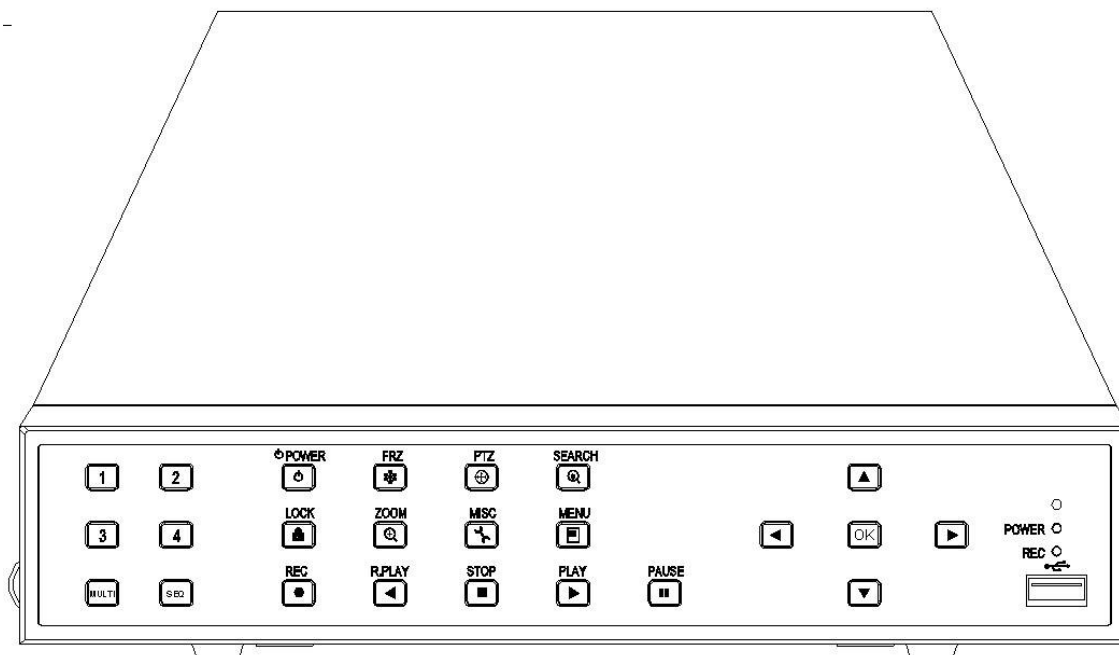


USER MANUAL

Real time Digital Recorder (FULL D1 4 Channel, MPEG-4)



* Default system password: 111111

(for RAMS, Record stop, Menu setup, System off, Auto key lock)

* Default ID: admin (for RAMS)

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1. SYSTEM OVERVIEWS

1.1 Safety

WARNING

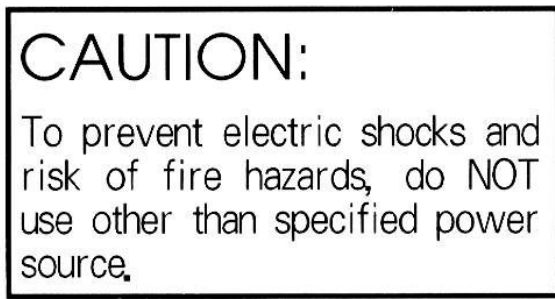
Please follow instruction to prevent any kind of damage or loss. If you do not follow this instruction, it might bring severe damage or loss.



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 Channel DVR. Please be certain that all items are included as soon as you open the box:

1.2.1 Components

- DVR
- Power cable
- DSUB-25 connector for EXTENSION PORT
- Quick Manual
- Software CD (RAMS, UniPlayer, Quick Installer and Operation Manual)

1.2.2 Options

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

1.3 Features & specifications

Features

- Real time 4 channel Standalone Digital Video Recorder
- Real time Recording & Playback
 - Full D1 Real Time(NTSC : 120 FPS, PAL : 100 FPS)
 - Multi Playback support
- 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
- Alarm triggered E-mail alert function
- Alarm function for Motion detection, Video loss, Sensor detection
- Recording frame and image quality control function
- Various back up support (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.
- Detail and convenient search, using Jog Shuttle
- Watermark function (during back up)
- PTZ control, using RS-485 communication
- Quick & easy setup, using RS-485 communication
- Convenient operating, by using of remote controller
- Convenient operating, by USB MOUSE support
- Both is NTSC & PAL video system are available.
- DC Adaptor : Free volt power input (100 - 240VAC, 50Hz/60Hz, 42W)
- Support various Video Out (CVBS out, VGA out)

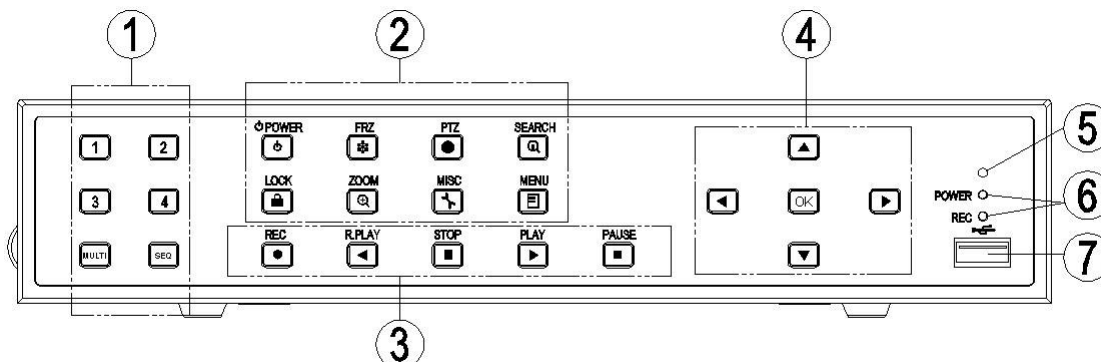
1.3.1. Specifications

Model	4ch DVR
Image System	NTSC, PAL selectable
Multi-tasking	Quadplex
Video Channel	4CH Composite BNC
Video Output	1CH Composite BNC, 1CH VGA
Video Compression	MPEG-4
Recording Resolution	720x480, 720x240, 360x240 (NTSC) / 720x576, 720x288, 360x288 (PAL)
Recording Quality	4 Levels (Normal, Enhanced, Fine, Super Fine)
Max Display Speed	120 fps (NTSC) 100 fps (PAL)
Max Recording Speed	120 fps at Full D1 (NTSC) 100 fps at Full D1 (PAL)
Max Playback Speed	120 fps (NTSC) 100 fps (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)
Alarm Output (Relay)	1 (NO/NC) , 4 TTL
Audio In/Out	4 CH Input / 1CH Output
Network	10/100Base-T (Static, DHCP, PPPoE, E-mail), DDNS server available
Motion Detection	22x15 (NTSC) / 22x18 (PAL), 8 Level Sensitivity
Hard Disk	Max. 1 EA
Backup	USB(Ver2.0), Network
Watermarking	Still Image Backup
PTZ Control	RS-485
Serial Port	RS-232(TTL Level, Console)
System Log	Video Loss, Power On/Off, HDD Full, HDD Fail, Menu Called, Reset HDD Format, Reset SW Upgrade, Email Fail
Language	Korean, English, Japanese, French, Spanish, German, Polish, Italian, Russian, Slovakia
S/W Upgrade	Network, USB Memory Stick
Password Function	Power OFF, MENU, Record OFF, Key Lock
Power Source	Free Voltage DC Adaptor (100 – 240VAC, 50Hz/60Hz, 42W)
Dimension	280(W) x 290(D) x 55(H)
Operating Temperature	5℃ ~ 40℃
Weight	3Kg (net)

- Design and specifications are subjected to change without notice.

1.4 Name, function & connections

1.4.1 Front view



Description:

1. Numeric button - Live Viewing mode button

- 1,2,3,4 : It can be used for channel & password change.
- MULTI : Selection button for Screen Division for Live Viewing mode
 - Live mode: Selection of Screen Division for Live Viewing mode
 - In order to go back to previous mode, user is required to push “MULTI” button, after selecting a specific channel.
 - Playback mode : Selection button for Screen Division for playback of recording file. If you select specific one channel and in order to get back to each divided channel, you can just click ”MULTI” button.
- SEQ - Sequential view under live mode. Viewing of all active video input channels sequentially.
 - If you click “SEQ” button one time, each single channel can be viewed sequentially.
 - This button also can be used for all motions area release purpose on motion detection set up menu.

2. FUNCTION BUTTON

- POWER - Press this button to power on/off.
 - Soft Power method is adapted. Therefore, If Power button is pressed, user is asked to input Password, before Power off.
- LOCK: Press this button to lock/unlock the buttons of DVR, in order to prevent the use by Unapproved user.
 - If the “LOCK” button is pressed, DVR is locked, and it’s unlocked by inputting correct password
- ZOOM: Zoom In/Out on the images during Live Viewing.

-
- FRZ - Freeze.
 - Press button once to freeze the frame at live mode. Press again to return.
 - Exchange of video input type : Press power button with “FRZ” button from NTSC to PAL or PAL to NTSC.
 - MISC - Miscellaneous functions or Shuttle Hold.
 - MISC - To substitute for the buttons that are placed on the remote control but that are not placed on the keypad (NET, OSD, Audio Mute, HDD, LOG).
 - ◆ (If the button is pressed, windows appear, and user can select lower menu one by one)
 - SEARCH - Press once to open the menu to 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.

3. PLAYBACK

- RECORD - Press once to begin recording all active channels. Press again to end recording.
- R-PLAY - Reverse Playback. Press to begin reverse playback. Under PTZ control menu, used to decrease the speed of Pan, Tilt, Zoom, Focus.
- STOP - Stop playback.
- PLAY - Access to playback.
 - Playback button will activate assigned starting position and Channel at playback setup of menu.
 - At pause mode, it will release pause mode.
 - Under PTZ control menu, used to increase the speed of Pan, Tilt, Zoom, Focus.
- PAUSE – Press once to freeze playback. Press again to restart playback.

4. DIRECTION/SELECTION BUTTON

- UP - Used to move the cursor up; change possible values in the setup menu; under PTZ control sub menu, used to move camera; or used to adjust focus.
- DOWN - Used to move the cursor up; change possible values in the setup menu; under PTZ control sub menu, used to move camera; or used to adjust focus.
- LEFT - Used to change possible values in the setup menu. Under PTZ control menu, used to move the camera left or used to do Zoom Out; At playback mode, used to decrease playback speed.
- RIGHT - Used to change possible values in the setup menu. Under PTZ control menu, used to move the camera left or used to do Zoom In; At playback mode, used to increase playback speed.
- OK - Used as a selection key. Under PTZ control menu, used to be interchanged P/T mode

with Z/F mode

5. IR RECEIVER

- Remote control signal receiver

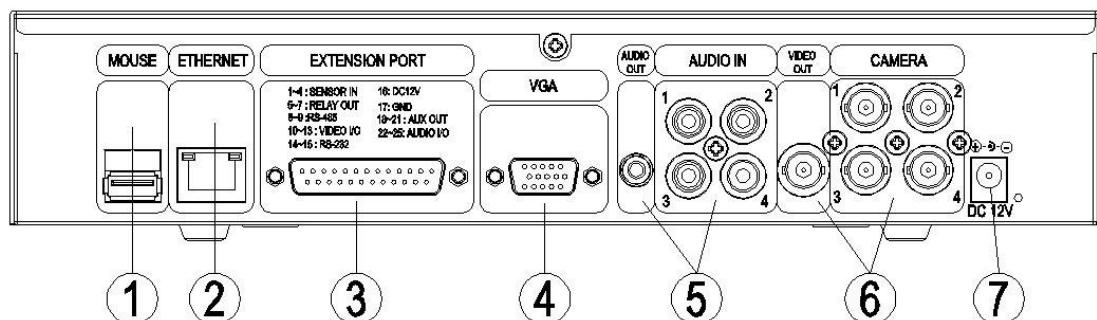
6. LED DISPLAY

- POWER : During Standby mode, red light on, during running unit, green light on
- REC : During recording green light flashes

7. USB CONNECTOR in the FRONT PANEL

- This connector is for USB Memory stick to back up the image
- USB mouse available.

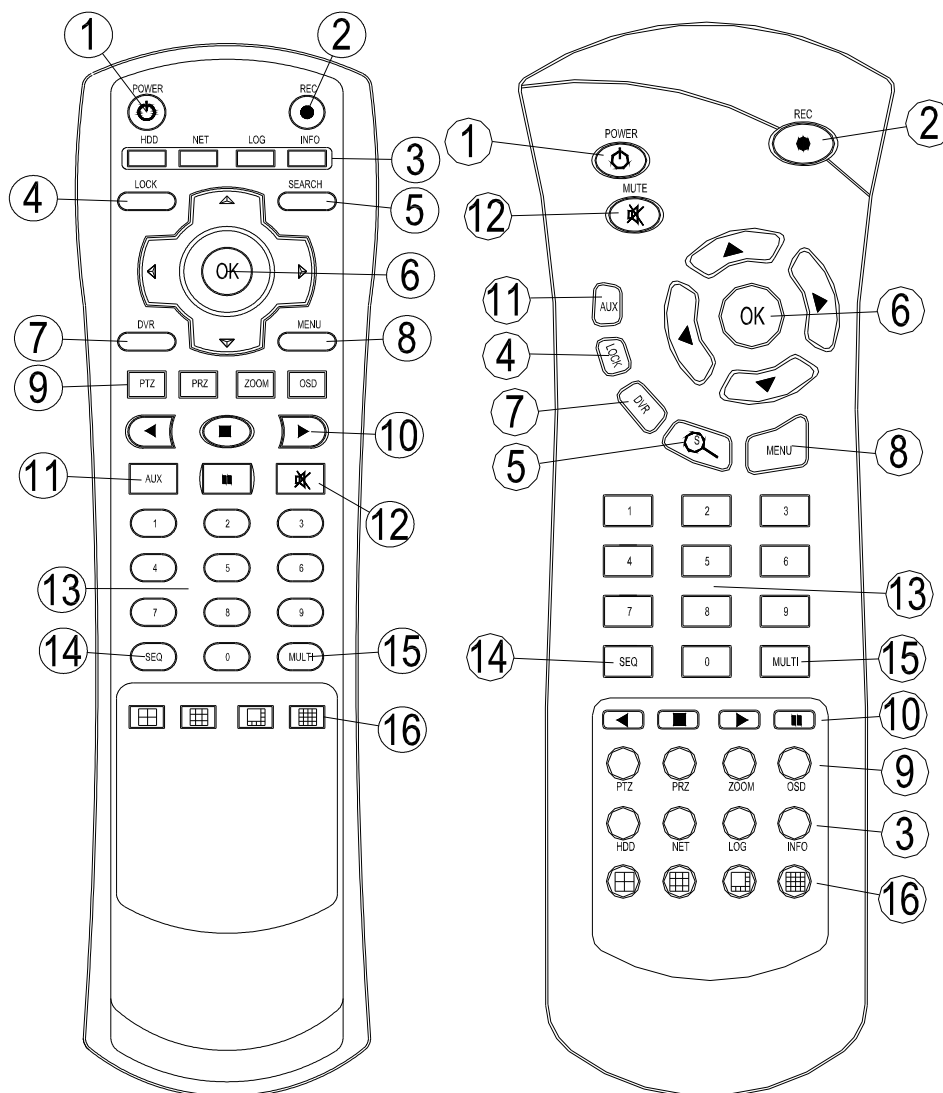
1.4.2 Rear panel view



Description :

1. MOUSE
 - This is USB memory stick terminal to back up HDD video screen.
 - USB Mouse is available.
2. ETHERNET
 - This is to connect 10/100 Base-T network connection port (RJ-45 port).
3. EXTENSION PORT
 - We provide you with SENSOR IN, AUX OUT, RELAY OUT, SERIAL OUT, RS-485 OUT, DC12V OUT and external AV IN/OUT.
4. VGA
 - Standard VGA Video-Out signal is exported. (DSUB-15 male Connector)
5. AUDIO IN/OUT
 - IN : Audio Line Input terminal.
 - OUT : Audio Line Output terminal.
6. VIDEO IN/OUT
 - IN : CAMERA INPUT TERMINAL. This is for CVBS signal input.
 - VIDEO OUT : VIDEO OUT TERMINAL. CVBS signal is exported.
7. DC 12V
 - Power Source for DVR SYSTEM.

1.4.3 Remote controller function



- ① POWER : button for power on/off. (DVR 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 DVR : Reserved.

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 "4" and "OK" button , it will show channel number 4.

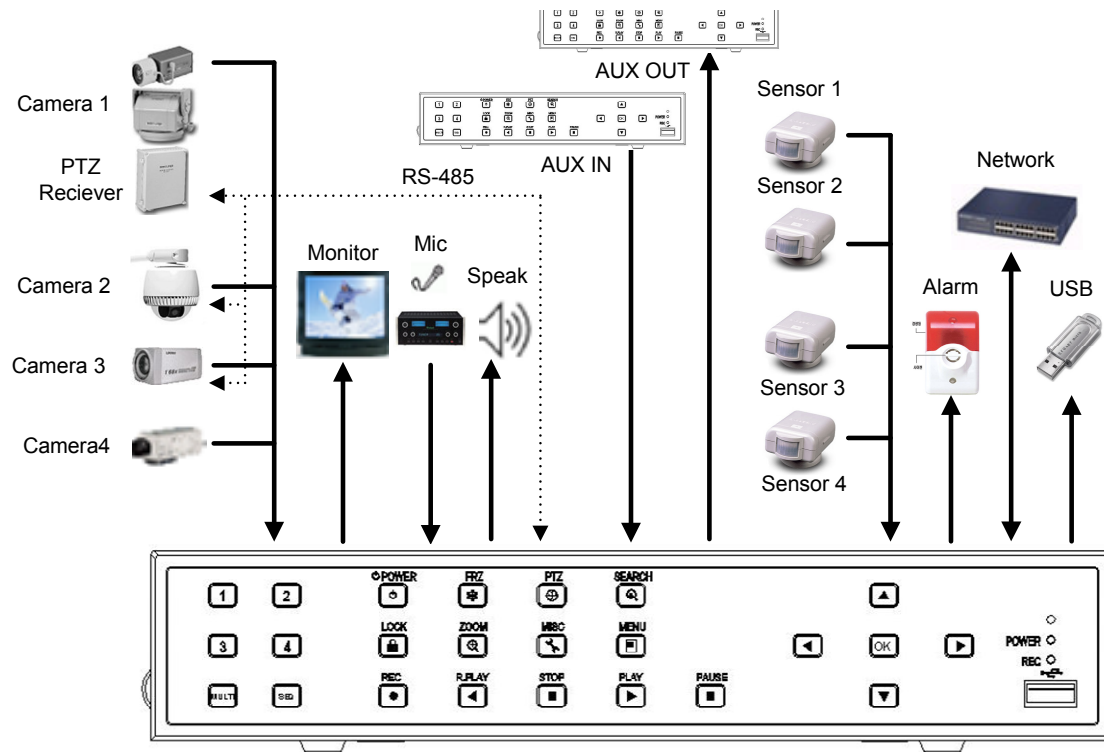
⑭ SEQ : The same function as on the DVR front panel.

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

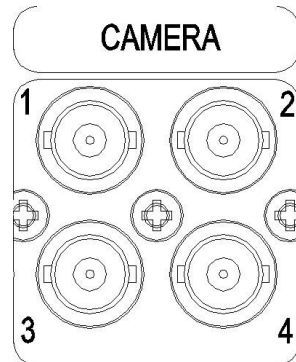
⑯ Screen division Group : Similar with "MULTI" Key but these keys play nothing , so makes it possible to move back related divided screen . From the left it provides , 4 divided screen, 8 divided screen , 9 divided screen and 16 divided screen.

1.5 INSTALLATION

1.5.1 Installation and connection

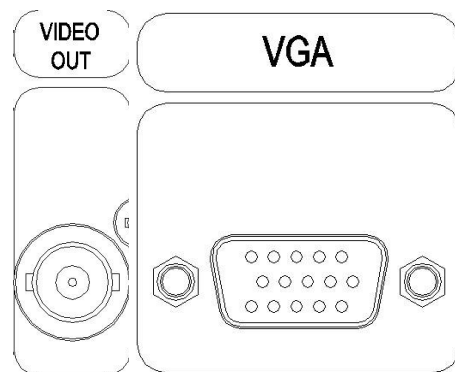


1.5.1.1 Camera In



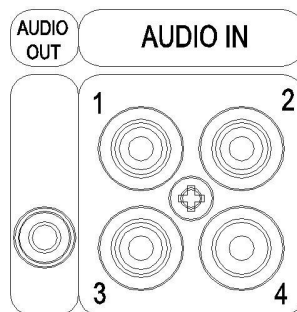
- It supports 4 inputs.

1.5.1.2 Video Out



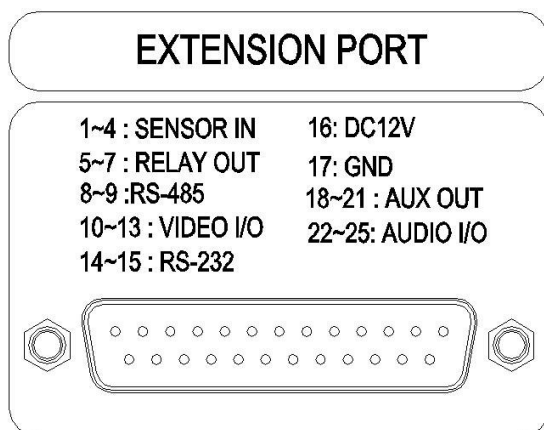
- Support various type's output.. Simultaneous output of CVBS signal and ANALOG RGB(VGA). It makes users to select appropriate output type, as they prefer.

1.5.1.3 Audio



- 4 channel Audio Input is Available. 1 channel Audio Out.

1.5.1.4 EXTENSION



1. **SENSOR IN 1 ~ 4**

It is able to connect with two kind of sensors(NO/NC). It is able to set up connection with input channel and select mode in the menu.

2. **REALY OUT**

It is available RELAY out port. (NO, COM, NC)

3. **RS-485**

It is available RS-485 output for connect PTZ.

4. **VIDOE I/O 1 ~ 4**

It is available VIDEO input or output port. User can choose which is output or input port

5. **RS-232**

It is available for serial message.

6. **DC 12V**

It provide DC power source from DVR to external component. It is DC12V@1A.

7. **GND**

It is signal GND port

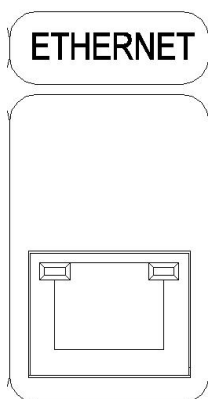
8. **AUX OUT 1 ~ 4**

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(DVR, Controller), using provided DSUB-25.

9. **AUDIO I/O**

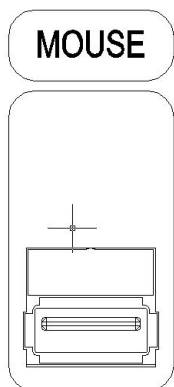
It is available AUDIO input or output port. User can use this port instead of RCA port.

1.5.1.5 Network



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

1.5.1.6 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 DVR 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 DVR.

(System Setup in Main Menu → Time/Date)

2.3 Password setting procedure

Change your password for the DVR. The password must be a 6-digit combined number consisting of numbers 1 ~ 4.

(System Setup in Main Menu → System Password)

2.4 Network setting

There are three types of network setting for the DVR: 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 Video input quality (Enhance/ Normal/ Fine/ Super fine), Frame rate (120 fps(NTSC) / 100 fps (PAL)), and recording mode. 4 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, and SCHEDULE mode. A red record light (●) on the top LEFT corner of each channel will indicate DVR recording.

In the MANUAL mode, the DVR 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 DVR 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 DVR has various types of backup methods:

2.8.1 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 DVR
- 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.

2.8.2 Network

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

2.9 Client Program

2.9.1 RAMS (Remote Access & Monitoring System)

- Remotely access, monitor, and operate the DVR for real-time live viewing, playback, backup, on-the-fly recording, and control over the LAN/WAN
- Upgrade the S/W(Kernel, Ramdisk) of DVR
- Install the RAMS program as referred to in section 4.2 of Operation Manual.
- Execute RAMS program and register selected DVR's IP address & Port number from the DVR

list by clicking following button .

- After selecting the target DVR, enter "admin" for ID and "111111" for default password. This will enable you to access the DVR.

2.9.2 UniPlayer

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

2.9.3 Quick Installer

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

3. Main Menu screen.



Figure. 3-1 Main Setup screen

3.1 Camera Setup menu

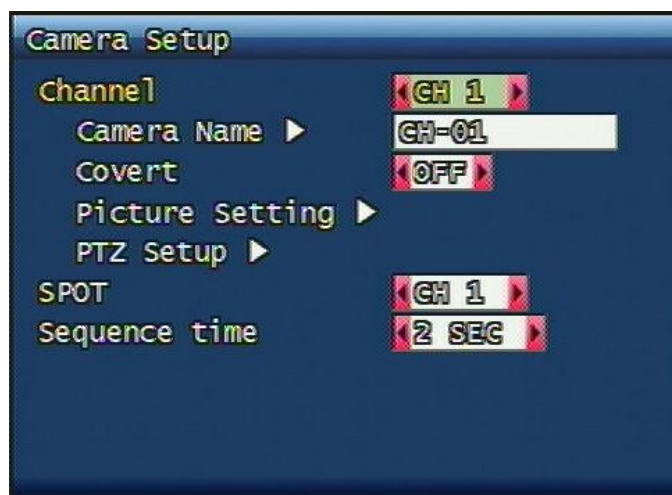


Figure. 3-2 Camera setup screen

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

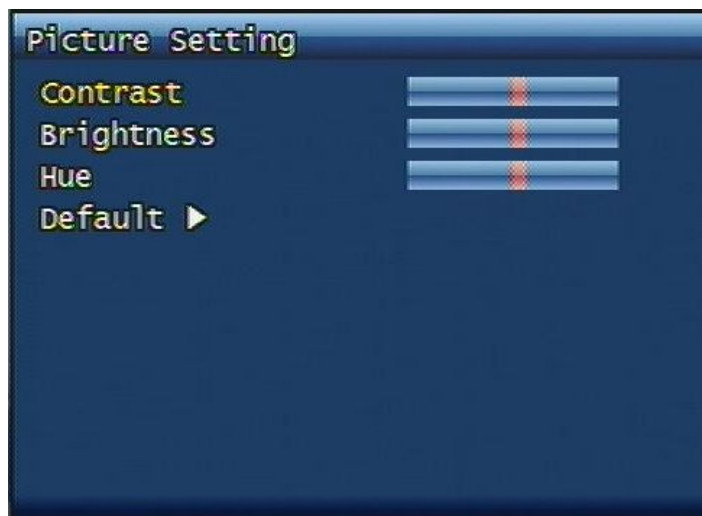


Figure. 3-4 Picture setting screen

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.

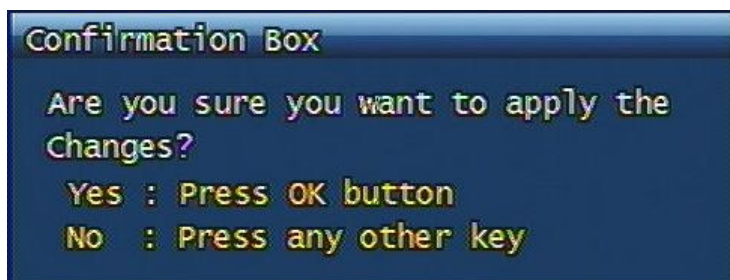


Figure. 3-5 Confirmation box on Picture Setting Default

3.1.5 PTZ setup

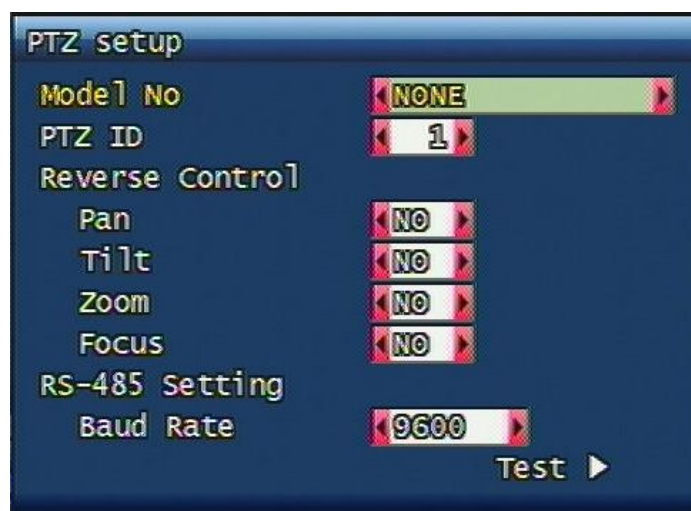


Figure. 3-6 PTZ setup screen

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.

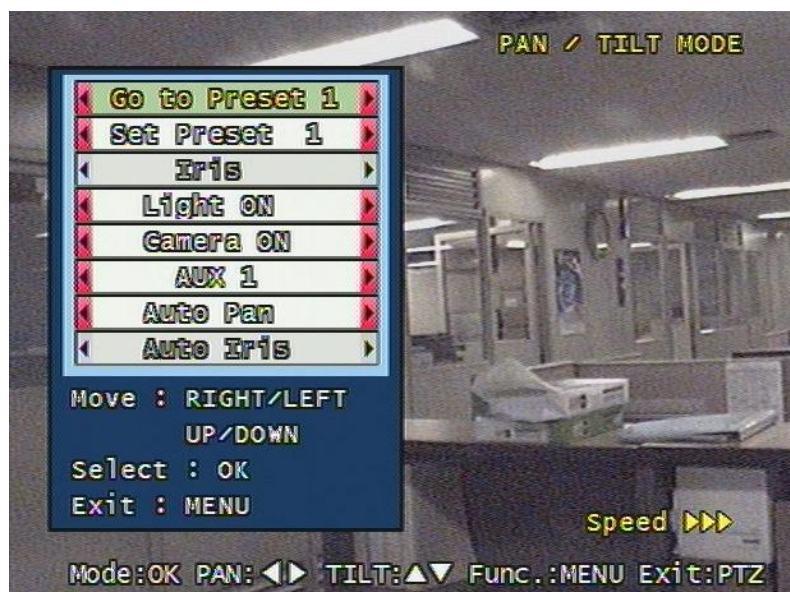


Figure. 3-7 Additional PTZ Menu

- 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 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

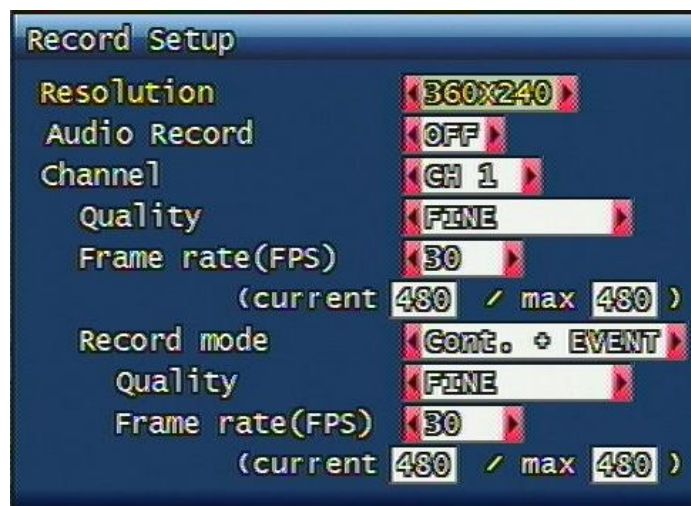


Figure. 3-8 Record setup screen

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

As audio input port is one channel available, user should synchronize audio signal with targeted video signal. With synchronized channel will record audio as well as video. But others will only record video input signal only.

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, 15, 20, 30(25) fps will be available. The total for all the channels is max 120 fps(100fps). But, with 720 x 240 (NTSC), 720x288 (PAL) resolution, user should not set to exceed 60(NTSC), 50(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.

3.2.7 Record Schedule Setup

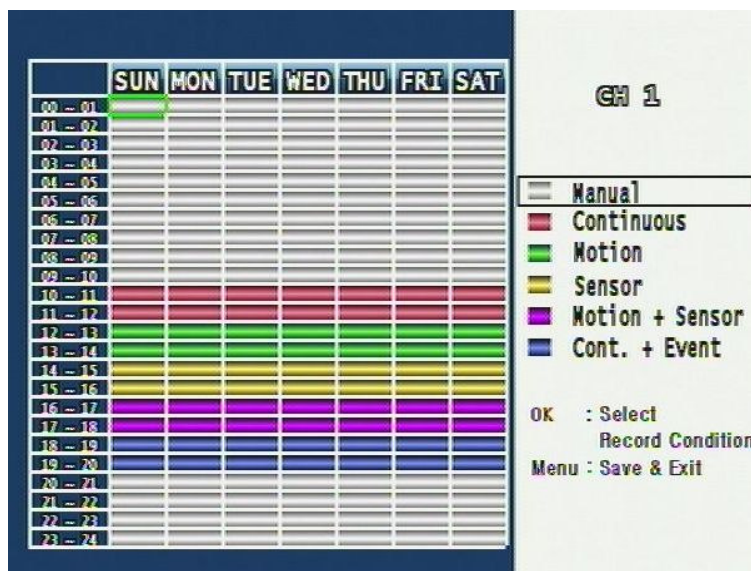


Figure. 3-9 Recording schedule setting screen

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

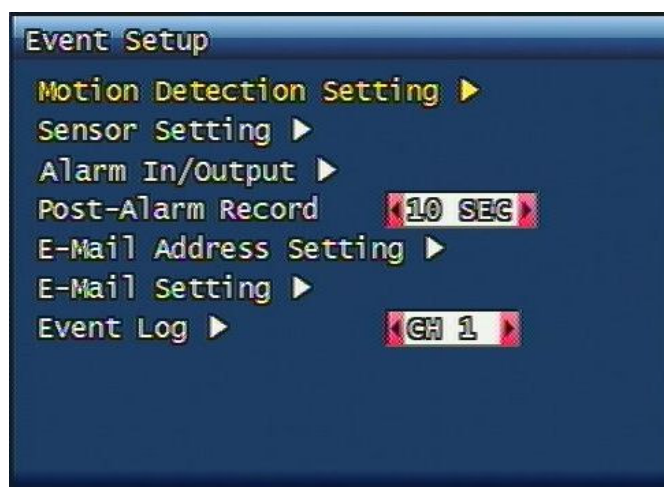


Figure. 3-10 Event Setup screen

3.3.1 Motion Detection Setting

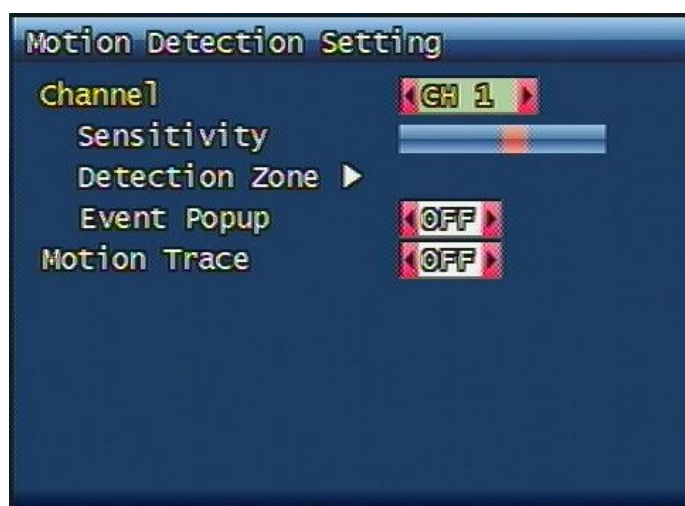


Figure. 3-11 Motion Detecting Setup screen

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

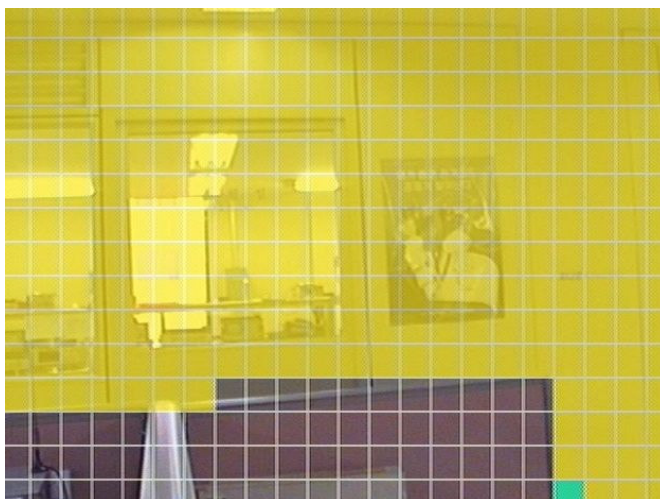


Figure. 3-12 Motion Detecting Area Setup screen

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.

3.3.2 Sensor Setting



Figure. 3-13 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.

3.3.3 Alarm input/ Output

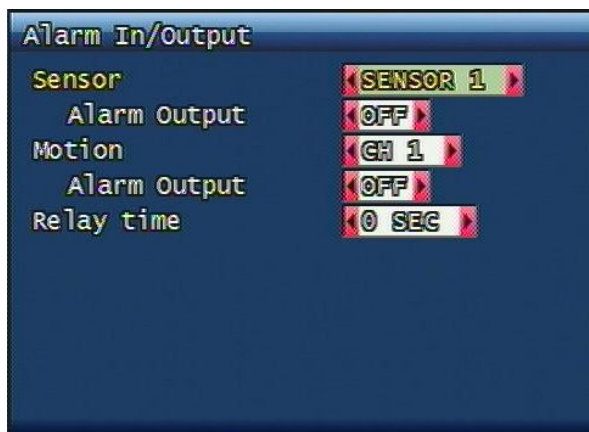


Figure. 3-14 Alarm Output Setting

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 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.

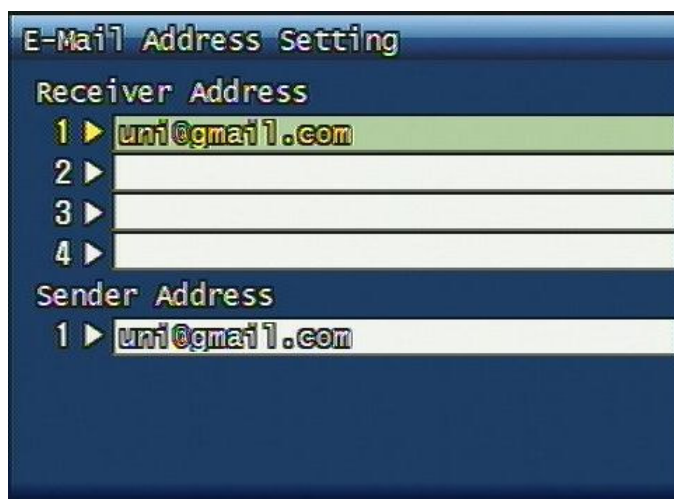


Figure. 3-15 E-Mail Address setting

3.3.6 E-Mail Setting



Figure. 3-16 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.

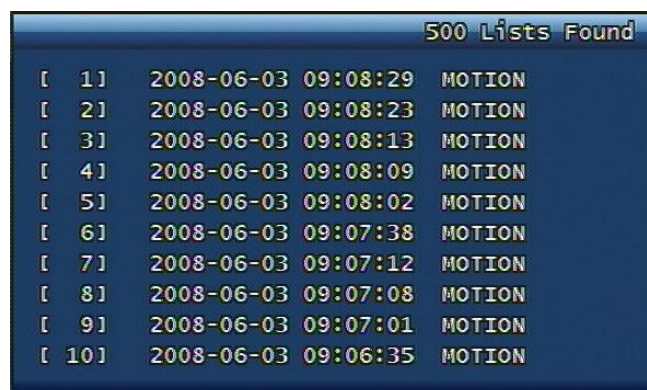
3.3.6.4 Authentication

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.



The screenshot shows a dark blue window titled "500 Lists Found". It contains a list of 10 entries, each with a number in brackets, a date and time, and the word "MOTION".

Event ID	Date and Time	Event Type
[1]	2008-06-03 09:08:29	MOTION
[2]	2008-06-03 09:08:23	MOTION
[3]	2008-06-03 09:08:13	MOTION
[4]	2008-06-03 09:08:09	MOTION
[5]	2008-06-03 09:08:02	MOTION
[6]	2008-06-03 09:07:38	MOTION
[7]	2008-06-03 09:07:12	MOTION
[8]	2008-06-03 09:07:08	MOTION
[9]	2008-06-03 09:07:01	MOTION
[10]	2008-06-03 09:06:35	MOTION

Figure. 3-17 Event Log Display screen

3.4 Playback Setup

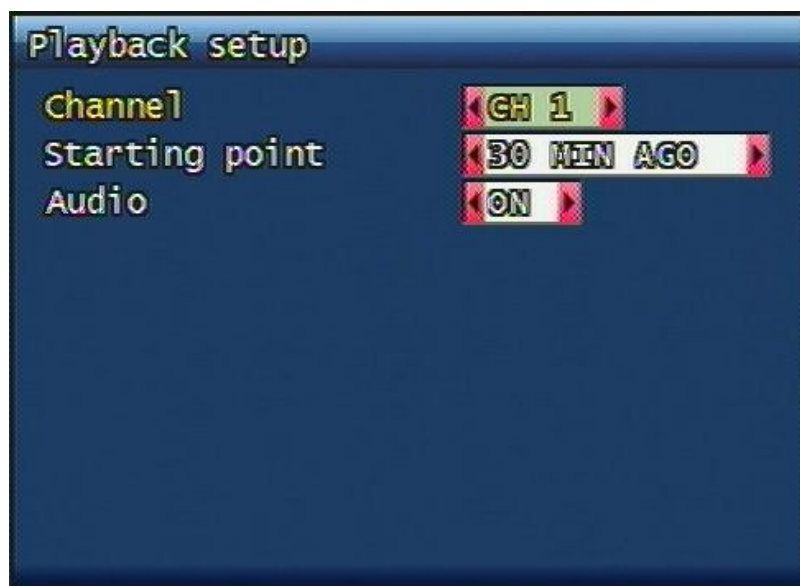


Figure. 3-18 Playback setup screen

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

3.4.3 Audio

If the recorded files contain audio, choose whether to turn the sound ON/OFF During playback.

3.5 Display Setup

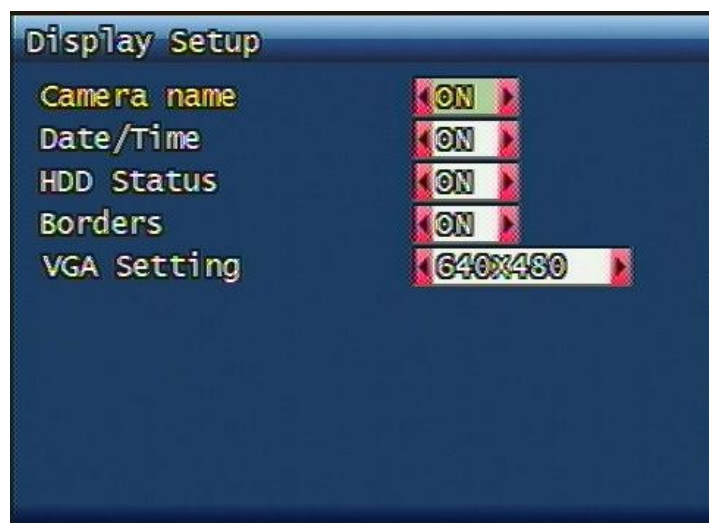


Figure. 3-19 Display setup screen

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 ALPHA BLENDING

OSD MENU Transparency decision. When it goes to right part, it is not transparent.

3.5.2 VGA Setting

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

3.6 Network Setup Menu



Figure. 3-20 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. 3-21 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 Remote Connection Login Password

There are two levels of access that can be set up in the RAMS program.

- Admin (Highest), User (Normal)
- By default, the password is 111111 when the software is first installed.

Users can use any numeric number from 1~4, combined 6 units.

-



Figure. 3-22 Remote Connection Login Password screen

3.6.3 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

3.6.4 STATIC

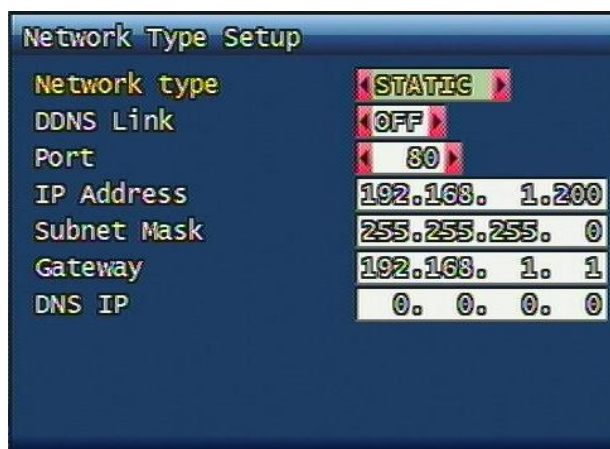


Figure. 3-23 STATIC Network setting

3.6.4.1 DDNS Link On/off

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

3.6.4.2 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.

3.6.4.3 IP Address

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

3.6.4.4 Subnet Mask

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

3.6.4.5 Gateway

Assign the Gateway address

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

3.6.5 DHCP

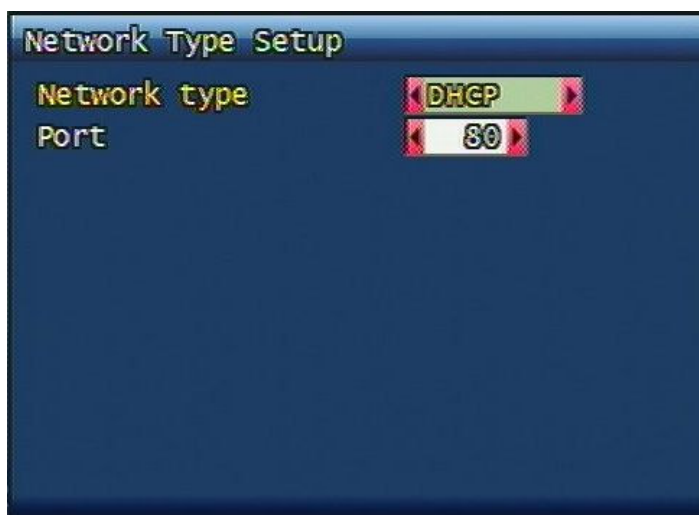


Figure. 3-24 DHCP setup screen

3.6.5.1 Port

Please refer to paragraph 3.6.4.2 for Port setting of STATIC.

3.6.6 PPPoE

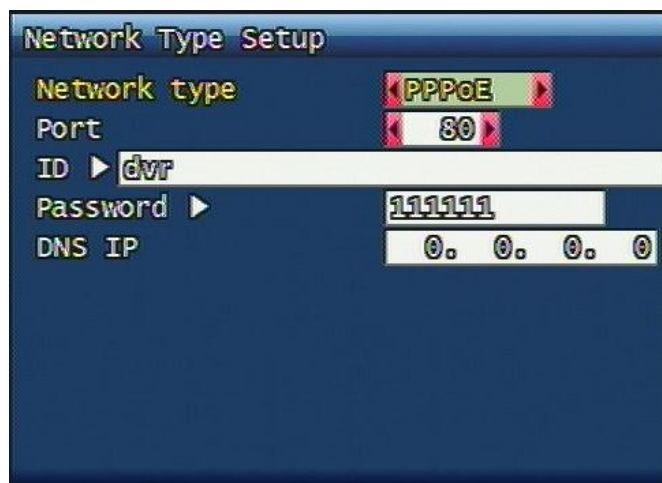


Figure. 3-25 PPPoE setting

3.6.6.1 Port

Please refer to the port setting in paragraph 3.6.4.2

3.6.6.2 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

3.6.6.3 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

3.6.6.4 DNS IP

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

3.6.7 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.

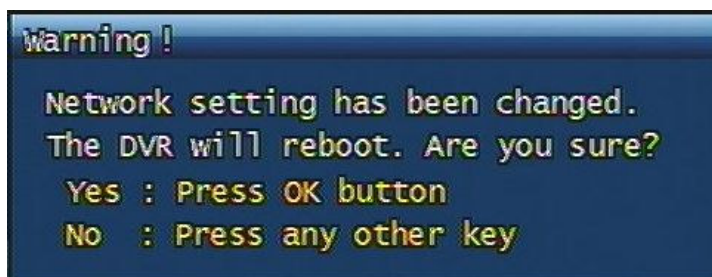


Figure. 3-28 Changing the Network setting screen

3.7 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.

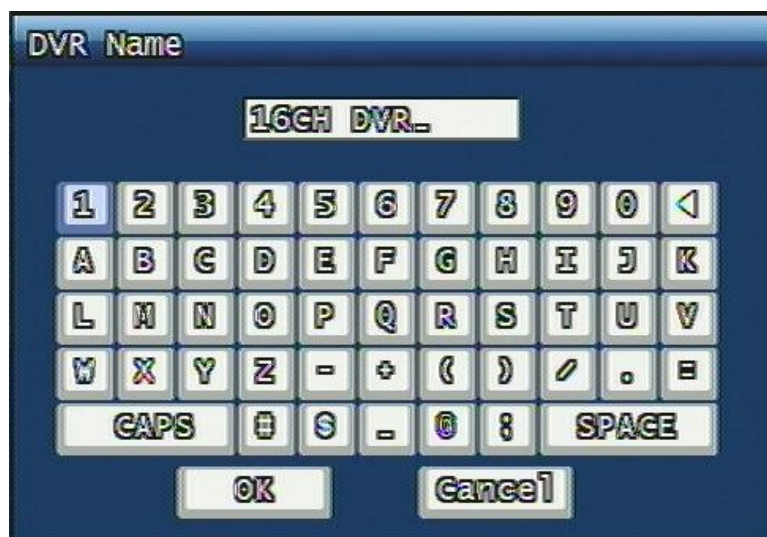


Figure. 3-30 DVR name screen

Name the DVR : type in the DVR name. Up to 12Ccharacters.

Click "OK" when finished.

3.7.2 System Password



Figure. 3-31 System password set up

Set up part for system password, related function and application.

This is a part of installation, actual system password, related function and password application.

3.7.2.1 Password Setting

To change system password:

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. 3-32 Password input screen

3.7.2.2 Password Apply

Determine whether the system password has to be applied to power On/Off. The applicable features are recording close, enter menu, system off. Users can set up password ON/OFF for each feature.

Setting to On, when each feature starts, users have to confirm password for each step. Setting to Off, users can use any confirmation of password.

3.7.2.3 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..

3.7.3 Time / Date

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



Figure. 3-33 Set up Time/Date

3.7.3.1 Set up Time / Date

Set up date and time on the system

3.7.3.2 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.

3.7.3.3 Day Light Saving Time

Set up Start Day and End Day in Day Light Saving Time mode

For example, if users adopt day light saving time from May 01 to Oct.31, input the dates accordingly.

3.7.3.3.1 Start date (m/d)

Set up start day in Day Light Saving Time mode.

3.7.3.3.2 End date (m/d)

Set up end date in Day Light Saving Time mode.

3.7.3.3.3 Apply Hour

Configure Day Light Saving Time.

3.7.4 Buzzer

Users can turn the buzzer ON/OFF depending on the situations. Usable situation is Sensor, Motion, & Video Loss. 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.

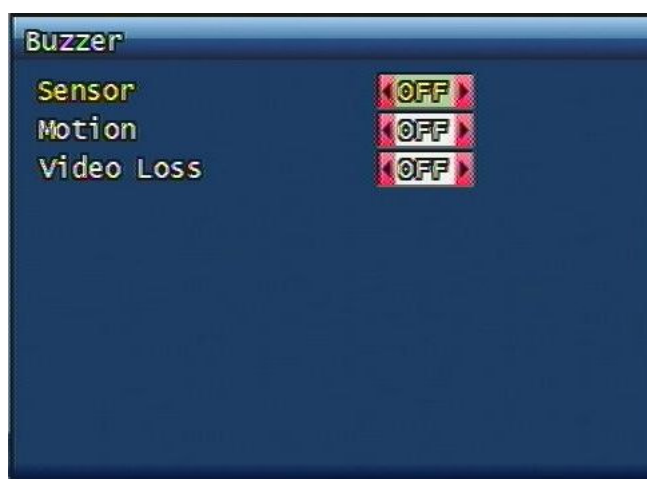


Figure. 3-34 Set up buzzer

3.7.5 Language

Ten Languages (English, Korean, Japanese, Spanish, French, Germany, Italian, Polish, Russian and Slovakian) are available.

3.7.6 HDD Setup

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

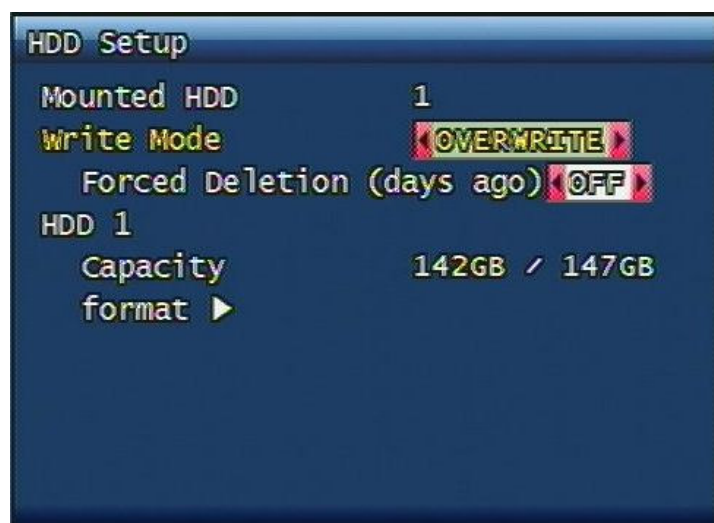


Figure. 3-35 HDD Setup image

3.7.6.1 The number of HDD

Show the HDD quantity that is built –in.

3.7.6.2 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.

3.7.6.3 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.

3.7.6.4 Hard Disk

3.7.6.4.1 Capacity

Indicate the used part and total capacity of Internal HDD.

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

3.7.6.4.2 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.

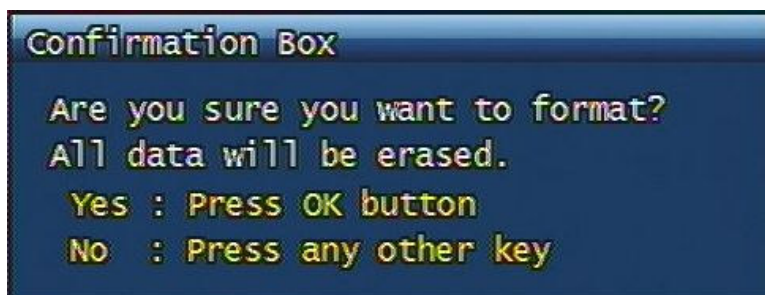


Figure. 3-36 Confirmation box for HDD format

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

3.7.7 Aux Port

Set up for Aux Port

A screenshot of the 'AUX Port' configuration screen. It features a table with four columns: 'Port', 'I/O', 'Active', and 'Function'. Each row represents a port from 1 to 4. The 'Active' and 'Function' columns contain dropdown menus with 'HIGH' and 'UNUSED' selected, respectively.

Port	I/O	Active	Function
1	OUT	HIGH	UNUSED
2	OUT	HIGH	UNUSED
3	OUT	HIGH	UNUSED
4	OUT	HIGH	UNUSED

Figure. 3-37 Set up AUX port screen

3.7.7.1 Active

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

3.7.7.2 Function

The following list contains a brief description of each function.

3.7.7.2.1 Direction : IN

- UNUSED: Do not use the AUX port.
- ALARM RESET IN: Pause alarm or buzzer when event occurred
- RECORD START IN: Record is on while external signal comes in.
- RECORD ON/OFF: Recording start/stop during user push the button & same as
 - pushing remote controller or DVR machine

3.7.7.2.2 Direction : OUT

- ALRAM OUT: Notice the assigned port when event occurred
- ERROR OUT: Notice the assigned port when system error occurred
- (Mark system error)
- RECORD START OUT: HDD of DVR is full(100%), send signal to DVR
 - which is connect with AUX port. During receiving recording
 - signal through AUX port, it can record it and the mode of DVR
 - AUX in port is RECORD
- DISK FULL: If HDD is full, send signal to the AUX port.
- RECORD STATUS: Indicate whether it is recording or not

3.7.8 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.

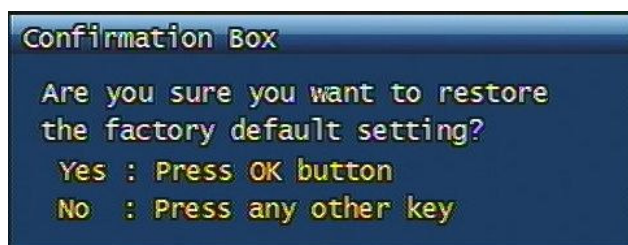


Figure. 3-38 Confirmation box for Factory Default

3.7.9 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.

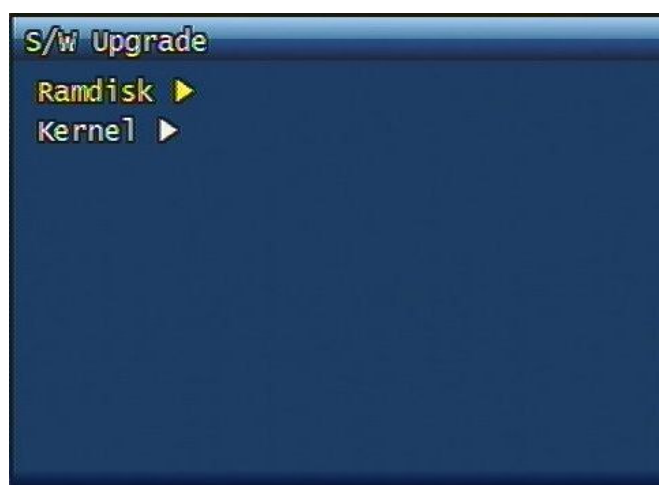


Figure. 3-39 Software Upgrade

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



Figure. 3-40 Ramdisk Upgrade

3.8 Backup

Backup recording data to CD-RW or USB Flash Drives



Figure. 3-41 Backup screen

3.8.1 Backup Device

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

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

System Log		313 Lists Found
[1]	2008-06-03 09:03:55	MENU CALLED
[2]	2008-06-03 08:59:11	MENU CALLED
[3]	2008-06-02 15:36:33	MENU CALLED
[4]	2008-06-02 15:36:29	MENU CALLED
[5]	2008-06-02 15:36:26	MENU CALLED
[6]	2008-06-02 15:35:48	MENU CALLED
[7]	2008-06-02 15:35:45	MENU CALLED
[8]	2008-06-02 15:34:53	MENU CALLED
[9]	2008-06-02 15:34:50	MENU CALLED
[10]	2008-06-02 15:34:48	MENU CALLED

Figure. 3-42 System Log

3.10 System Information

System Info		416SU	
Video type	NTSC		
H/w version	1.1.1		
S/w version	0.1.1dev-3581-dev		
Kernel version	2.6.19.2_2		
Mac address	00:09:f8:00:13:09		
Audio	Support		
Language	Korean	English	
	German	French	Spanish
	Japanese	Polish	Russian
	Italian	Slovak	

Figure. 3-43 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.

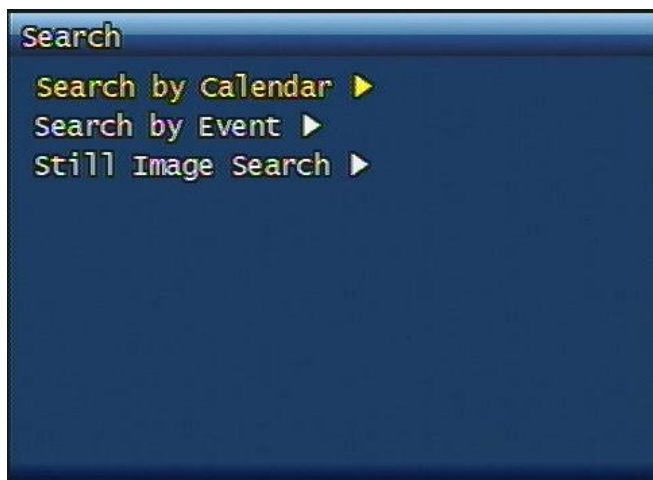


Figure. 3-44 Main Screen of Search

3.11.1 Search by Calendar

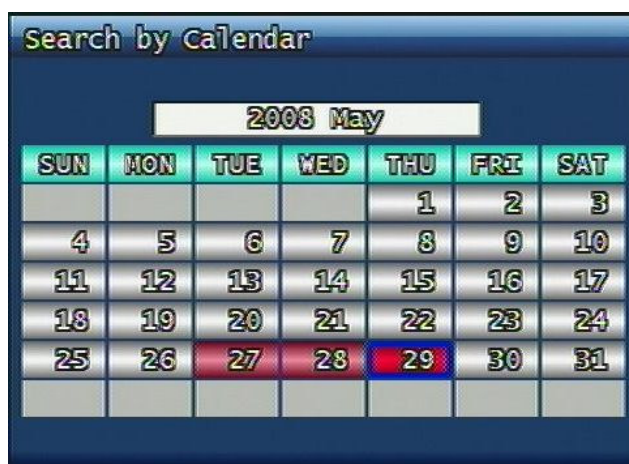


Figure. 3-45 Search by Calendar

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

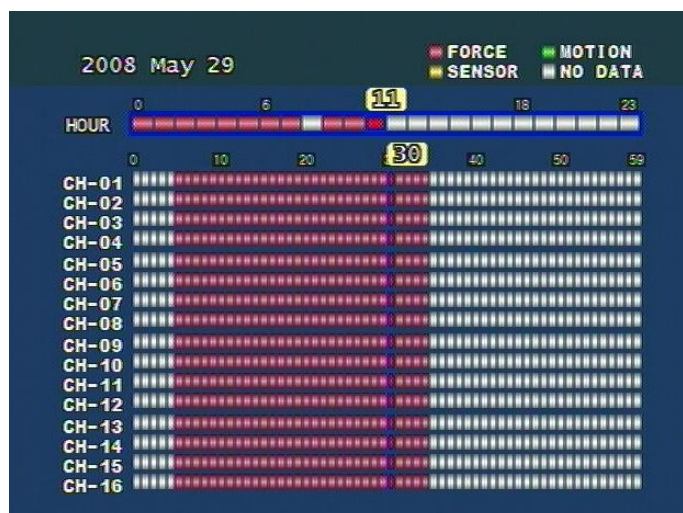


Figure. 3-46 Calendar Search Screen

- 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 Search of Event

It shows event occurring time.

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

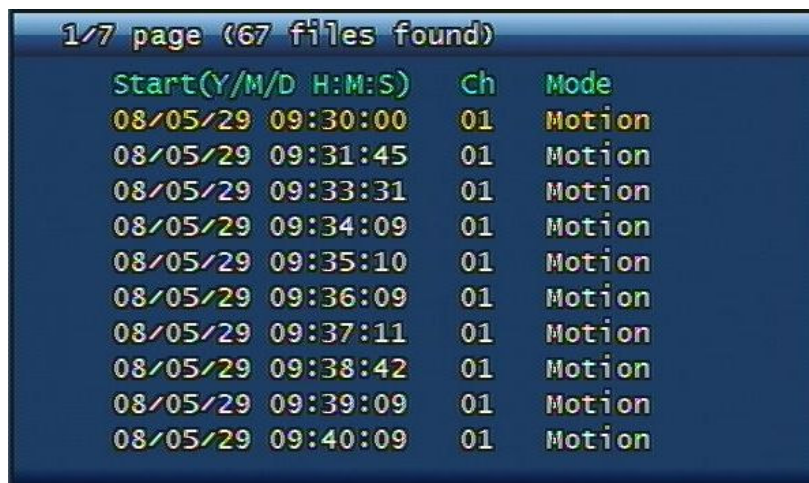


Figure. 3-472 Event Search Image

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.

3.11.3.1 Still Image Search



The screenshot shows a search results screen with a blue header bar that reads "1/7 page (67 files found)". Below the header is a table with three columns: "Start(Y/M/D H:M:S)", "Ch", and "Mode". The table lists ten entries, all with a start time of 08/05/29 and a mode of "Motion".

Start(Y/M/D H:M:S)	Ch	Mode
08/05/29 09:30:00	01	Motion
08/05/29 09:31:45	01	Motion
08/05/29 09:33:31	01	Motion
08/05/29 09:34:09	01	Motion
08/05/29 09:35:10	01	Motion
08/05/29 09:36:09	01	Motion
08/05/29 09:37:11	01	Motion
08/05/29 09:38:42	01	Motion
08/05/29 09:39:09	01	Motion
08/05/29 09:40:09	01	Motion

3-53 Still Image search Screen

3.11.3.2 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 simpleplay_m4.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.

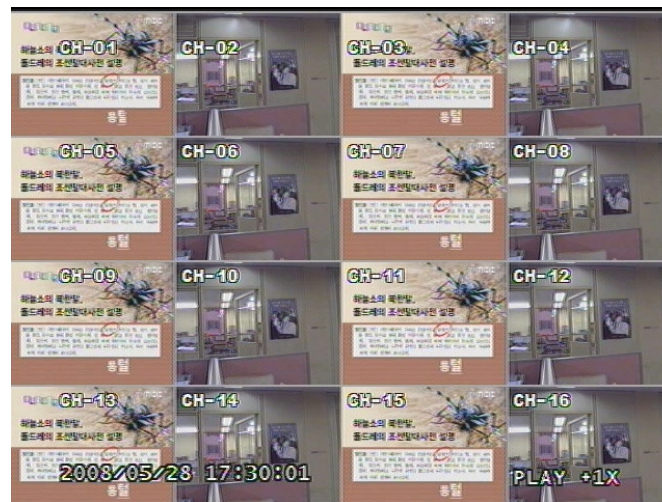


Figure. 3-54 Screen of playback

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. 3-48 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 Miscellaneous Menu



Figure. 3-49 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

3.13.2 NET

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

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

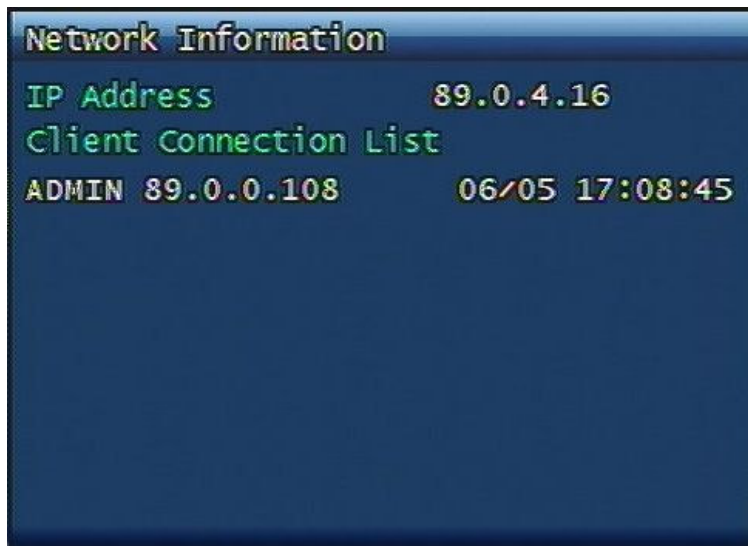



Figure. 3-50 Network Information

3.13.3 OSD

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

3.13.4 Audio Mute

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

3.13.5 HDD

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

3.13.6 LOG

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

4 Client Program.

4.1 Overview of DVR

- **RAMS_M4** (Remote Access & Monitoring System MPEG4) 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_M4** is a viewer with functions for recording, capturing, & backing up files.
- **QuickInstaller_M4** is a setup configuration template for quick & easy, multiple unit setup using RS-232 or network. It can be 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)

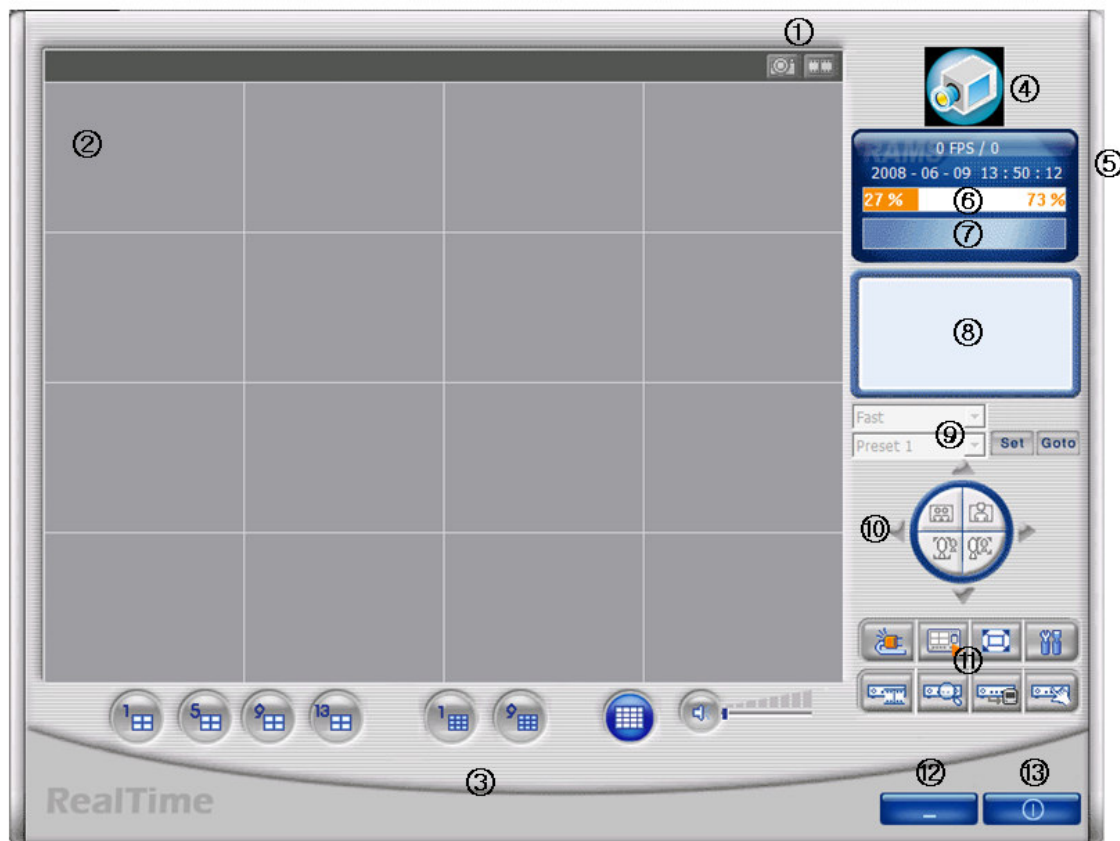
- Window 98
- DirectX 8.0
- Explorer 5.0
- VGA Card for over 2 x AGP
- Video card memory 64MB memory (the latest graphic card driver)
- Resolution 1024 x 768

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 DVR_MPEG4_Verx.x_Setup.exe file.
- Rams_M4.exe, Uniplayer_M4.exe, QuickInstaller_M4.exe icons will be placed on the desktop after a successful installation.
- UDR400 Series's PC Program (Rams_RT, UniPlayer_RT, QuickInstaller_RT) are compatible with UDR300 Series.

4.3 RAMS_M4 (Remote Access & Monitoring System Mpeg4)

4.3.1 Screen and button




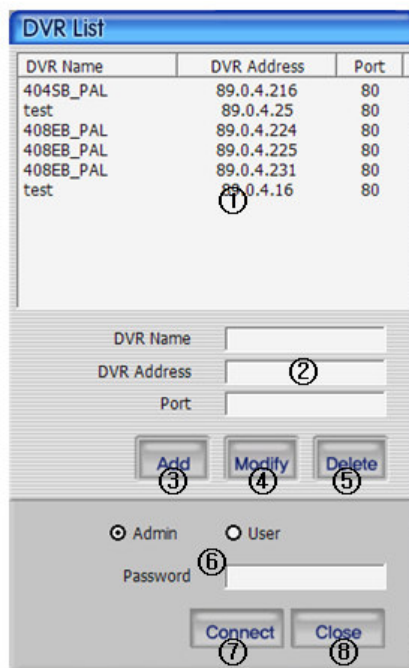
- ① Screen capture button, Video record button
- ② Screen display
- ③ Channel display button, Sound control button
- ④ If logo is clicked, program version window appears.
- ⑤ Time indicator
- ⑥ PC HDD information indicator
- ⑦ Live or Playback mode indicator
- ⑧ Connected DVR information indicator
- ⑨ PTZF Speed, Preset
- ⑩ Pan/Tilt, Zoom/Focus button
- ⑪ DVR Connect button, UniPlayer_M4 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.



DVR Name	DVR Address	Port
4045B_PAL	89.0.4.216	80
test	89.0.4.25	80
408EB_PAL	89.0.4.224	80
408EB_PAL	89.0.4.225	80
408EB_PAL	89.0.4.231	80
test	89.0.4.16	80

DVR Name:

DVR Address:

Port:

Admin User

Password:

- 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 the 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_M4 link



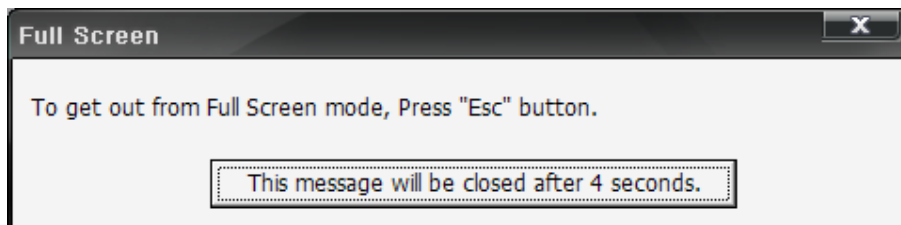
If you click this button on main menu, UniPlayer_M4 program will be executed.

Regarding the UniPlayer_M4 program, please refer to the article

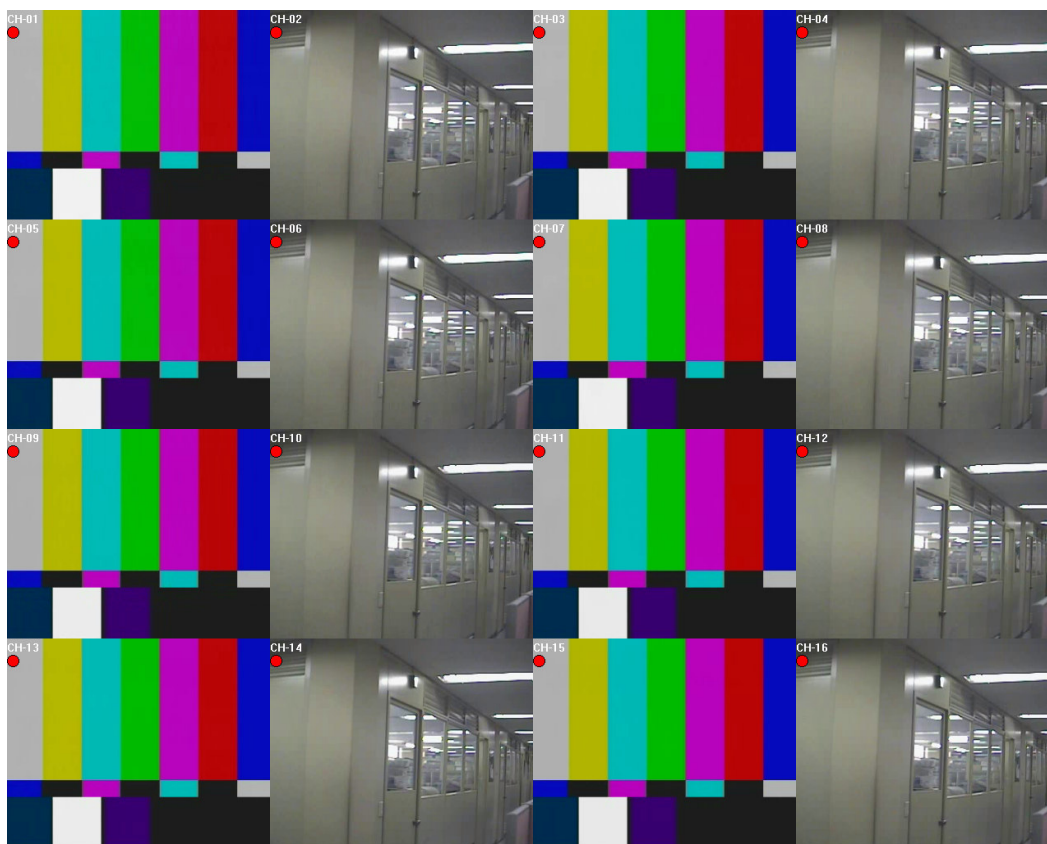
4.3.4 Full-screen display



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.



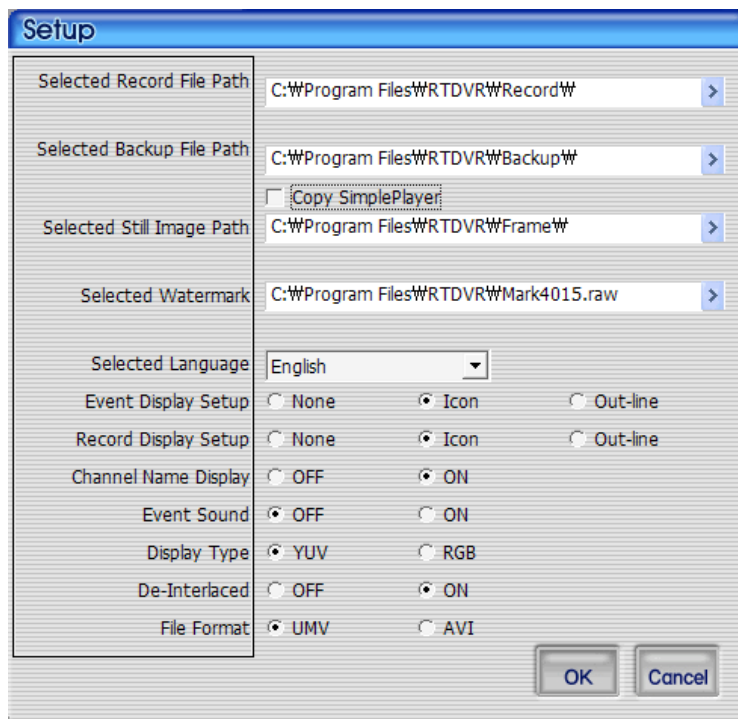
OSD in the screen is same as that of DVR

(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.

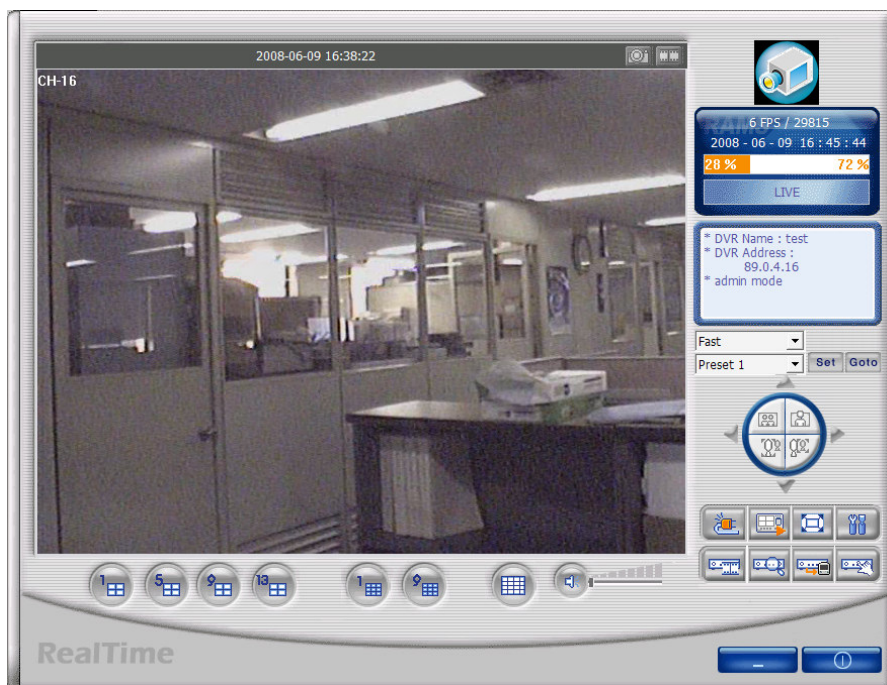


- ① Capture a still image and select a folder where the image is recorded
- ② Select the image of water mark to be input in the still image
- ③ Set up a program by user's language
- ④ Set up whether alarm occurrence is on or off when motion detection or sensor icon activated.
- ⑤ Close the window without saving the setup
- ⑥ Close the window after saving the setup

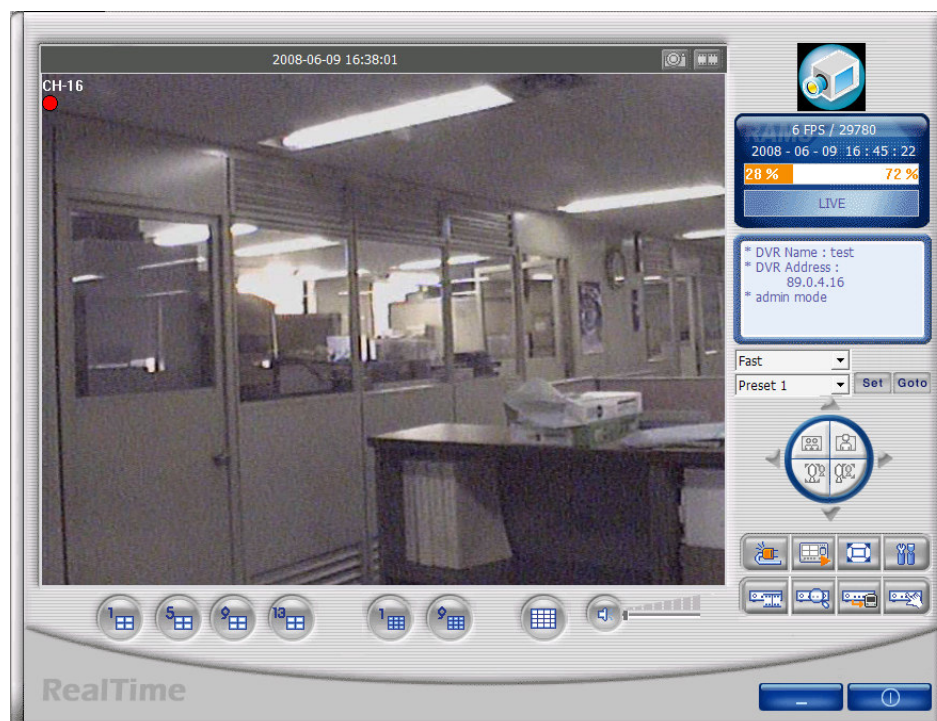
4.3.6 DVR recording



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.

DVR Playback Search

2008 6

SUN	MON	TUE	WED	THU	FRI	SAT
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

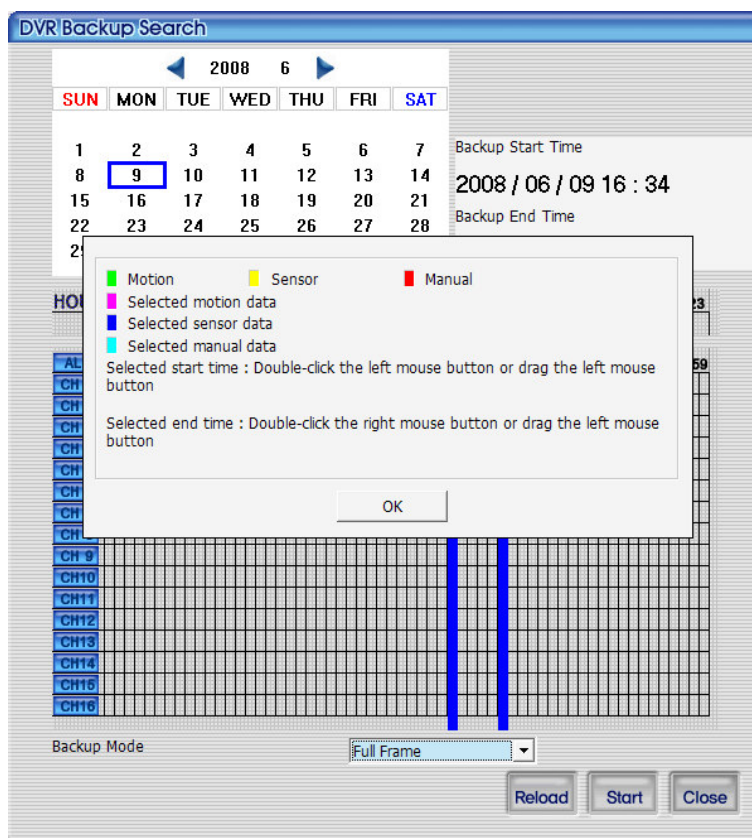
04 : 26

HOUR 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23

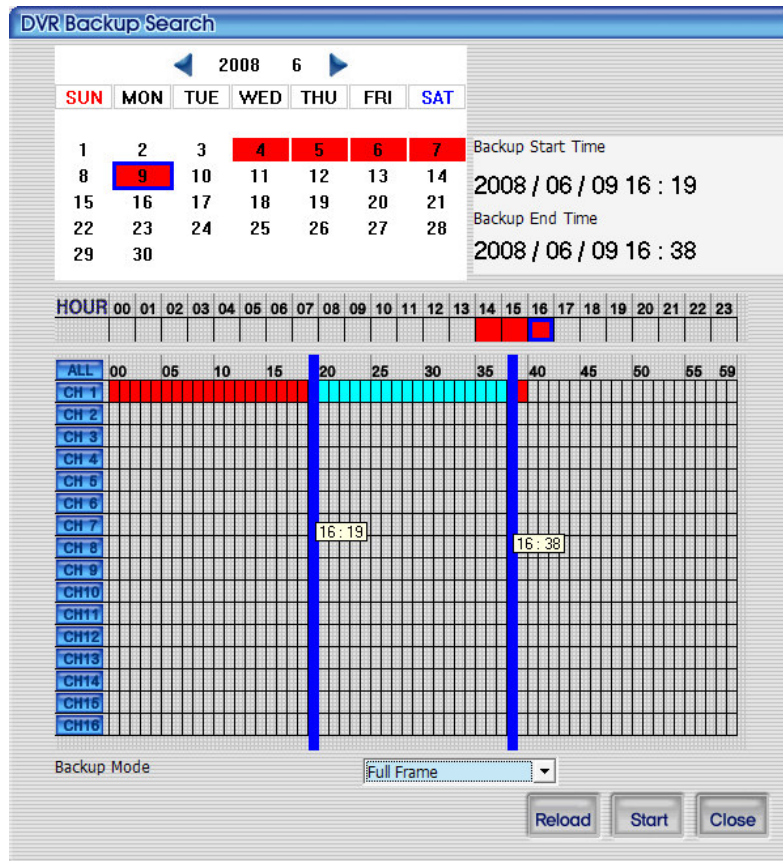
ALL	00	05	10	15	20	25	30	35	40	45	50	55	59
CH 1													
CH 2													
CH 3													
CH 4													
CH 5													
CH 6													
CH 7													
CH 8													
CH 9													
CH10													
CH11													
CH12													
CH13													
CH14													
CH15													
CH16													

Reload Play Close

< Recorded data by search function >



< Tips for DVR backup search >



< Searched screen, when pushed backup button >

4.3.8 DVR playback

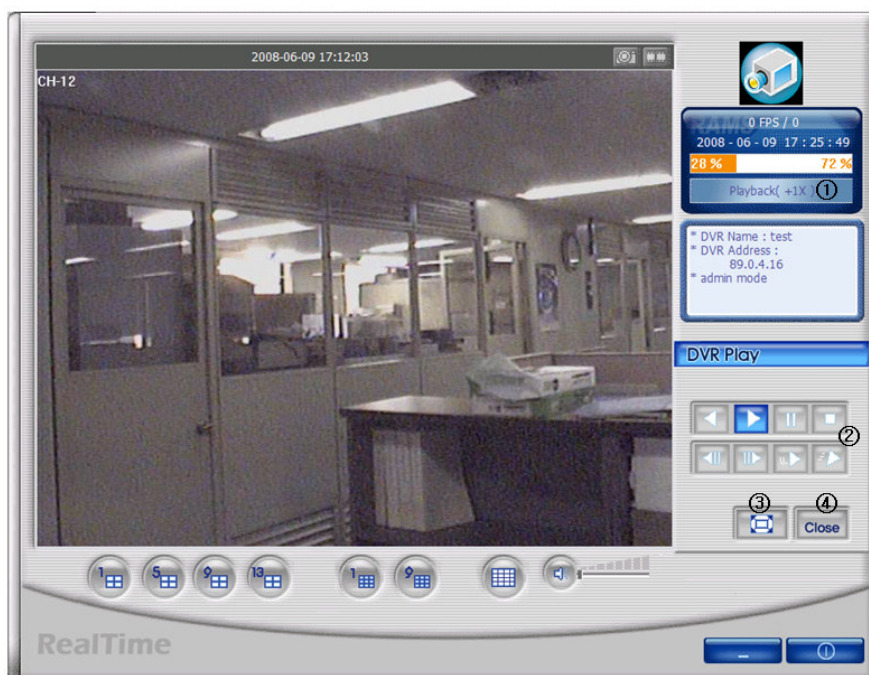
It shows recorded data by date and time on the time table. It starts playback, upon press the Play button, after selecting of date and time in order.

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

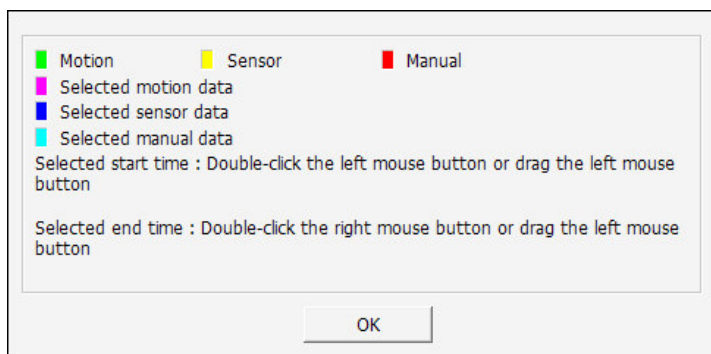
It shows recorded data in the calendar and time table. It is able to select starting time and closing time of backup by mouse.


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.



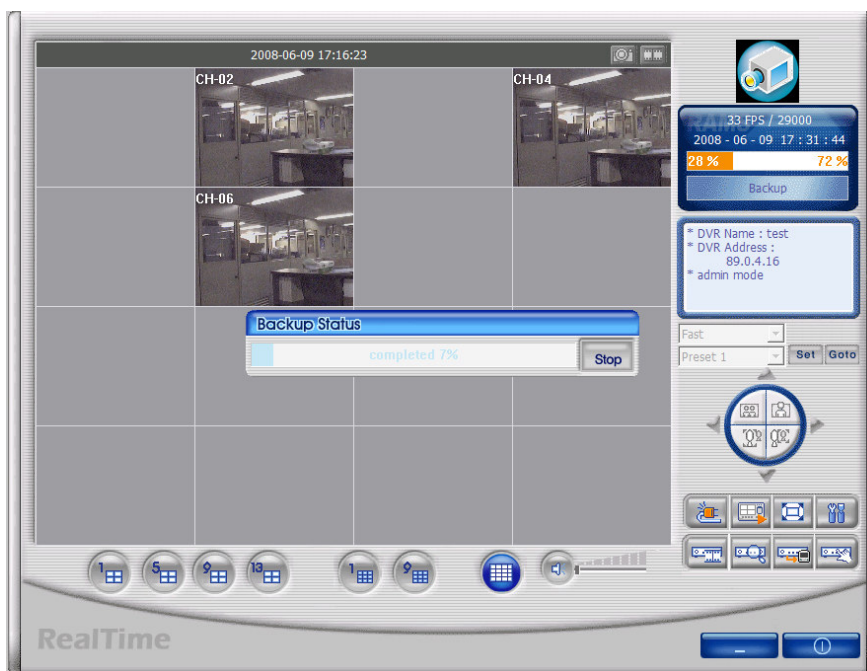
 After selecting a file at DVR backup list, user can start to backup with pushing start button

The destination of backup files is below of backup folder located in directory of program

installed. After starting backup,  button changes  button, displays backup

progress rate. Even backup, users can stop it by pushing  button. Close DVR

backup window with pushing  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



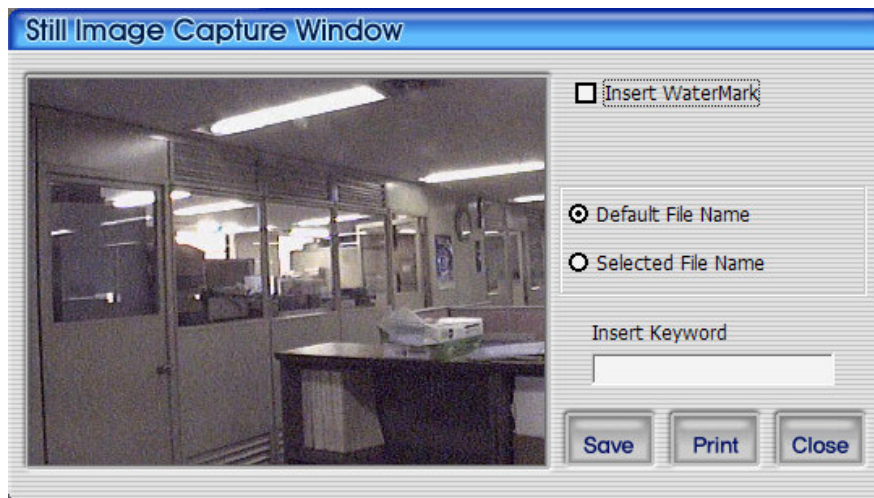
This button is for linking into quick installation program, which is used to manage setting parameter of DVR easily. It can be activated after logging in by admin.

The setting parameter of DVR are displayed.

4.3.11 Still image Capture



You 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_M4'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.

4.3.12 Watermark insertion

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

4.3.13 Printing still image

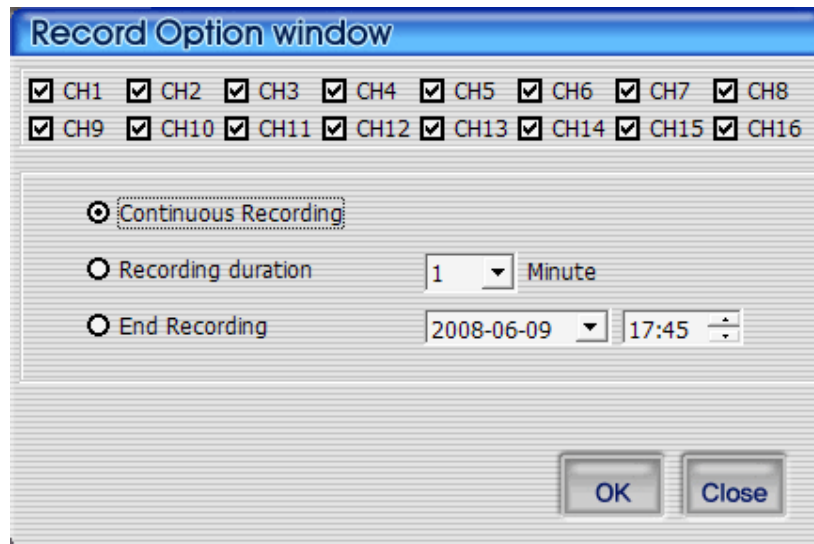
To print still image, please push  icon in capture screen.

4.3.14 Motion picture recording




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

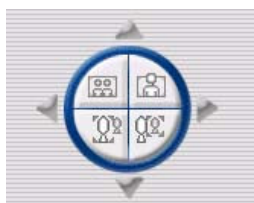
User can record each channel by pushing record button on top right side of channel or pushing record button at below side of window. After pushing recording, record time setting window will be popup. Users can change it or not.



- 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 .

4.3.15 PAN/TILT, ZOOM/FOCUS.



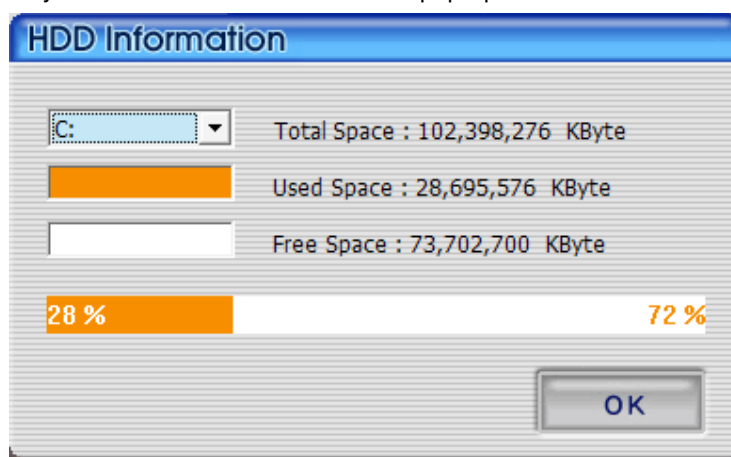
These buttons are for PAN/TILT, ZOOM/FOCUS function of DVR and after logging in by admin and/or one channel selected.

4.3.16 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.

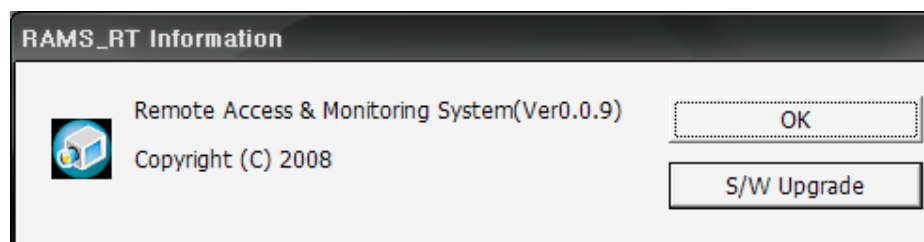
You can select HDD there, which you want to check and it shows rest capacity of the HDD at KByte. Press OK button to close this pop-up window.



4.3.17 Check the program version



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



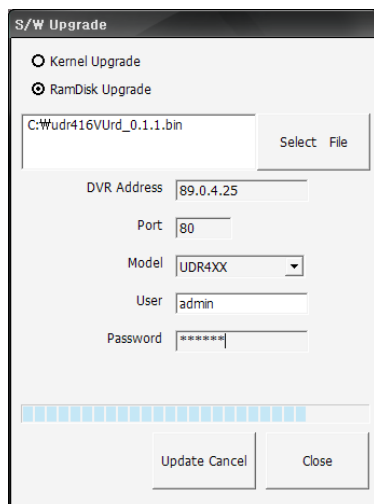
- ① Display the name & version of program
- ② Close the RAMS_M4 information window
- ③ Display S/W update window of DVR system

4.3.18 S/W upgrade of DVR

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

The screenshot shows a dialog box titled "S/W Upgrade". It features two radio buttons at the top: "Kernel Upgrade" (unselected) and "RamDisk Upgrade" (selected). Below these is a file selection area consisting of a text box and a "Select File" button. The lower section contains several input fields: "DVR Address", "Port", "Model" (a dropdown menu currently showing "UDR3XX"), "User" (with "admin" entered), and "Password". At the bottom of the dialog are two buttons: "Update Start" and "Close".

- 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 >

4.3.19 Program minimizing



Rams_M4 program is minimized

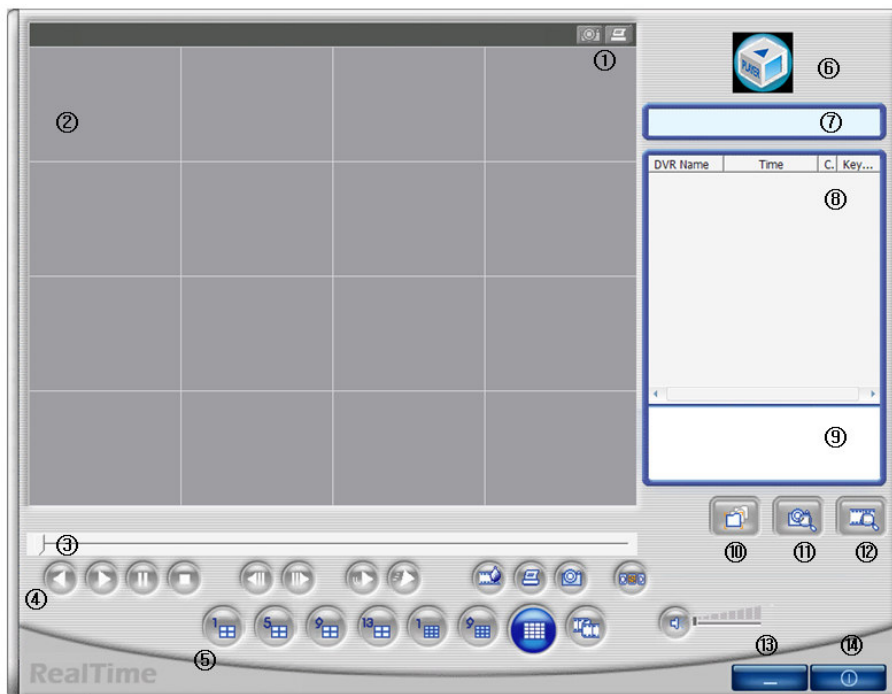
4.3.20 Close program



Closed Rams_M4 program

4.4 UniPlayer_M4

4.4.1 Screen and button

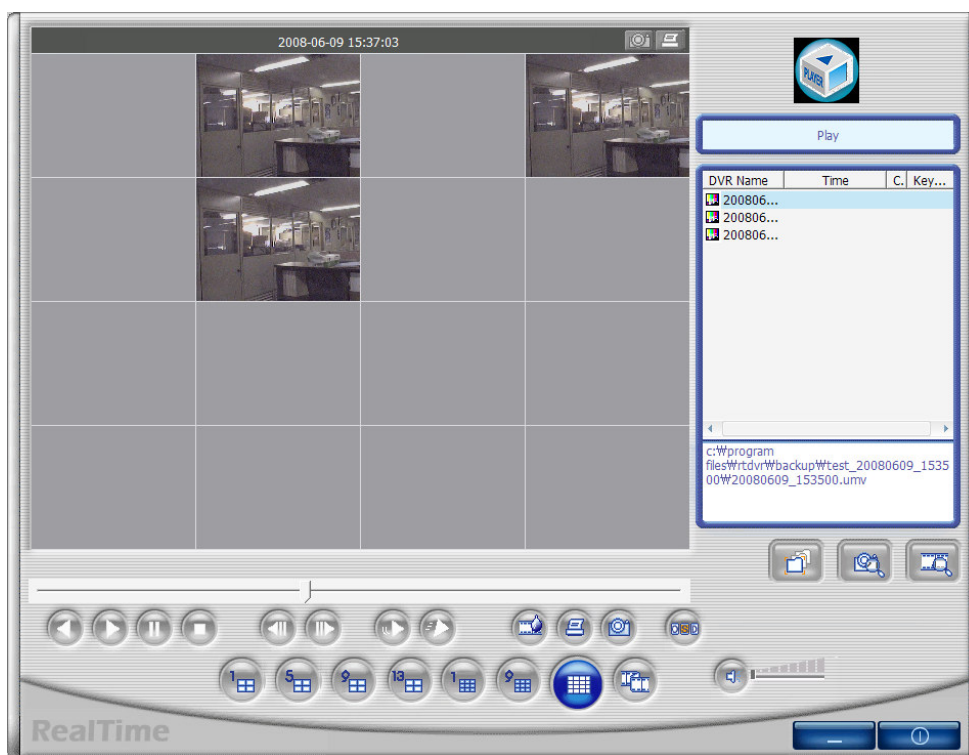


- ① Button per channel (Capture, Print)
- ② Playback picture
- ③ Indicator for playback progress rate
- ④ Reverse playback, playback, still, pause, reverse phase, forward phase, slow, fast
- ⑤ Channel selection button, Panorama playback button
- ⑥ Click the logo to check program version
- ⑦ Uniplayer_M4's 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

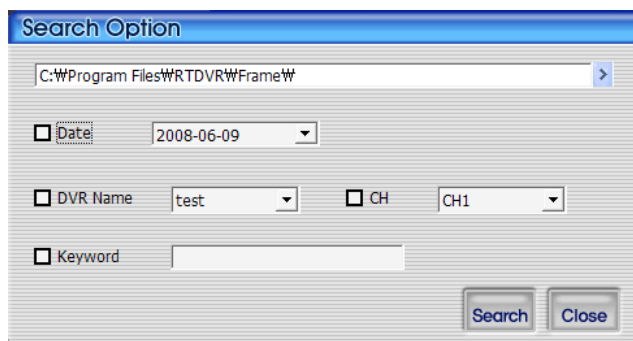


User searches directory directly and playback recorded file.

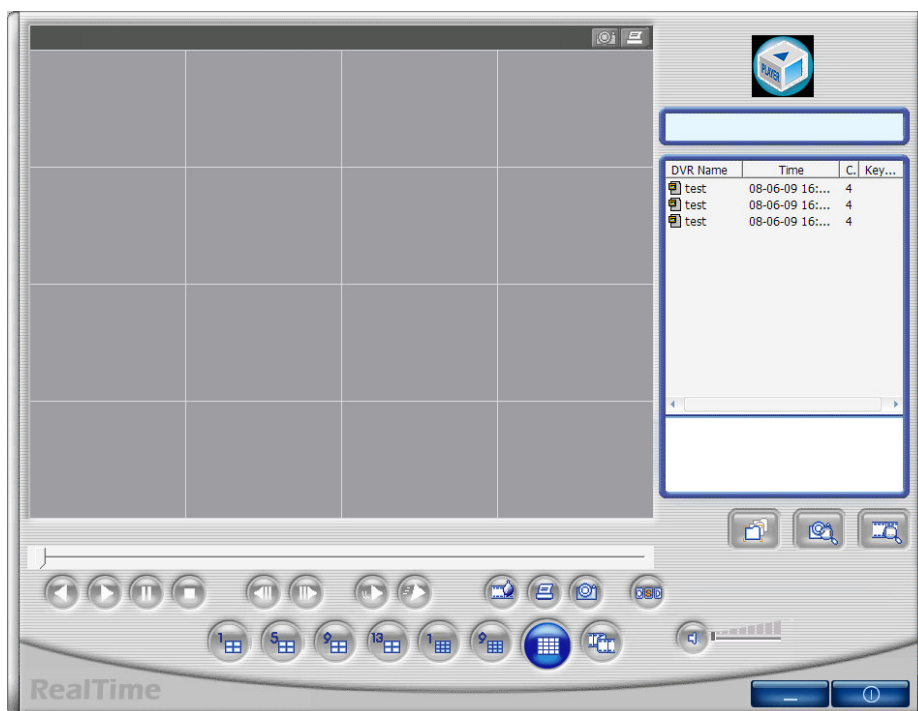


It shows all file list, which is stored in the selected folder.

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.

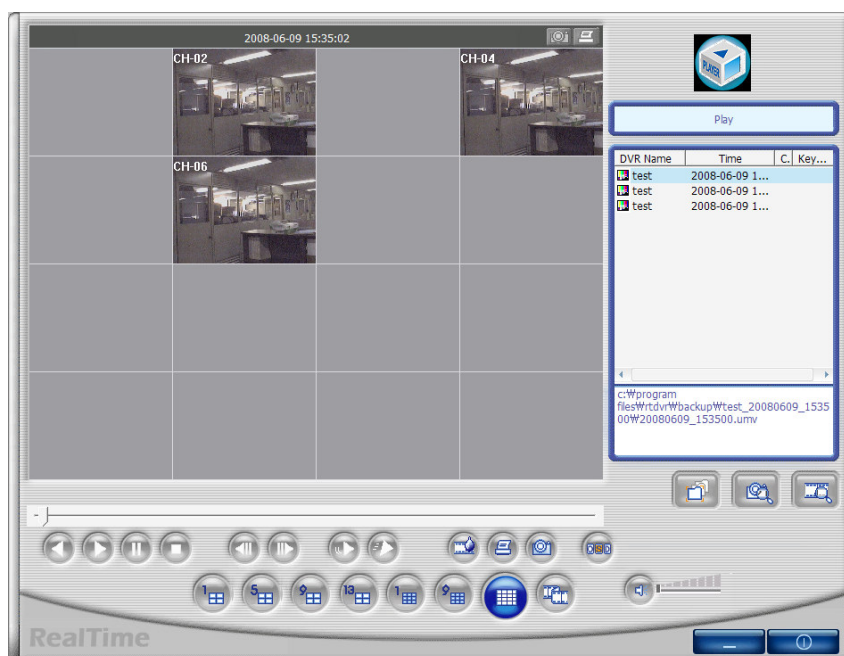


<Searched screen by channel 4 >

4.4.4 Calendar search



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

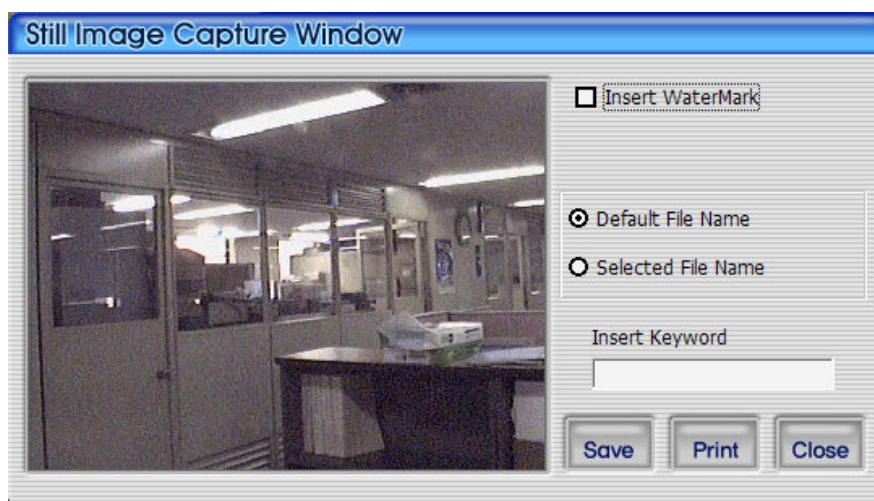


<Playback screen of real-time image, after search >

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_M4'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 Uni playerRT, 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.



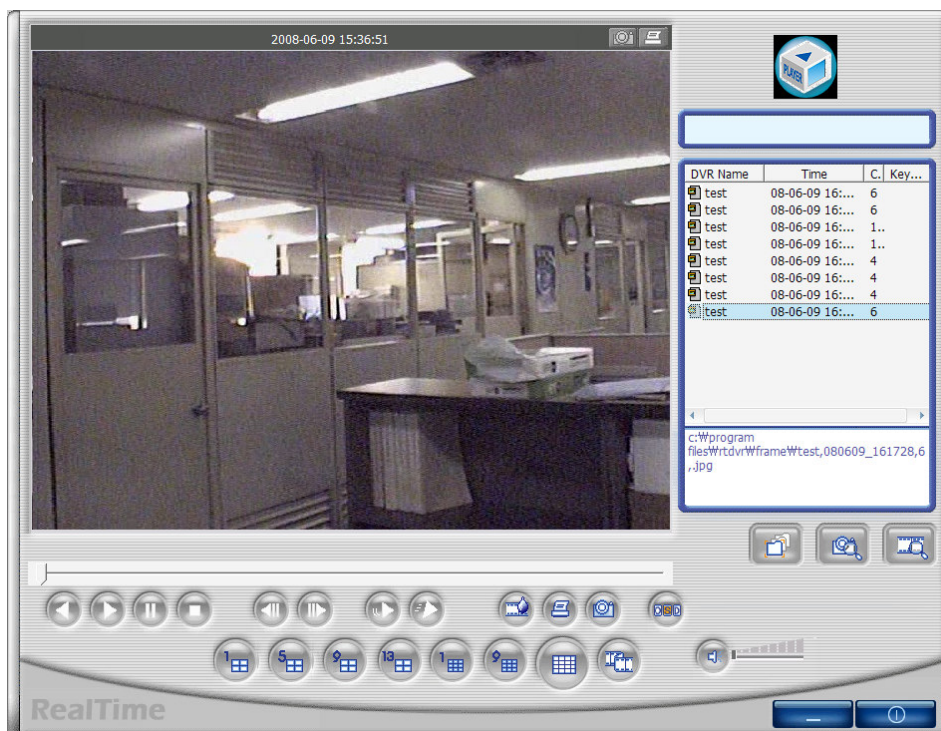
Play file quickly. User can control by click this button.

4.4.9 Water mark drawing

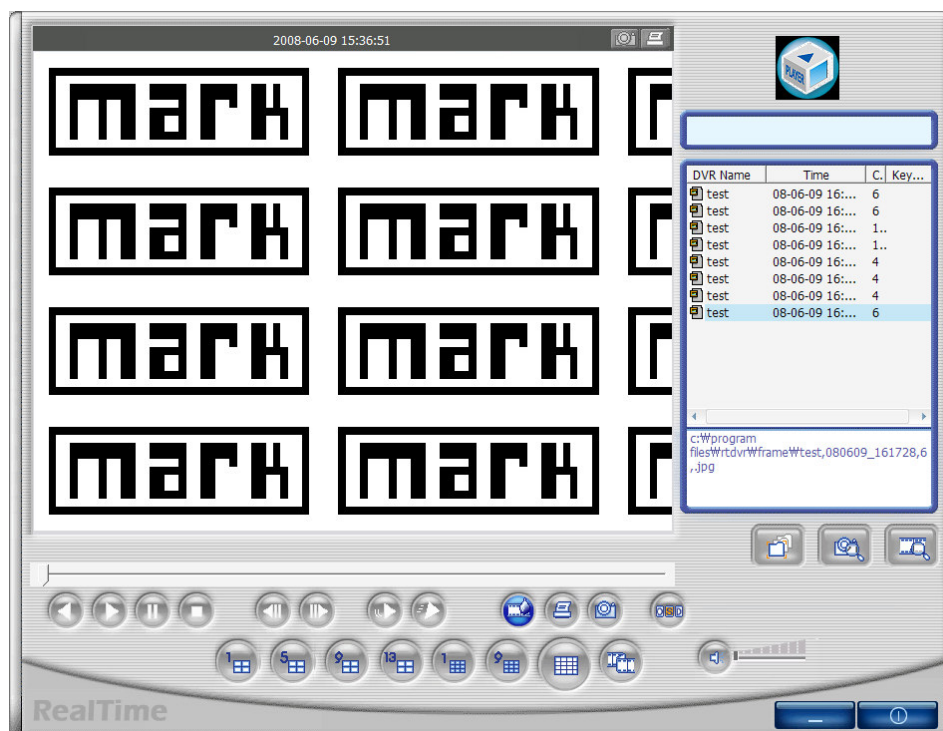


When still image is display, if push this button watermark will be drawn. If you find

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



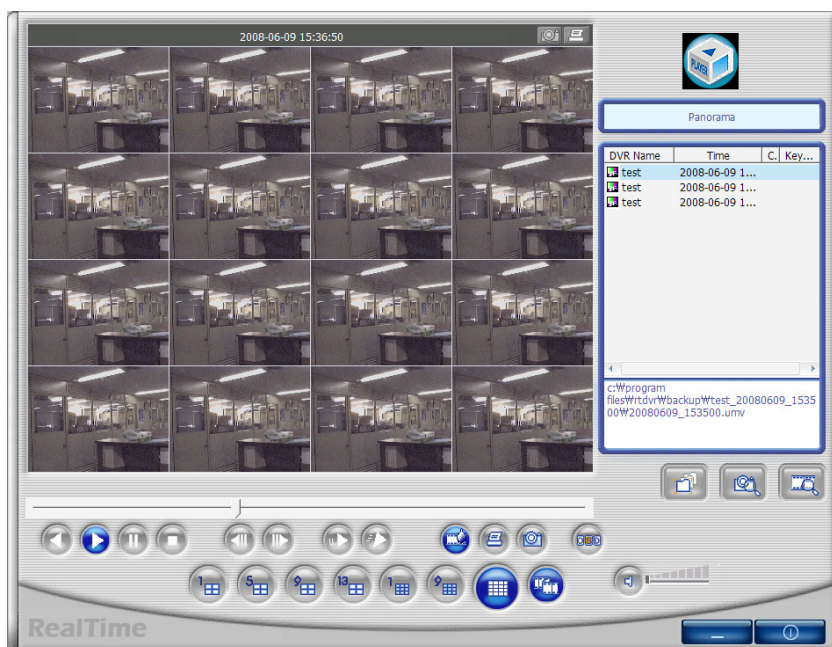
You can see the panorama screen when you push this button while file playing.



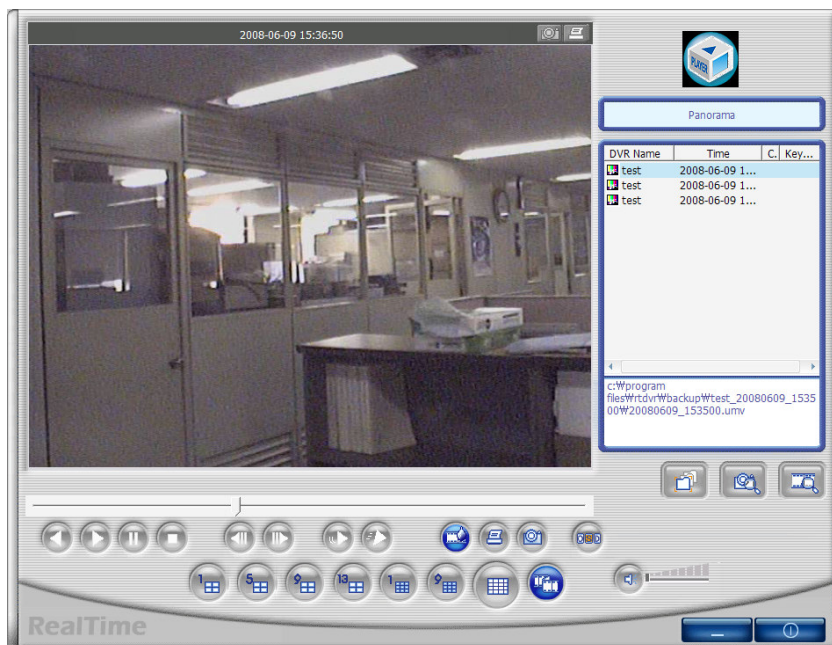
(Button will change into like this button. And button can help user to view screen while control screen back and forth. And click the one screen which is one of the 16 channel, you can see 640x480 image. If you want to come out of the panorama mode,



click button. Then program will go back to former state.



< Screen in panorama mode. >

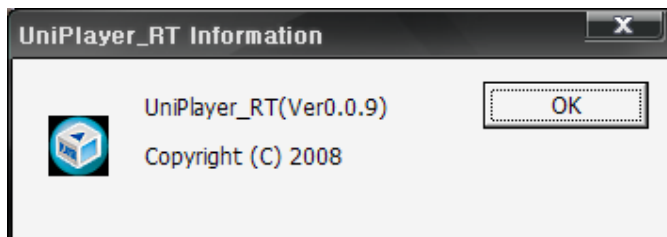


< Image when click one screen in panorama mode.>

4.4.11 Check the program version.



Click right part of logo to confirm version.



4.4.12 Program minimizing



UniPlayer_M4 program is minimized

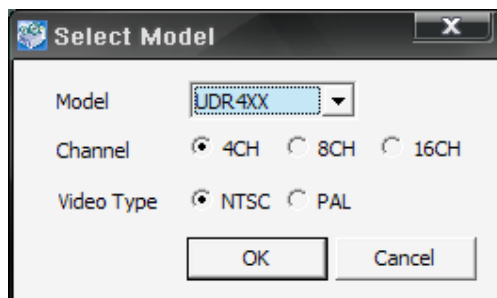
4.4.13 Close Program



Close UniPlayer_M4 program

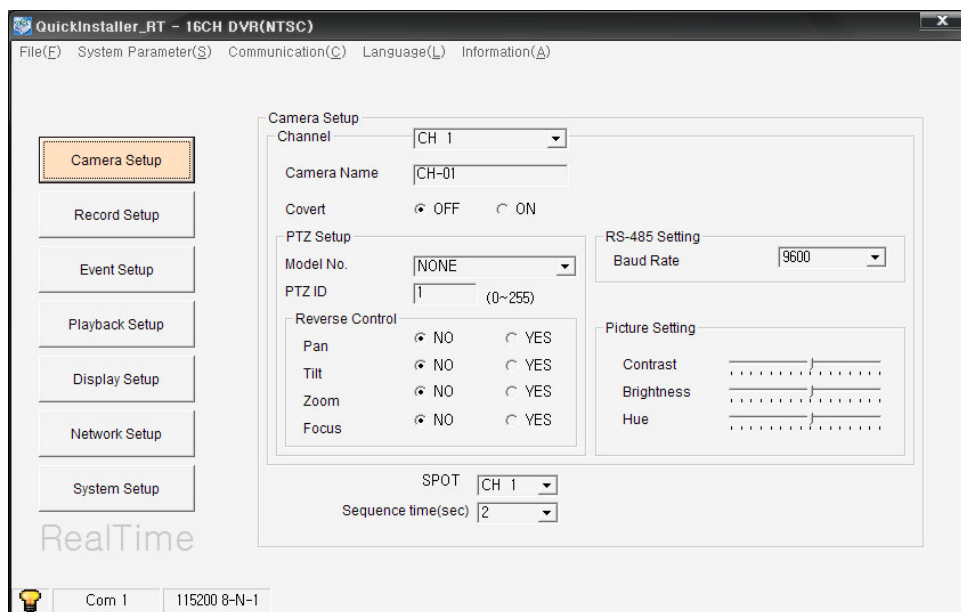
4.5 Quick Installer

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.

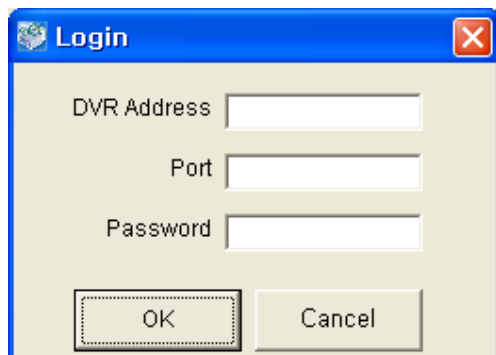
1. File ->Save: Click to save setting parameter values as file.
2. File->Close: Click to close program
3. System parameter-> Read parameters from DVR: Derive to display setting parameter values
4. System parameter-> Write parameters to DVR: Transfer to save setting parameters of DVR.
5. System parameter->Default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

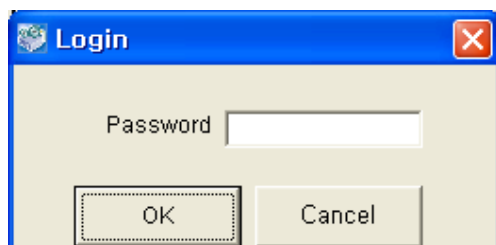
The below window will be activated on

- After Setting system parameters
- Derive system parameters from DVR

A screenshot of a 'Login' dialog box with a blue title bar and a close button (X) in the top right corner. The dialog contains three text input fields: 'DVR Address', 'Port', and 'Password'. Below the fields are two buttons: 'OK' and 'Cancel'.

=> Network mode as communication media

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

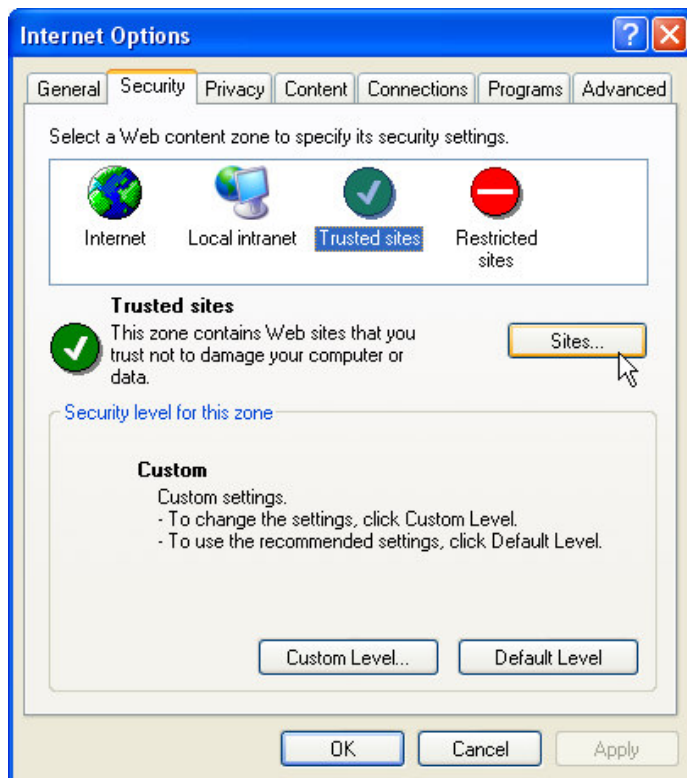
A screenshot of a 'Login' dialog box with a blue title bar and a close button (X) in the top right corner. The dialog contains one text input field labeled 'Password'. Below the field are two buttons: 'OK' and 'Cancel'.

=>Serial mode as communication media

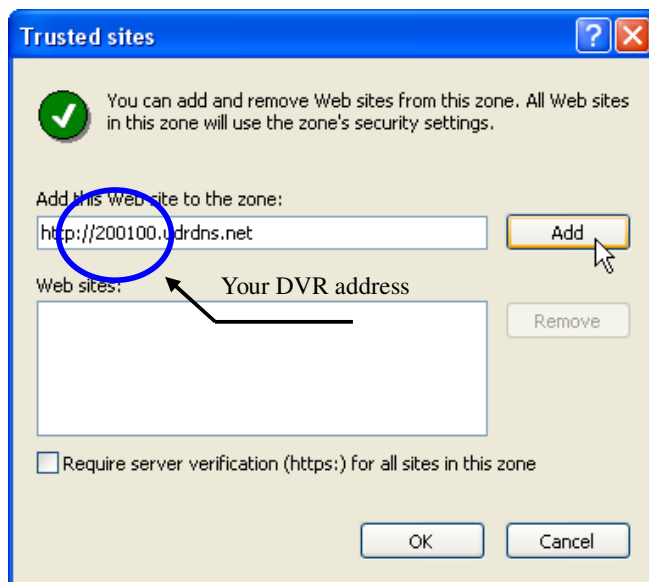
Enter assigned network access password for Admin. After authenticated, users can communication between DVR using serial port.

4.6 Connection by Internet Explorer

4.6.1 Security setup



In "Internet Option" Menu, Choose "Trusted sites" then click "Sites..." button,



Add your DVR Address.(it possible “IP” or “MAC”).

4.6.2 Download ActiveX control

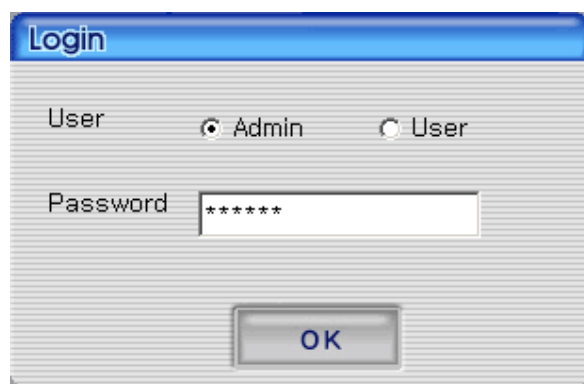
In order to download ActiveX control, press “confirmation” button, when the message Appears, and download in the PC.

(If “cancel” button is clicked, program may not be worked)

4.6.3 Connection with DVR

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

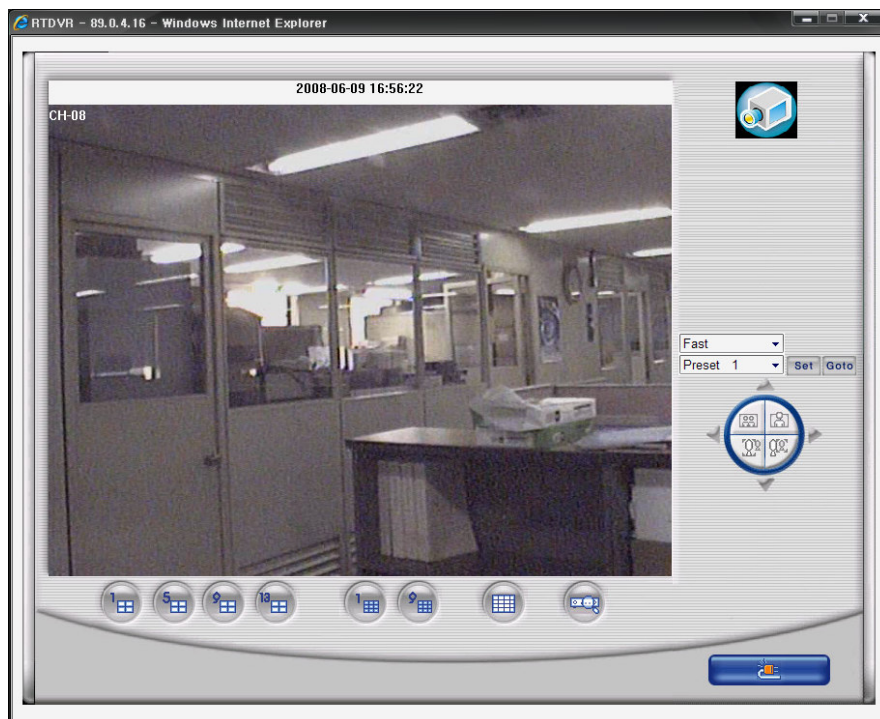
4.6.4 Login



The image shows a standard Windows-style dialog box titled "Login". It has a blue title bar. Below the title bar, there are two radio buttons: "Admin" (which is selected) and "User". Below the radio buttons, there is a "Password" label and a text input field containing six asterisks. At the bottom center of the dialog box is an "OK" button.

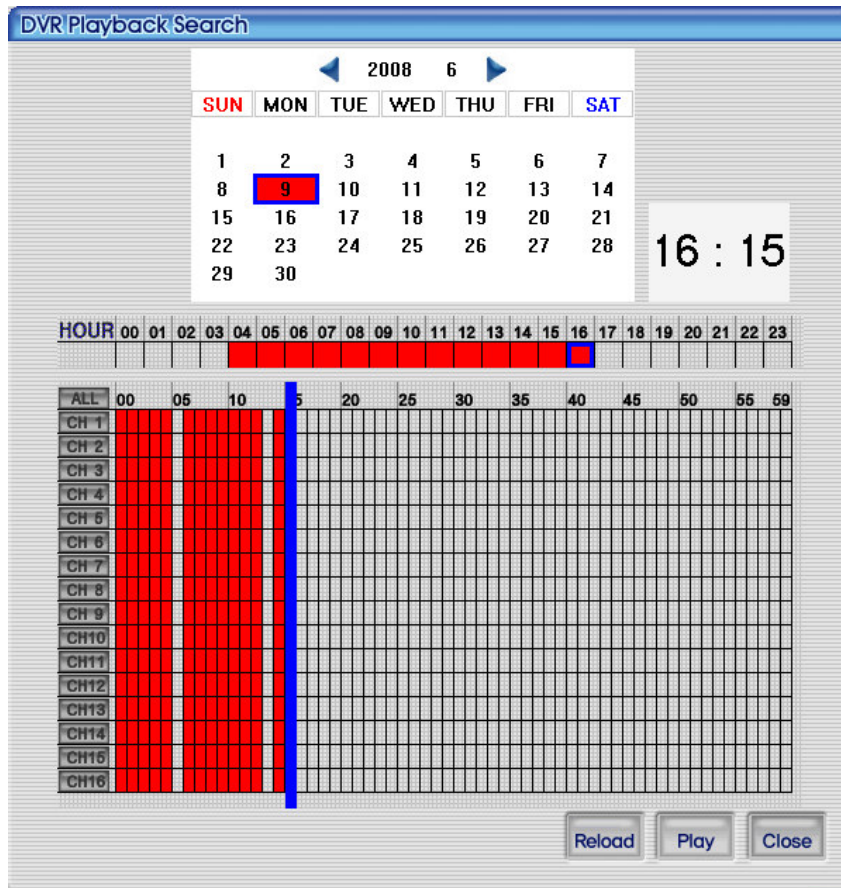
Fill network password of DVR and press “OK” button, same as Rams_M4 program.

4.6.5 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.

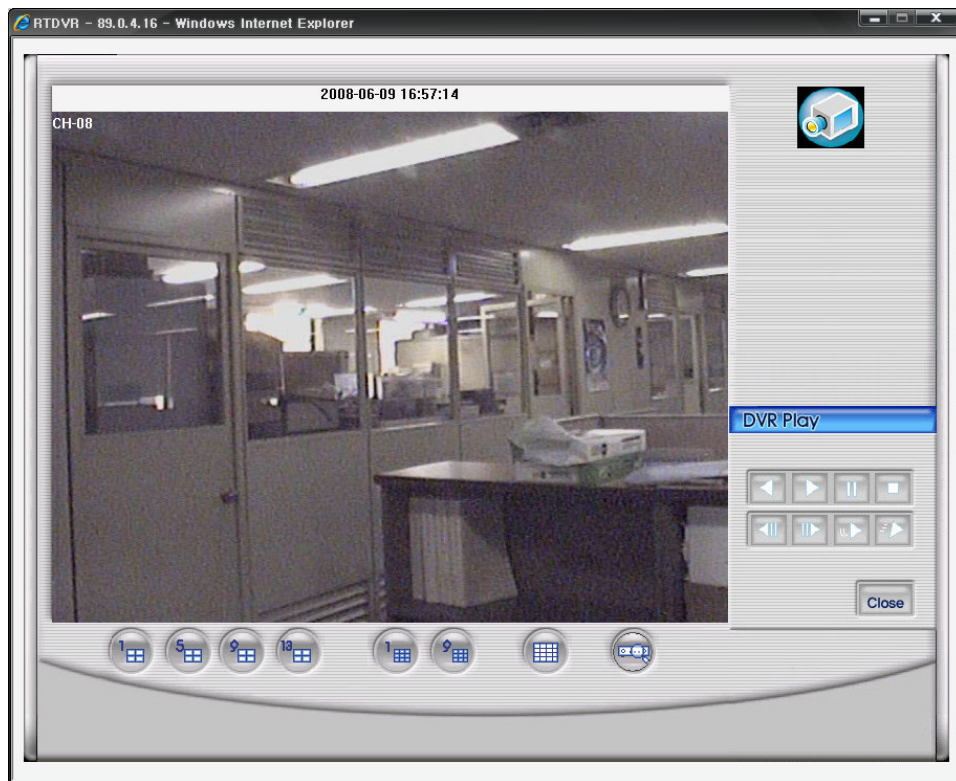
4.6.6 Search



Same function as search of DVR playback search

Please refer to the article 4.3.7

4.6.7 Playback

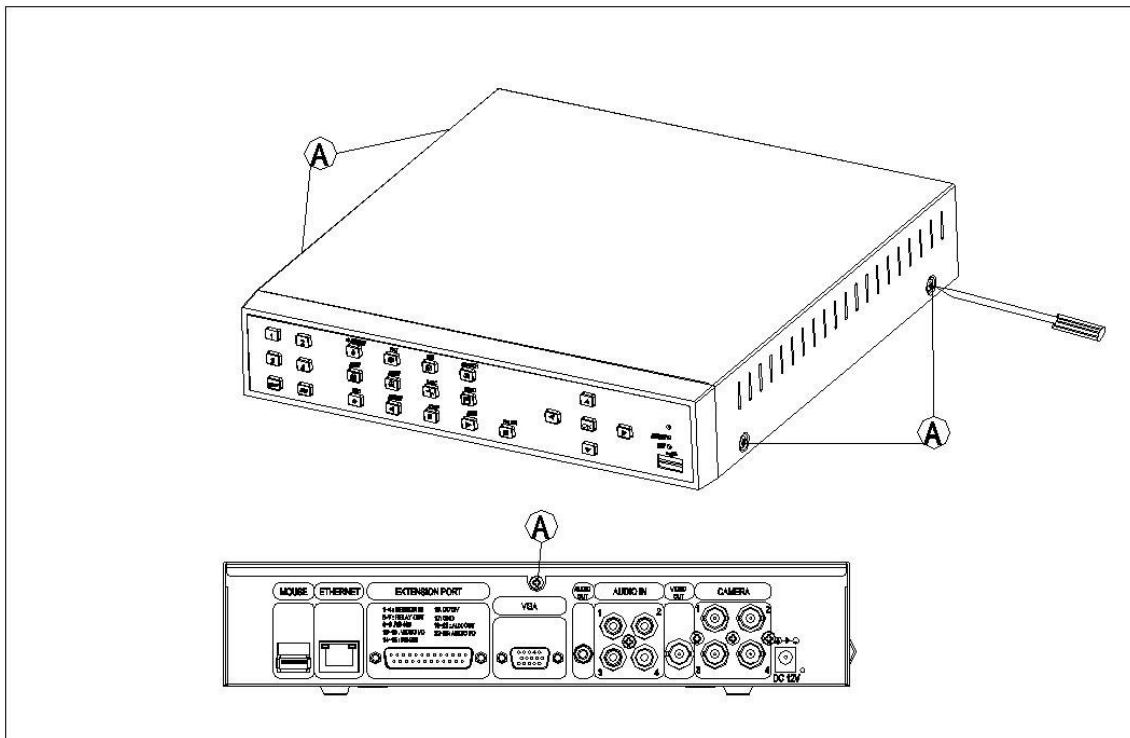


This is the screen when it's playback.. Playback control button in the right parts has same function as DVR playback in RAMS_M4. Please refer to the article 4.3.8 (DVR manual)

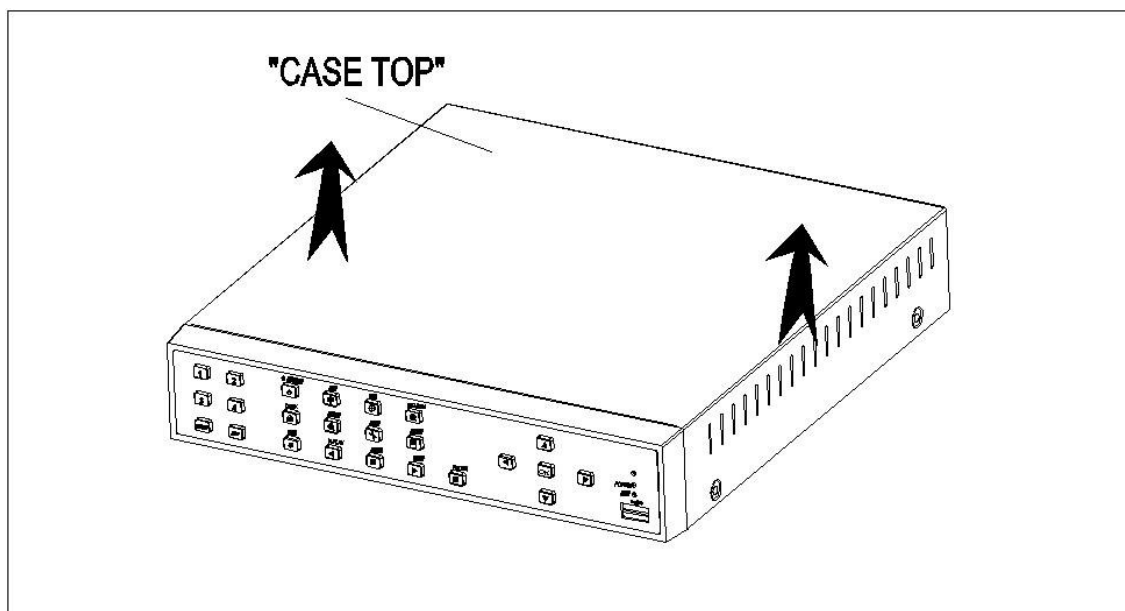
5 Appendix

5.1 Installing HDD

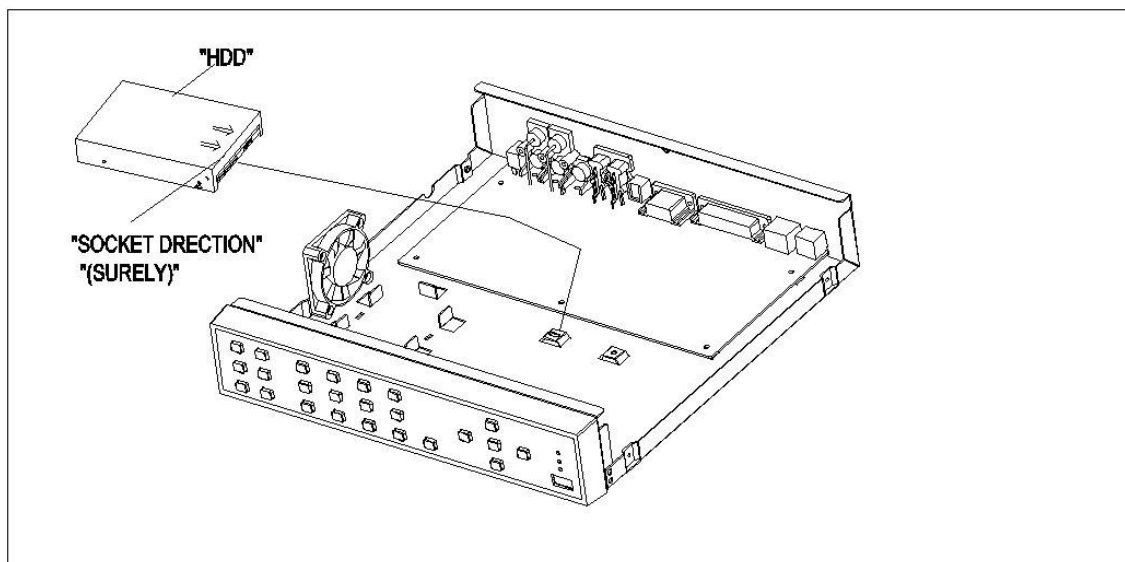
5.1.1 Installing HDD



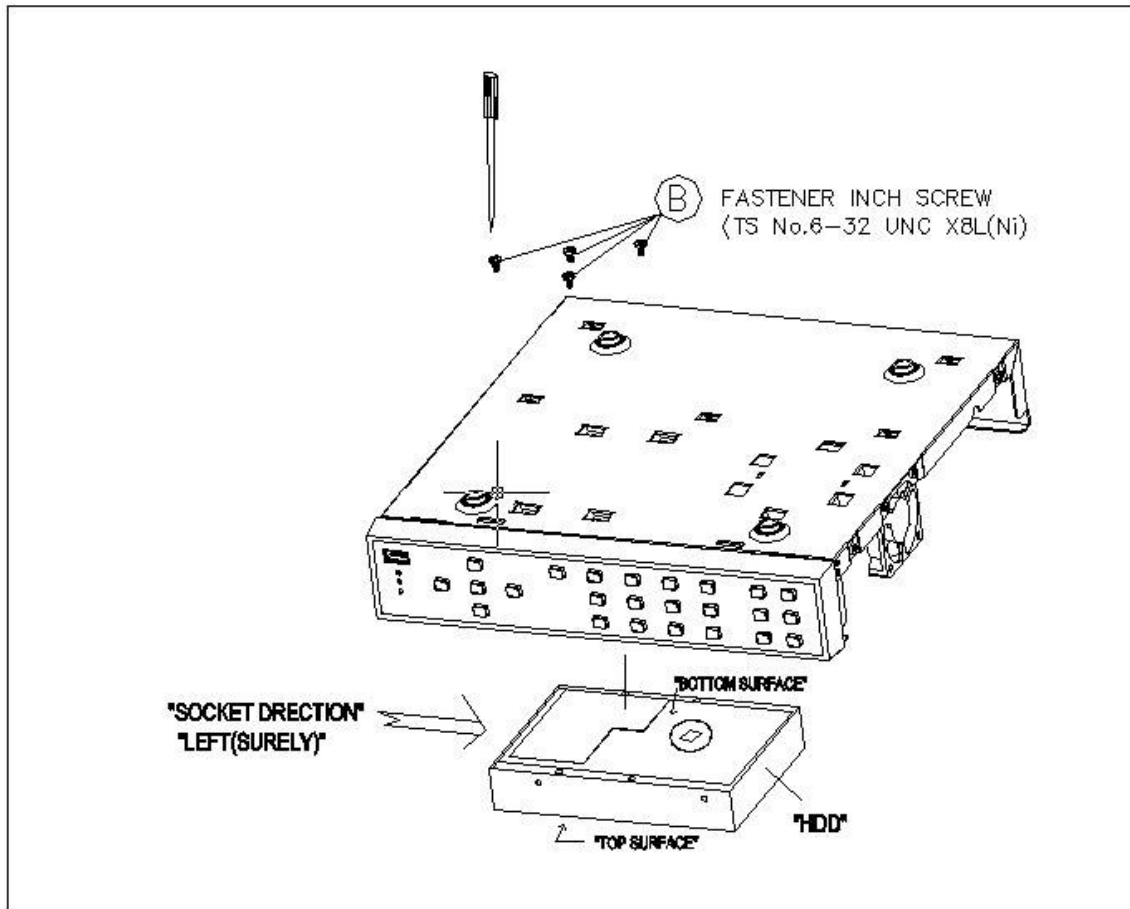
- Bolt the "A" part out, using driver.



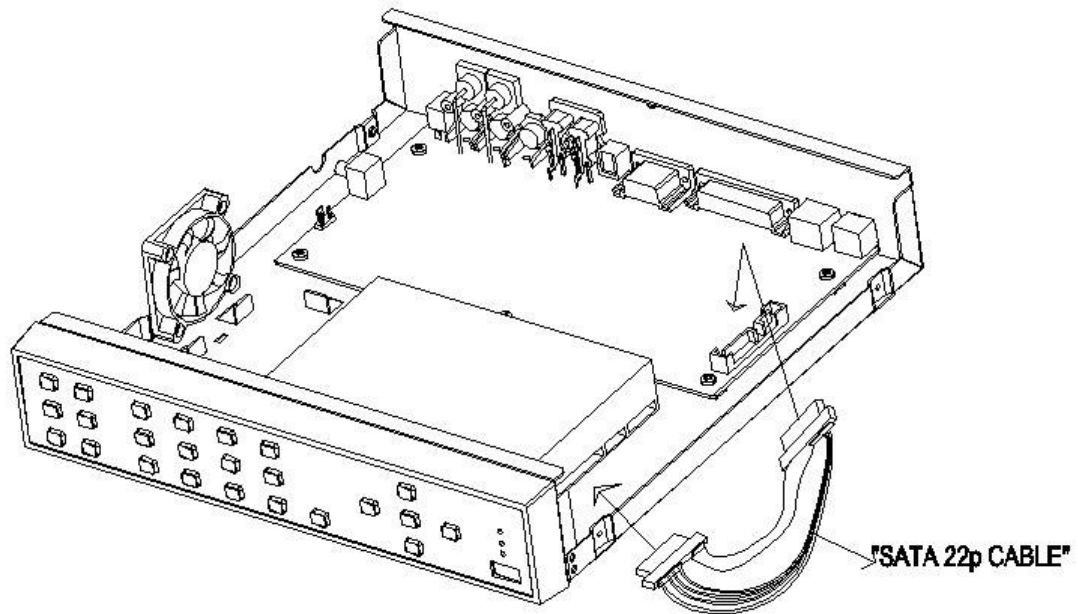
- TOP COVER is able to apart from BOTTOM CASE.



- Set the right position for HDD and DVR.
- Be careful the direction of HDD.

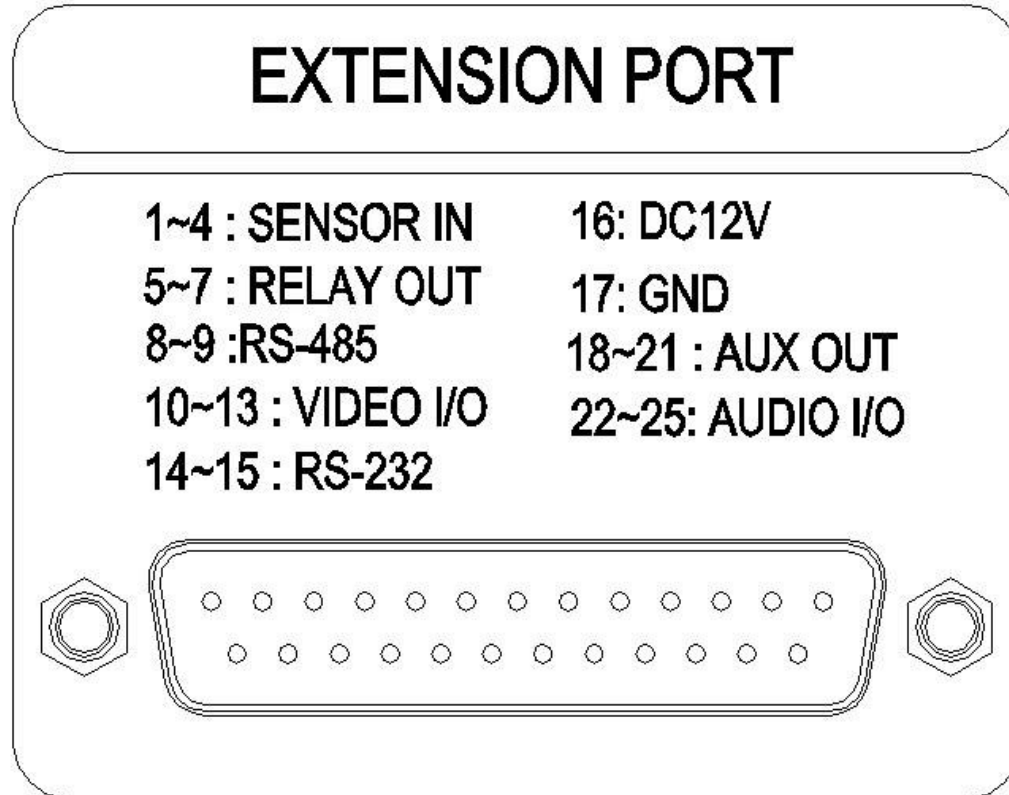


- Fasten the SCREW from bottom side of DVR



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

5.2 Terminal Information – D_SUB25P (EXTENSION PORT)



NO	NAME	DESCRIPTION	NO	NAME	DESCRIPTION
1	SENSOR IN 1		14	RS-232 Rx (TTL)	TTL Level Serial
2	SENSOR IN 2	SENSOR INPUT	15	RS-232 Tx (TTL)	
3	SENSOR IN 3	NO/NC Selectable	16	DC 12V	DC Power Output
4	SENSOR IN 4		17	GND	GND
5	RELAY NO		18	AUX OUT 1	
6	RELAY_COM	Relay Out	19	AUX OUT 2	AUX OUTPUT
7	RELAT_NC		20	AUX OUT 3	TTL Level
8	RS-485+		21	AUX OUT 4	
9	RS-485-	RS-485	22	AUDIO IN/OUT 1	
10	VIDEO IN/OUT 1		23	AUDIO IN/OUT 2	
11	VIDEO IN/OUT 2		24	AUDIO IN/OUT 3	AUDIO IN/OUT
12	VIDEO IN/OUT 3	VIDEO IN/OUT	25	AUDIO IN/OUT 4	
13	VIDEO IN/OUT 4				

5.3 Factory Default Value

5.3.1 Main Menu

Main menu	Menu			Default	Remark		
	Sub menu1	Sub menu 2	Sub menu3				
Camera setting	Channel	Channel number		CH 1~CH 4			
	Camera name			CH 01~CH 4			
	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	
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 4, 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 CONT+EVENT	
			CONT+EVENT	Screen quality	SUPER FINE	
				Recording speed (FPS)	30 FPS	
Event setting	Motion detection setting	Channel		CH 1	CH 1 ~ CH 4	
		Sensitivity		5 Level	8 Levels	
		Detection area setting				
		Event pop up		OFF		
		Motion tracing		OFF		
	Sensor setting	Sensor			SENSOR 1	SENSOR 1 ~ SENSOR 4, ALL
			Sensor type		N.O.	N.O. / N.C.
			Connection channel		CH 1	CH1~CH4, NONE
			Event pop up		OFF	
	Alarm input/output	Sensor			SENSOR 1	SENSOR 1 ~ SENSOR 4, ALL
			Alarm input setting		OFF	
		Motion			CH 1	CH1 ~ CH4,NONE
			Alarm output setting		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	
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			
System setting	System name			4CH DVR		
	DVR ID			1		
	System password	Password change			*****	
		Password adoption	Recording stop		OFF	
			Enter into menu		OFF	
			System close		ON	
	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_Angeles, 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/Brussels, 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	
	Language			Korean	Korean, English, German, French, Spanish, Japanese, Polish, Russian, Italian, Slovak
	Hard Disk	Quantity of HDD		1	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		
		Working Function	HIGH / LOW	HIGH	
				UNUSED	UNUSED, ERROR OUT, DISK FULL, RECORD STATUS, ALARM CH-ALL, ALARM CH 01 ~ ALARM CH 04
	Aux port setting				
		RAMDISK			
	System initialization	Kernel			
	Software upgrade			USB	USB, USB(AVI),
Back up	Back up device			1 hour 0 min	0 hour 0 min ~ 240 hour 59 min
	Starting time			ALL	ALL, 1 ~ 4
	Scope				
	Channel				
	Format				NTSC, PAL
System log					It is able to be changed for function upgrade.
System information	System type				
	H/W version				
	S/W version			00:09:F8:XX:XX:XX	It is different, depending on S/W version.
	Kernel version			Support	
	Mac Address			Korean, English, German, French, Spanish, Japanese, Polish, Russian, Italian, Slovak	
	Audio				
	Language				

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	

		Enhanced	1 FPS	8095.73	134952.88	26985.75
			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
	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.