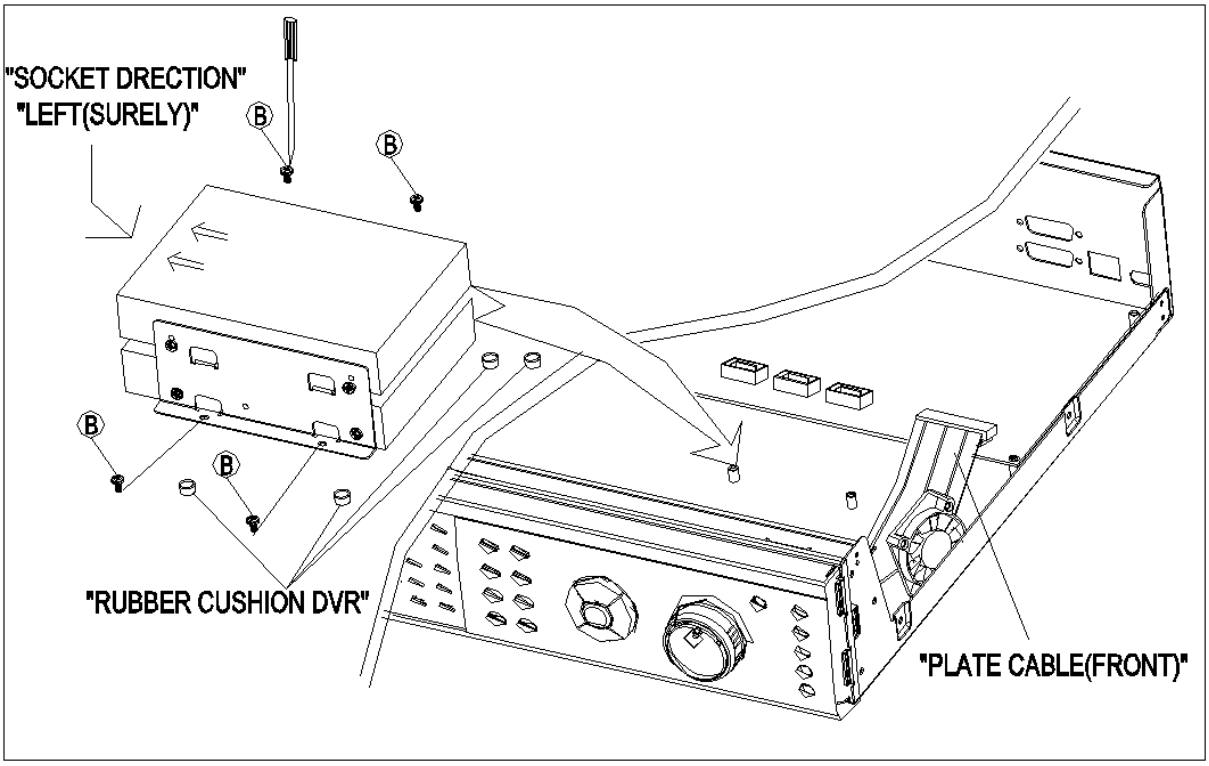




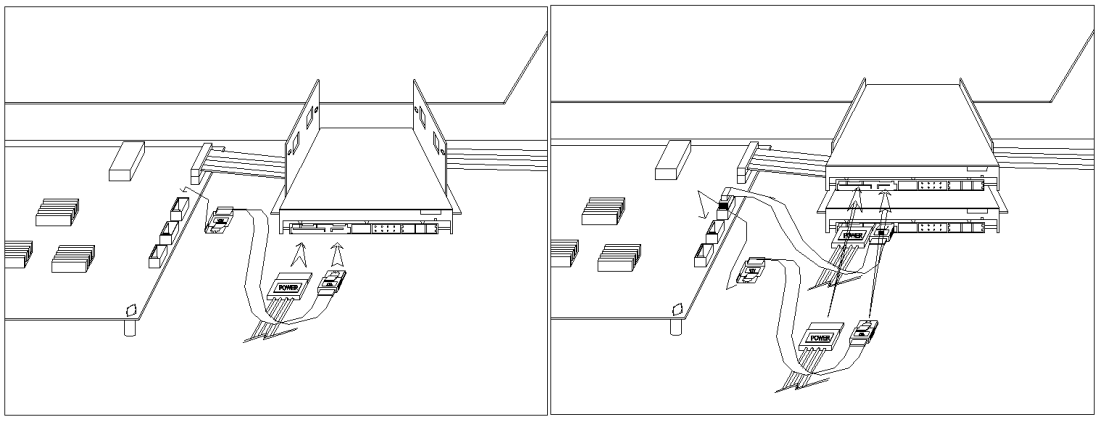




- Assemble HDD, referring to above picture. Upper side picture for assembling of 1 piece HDD and lower side picture for assembling of 2pcs HDD.
- Recommended bolt type is M3.5 x 5L for assembling of HDD. (It is packed with HDD, when you purchase it)



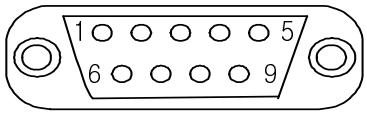
- When you finished to assemble HDD and BRACKET, install assembled HDD set in DVR.
- You can refer to above picture for HDD installation.
- Be careful the connector direction of HDD.
- When you install HDD in a set, be careful to be not hold the FRONT CABLE between HDD set and DVR.
- You can use the bolt, which you bolt out, when you disassemble DVR.



- This shows installed HDD set in DVR. Be careful the direction.

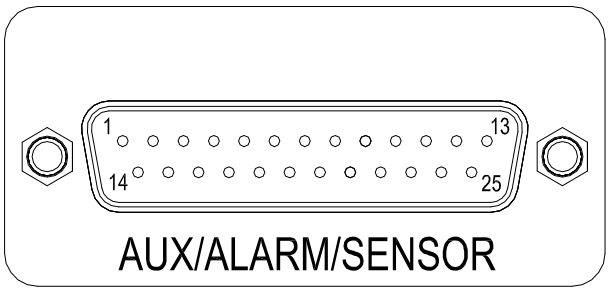
5.2 Terminal Information

5.2.1 DSUB-9P (RS-232)



No	Name	Description
2	RXD	Receive Data
3	TXD	Transmit Data
5	GND	Signal Ground

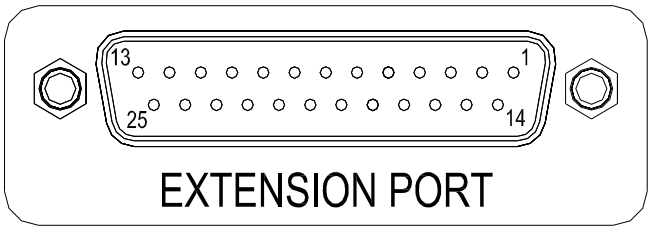
5.2.2 DSUB-25P (AUX / ALARM / SENSOR)



NO	NAME	DESCRIPTION	NO	NAME	DESCRIPTION
1	AUX0	User Programmable Auxiliary Output Port	14	SENSOR INPUT 6	Sensor Input Port NO/NC Selectable
2	AUX1		15	SENSOR INPUT 7	
3	AUX2		16	SENSOR INPUT 8	
4	AUX3		17	SENSOR INPUT 9	
5	+5V	POWER OUT	18	SENSOR INPUT 10	
6	RELAY_NO	Relay Output Port	19	SENSOR INPUT 11	
7	RELAT_COM		20	SENSOR INPUT 12	
8	RELAY_NC		21	SENSOR INPUT 13	
9	SENSOR INPUT 1	Sensor Input Port NO/NC Selectable	22	SENSOR INPUT 14	
10	SENSOR INPUT 2		23	SENSOR INPUT 15	
11	SENSOR INPUT 3		24	SENSOR INPUT 16	
12	SENSOR INPUT 4		25	GND	
13	SENSOR INPUT 5				

- DVR model difference.
  - 4ch DVR : SENSOR 4pcs
  - 8ch DVR : SENSOR 8pcs
  - 16ch DVR : SENSOR 16pcs

5.2.3 DSUB-25P (EXTENSION)



NO	NAME	DESCRIPTION	NO	NAME	DESCRIPTION
1	AUDIO5	Audio Input (5ch ~16ch)	14	Daisy Video Out	Daisy chain Video Output for Matrix function
2	AUDIO6		15	GND	Ground
3	AUDIO7		16	GND	
4	AUDIO8		17	GND	
5	AUDIO9		18	GND	
6	AUDIO10		19		
7	AUDIO11		20		
8	AUDIO12		21		
9	AUDIO13		22		
10	AUDIO14		23		
11	AUDIO15		24		
12	AUDIO16		25		
13	Daisy Video In	Daisy chain Video Input for Matrix function			

- DVR model difference.
  - 4ch DVR : AUDIO5 ~ AUDIO8, Daisy Video In, Daisy Video Out.
  - 8ch DVR : AUDIO5 ~ AUDIO8, Daisy Video In, Daisy Video Out.
  - 16ch DVR : AUDIO5 ~ AUDIO16, Daisy Video In, Daisy Video Out.

5.3 Factory Default Value

5.3.1 Main Menu

Menu				Default	Remark
Main menu	**Sub menu1**	**Sub menu 2**	**Sub menu3**		
Camera setting	Channel	Channel number		**CH 1~CH 16**	
	Camera name			**CH 01~CH 16**	
	Hide screen			**OFF**	
	Screen adjustment	Contrast		**9 Level**	Max. 16 Levels
		Bright		**9 Level**	
		Color		**9 Level**	
	PTZ setting	Model name		**NONE**	URX-500, PELCO-D, SENSORMATIC, VICON, SUNGJIN MRX-1000 SRX-100B, HITRON, SPECO CVC-927PTZ, DMP23-H2, ELMO, LG-MULTIX LILIN
		PTZ number		**1**	
		Control opposite direction	Pan	**NO**	
			Tilt	**NO**	
			Zoom	**NO**	
			Focus	**NO**	
		RS-485 setting	Baud Rate	**9600**	2400, 4800, 9600, 19200, 38400, 57600, 115200
	SPOT			**CH 1**	CH 1~CH 16, SEQ
	Screen switch time (sec)			**2 sec**	2,4,5,8,10,15,30
Recording setting	Resolution			**360x240(NTSC)**	360x240, 720x240, 720x480
				360x288(PAL)	360x288, 720x288, 720x576
	Audio recording			**OFF**	
	Channel	Channel number		**CH 1**	CH 1 ~ CH 16, ALL
		Screen quality		**FINE**	4 Levels

		Recording speed (FPS)		**30**	NONE, 1, 2, 3, 4, 5, 6, 8, 10, 15, 30
		Recording condition		**MANUAL**	MANUAL, CONTINOUSE, MOTION, MOTION+SENSOR, SCHEDULE, CONT+EVENT
			CONT+EVENT	**Screen quality**	SUPER FINE
				Recording speed (FPS)	30 FPS
Event setting	Motion detection setting	Channel		**CH 1**	CH 1 ~ CH 16
		Sensitivity		**5 Level**	8 Levels
		Detection area setting			
		Event pop up		**OFF**	
		Motion tracing		**OFF**	
	Sensor setting	Sensor		**SENSOR 1**	SENSOR 1 ~ SENSOR 16, ALL
			Sensor type	**N.O.**	N.O. / N.C.
			Connection channel	CH 1	CH1~CH16, NONE
		Event pop up		OFF	
	Alarm input/output	Sensor		**SENSOR 1**	SENSOR 1 ~ SENSOR 16, ALL
			Alarm input setting	**OFF**	
		Motion		**CH 1**	CH1 ~ CH16,NONE
			Alarm output setting	**OFF**	
		Record Fail		**OFF**	
		Record Warning		**OFF**	
		Relay duration time (sec)		**0 sec**	0, 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60sec
	Recording duration time, after alarming			**10 sec**	10, 20, 20, 40, 50, 60 sec
	E-mail address setting	Address of recipient	1~4		
		Address of sender	1		
	Setting of e-mail environment	Sending period		**NO**	NO, 30MIN, 1 HOUR, 2 HOUR, 5 HOUR, 12 HOUR, 24 HOUR, 2 min after event
		Set the time of no-sending		**NO**	
			Starting time	**01**	
			Ending time	**01**	
		SMTP server address		**0.0.0.0**	
		Port		**0025**	
		Certification		**NO**	
			Password		
	Event log			**CH 1**	
Playback	Channel			**ALL**	

setting	Playback starting time			**5 MIN AGO**	FISRT, 5 MIN AGO, 30 MIN AGO, 1 HOUR AGO, 6 HOUR AGO, 12 HOUR AGO 24 HOUR AGO,
Screen indication setting	Camera name			**ON**	
	Date / Time			**ON**	
	HDD usage status			**ON**	
	Outline			**ON**	
	VGA setting			**640x480**	640x480, 800x600, 1024x768, 1280x1024
	REC Icon			**RED Only**	**REC Only** **R/G/Y**
Network setting	DDNS setting	DDNS server address 1		**221.139.14.109**	
		Port		**7100**	
		DDNS server address 2		**211.104.85.235**	
		Port		**7100**	
	Password for connection with remote site	Admin		**111111**	
		User		**111111**	
	Network type setting	STATIC	DDNS usage	**OFF**	
			Port	**80**	
			IP address	**192.168.1.200**	
			Subnet mask	**255.255.255.0**	
			Gateway	**192.168.1.1**	
			DNS IP	**0.0.0.0**	
		DHCP	Port	**8888**	
		PPPoE	Port	**80**	
			ID	**dvr**	ID for entrance
			Password	**111111**	P/W for entrance
			DNS IP	**0.0.0.0**	
	JPEG Frame rate			**CH1**	**ALL** **CH 1~16**
	Recording speed [FPS]			30	
System setting	System name			**16CH DVR**	
	DVR ID			**1**	
	System password	**User Account**	**ADMIN**		**ADMIN,** **USER_1~6**
			Password input	******	
		Lock of automatic key (Sec.)		**OFF**	OFF, 30 SEC, 1, 3, 5, 10 MIN
	Date / Time	Time		**24**	12/24
		Date		**YYYY/MM/DD**	YYYY/MM/DD, MM/DD/YYYY, DD/MM/YYYY

		Standard time zone	Time	**GMT**	GMT, America/Anchorage, America/Chicago, America/Dawson, America/Denver, America/Los_Angles, America/Mexico_City , America/New_York, America/Sao_Paulo, America/Toronto, America/Winnipeg, Asia/Dubai, Asia/Istanbul, Asia/Seoul,, Asia/Tehran, Asia/Tokyo, Australia/Darwin, Australia/Perth, Australia/Sydney, Europe/Amsterdam, Europe/Athens, Europe/Berlin, Europe/Brussles, Europe/Copenhagen, Europe/Dublin, Europe/Helsinki, Europe/London, Europe/Madrid, Europe/Moscow, Europe/Oslo, Europe/Paris, Europe/Prague, Europe/Stockholm, Europe/Tallinn, Europe/Vienna, Europe/Warsaw, Europe/Zurich, Pacific/Auckland, Pacific/Chatham
		NTP usage		**OFF**	
		Time setting (h./m./s)			
		Date setting			
	buzzer	Sensor		**OFF**	
		Motion		**OFF**	
		Video loss		**OFF**	
		Record Fail		**OFF**	
		Record Warning		**OFF**	

	Language			**English**	Korean, English, Japanese, French, Spanish, German, Polish, Italian, Russian, Slovak, Turkish, Czech
	Hard Disk	Quantity of HDD		**1 or 2**	Indicate the quantity of installed HDD.
		Writing mode		**Overwrite**	Overwrite/Once
		Delete by force [some days ago]		**OFF**	1~100, OFF
		HDD 1	Usage capacity	**Used Cap. / Total Cap.**	
			Format		
		HDD 2	Usage capacity	**Used Cap. / Total Cap.**	
			Format		
	Aux port setting	Working	HIGH / LOW	**HIGH**	
		Function		**UNUSED**	**UNUSED, REC FAIL, REC WARNING, DISK FULL, RECORD, STATUS, ALARM, CH-ALL ALARM CH 01~ ALARM CH 16**
	System initialization				
	Software upgrade	RAMDISK			
		Kernel			
Back up	Back up device			**USB**	USB, USB(AVI), CD-RW, CD-RW(AVI)
	Starting time				
	Scope			**1 hour 0 min**	0 hour 0 min ~ 240 hour 59 min
	Channel			**ALL**	ALL, 1 ~ 16
	Format				CD-RW only
System log					
System information	System type				NTSC, PAL
	H/W version				It is able to be changed for function upgrade.
	S/W version				
	Kernel version				
	Mac Address			**00:09:F8:XX:XX:XX**	
	Audio			**Support**	It is different, depending on S/W version.
	Language			Korean, English, Japanese, French, Spanish, German, Polish, Italian, Russian, Slovak, **Turkish, Czech**	

5.3.2 Search Menu

Menu				Default Value	Ref.
Main Menu	Sub menu1	Sub menu2	Sub menu3		
Search	Calendar Search			CURRENT SYSTEM DATE	
	Event Search	START TIME		DATE : One day before Time : Current system time	
		END TIME		Date : Current System date Time : Current system time	
		CHANNEL		CH1	
	Still Image Search				

5.4 Protocol

5.4.1 Code table

No	Protocol	Description	Remarks
1	kmute	Audio Mute	
2	krec	Record	
3	khdd	HDD Information	
4	knet	Network user information	
5	klog	Log Display	
6	kinfo	System Information	
7	knum1	Number 1	
8	knum2	Number 2	
9	knum3	Number 3	
10	knum4	Number 4	
11	knum5	Number 5	
12	knum6	Number 6	
13	knum7	Number 7	
14	knum8	Number 8	
15	knum9	Number 9	
16	knum0	Number 0	
17	kseq	Sequence	
18	kmulti	Multi	
19	klock	Lock	
20	kdvr	DVR	
21	ksearch	Search	
22	kmenu	Menu	
23	kup	Up	
24	kdown	Down	
25	kleft	Left	
26	kright	Right	
27	kok	Ok	
28	krplay	R.Play	
29	kstop	Stop	
30	kplay	Play	
31	kpause	Pause	
32	kptz	PTZ	
33	kfrz	Freeze	
34	kzoom	Zoom	
35	kosd	OSD	
36	k4ch	4ch Division	
37	k6ch	6ch Division	
38	k8ch	8ch Division	
39	k16ch	16ch Division	
40	kshold	Shuttle Hold	
41	ksr8	Shuttle Right 8Step	
42	ksr7	Shuttle Right 7Step	
43	ksr6	Shuttle Right 6Step	
44	ksr5	Shuttle Right 5Step	
45	ksr4	Shuttle Right 4Step	
46	ksr3	Shuttle Right 3Step	
47	ksr2	Shuttle Right 2Step	
48	ksr1	Shuttle Right 1Step	
49	ks0	Shuttle Right 0Step	

50	ks1	Shuttle left 1Step	
51	ks2	Shuttle left 2Step	
52	ks3	Shuttle left 3Step	
53	ks4	Shuttle left 4Step	
54	ks5	Shuttle left 5Step	
55	ks6	Shuttle left 6Step	
56	ks7	Shuttle left 7Step	
57	kjleft	Jog left	
58	kjright	Jog right	
59	kpower	Power	

5.4.2 Usage

- System protocol to control DVR from remote client software installed in PC or remote controller.
- It maps button function of remote controller with front key in the front panel of DVR. If user add English letters assigned protocol paragraph and \n(new line and transmit ASCII Code form, DVR will be activated same as for user to push one of pad or remote controller.

5.5 Recording mode, Quality, FPS, HDD time table

TV System	Resolution	Quality	Frame Rate	Recording time by HDD capacity(hours), for 1 channel		
				300GB	500GB	1TB
N T S C	360*240	Super Fine	30 FPS	425.52	709.19	1418.39
			15 FPS	703.19	1171.99	2343.97
			10 FPS	968.51	1614.18	3228.36
			5 FPS	1744.38	2907.31	5814.61
			1 FPS	9286.27	15477.12	30954.25
		Fine	30 FPS	683.41	1139.01	2278.02
			15 FPS	1088.74	1814.56	3629.12
			10 FPS	1468.53	2447.55	4895.09
			5 FPS	2546.24	4243.73	8487.46
			1 FPS	12143.59	20239.32	40478.63
		Enhanced	30 FPS	939.68	1566.14	3232.28
			15 FPS	1540.16	2566.94	5133.88
			10 FPS	1973.33	3288.89	6577.78
			5 FPS	3358.87	5598.11	11196.22
			1 FPS	15786.67	26311.11	52622.22
		Normal	30 FPS	1209.71	2016.18	4032.35
			15 FPS	1825.05	3041.75	6083.49
			10 FPS	2447.55	4079.24	8158.48
			5 FPS	4154.39	6923.98	13847.95
			1 FPS	22552.38	37587.30	75174.60
	720*240	Super Fine	30 FPS	302.72	504.53	1009.06
			15 FPS	505.17	841.96	1683.91
			10 FPS	724.16	1206.93	2413.86
			5 FPS	1268.01	2113.34	4226.68
			1 FPS	6314.67	10524.44	21048.89
		Fine	30 FPS	454.29	757.15	1514.31
			15 FPS	744.65	1241.09	2482.18
			10 FPS	968.51	1614.18	3228.36
			5 FPS	1715.94	2859.90	5719.81

			1 FPS	8095.73	134952.88	26985.75
		Enhanced	30 FPS	577.21	962.02	1924.03
			15 FPS	931.37	1552.28	3104.56
			10 FPS	1247.96	2079.93	4159.86
			5 FPS	2177.47	3629.12	7258.24
			1 FPS	10524.44	17540.74	35081.48
		Normal	30 FPS	489.37	1148.96	2297.91
			15 FPS	1115.67	1859.44	3718.88
			10 FPS	1475.39	2458.98	4917.96
			5 FPS	2587.98	4313.30	8626.59
			1 FPS	10887.36	18145.59	36291.19
	720*480	Super Fine	30 FPS	154.62	257.70	515.40
			15 FPS	258.16	430.27	860.54
			10 FPS	367.13	611.89	1223.77
			5 FPS	673.21	1122.01	2244.02
			1 FPS	3587.88	5979.80	11959.60
		Fine	30 FPS	216.55	360.92	721.84
			15 FPS	369.71	616.19	1232.37
			10 FPS	505.17	841.96	1683.91
			5 FPS	902.10	1503.49	3006.98
			1 FPS	4266.67	7111.11	14222.22
		Enhanced	30 FPS	284.96	474.93	949.86
			15 FPS	469.14	781.91	1563.81
			10 FPS	655.05	1091.75	2183.49
			5 FPS	1182.52	1970.87	3941.74
			1 FPS	5443.68	9072.80	18145.59
		Normal	30 FPS	343.56	572.60	1145.21
			15 FPS	553.92	923.20	1846.36
			10 FPS	744.65	1241.09	2482.18
			5 FPS	1332.21	2220.35	4440.69
			1 FPS	6071.79	10119.66	20239.32

- The recording time can be different by inputting image.

TV System	Resolution	Quality	Frame Rate	Recording time by HDD capacity(hours), for 1 channel		
				300GB	500GB	1TB
PAL	360*288	Super Fine	25 FPS	441.59	735.98	1471.95
			20 FPS	513.39	855.65	1711.29
			9 FPS	1025.11	1708.51	3417.03
			5 FPS	1602.71	2671.18	5342.36
			1 FPS	7700.81	12834.69	25669.38
		Fine	25 FPS	689.37	1148.96	2297.91
			20 FPS	815.85	1359.75	2719.49
			9 FPS	1482.32	2470.53	4941.05
			5 FPS	2192.59	3654.32	7308.64
			1 FPS	10524.44	17540.74	35081.48
		Enhanced	25 FPS	951.00	1585.01	3170.01
			20 FPS	1123.61	1872.68	3745.35
			9 FPS	1973.33	3288.89	6577.78
			5 FPS	2998.42	4997.36	9994.72
			1 FPS	13727.54	22879.23	45758.45
		Normal	25 FPS	1156.53	1927.55	3855.11
			20 FPS	1360.92	2268.20	4536.40
			9 FPS	2373.93	3956.56	7913.12
			5 FPS	3629.12	6048.53	12097.06
			1 FPS	15034.92	25058.20	50116.40
	720*288	Super Fine	25 FPS	315.10	525.17	1050.34
			20 FPS	374.98	624.97	1249.93
			9 FPS	734.26	1223.77	2447.55
			5 FPS	1160.78	1934.64	3869.28
			1 FPS	5638.10	9396.83	18793.65
		Fine	25 FPS	471.24	785.41	1570.81
			20 FPS	558.82	931.37	1862.73
			9 FPS	1005.52	1675.87	3351.73
			5 FPS	1602.71	2671.18	5342.36
			1 FPS	7079.22	11798.70	23597.41
		Enhanced	25 FPS	600.25	1000.42	2000.84

			20 FPS	704.76	1174.60	2349.21
			9 FPS	1288.71	2147.85	4295.69
			5 FPS	1985.74	3309.57	6619.15
			1 FPS	9020.95	15034.92	30069.84
		Normal	25 FPS	709.51	1182.52	2365.04
			20 FPS	837.49	1395.81	2791.63
			9 FPS	1503.49	2505.82	5011.64
			5 FPS	2304.62	3841.04	7682.08
			1 FPS	10184.95	16974.91	33949.82
	720*576	Super Fine	25 FPS	153.12	255.20	510.40
			20 FPS	184.53	307.55	615.10
			9 FPS	372.33	620.55	1241.09
			5 FPS	619.08	1031.81	2063.62
			1 FPS	3038.82	5064.70	10129.40
		Fine	25 FPS	217.30	362.16	724.33
			20 FPS	259.01	431.68	863.37
			9 FPS	510.90	851.49	1702.98
			5 FPS	820.09	1366.81	2733.62
			1 FPS	4047.86	6746.44	13492.88
		Enhanced	25 FPS	288.08	480.13	960.26
			20 FPS	341.33	568.89	1137.78
			9 FPS	645.67	1076.12	2152.24
			5 FPS	1066.67	1777.78	3555.56
			1 FPS	4643.14	7738.56	15477.12
		Normal	25 FPS	324.49	540.82	1081.65
			20 FPS	394.17	656.96	1313.91
			9 FPS	746.41	1244.02	2488.05
			5 FPS	1169.38	1948.97	3897.94
			1 FPS	5638.10	9396.83	18793.65

- The recording time can be different by inputting image.
- Above table is made with the images, which there are many movements. So, it is able to record more longer time than above table, when you record.

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