DIGITAL WATCHDOG
Everything's Digital

Digital Video Recorder
Stand-alone DVR

User's Manual Ver 1.500

MAX-II

Guaranteed Stability and Reliability with our Advanced Codec format

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1. INSTALLATION & SAFEGUARDS

All the safety and operating instructions should be read before operation.

Environment Condition for Installation

1. To prevent electric shock or other hazards, do not expose this unit to rain, moisture, or dust.
2. Place this unit in a well-ventilated place and do not place heat-generating objects on this unit.
3. This unit should not be located in an area where it is likely to be subjected to mechanical shocks.

Before You Start

1. Ensure the power switch is in the OFF position prior to installation.
2. Opening or removing the cover may expose you to dangerous voltage or other hazards.
3. Operate this unit within the range of room temperature and humidity.
4. Supply power through the type of power source indicated on the manufacturer's label and with the power supply included in this unit.
5. Keep this unit out of direct sunlight and heat .
6. Make sure conductive materials do not go into the fan hole.

Notice

1. Before initial configuration or operation, first set TIME/DATE, then set this unit to the FACTORY DEFAULT setting, and lastly clear the HDD. Follow All steps in this order.
2. This unit is compatible with large HDD.
3. When setting RECORDING SETUP after installation, set not only RECORD CONFIGURATION, but also SCHEDULE SETUP. Setting Schedule setup is necessary as this unit records according to Record type & Schedule setup. Default setting value for Schedule setup is Continuous mode.
4. Stop recording before powering off this unit by entering setup menu. Powering off while recording may cause critical malfunctions such as Recording Error, Playback Error, or System Error.

FCC Information

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. May cause harmful interference to radio communications if not installed and used in accordance with the instruction manual,.

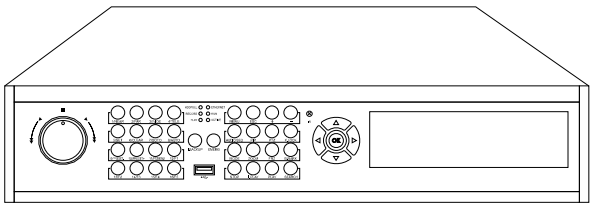
Operation of this equipment in a residential area may cause harmful interference in which case the user will be required to correct the interference at his own expense.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operated the equipment under FCC rules.

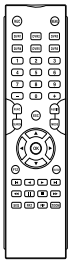
1. General Information

1-2. Package Contents & Description

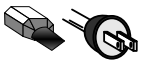
1. DVR Main Unit



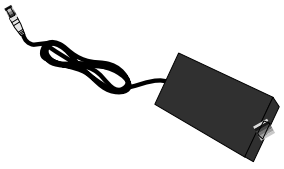
2. Remote Control



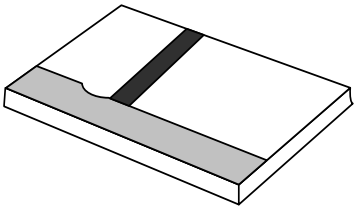
3. Power Cable



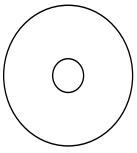
4. Power Adapter



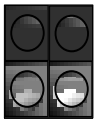
5. User's Manual



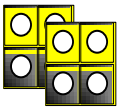
6. Software CD



7. Rubber Pad

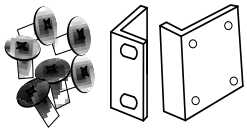


8. HDD Absorber



8. Batteries

9. Rack Mount Bracket
HDD Bolts

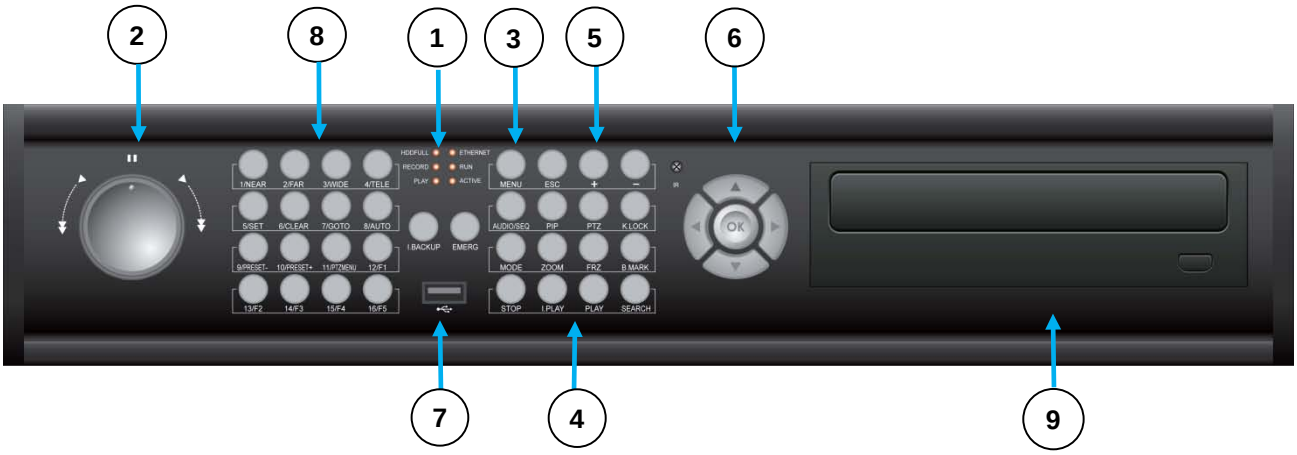


10. Mouse

Contents	Description
1. DVR Main Unit	Stand-Alone DIGITAL VIDEO RECORDER
2. Remote Control	Remote Control
3. Power Cable	AC power supply to adapter
4. Power Adapter	DC power supply
5. User's Manual	User's Manual
6. Software CD	Remote Viewer SOFTWARE
7. Rubber Pad	Prevent the DVR from slipping by attaching Pads to the bottom of the unit
8. HDD Absorber	Absorbing the mechanical shock of the HDD against the case bottom
9. Batteries	Batteries for the Remote Control
10. Rack Mount Bracket / Bolts	Rack Mount Bracket / 6 Bolts for fixing Rack Mount Bracket to DVR / 4 Bolts for fixing DVR with Rack Mount Bracket to 19" Rack / 8 Bolts for mounting the HDD into DVR
11. Mouse	DVR function control

2. Function of Buttons

2-1. Front

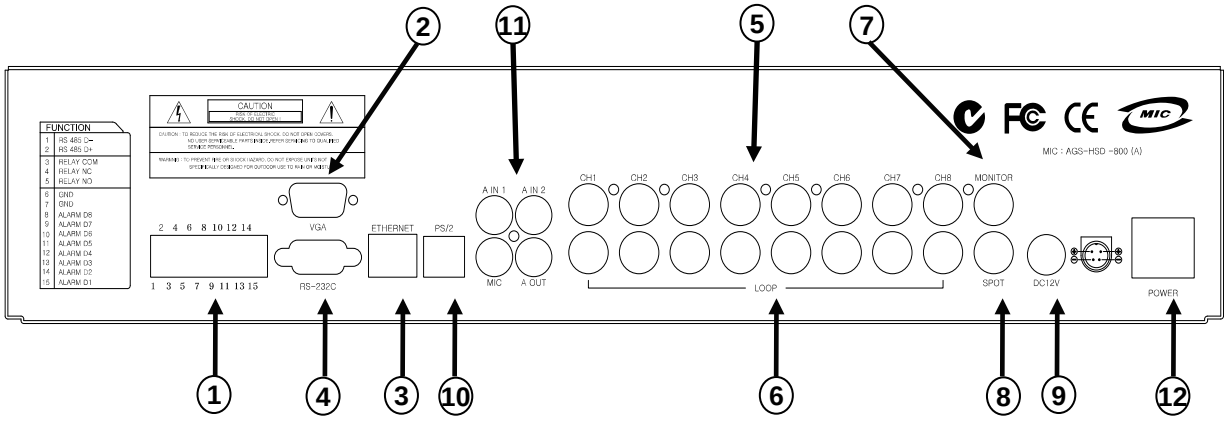


Name	Function	
1. LED Lamps	Status of operation	
2. Jog Shuttle	Pause, Direction, and Speed increases or decreases during Playback	
3. Function Key	MENU	Enter SYSTEM MENU
	PANIC	Panic recording at continuous mode at highest quality (30fps,SUPER FINE, 1/1x)
	BOOKMARK	Check the bookmark while playback for bookmark search.
	PLAY	Playback recorded data on the HDD
	I.PLAY	Backward Playback recorded data on the HDD
	I. BACKUP	Backup starts during playback (1, 2, 3, 5 minutes backup available)
	AUDIO	Select audio channel (1, 2, 3, 4 Mute)
	K. LOCK	Locking the key. To unlock, keep pressing the button for a few seconds and input the password (Same password for Setup Menu)
	SEARCH	Search recorded data on the HDD
	STOP	Stop Playback

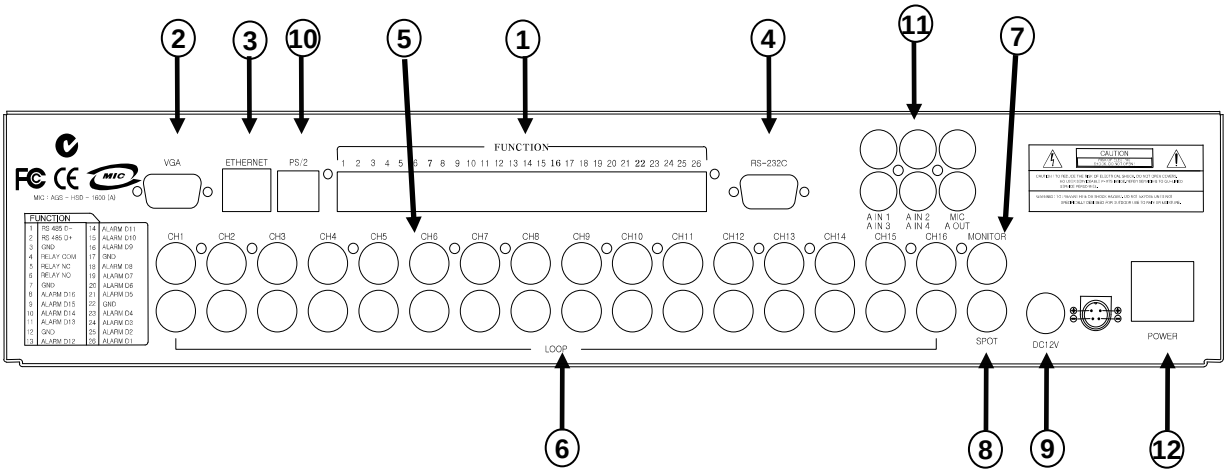
Name	Function	
4. LIVE View Control Key	PTZ	Shift from LIVE mode to PTZ control mode
	MODE	Switch screen division (in 1,4,9,16 sequence)
	FRZ	Freeze Live display
	SEQ	Automatic image sequence in full screen mode
	PIP	PIP (Picture in picture) mode
	ZOOM	Zoom image
5. Control Key	ESC	Cancel selected menu panel
	+	Increase setting value, page shift
	-	Decrease setting value, page shift
6. Arrow Key	Navigate in the menu	
7. USB Device	For firmware upgrade and USB backup	
8. Camera Selection/PTZ control	1~16 Button : Select camera channel in full screen mode	
	NEAR : FOCUS NEAR	PRESET - : Decrease PRESET NO.
	FAR : FOCUS FAR	PRESET + : Increase PRESET NO.
	WIDE : ZOOM OUT	PTZMENU : PTZ MENU POPUP
	TELE : ZOOM IN	F1 : USER FUNCTION 1
	SET : PRESET SET	F2 : USER FUNCTION 2
	CLEAR : PRESET CLEAR	F3 : USER FUNCTION 3
	GOTO : PRESET GOTO	F4 : USER FUNCTION 4
	AUTO : AUTO SCAN	F5 : USER FUNCTION 5
9. Backup CD,DVD-ROM	For Firmware upgrade and CD/DVD backup	

2-2. Rear

[Rear Panel for 8ch DVR]



[Rear Panel for 16ch DVR]

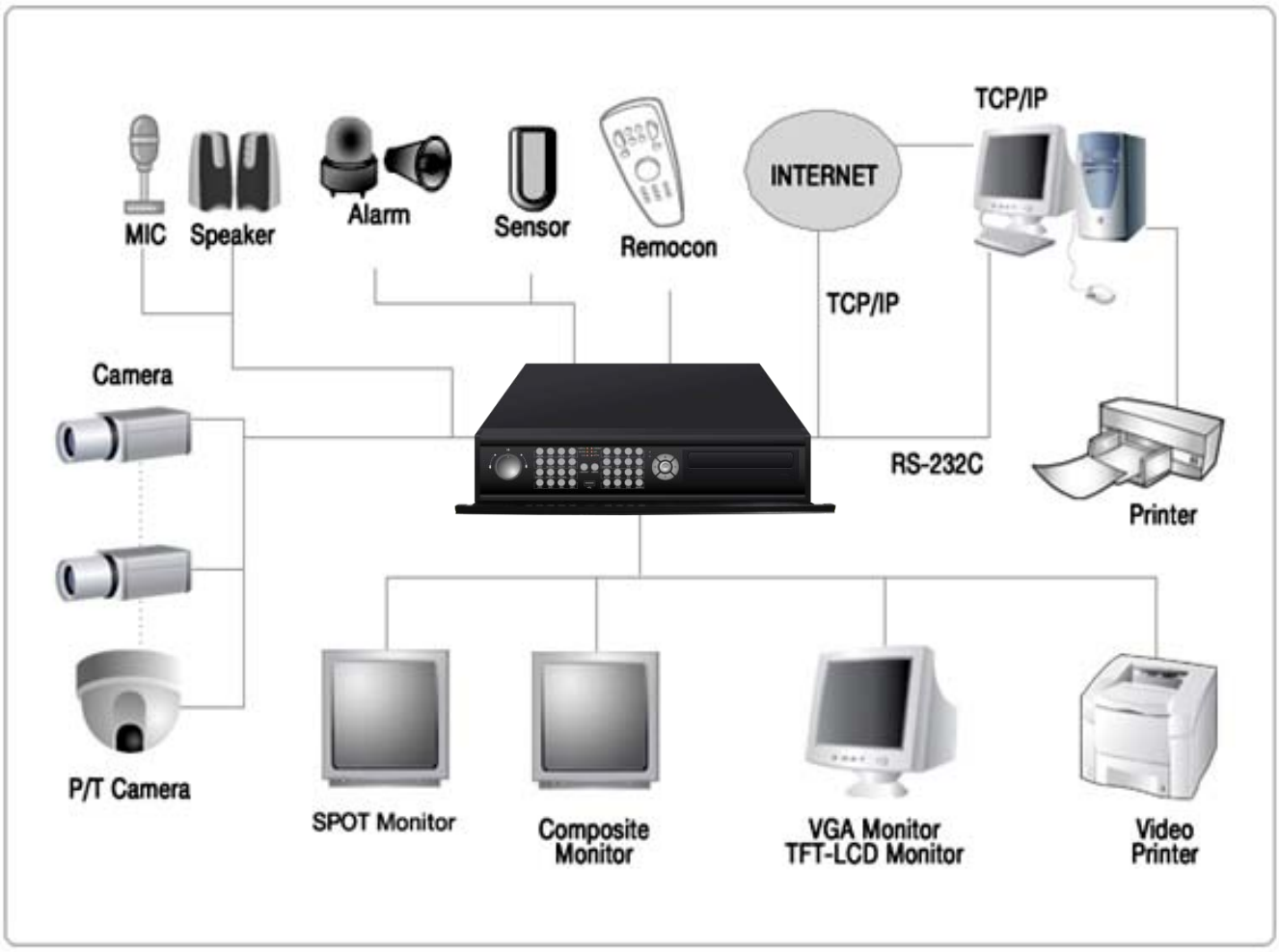


	Name	Function
1	RS 485	Connection with a PTZ Camera or other external devices using RS 485
	RELAY Output	Relay Output terminal
	SENSOR Input	Sensor Input terminal
2	VGA	VGA Output to CRT or TFT LCD Monitors
3	ETHERNET	Connection to ethernet devices
4	RS-232C	Connection to external devices such as a PC using RS-232C to control DVR
5	Camera Input	Connection with NTSC/PAL cameras
6	Loop Out	Camera looping outputs
7	Monitor Output	Connection with NTSC/PAL composite monitor
8	SPOT Output	Connection from analog backup output to external devices
9	DC Power	DC 12V 6.67A Adaptor
10	PS2 Mouse	Connection to PS2 Mouse
11	Audio	Microphone input and Audio output
12	POWER SWITCH	Power ON/OFF Switch To avoid accidental deletion of the HDD data, please make sure to press MENU button and enter into setup menu before powering off the unit. This takes the unit out of recording mode for a safe shutdown.

NOTE : You can not mix PAL and NTSC equipment. For example, you cannot use a PAL camera and NTSC monitor.

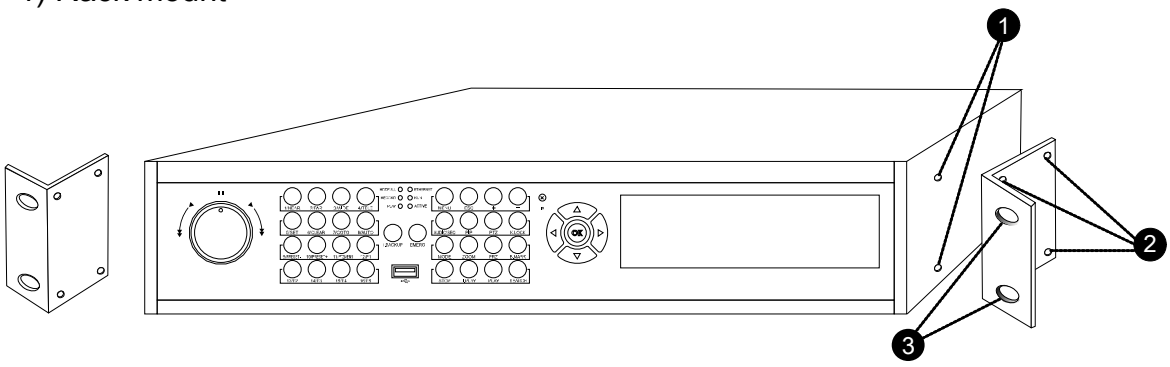
3. Installation

3-1. Configuration



3-2. Detailed Configuration

1) Rack mount



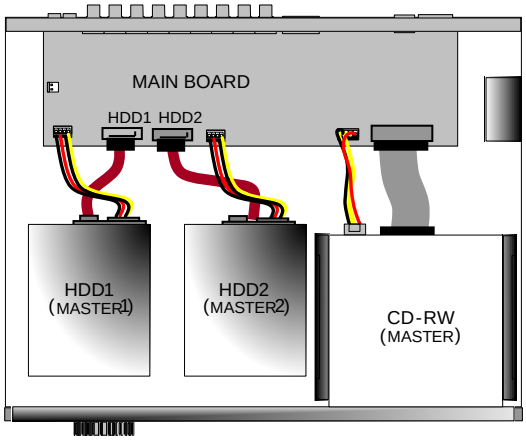
1. Remove all 4 bolts on the side caps.
2. Attach Rack mount bracket to the DVR.
3. Attach the DVR with rack mount bracket to a 19” Rack.

2) HDD (Hard Disk Drive) Connection

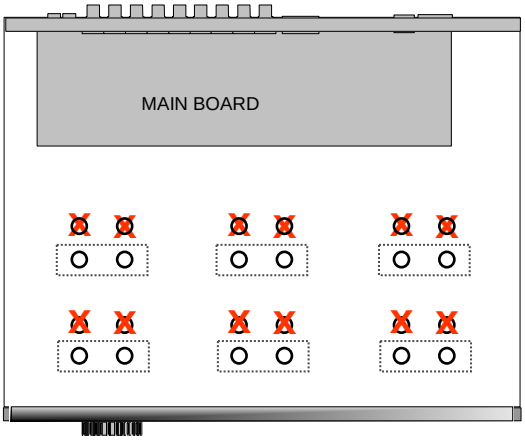
1. Connect the Main Board and HDD1 using the IDE cable and the HDD power cable.
2. When using 1 HDD, install the HDD onto HDD1 location.
3. When using 2 HDDs, install the first HDD onto the HDD1 location and then install the second HDD onto HDD2 location in order.
4. Adhere the HDD absorbers (included in package) to the bottom of case and then install the HDD on top of them by using the bolts (included in package).
5. Screws must be inserted from outside of the case bottom.

[8ch]

HDD Cable Connection

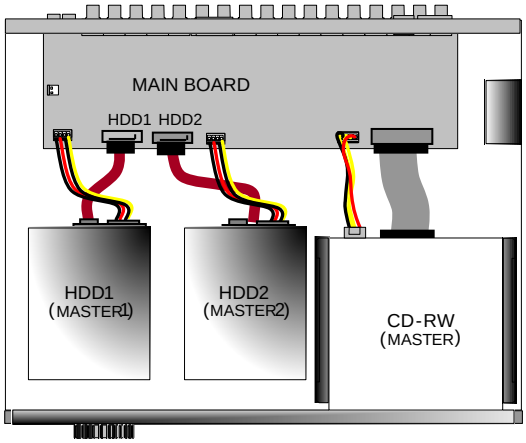


HDD Fix

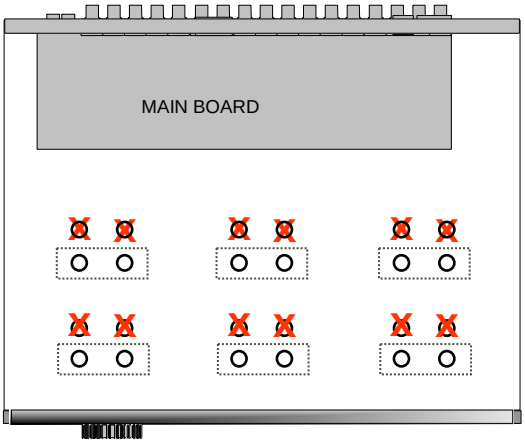


[16ch]

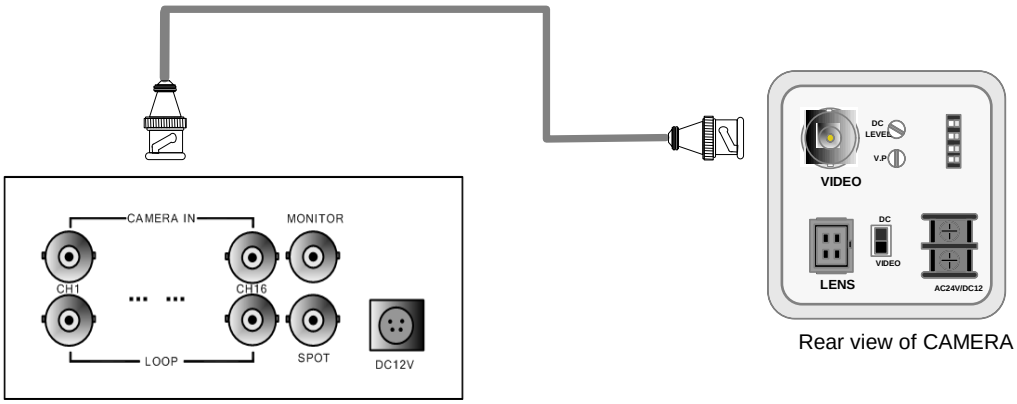
HDD Cable Connection



HDD Fix



3) Camera



Rear view of CAMERA

Connect cameras to the camera input on rear panel of DVR marked CAMERA IN.

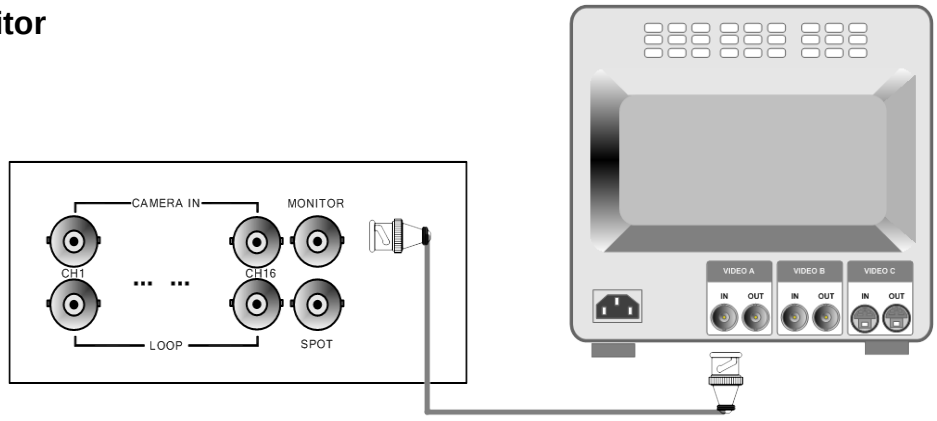
4) Audio

- Audio Input
  1. 4ch Audio Input is available for MAX II-16, 2ch for MAX II -8.
  2. Connect the Audio Input as needed for camera channels.
  3. Audio channel 1 is assigned for camera channel 1~4, audio channel 2 for camera channel 5~8, audio channel 3 for camera channel 9~12 and audio channel 4 for camera channel 13~16.
  4. The audio input should be connected according to assigned camera channels for audio recording.

- Microphone Input
  1. 1 Microphone Input is available. The recording is not available through microphone input..
  2. The Microphone is to support TWO-WAY Audio, for communication with remote user.

- Audio Output
  1. 1ch of Audio Output is available.
  2. The Audio of Selected channel at DVR will be output.

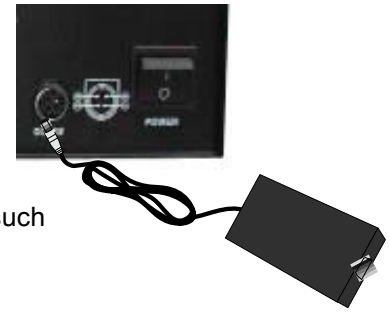
5) Monitor



Connect the video output marked MONITOR to VIDEO-IN of Main Monitor.

6) Power Cable

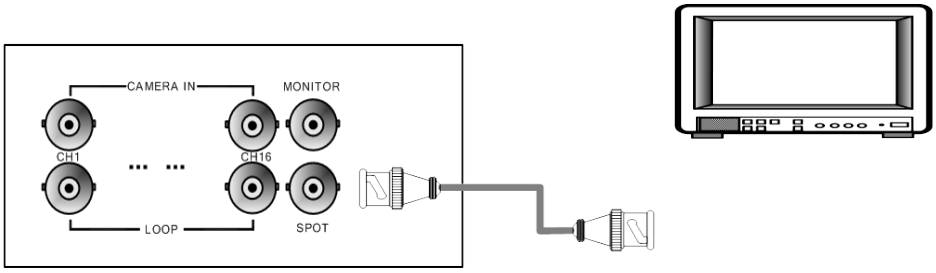
Connect DC 12V, 6.67A Adaptor to the back side of Power Jack for right operation of 2HDDs and CD Recorder.



Before turning on, be sure all necessary devices such as Power adaptor, cameras and Monitor are connected properly to DVR!

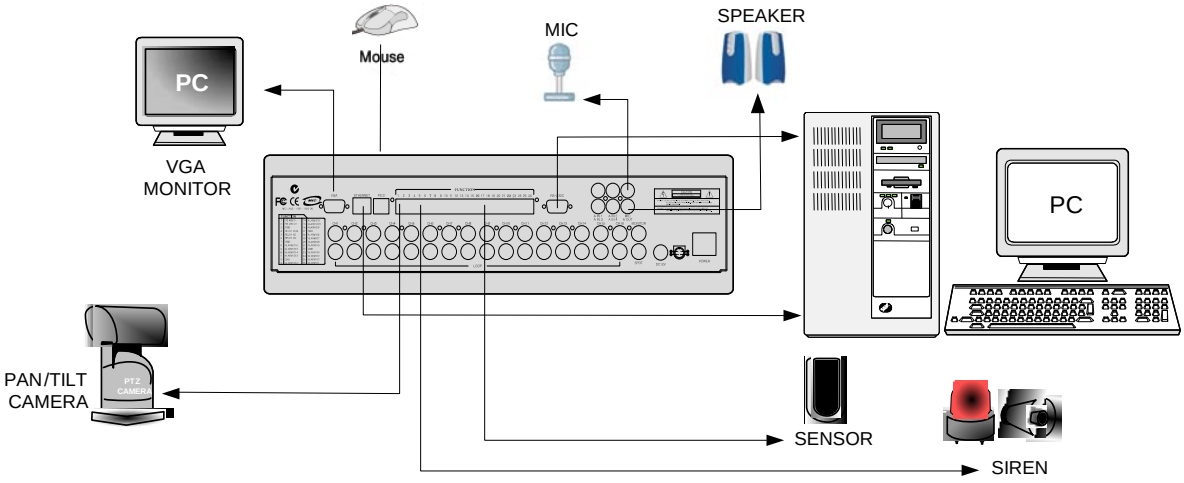
Notice
To avoid accidental deletion of HDD data, please make sure to press MENU button before powering off the unit. This takes the unit out of recording mode for safe shutdown.

7) SPOT - Monitor Output



Connection with the spot monitor as needed.

8) Others



RS-232C : Controls the DVR through RS-232C port by using PC.

RS-485 : Controls external devices such as PTZ Cameras.
(Pin No.1 ~ 2 at Terminal Block).

RELAY Output : (Pin No.4 ~6 at Terminal Block).

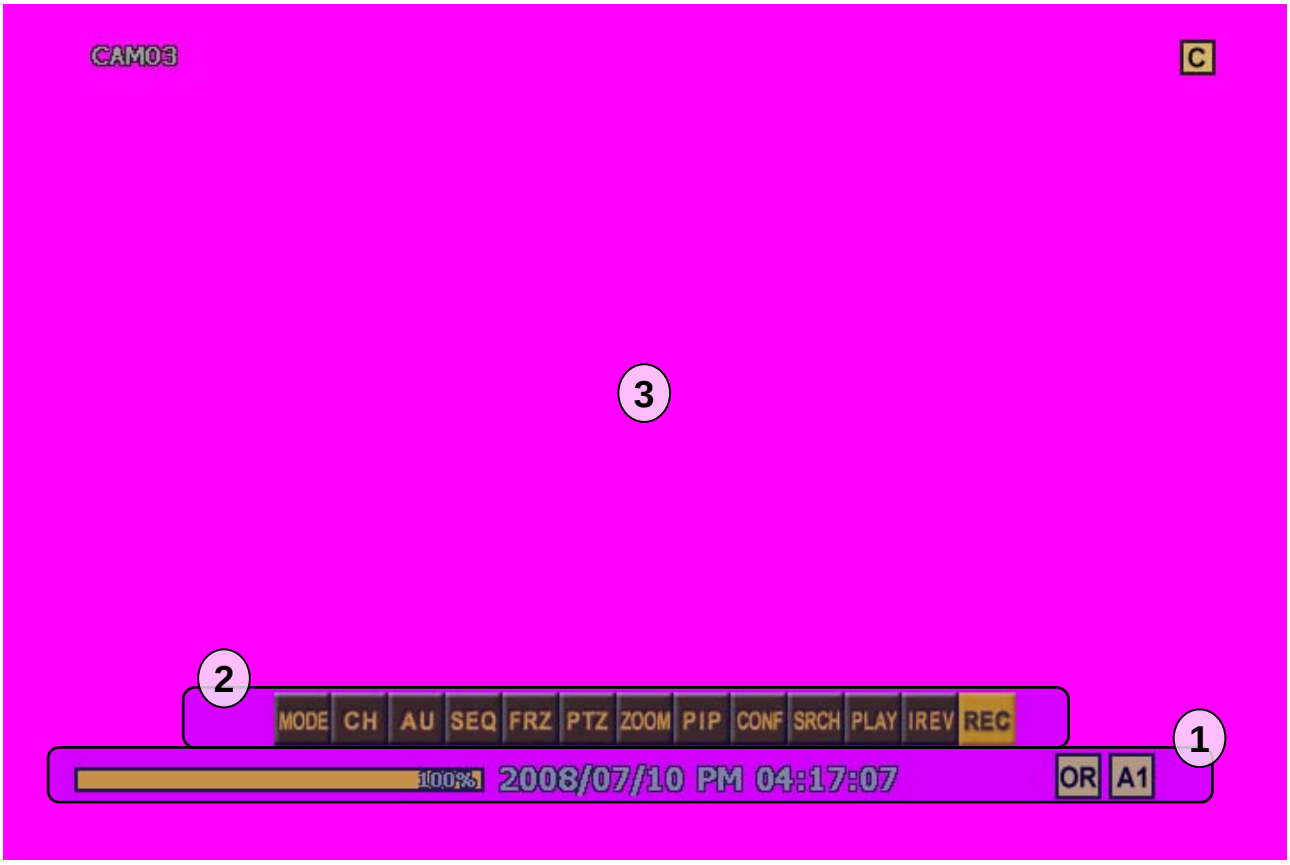
SENSOR Input : (Pin No.8 ~ 11 / No.13 ~ 16 **/** No.18 ~ 21 **/** No.23 ~ 26 at Terminal Block).

GRND : Ground (Pin No.3 / No.7 / No.12 **/** No.17 **/** No.22 at Terminal Block).

ETHERNET : Connection to LAN, WAN and Internet.

VGA : Connection to VGA Monitor (CRT, TFT LCD Monitor) is available if optional VGA board is fixed on the main board.
Resolution is set to 800x600 60 Hz
User can change the resolution in MONITOR SETUP / VGA SETUP / VGA RESOLUTION.

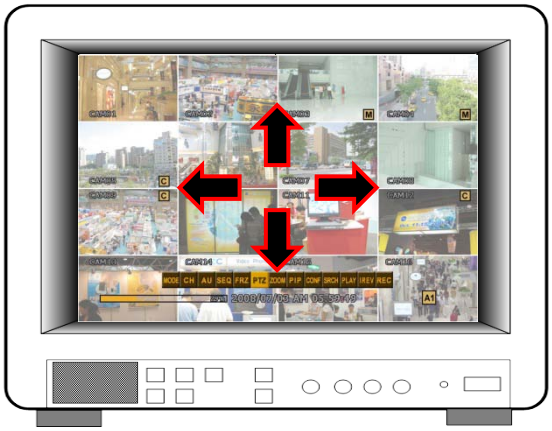
4. Display Configuration



No	Contents	Description
1	Display	Display Date/Time, HDD Status, HDD recorded space, available remaining days, and audio channel
2	Main Menu	Click with mouse : SPLIT, CHANNEL, AUDIO, FRZ, SEQ, ZOOM, PIP, PTZ, SETUP, PANIC, PLAY, SEARCH
3	LIVE	Live screen of each channel Camera Title & Status

[Screen Movement Function]

If the location of screen does not fit in the middle of monitor, you can move the screen by using key as below.



FUNCTION KEY	EXPLANATION
MODE+LEFT	Moving entire screen to left side
MODE+RIGHT	Moving entire screen to right side
MODE+TOP	Moving entire screen to top side
MODE+DOWN	Moving entire screen to down side
MODE+OK	Saving moved location

4-1. Display

1) Date/Time

Live mode : shows the current date & time
Playback mode : shows the recorded date & time of the playback image

2) AUDIO Icon

The number in the icon indicates which Audio channel is on.

In case Audio channel 1 is ON, A1 appears.

3) Record Icon

Displays the current recording mode.

In case of Continuous Recording Mode, C appears.

4) HDD Overwrite

OR appears when the HDD overwrite mode is selected.

5) HDD Space

The HDD recorded space is marked in red on the time bar.
The available remaining days/time at the current record mode is also displayed.

4-2. Main Menu

1) MODE Split Screen

Screen division panels display various screen viewing options:

1CH Full screen mode : Channel Bar pops up

4CH 4 Channels Split

9CH 9 Channels Split

16CH 16 Channels Split

2) CH Display Channel Selection

Display Channel Selection Panel views, and selected channel displays in full screen mode.
(Channels are also selectable in ZOOM, PTZ, and FREEZE mode.)

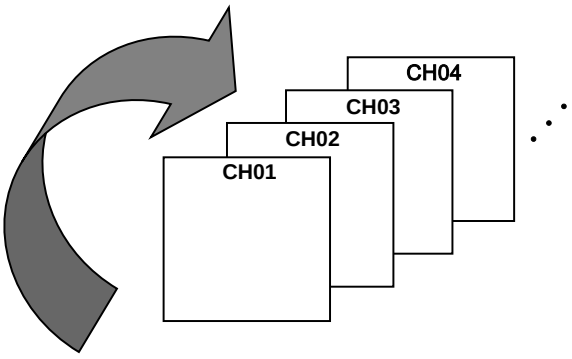
3) AU AUDIO Channel Selection

Audio Channel Selection Panel controls.
(1ch output for 4ch DVR, 2ch output for 8ch DVR, 4ch output for 16ch DVR)

4) SEQ SEQ (Sequence)

Displays full screen mode images in sequence

In case of 4 Split, 1,2,3,4 -> 5,6,7,8 -> 9,10,11,12…… images sequenced.



5) FRZ FRZ (Freeze)

Click FRZ to pause with FZ icon.
Click each channel to pause with FZ icon.

6) PTZ PTZ (PAN/ TILT/ ZOOM)

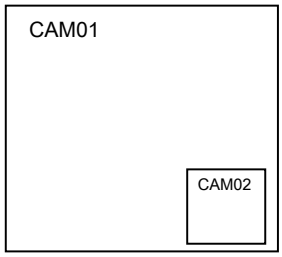
Click the PTZ button, and the PTZ Controller panel will pop up as shown below.

OPEN	IRIS OPEN	**SET**	PRESET SET
CLOSE	IRIS CLOSE	**CLEAR**	PRESET CLEAR
WIDE	ZOOM OUT	**GOTO**	PRESET GO TO
TELE	ZOOM IN	**AUTO**	AUTO SCAN
NEAR	FOCUS NEAR	**Arrow**	PAN / TILT
FAR	FOCUS FAR	**No.**	PRESET No.

7) ZOOM ZOOM

In LIVE mode, images Zoom in X2.
Move selected frame by mouse control.
Click ESC to exit zoom mode.

8) PIP PIP



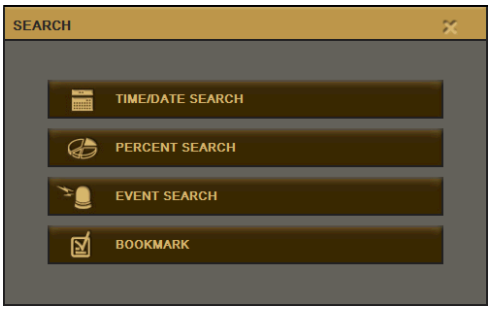
One channel displays on the full monitor screen while another small screen displays on the inset window.

-Small screen can display in sequence according to preset interval.
- Full screen can be shifted to next channel by clicking the full screen or by clicking the channel number.

9) CONF Setup

Click SETUP button to go to the setup menu.
(See Chapter 6 for more details.)

10) SRCH SEARCH



Its function is to search the recorded data easily and to playback.
Search by Time/Date, Percentage of HDD availability, Event, and Bookmark list search available.

(See Chapter 4-5 for more detailed instruction)

11) PLAY PLAY

While in LIVE mode, click the PLAY button and it will playback recorded images.
The Control Panel pops up and assists in flexible playback operation: play forward/reverse, previous/next, fast forward/reverse, and pause.

12) IREV I.PLAY

While in LIVE mode, click the PLAY button and it will playback recorded images.
The Control Panel pops up and assists in flexible playback operation: play forward/reverse, previous/next, fast forward/reverse, and pause.

13) REC Panic Recording

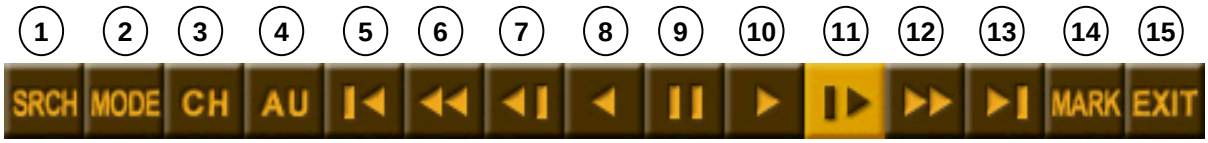
In case of an emergency, click the Panic Record icon to activate the panic recording.

R appears and it starts recording at continuous mode at highest quality.

(See Chapter 4-4 for more details)

4-3. Record / Playback Panel

1) Playback Panel



No	Function	Details	No	Function	Details
1 SRCH	Search	Search Recorded Data for Playback	9	Pause	Pause Playback
2 MODE	MODE	Screen Split in 1,9,16ch Screen Mode	10	Playback	Playback
3 CH	Channel	Display Channel Selection in Full Screen Mode	11	Decrease playback speed	In fast playback, decrease playback speed. In pause, it playback frame by frame.
4 AU	Audio	Audio Channel Selection	12	Increase playback speed	In forward playback : increase playback speed
5	Move to Beginning	Move to Beginning of Recording and Playback	13	Move to End	Move to the end of recording and stop
6	Increase playback speed	In reverse playback : increase playback speed	14 MARK	BOOKMARK	Check and save bookmark point while playback
7	Decrease playback speed	In fast playback, decrease playback speed. In pause, it plays back frame by frame	15 EXIT	EXIT	Exit Playback Mode
8	Reverse Playback	Playback in Reverse Direction			

4-4. Panic Recording

1) Schedule recording & Emergency recording

Default setting is Schedule recording: continuous recording mode.
In case of emergency, click the Emergency Record button and it **begins** recording at highest quality level. (Record LED lights on DVR)

Panic Recording : Records at the highest quality on a continuous recording mode.

Schedule Mode : Records according to the recording settings in the RECORD SETUP & SCHEDULE SETUP menu.

To return to Schedule Recording mode, click 'STOP' button.

2) When the system does not record:

- when cameras are NOT connected.
- when the HDD is full and the overwrite mode is not selected.
- when factory the default and the HDD clear function was not run before recording.
- when in Schedule recording mode and it is set not to record at the time.

4-5. SEARCH

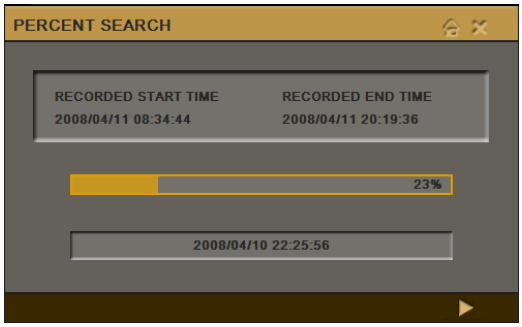
Searching is available in 3 different methods.

Click SRCH button, and search window will popup as below:

1) Search by Date/Time

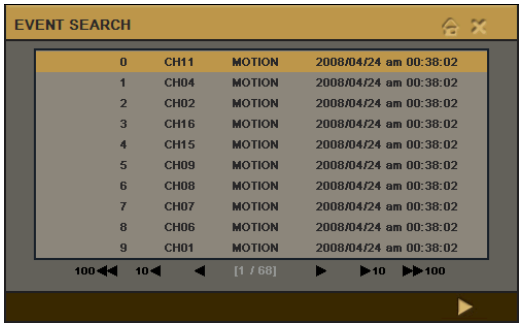
- Search by Time and Date as entered. You can change the target Date/Time values by clicking “+” and “-”.

2) Search by Percentage of HDD



- Search by Percentage of HDD
Search by Percentage of total recorded data on HDD. You can change the target Date/Time values by clicking “+” and “-” or anywhere in the percent search bar.
It starts playback from the selected Date/Time or from the point marked on the percent search bar.

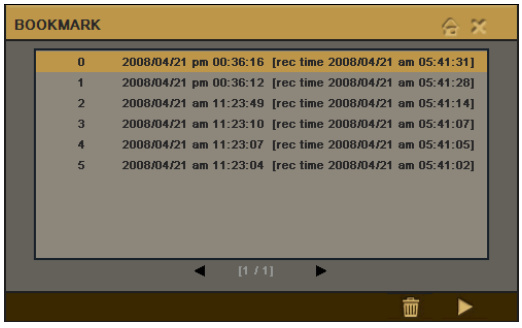
3) Search by Event List



- Search by event list which tracks Motion Detection, Alarm Input, and/or Video Loss.

Select any event shown on the list first and click “PLAY” button to play it. Playback will start from the beginning of the selected event.

4) Search by BOOKMARK List



- Search by bookmark list.

While in playback mode, if you want to remember a certain point of the recorded data, press the “BOOKMARK” button and the time and date will be added to the bookmark list.
Select any recorded data on the bookmark list and click the “PLAY” button to play.

4-6. PTZ Control

Push [PTZ] button on the DVR to activate the PTZ mode.

Button	Description	Button	Description
1 / NEAR	FOCUS NEAR	10 / PRESET+	PRESET No. +
2 / FAR	FOCUS FAR	11 / PTZ MENU	PTZ MENU
3 / WIDE	ZOOM OUT	12 / F1 ~ 13 / F5	Function
4 / TELE	ZOOM IN	UP	TILT UP
5 / SET	PRESET SET	DOWN	TILT DOWN
6 / CLEAR	PRESET CLEAR	LEFT	PAN LEFT
7 / GOTO	PRESET GOTO	RIGHT	PAN RIGHT
8 / AUTO	AUTO SCAN	+ -	Select Channel
9 / PRESET-	PRESET No. -		

4-7. CD/DVD Backup

Please press [MENU] button then go to DEVICE menu and click “CD/DVD BACK UP”.

1. Insert an empty CD-R media into CD writer and select time and date you want to begin backup. (Start & End time and date in HDD sub-menu is not editable. It only shows the start and end time and date of total recorded data.)

2. After selecting Start time and date, select BACKUP SIZE, and it will display the end time. The End time and date will be calculated automatically as per start time and the selected backup data size. (To backup in several CDs, set size in SPLIT TO FILE)

3. Click BACKUP START to start backup.

4. When the burning process is completed, the CD-RW will open automatically, and the start time will be set automatically to the end time of burned data for continuous backup process. The End time will be calculated automatically as per the selected backup data size in previous backup.
To continue backup, insert new CD-R media and repeat above procedure.
To stop backup, click MENU button or close the window.

5. Install BACKUP CD PLAYER with the CD included in the accessory pack. Playback of the recorded data is available now. (See Chapter 6-7 for more information)

4-8. USB Backup

Please press [MENU] button then go to HDD/CD/DVD/USB menu and click “USB BACKUP” button.

1. Insert the USB memory stick on the USB port of the DVR and select the time and date you want to begin backup. (* Start & End time and date in HDD sub-menu is not editable. It only shows the start and end time and date of total recorded data.)

2. After selecting the Start time and date, select BACKUP SIZE, and it will show end time.
The End time and date will be calculated automatically as per the start time and the selected backup data size.

3. Click BACKUP START to start backup.

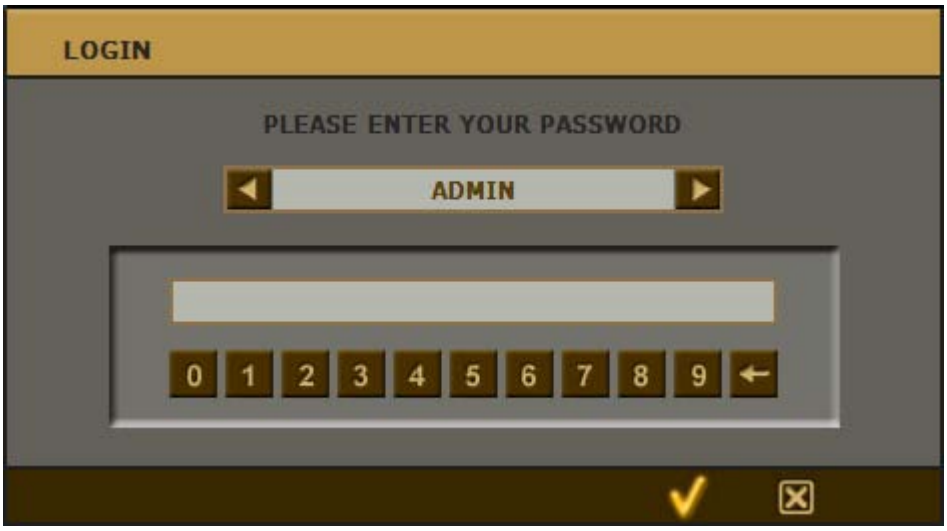
4. When the backup process is completed, the start time will be set automatically to the end time of backup data for continuous backup process. The end time will be calculated automatically as per selected backup data size in previous backup.

5. Install BACKUP CD PLAYER with the CD included in the accessory pack.
Playback of the recorded data is available now. (See Chapter 6-7 for more information)

5. Operation

5-1. System Login

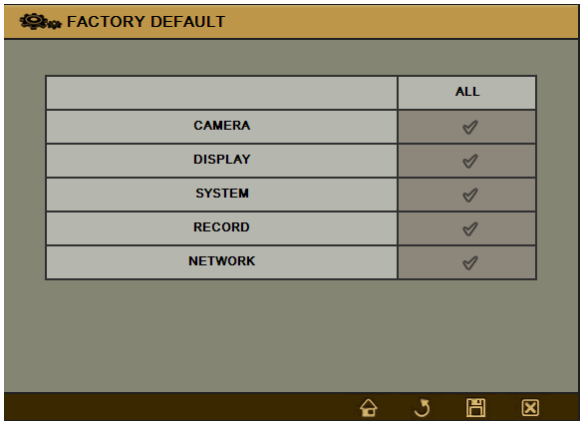
1) To enter system menu, press the MENU button.



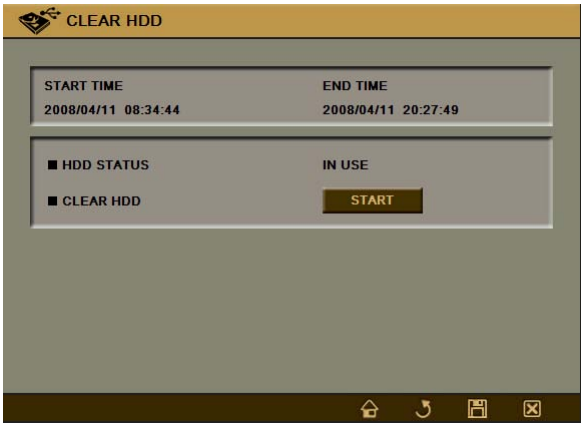
Select the user name, input the password and click the OK button.

5-2. Factory Default

* Check if all channels are being displayed properly before the first operation. Log into the Main Menu and set Time/Date and run factory default and clear HDD. ** Starting recording without factory default and clear HDD may cause a malfunction.

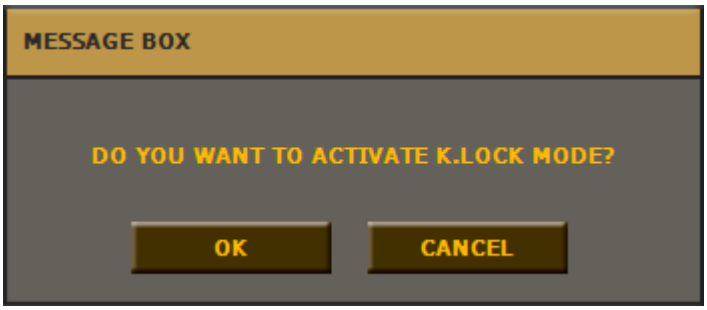


(See chapter 5-2)



(See chapter 5-4)

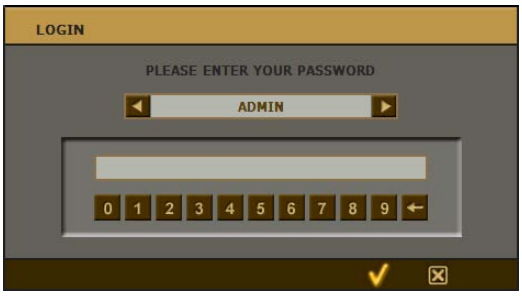
5-3. KEY LOCK



Press K.LOCK button for several seconds and then the message appears to confirm. If you click “OK”, it will lock all the key function of DVR.

KL appears on the screen while DVR is under the Key Lock mode.

To unlock, press K.LOCK button for several second and then input the password (same as system password)



5-4. Playback

1) Playback, Jog / Shuttle Function

Click the playback button, the recorded data on HDD will begin playback at X1 speed.
Click the backward playback button, It will being to play backwards. Use the Jog/Shuttle to pause, lower speed or Increase speed playback and pause.

Press the ‘J.SHUTTLE’ button to activate the Jog/Shuttle, the LED will blink when it is available. To operate the Jog/Shuttle, turning the control knob to the right will control fast-forward playback, turning the control to the left, will control its reverse playback. Jog/shuttle will control one camera at a time. Shuttle speeds are shown below.

1/2, 1/4, 1/8, 1/16 : The speed is lower than Normal Playback speed. 1X : Normal playback speed.
2, 4, 8, 32 : The speed is faster than Normal Playback speed.

2) MARK BOOKMARK Function

While in playback mode, if you want to remember a certain point of the recorded data, press “BOOKMARK” Button or click the icon. And then the time and date will be added to the bookmark list.

3) I.BACKUP

During playback, when you press I.BACKUP Button of key panel or BACKUP Button of remote controller, the play status is changed to pause status as following display.
The USB back up gets started and processed as long as you set backup time(1,2,3,5 minutes available) then USB back up is completed with success message.

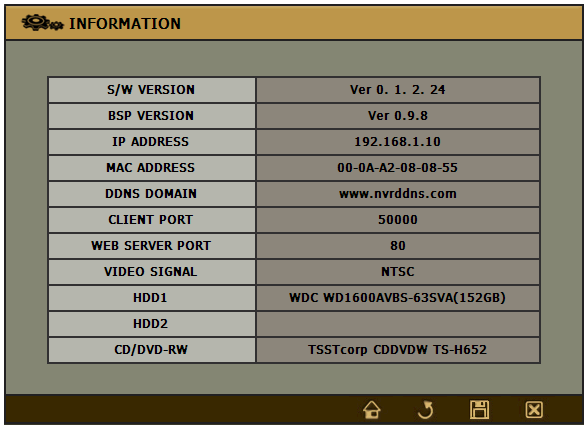
6. DVR Setup

6-1. General Operation

SETUP GROUP	GROUP CONTENTS
SYSTEM	INFORMATION, UPGRADE, USER AUTHORITY, PASSWORD, BUZZER AUDIO, REMOTE CONTROL, FACTORY DEFAULT
DISPLAY	DATE/TIME, DISPLAY SETUP, VGA, INTERVAL, LANGUAGE
RECORD	RECORD SETUP, MOTION, SCHEDULE, HOLIDAY
CAMERA	CAMERA TITLE, COLOR ADJUSTMENT, ACTIVATION, ALARM PTZ SETUP, PTZ SPEED, EVENT POPUP
DEVICE	CLEAR HDD, CD/DVD BACKUP, USB BACKUP, RS-232C
NETWORK	ETHERNET, DDNS, PPPoE

6-2. SYSTEM Setup

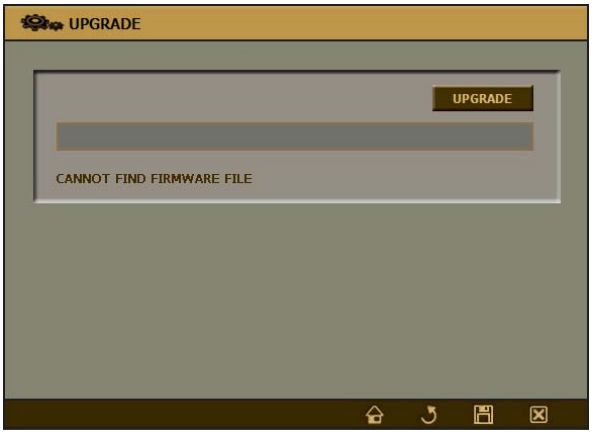
1) INFORMATION



To display the System Information

• Click ‘SAVE’ or ’EXIT’ to exit.

2) UPGRADE

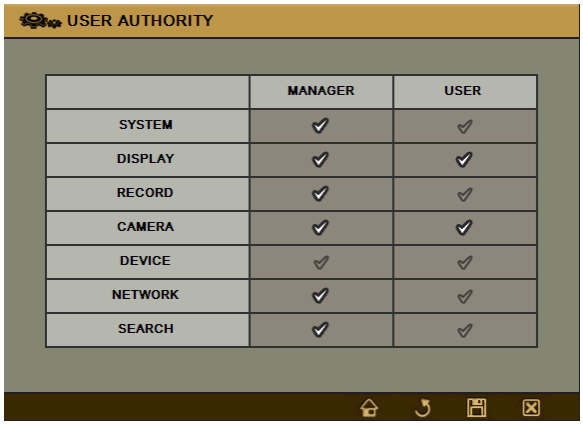


To access the Menu for a USB Upgrade.

•Insert an USB memory stick which has the firmware (to be upgraded) into the USB port on the front.
•Go to “UPGRADE” and then it will automatically detect the USB memory stick.

•Click “START” to start upgrading.

3) USER AUTHORITY

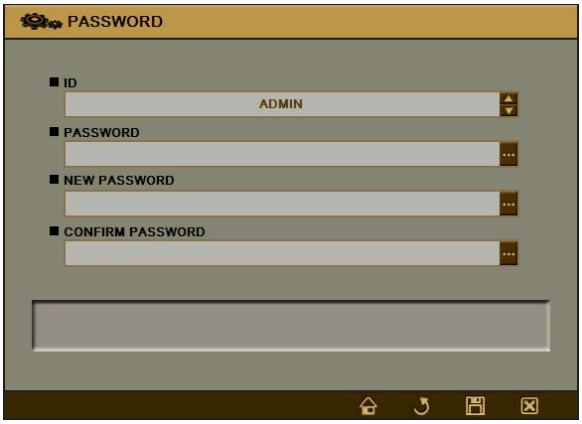


To Set the Authority level of each user.

• Review the checkbox of contents for MANAGER & USER menu. The corresponding user grade will have authority to access the setting Menu as checked.

•Click OK to save this setting.
•Click DEFAULT to return to the original setting.

4) PASSWORD

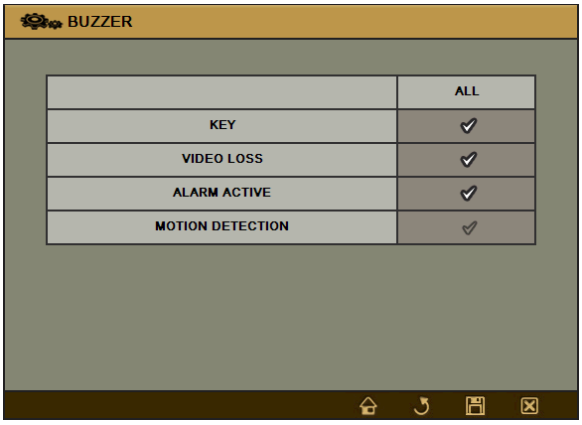


To Program the Password for each user level.

Select user level, and set USER PASSWORD.
Set different passwords for different user levels.

Click OK to save the setting.
Click CANCEL to cancel.

5) BUZZER



To Program the parameters for the buzzer (On/Off).
Review checkbox for events that will activate the buzzer.

•KEY : when button on the key panel is clicked or pressed.
•VIDEO LOSS : when video signal is lost.
•ALARM ACTIVE : when alarm is activated.
•MOTION DETECT : motion is detected.

•Click OK to save this setting.
•Click DEFAULT to return to the original setting.
.

6) AUDIO

To set the audio output volume.

•AUDIO VOLUME : Set the output volume for each channel.

•Click OK to save this setting.
•Click DEFAULT to return to the original setting.
.

7) REMOTE CONTROL

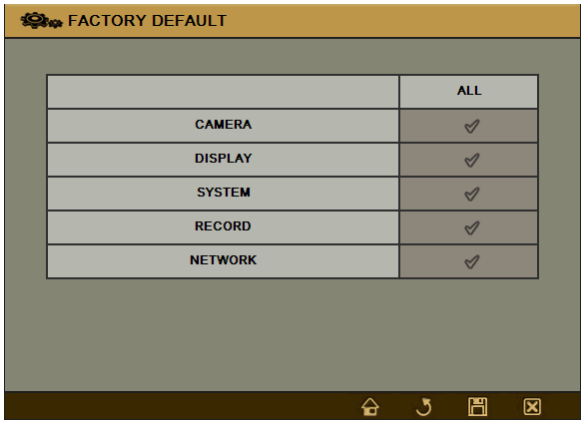
To Set the Remote Controller for DVR.

- The DVR can be controlled remotely with IR remote controller (Included).
- Setup for number of remote control available (All, 1~6).

- Click OK to save this setting.
- Click DEFAULT to return to the original setting.

.

8) FACTORY DEFAULT

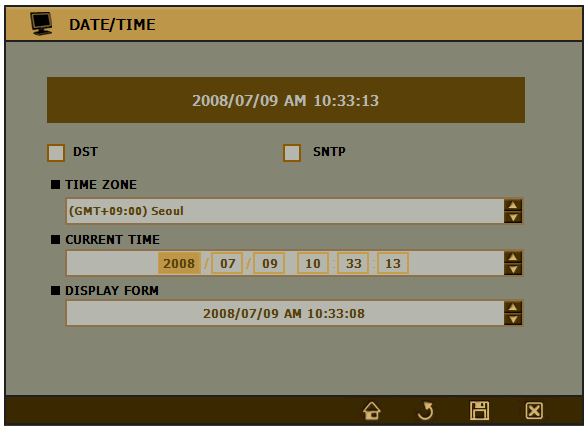


To re-set the DVR back to the original manufactures specifications or Factory Default .

- Review the checkbox of contents to reset.
- Click OK to run factory default.
- Click CANCEL to return to initial setting.

6-3 DISPLAY Setup

1) DATE/TIME

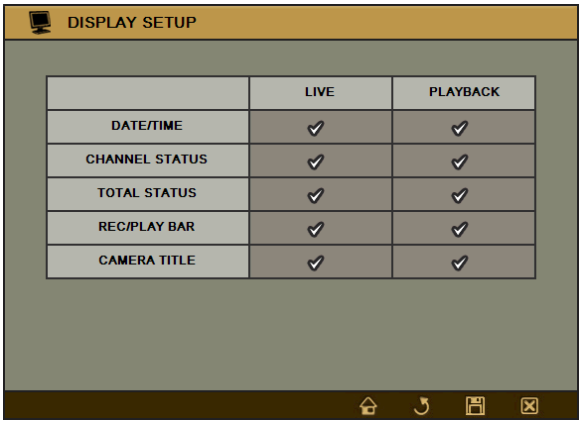


To set time and date of DVR system.

•Set the time and date by selecting your TIME ZONE.
•Set the Time Display Format.
•Check checkbox DAYLIGHT for Saving Time mode.
• (DST)

•Click OK to save this setting.
•Click DEFAULT to return to the original setting.

2) DISPLAY SETUP



Review the checkbox of contents to be displayed on Live and Playback screen.

•DATE/TIME : Current time / Record time
•ICON STATUS : LIVE status icon
•DVR STATUS : DVR status icon
•REC/PLAY BAR : HDD Bar
•CAMERA TITLE : Camera Title

•Click OK to save this setting.
•Click DEFAULT to return to the original setting.

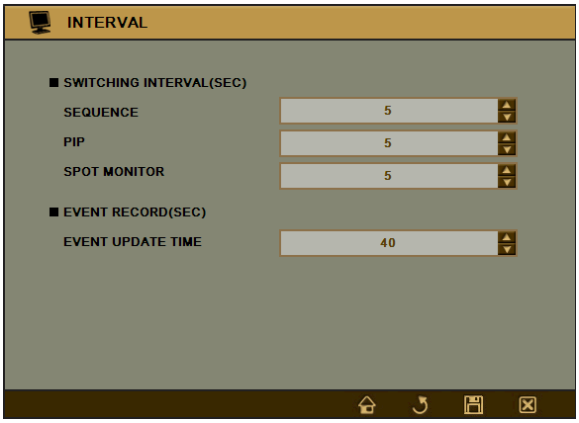
3) VGA

To Program the VGA OUT.

•VGA : Connection ON/OFF.
•RESOLUTION : Set Resolution
•FREQUENCY : 60Hz, 75Hz

•Click OK to save this setting.
•Click DEFAULT to return to the original setting.
.

4) INTERVAL



To set the interval for channel sequencing.

•SEQUENCE : Camera channel time interval.
•PIP : PIP channel sequencing time interval.
•SPOT MONITOR : SPOT MONITOR sequencing time interval.
•EVENT UPDATE TIME : EVENT update interval.
•
•Click OK to save this setting.
•Click DEFAULT to return to the original setting.
.

5) LANGUAGE

To select language.

•Click “OK” to save the setting.

6-4 RECORD Setup

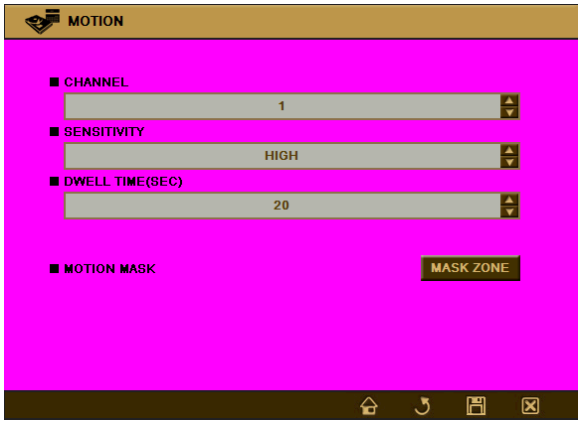
1) RECORD SETUP

To set the recorder configuration.

•CHANNEL: Channels of the 4-camera groups.
•QUALITY : Recording quality of the selected channels of 4-camera group.
• FPS : Frames per second
• Pre Alarm : Record data 0~5 seconds before the alarm occurs
•*Notice : In case of sudden power off while in Pre-Alarm mode, up to 5 seconds of data loss may occur.

•Click OK to save this setting.
•Click DEFAULT to return to the original setting.

2) MOTION

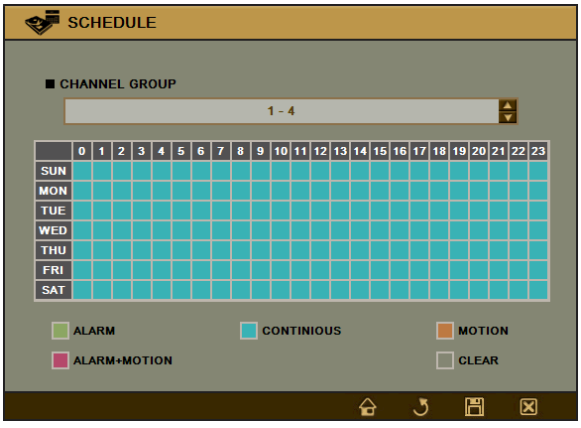


The Menu for DVR Motion Detection Programming.

•Select CHANNEL
•SENSITIVITY : sensitivity LOW ~ VERY HIGH
•MOTION DURATION: The time duration of motion detection.
•MASK ZONE : Click MASK ZONE to select or clear blocks.

•Click OK to save this setting.
•Click DEFAULT to return to the original setting.

3) SCHEDULE



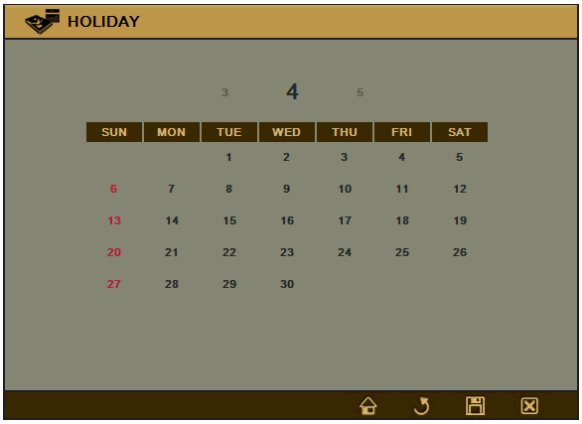
To Set the Schedule Recording Mode.

•Appoint Schedule recording by Day and Hour.
•MOTION, ALARM, MOTION+ALARM or CONTINUOUS recording mode selectable.

Note: In case of emergency, click the Panic button which will start recording at CONTINUOUS MODE at the highest resolution. Unless otherwise specified, it records according to this Schedule Record Setup.

•Click OK to save this setting.
•Click DEFAULT to return to the original setting

4) HOLIDAY



To set the Holiday Schedule: Setting national holidays, weekly security hours or custom holidays on the calendar to record.

•Set date on SET HOLIDAY and click ⇒, and set date will be listed on HOLIDAY LIST.
•It will record as setting for Sunday in Schedule Record Setup.

•Click OK to save this setting.
•Click DEFAULT to return to the original setting.

6-5. CAMERA Setup

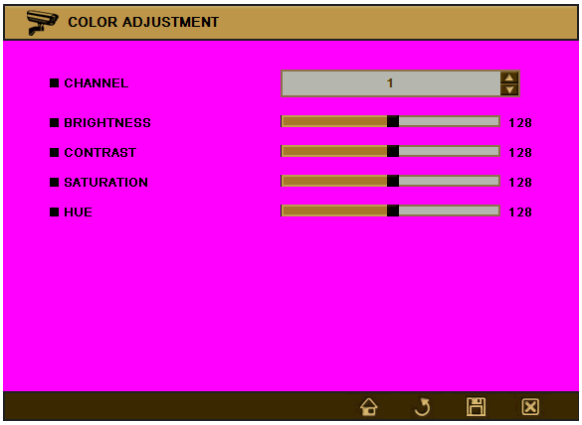
1) CAMERA TITLE

Programming the title of each camera.

Left click any place one the screen.
Then, the virtual keyboard panel pops up.
Enter title and click ENTER.

- Click OK to save the setting.
- Click DEFAULT to cancel.

2) COLOR ADJUSTMENT



To Adjust the Camera Image Color.

•BRIGHTNESS : 0 ~ 255
•CONTRAST : 0 ~ 255
•SATURATION : 0 ~ 255
•HUE : 0 ~ 255

•Click OK to save this setting.
•Click DEFAULT to return to the original setting.

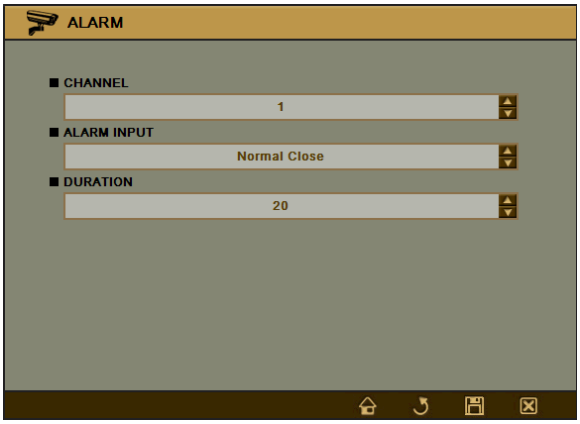
3) ACTIVATION

To set the Camera Activation.

•STATUS : Camera type: NTSC/PAL/LOSS.
•COVERT : Check the checkbox of camera channel not to display.
•REC : Check checkbox of camera channel to Record.

•Click OK to save this setting.
•Click DEFAULT to return to the original setting.

4) ALARM

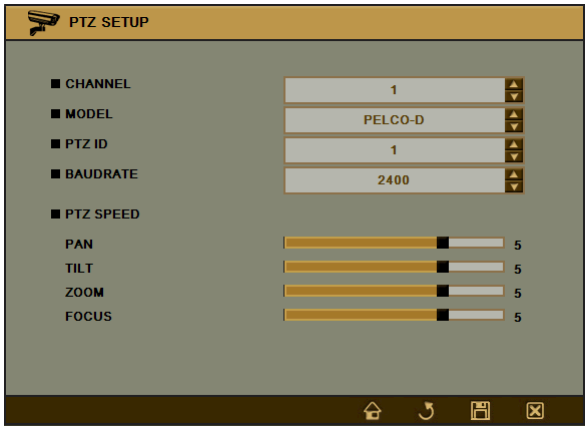


To program an alarm sensor connected to DVR.

•Set input type and dwell time for each channel.
•Select between N.O. and N.C. (Normal Open : NO, Normal Close : N.C.)

•Click OK to save this setting.
•Click DEFAULT to return to the original setting.

5) PTZ SETUP



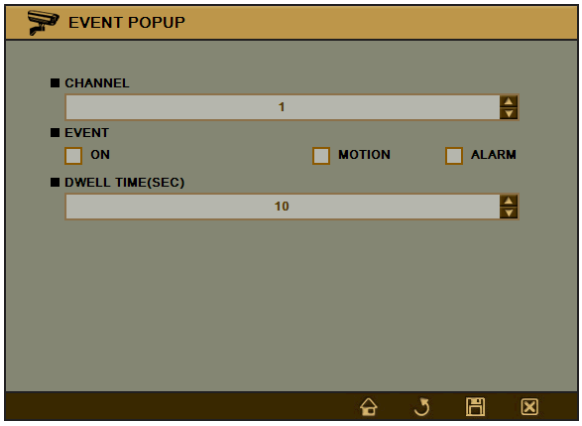
To Program a PTZ Camera.

•CHANNEL : Selection connected PTZ
•PROTOCOL : Selection Camera Model
•ID: ID Value for PTZ Camera
•BAUD RATE : PTZ SIGNAL Transmit rate

•PAN : Horizontal movement Speed
•TILT : Vertical movement Speed
•ZOOM : Zoom In/Out Speed
•FOCUS : Focus Near/Far Speed

•Click OK to save this setting.
•Click DEFAULT to return to the original setting.

6) EVENT POPUP



To Program an Event Popup.

•Select the camera channel
•Select POPUP On or Off
•EVENT : Check the checkbox of MOTION and/or ALARM
•Dwell Time : The period of time for the popup in case of Event.

•Click OK to save this setting.
•Click DEFAULT to return to the original setting

6-6. DEVICE Setup

1) CLEAR HDD

The Menu to erase /clear the HDD.

•Displays starting time and the ending time of the currently saved data on HDD.

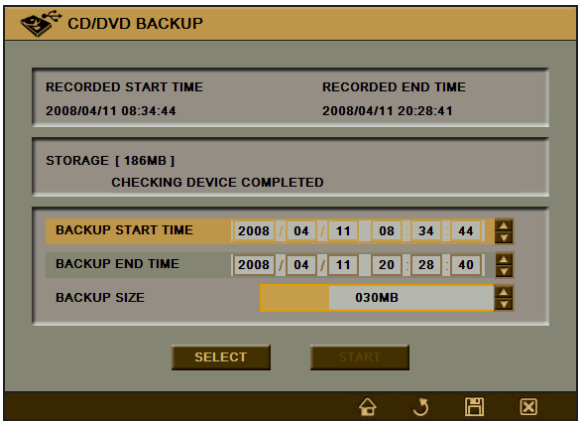
•After pressing the 'START' button, account, and password of DVR, an input window pop up.

•Then, after inputting the number, the HDD changes to the CLEAR Status.

•OVERWRITE : When HDD is full, the DVR automatically overwrites from the beginning of HDD.

•Click OK to SAVE and EXIT or CANCEL to EXIT.

2) CD/DVD BACKUP



How to Backup via CD/DVD-RW.

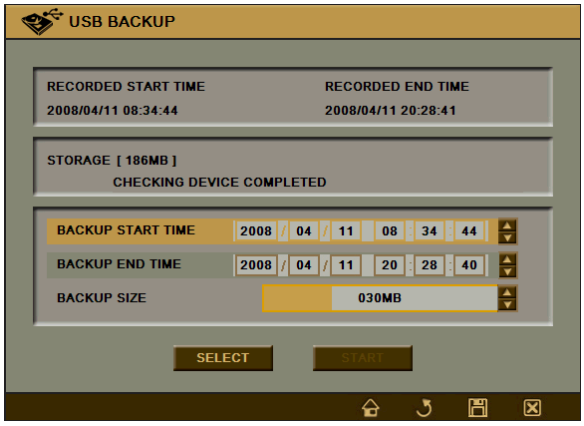
•Review the Display Start & End time of total recorded data on HDD which is displayed at the top screen.

•Input the date/time of data you wish to backup and click the SELECT button to check total backup data file size.

•If total backup data size is bigger than CD/DVD storage, the End time will be determined automatically.

•Click START to start backup.

3) USB BACKUP



How to Backup via USB.

•Review the Display Start & End time of total recorded data on HDD which is displayed at the top screen.

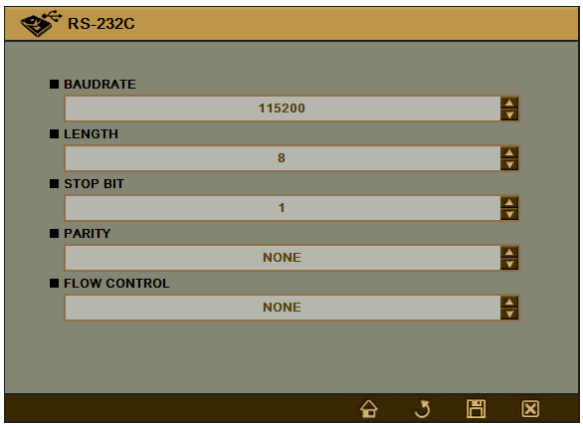
•Input the date/time of data you wish to backup and click the SELECT button to check total backup data file size.

•If total backup data size is bigger than USB storage device , the End time will be determined automatically.

• the Backup data file size is adjustable to USB storage size.

•Click START to start backup.

4) RS-232C



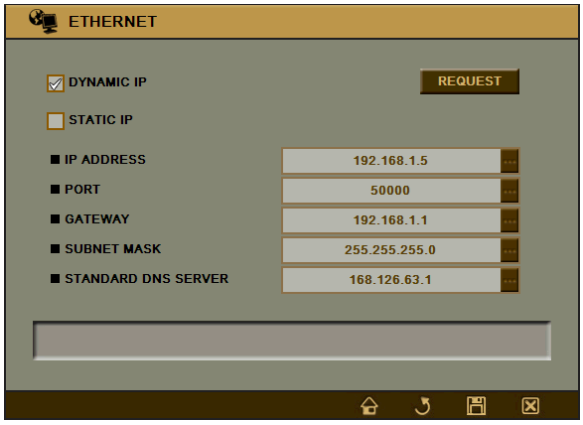
To program the settings for the RS-232C port.

•BAUD RATE : 2400 ~ 115200
•LENGTH : 5 ~ 8
•STOP BIT : 1 ~ 2
•PARITY : NONE, ODD OVEN
•FLOW CONTROL : NONE, SOFTWARE, HARDWARE

•Click OK to save this setting.
•Click DEFAULT to return to the original setting.

6-7. NETWORK Setup

1) ETHERNET



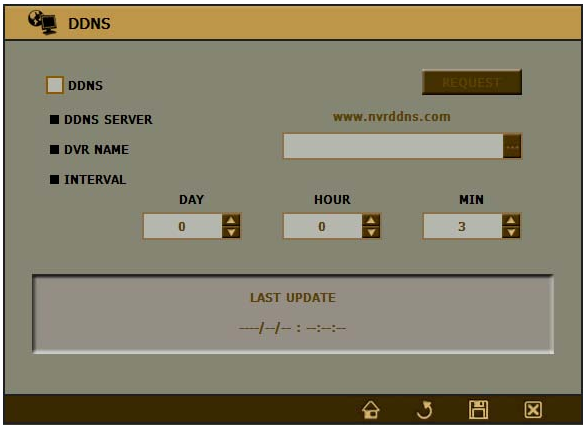
To Setup the DVR Network.

•DYNAMIC IP : Check checkbox to enable connection via Cable Modem with Dynamic IP.
•STATIC IP : Check checkbox to enable connection via Stable IP

Click OK to save the settings.
Click EXIT to cancel.

(Refer to Chapter 7-1 for more details)

2) DDNS



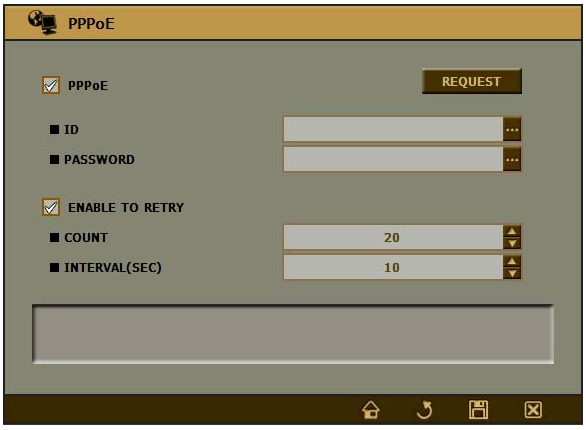
To Program the DDNS Server Connection.

•DDNS SERVER : DDNS Server address.
•DVR NAME : Program the DVR name that it is to be registered to the server.
•INTERVAL: Program how often the DVR information is forwarding to DDNS SERVER.

•Click OK to save the settings.
•Click EXIT to cancel.

(Refer to Chapter 7-2 for more details)

3) PPPoE



To Program the PPPoE Connection. (In case of using local DSL) : When connecting to the local network through an external modem.

•ID: Please enter the ID which you received from the local DSL service company.
•User Password : Please enter the PW which you received from local DSL service company.
•Retry Count: Program the number of retry's it will attempt.
•Retry Interval: Program the time interval between retry attempts.

•Click OK to save this setting.
•Click DEFAULT to return to the original setting.

(Refer to Chapter 7-3 for more details)

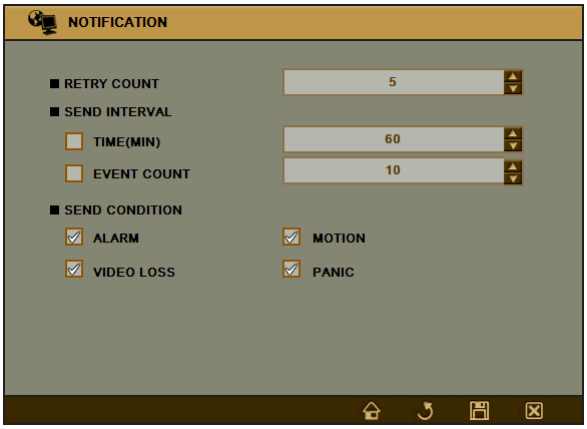
4) WEB GUARD

Programming the web server port

• WEB GUARD : Activate the WEB GUARD function by checking the box.
•WEB PORT : Setting web port number
•Click OK to save setting.
•Click EXIT to cancel.

(Refer to Chapter 7-4 for more details)

5) NOTIFICATION



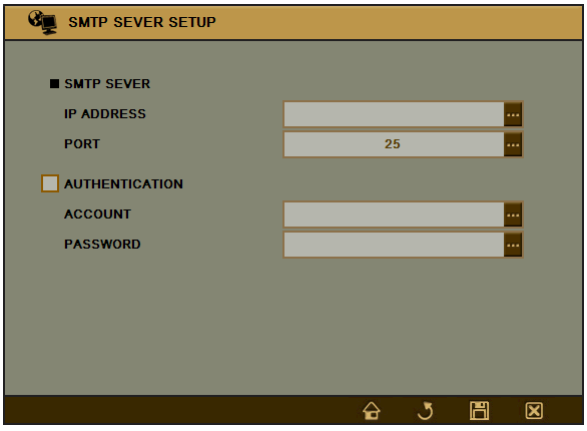
Programming the EVENT NOTIFICATION

•RETRY COUNT: Setting of retry number
•SEND INTERVAL: Setting of sending interval
- TIME(MIN) : Sending event every setting time(min)
- EVENT COUNT : Sending event when reaches setting count number

•SEND CONDITION : Type of Event Activation.
•Click OK to save setting
•Click EXIT to cancel

(Refer to Chapter 7-5 for more details)

6) SMTP SERVER SETUP



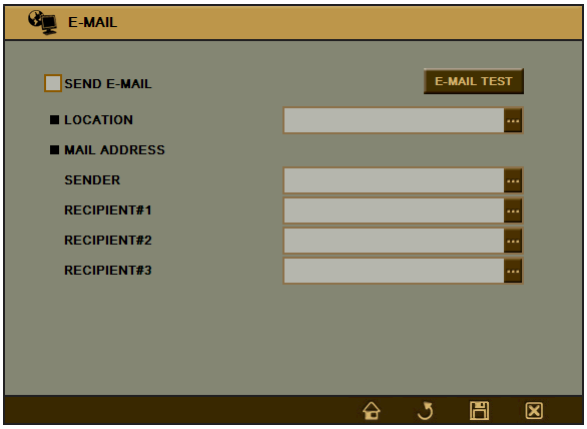
Programming the SMTP SERVER

•ID ADDRESS: Input the address of SMTP server.
•PORT : Input SMTP PORT
•AUTHENTICATION : Setting of authentication
•ACCOUNT : Input account number
•PASSWORD : Input password

•Click OK to save this setting.
•Click DEFAULT to return to the original setting.

(Refer to Chapter 7-5 for more details)

7) E-MAIL



To Program E-MAIL NOTIFICATION

•LOCATION : Information of mail title
•SENDER : Input address of sender
•RECIPIENT: Input e-mail address' of recipients
➢Available up to 3 persons.

(Refer to Chapter 7-7 for more details)

7. Network Setup

7-1. DVR Network Setup

Please contact your local network service provider for information below:

- Upload Speed : to predict frame rate via network.
- Download Speed : to predict frame rate via network.
- Addressing : to determine which scenario to follow.
- Router ON Site or Just Modem : to determine which scenario to follow.

* NOTE : If the provider is using PPPoE (usually DSL providers), you MUST have a IP Share installed on site and follow the Dynamic IP of PPPoE (DSL) for DVR setup and access.
* Verify if Internet accessibility before installing any new equipment (routers, switches, modems, etc.)

PC's TCP/IP Setup

Fill out the information below before configuring DVR if applicable:
Choose PC connected to the network and determine its TCP/IP setting.

IP address : _____ ex) 192.168.1.5
Subnet Mask : _____ ex) 255.255.255.0
Default Gateway : _____ ex) 192.168.1.1

Refer to following scenarios 1) ~ 3), and identify which scenario your current network falls within and follow instructions for configuring and accessing your DVR via TCP/IP.

1) Static IP

User input IP address assigned from ISP company in IP CONFIG SETUP.

1) Verify if the IP address is OK with your PC before connecting DVR.
2) Connect static IP LAN cable to DVR after verification.
3) Enter into [MENU]-[NETWORK SETUP]-[IP CONFIG].
4) Select STABLE IP and set assigned IP address.
5) Input GATEWAY assigned from ISP company.
6) Input SUBNET MASK.
7) Exit MENU.
8) Verify if MAC address starts with 00-0A-A2….
9) Set IP port in CONNECTION SETUP. (50000 recommended)
10) Turn off Modem or Router provided by ISP company, and turn on again.
(This process is to reset client's MAC from ISP company. Wait for 30 sec after turning on.)
11) Access DVR with Transmitter Program.

* If access via Transmitter fails, check 1), 5), 6) & 9) again.

2) Dynamic IP of Cable Method

Select DYNAMIC IP from DVR's TCP/IP SETUP and an IP address will be assigned from ISP's DHCP server.

1) Verify if the IP address is OK with your PC before connecting DVR.
2) Connect the dynamic IP LAN cable to DVR after verification.
3) Turn off Modem provided by ISP company, and turn it on again.
   (This process is to reset client's MAC from ISP company. Wait for 30 sec after turning it on.)
4) When modem functions properly, turn off DVR and turn it on again.
5) Enter into [MENU]-[NETWORK SETUP]-[IP CONFIG].
6) Select DYNAMIC IP and click refresh button.
7) Exit MENU.
8) Verify if the MAC address starts with 00-0A-A2….
9) Set IP port in CONNECTION SETUP. (50000 recommended)
10) Access the DVR with Transmitter Program.

* If access via Transmitter fails, check 1), 3) & 4) again.

3) Dynamic IP of PPPOE Method

Enter PPPOE setting in the DVR's TCP/IP SETUP

1) Verify if the IP address is OK with your PC before connecting the DVR.
2) Connect the dynamic IP LAN cable to DVR after verification.
3) Turn off Modem provided by ISP company, and turn on again.
   (This process is to reset client's MAC from ISP company. Wait for 30 sec after turning on.)
4) When modem functions properly, turn off DVR and turn it on again.
5) Enter into [MENU]-[NETWORK SETUP]-[PPPOE].
6) Input the ID & PASSWORD assigned from ISP
7) Exit MENU.
8) Verify if the MAC address starts with 00-0A-A2….
9) Set IP port in CONNECTION SETUP. (50000 recommended)
10) Access the DVR with Transmitter Program.

* If access via Transmitter fails, check 1), 3) & 4) again.

7-2. DDNS Setup

1. Go into [Menu] -> [NETWORK] -> [DDNS].
2. Click the check box of DDNS and Input the domain address which you want to Register to DDNS.

3. Click OK to request the registration.

• If registered, a success message will display on the DDNS STATUS.
• An error massage will display when entering a domain name that is already registered on the DDNS server or failing due to network condition.

4. Updates IP address of DVR in DDNS Server by setting interval time.
   Assigned IP is IP address authorized on the network connected DVR unit

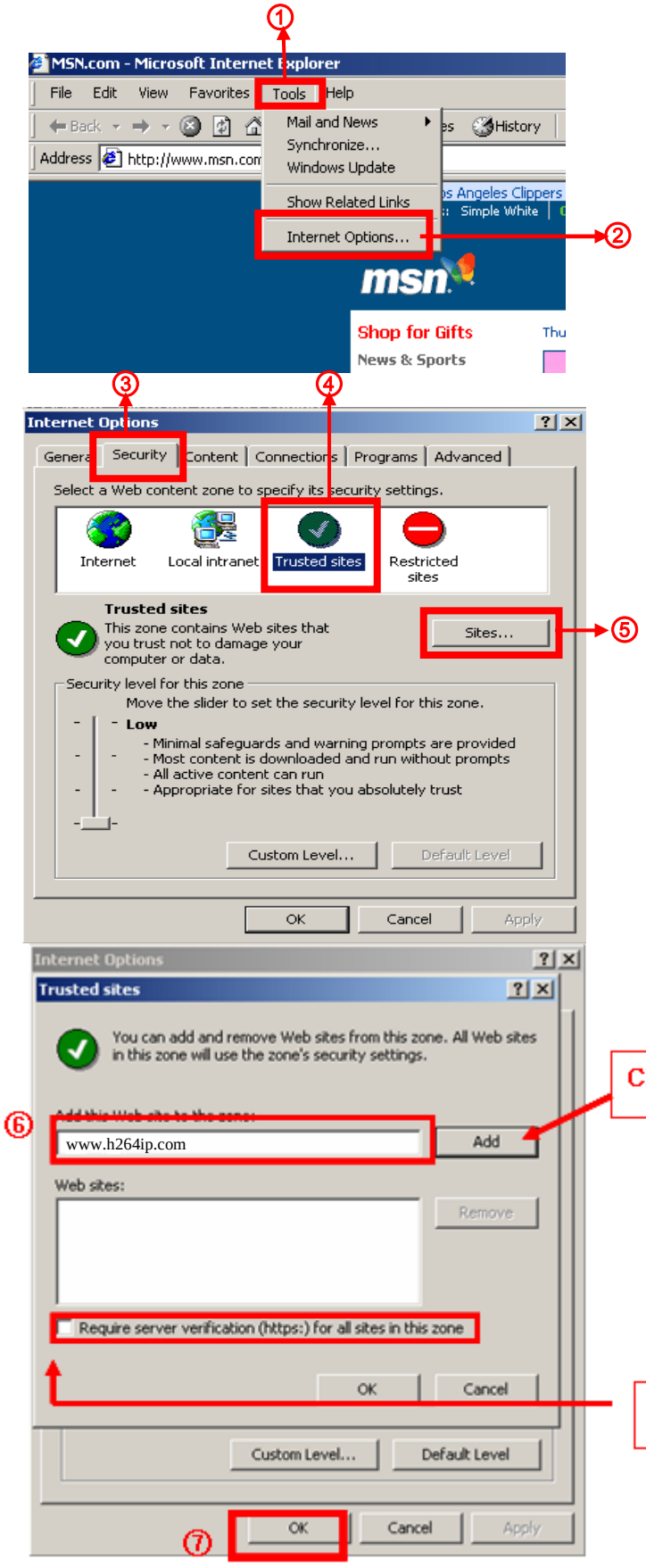
7-3. Web Application

By entering the IP address of the DVR or the Domain you registered on DDNS server, you can connect to the web application which supports IRS (Internet Remote Software) function.

Notice : When you first use web application, please click “yes” for ActiveX control installation.

DVR CONFIG Change the DVR settings remotely over network
BACKUP Back up Recorded Images from the DVR to your PC
BACKUP VIEWER Playback the backup data on PC
TURBO LIV / SRCH Control the DVR remotely as if controlling the DVR locally.

(Notice- For security reasons, if connection is not available, change the setting of internet browser as below. (Tools -> Internet Options -> Security))



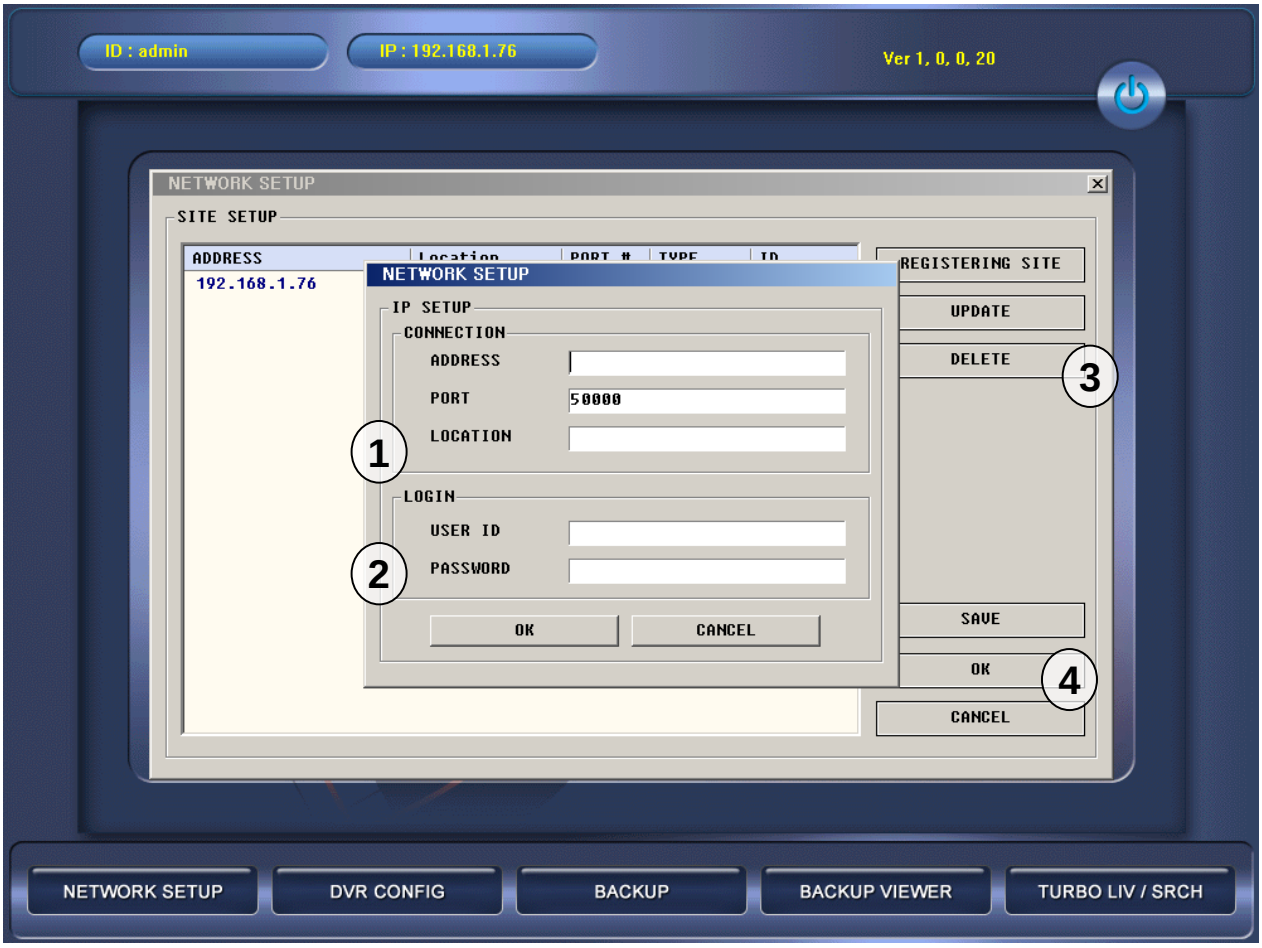
8. Remote Center Program(WEB APPLICATION)

8-1. MAX - Ⅱ Operation(Intergrated Remote Station)

1) MAX - Ⅱ (REMOTE CENTER) Display

No.	Button	Function
1	NETWORK Setup	Input the Information for network connection.
2	DVR CONFIG	Change the DVR settings remotely over the network.
3	BACKUP	Backup Recorded Images from the DVR to your PC.
4	BACKUP VIEWER	Playback backup data on the PC.
5	TURBO LIV / SRCH	Control the DVR remotely as if controlling the DVR locally.

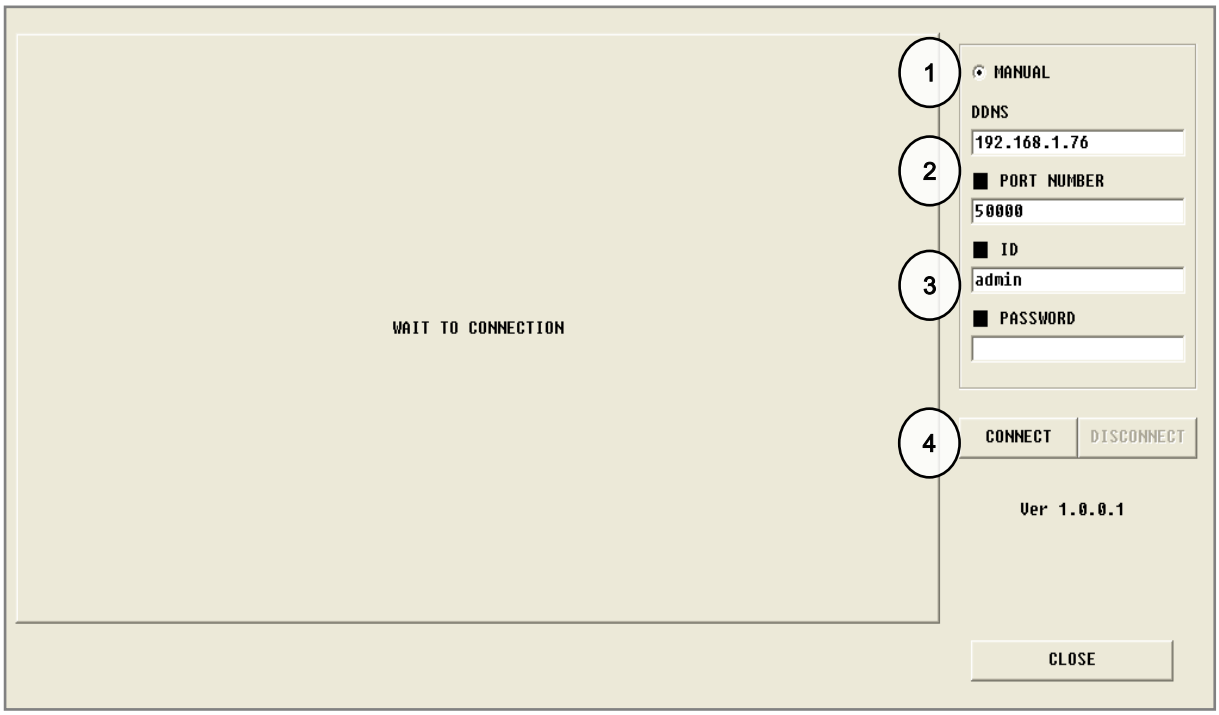
2) NETWORK SETUP



No.	Button	Function
1	ADD / PORT / LOCATION	Input the IP address and port number manually. Input the location of the DVR
2	ID / PASS	Input the ID and Password of the DVR.
3	UPDATE / DELETE	Update the new setup, Delete the selected setup.
4	SAVE / OK	Save and select the site information from the list.

3) DVR Setup

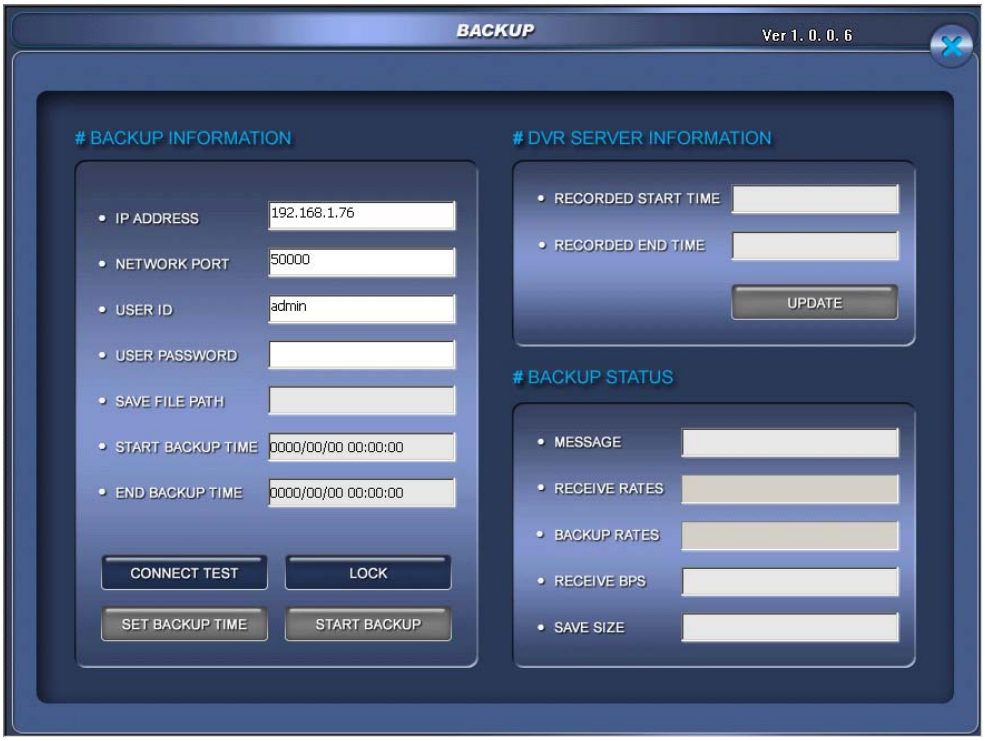
The User can change various settings of the DVR remotely over network. (Active, Camera, Alarm, Buzzer, Interval, Password, Record Configuration, Record Schedule)



No.	Button	Function
1	MANUAL	Program the IP address and port number manually
2	DDNS / PORT	Input the IP address and port number of the DVR
3	ID / PASS	Input the ID and password of the DVR
4	CONNECT	Click to connect to DVR.

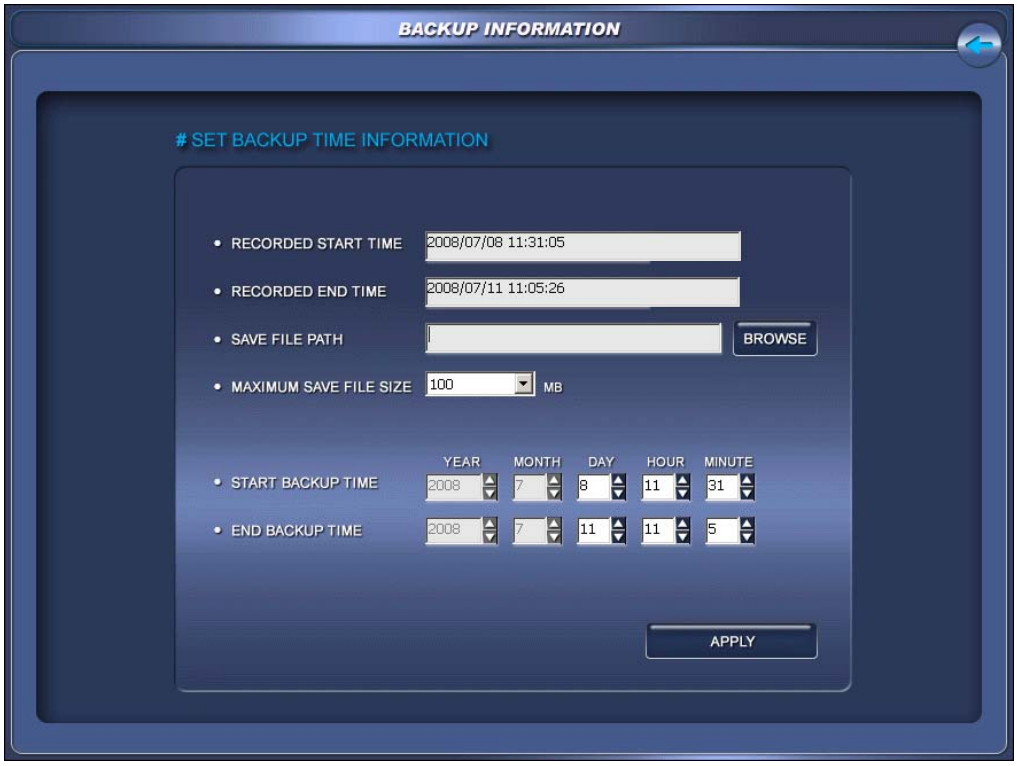
8-2. Backup Operation

1) To execute Backup, input the IP Address & Port, click the ‘Connect Test’ Button.

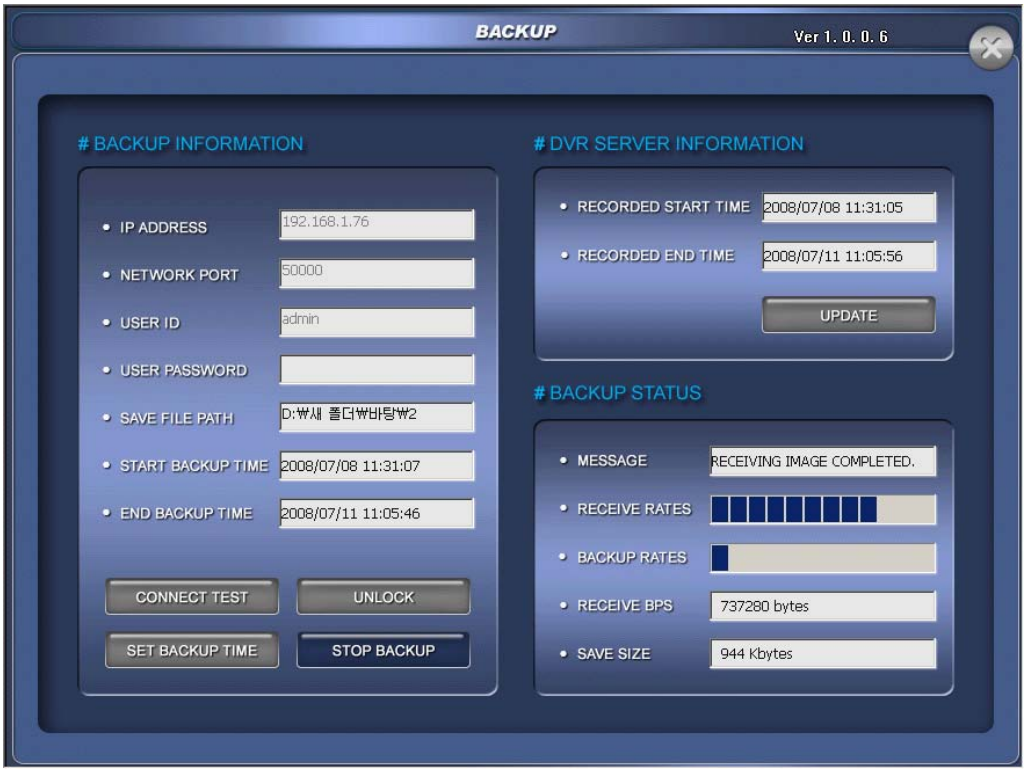


2) After the Connection Test is done, you will see the ‘Success Connect Test!’ message. Then, click the ‘Lock’ button and click the ‘Set Backup Time’ Button.

3) Now your ready to set the ‘Start Time’, ‘End Time’, ‘Save File Path’, ‘File Size’ and then click ‘Apply.



4) After finishing the time setting, click the ‘Start Backup’ button to start the Backup. Then, you can see the Backup on the File Path that you chose.



8-3 Turbo LIV / SRCH Operation

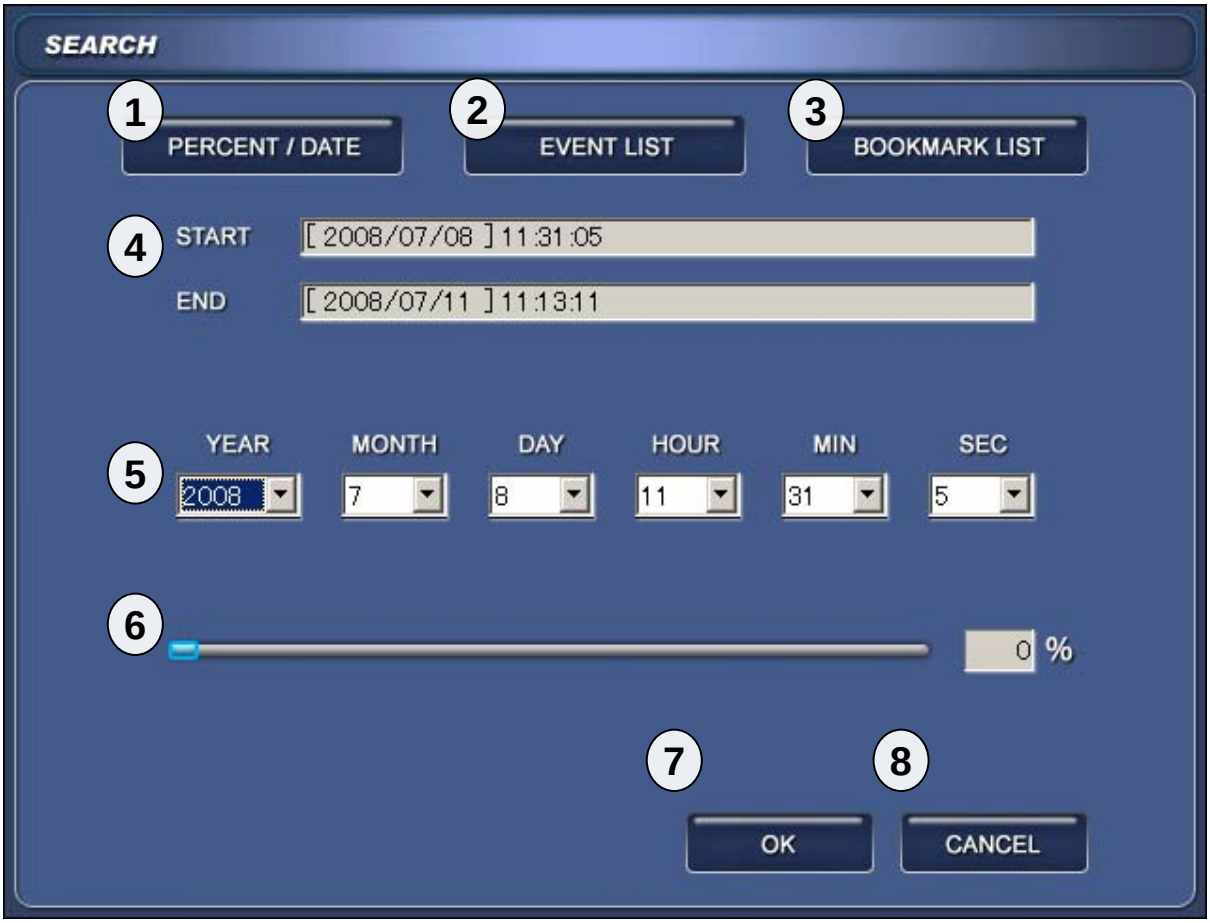
1) Turbo LIV / SRCH Display

-Turbo LIV / SRCH : This is the program that enables connection to the DVR via TCP/IP to see live screen and to control the DVR.

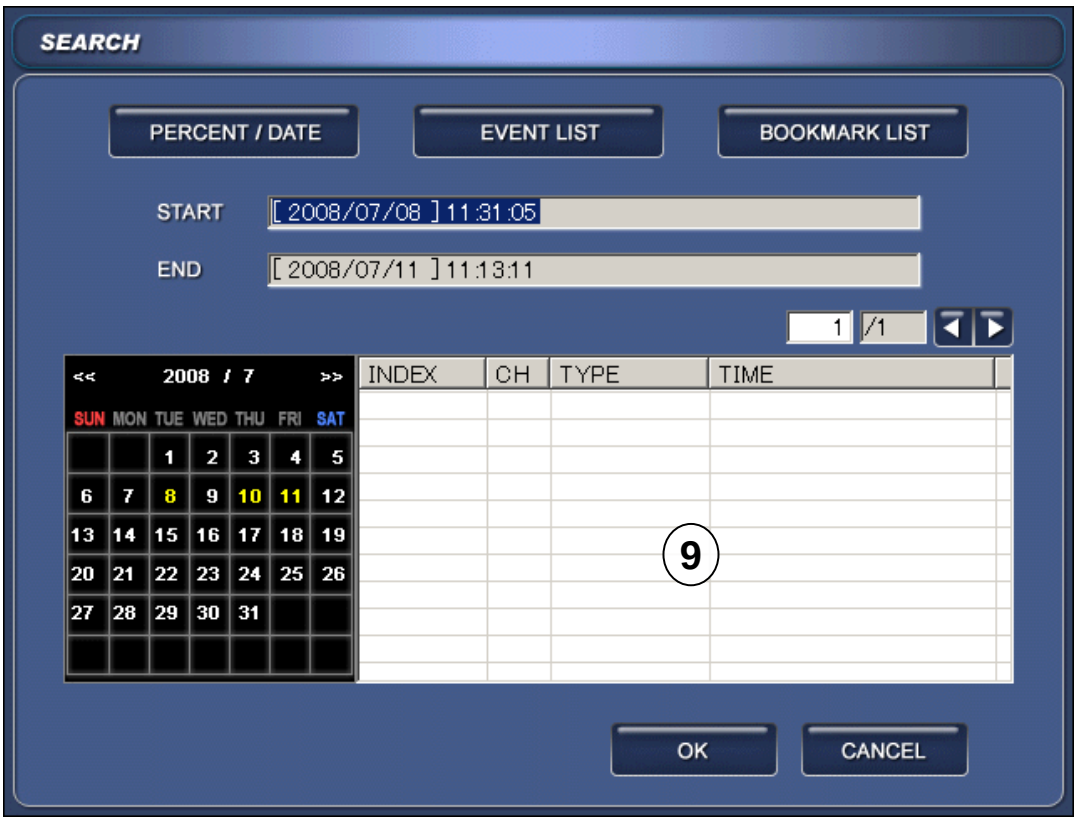
No.	Button	Function
1	Connect	Connect to the DVR via network
2	Disconnect	Disconnect the DVR connection via network.
3	Setup	Change or set the DVR system menu.
4	Search	Search recorded data from the HDD of the DVR(Date/Time Search, Event List)
5	Main Key Panel	This is a Pop up panel to control CH, REC, PLAY, STOP.
6	Two Way Audio	Enabling Two Way Audio between DVR and Transmitter.

No.	Button	Function
7	STATUS WINDOW	Display the DVR connection and the Turbo LIV / SRCH program information
8	PTZ CH	Select the channel number connected to the PTZ Camera.
9	ZOOM	Zoom In/Out operation of a PTZ Camera.
10	FOCUS	Focus Near/Far operation of a PTZ Camera.
11	PTZ	PTZ ON : Pan/Tilt control of a PTZ Camera. OFF: Function as arrow keys.
12	EXIT	EXIT the Turbo LIV / SRCH program
13	USER	Input IP, PORT, ID, PASSWORD of the remote DVR.
14	DATE, TIME	Display Date/Time of the DVR.

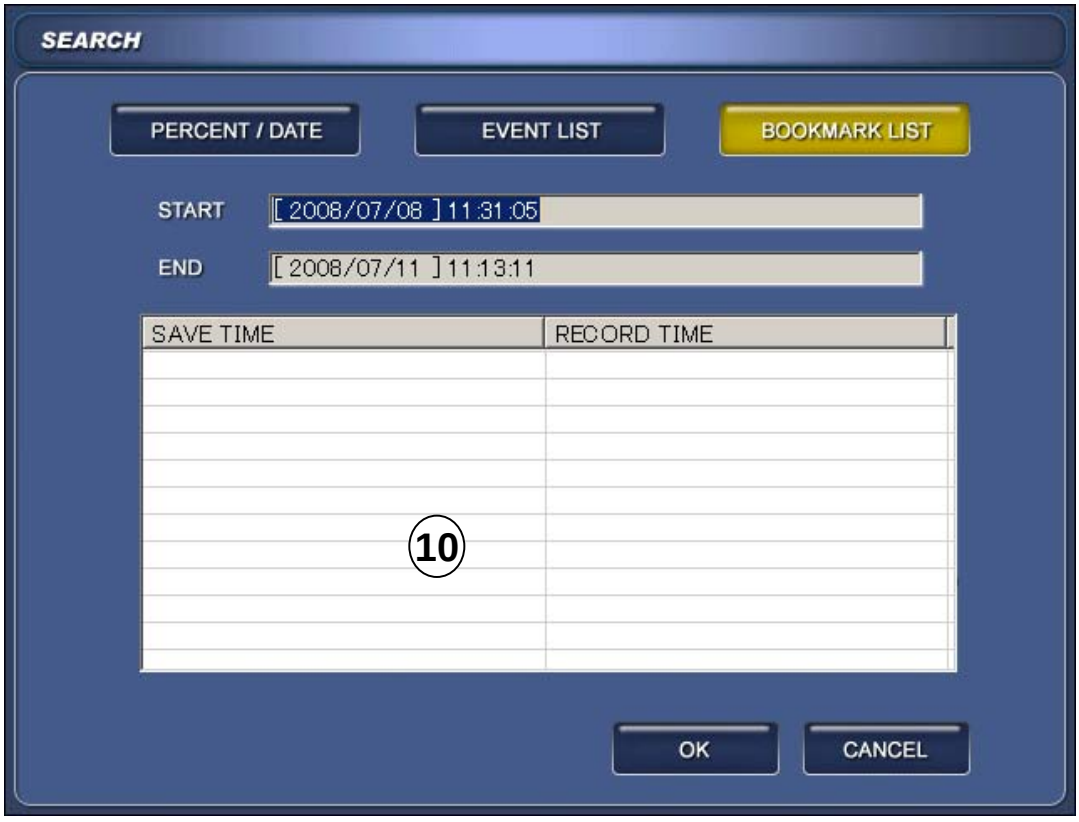
2) Turbo LIV / SRCH – Search



[Search – Percent/Date]



[Search –Event List]



[Search –Bookmark List]

No.	Button	Function
1	**Percent / Date**	Open window for the Percent/Date search.
2	**Event List**	Open window for the Event List search.
3	**Bookmark List**	Open window for the Bookmark list search.
4	**Start / End**	Display Start and End time of the recorded data on the DVR.
5	**Search by Time/Date**	Search by Time and Date as entered.
6	**Search by Percentage of HDD**	Search by Percentage of total recorded data on HDD.
7	**OK**	Start playback.
8	**CANCEL**	Close Search window.
9	**Event List Index**	Show Event Lists received from the DVR. Double click a list to start the playback or click OK.
10	**Bookmark List**	Show the Bookmark Lists received from the DVR. Double click a list to start the playback or click OK.

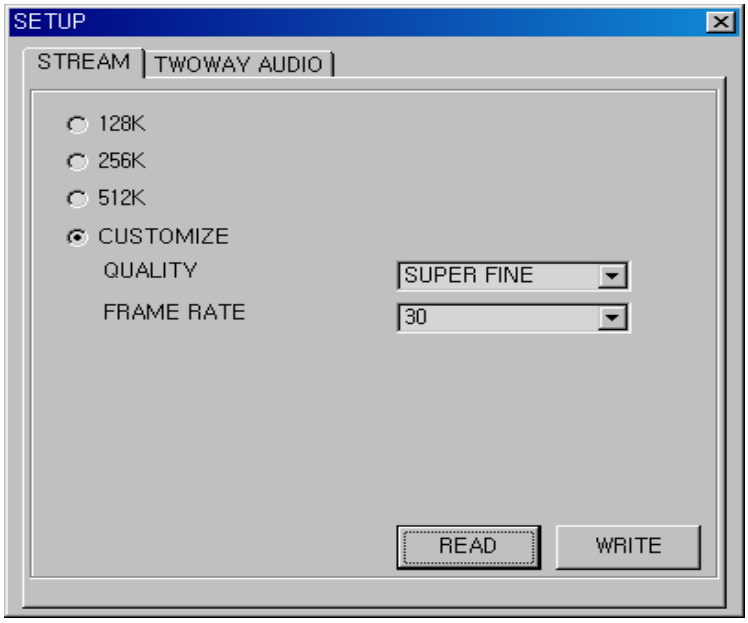
3) Turbo LIV / SRCH – MAIN KEY

No.	Button	Function
1	Channel	Select the channel number of the camera you wish to be displayed.
2	VIEW	4ch, 9ch, 16ch VIEW
3	Record	Force Emergency Record.
4	Play	Playback recorded image on the HDD.
5	Stop	Stop Emergency Record or stop playback.
6	Mode	Screen division mode in 1ch, 6ch, 8ch, 9ch, 13ch, 16ch.
7	Sequence	The Full screen image displays in sequence.
8	Pip	Picture In Picture.
9	Un FRZ	Continue playback from the FREEZE mode.
10	Zoom	Zoom In the image.
11	Pause	Stop playback for a short period of time.
12	- / +	Up/Down button for volume, channel, page.
13	Exit	Exit Main Key Panel

4) Turbo LIV / SRCH – PLAY Panel

Button	Function
|<	Move to the beginning of recording
<<	Increase reverse playback speed
<|	Decrease reverse playback speed
<	Reverse playback x1
||	Pause
>	Playback x1
|>	Decrease forward playback speed
>>	Increase forward playback speed
>|	Move to the end of recording
EXIT	Exit Playback Mode

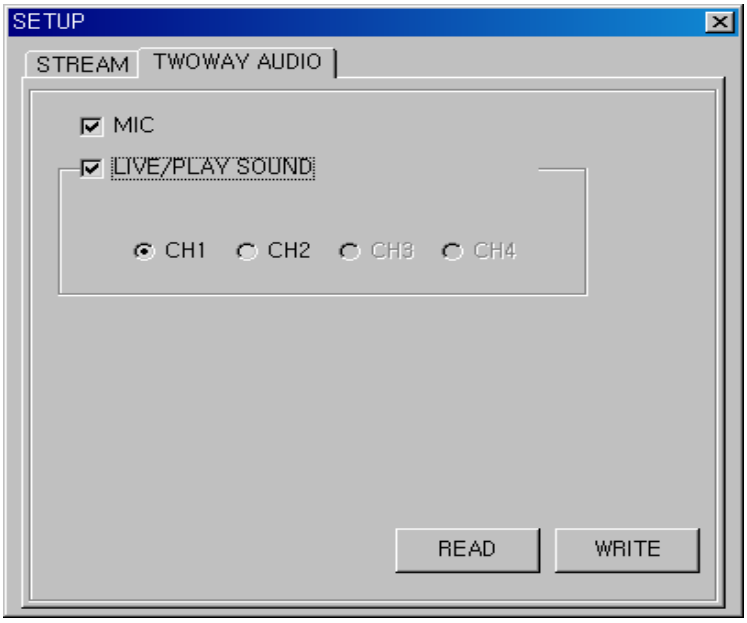
5) Turbo LIV / SRCH – Setup Page



SETUP - STREAM

Choose from the presets options for your specific network condition(128K, 256K, 512K)

Or choose “Customize” for setting as you want.



Two-way Audio

Choose the audio input from the DVR to activate the Two-way Audio capability.

8-4 BACKUP VIEWER Operation

1) BACKUP VIEWER

Please click “HIGH SPEED PC” or “LOW SPEED PC” according to your PC’s specification.
“HIGH SPEED PC” supports all channel Playback simultaneously.
“LOW SPEED PC” supports up to 4 channels of playback simultaneously.

NOTE

Recommended PC specification for “HIGH SPEED PC” is as below:
Processor Type : Pentium Core2 DUO or better
Memory : 1GB minimum

2) Backup Viewer Setup

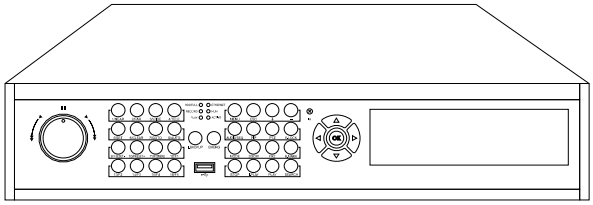
No.	Button	Function
1	OPEN	Open backup data for playback.
2	EDIT	Edit a still image in full screen mode.
3	AVI SAVE	Save data in .avi file format in full screen mode.
4	CHANNEL	Popup channel panel.
5	DIVISION	Select 1ch, 4ch, 9ch, 16ch Division display.
6	Audio	Check checkbox Audio On and choose channel to sound on.
7	DISPLAY	Playback backup data.
8	TIME	Indicate Start time, End time, Play time of backup data.
9	CONTROL	Play panel for Fast/normal, Reverse/Forward, Move to beginning/end, Pause
10	Speed/Delay	Control playback speed of backup data.
11	EXIT	Exit Player.

3) Backup Viewer – Channel, Edit, AVI Save Panel

No.	Button	Function
1	1Ch ~ 16Ch	In full screen mode, select 1 channel to be displayed. In 4 split screen mode, select 4-channel group to be displayed.
2	Contrast	Adjust contrast of still image in full screen mode.
3	Bright	Adjust brightness of still image in full screen mode.
4	Sharp	Adjust sharpness of still image in full screen mode.
5	Image Save	Save still image in image file in full screen mode.
6	Image Print	Print still image in full screen mode.
7	AVI Save Option	Select channel, frame rate & size to convert into .avi file.
8	Start	Start saving data in .avi file format.
9	Stop	Stop saving data in .avi file format.

9. Specification and Dimension

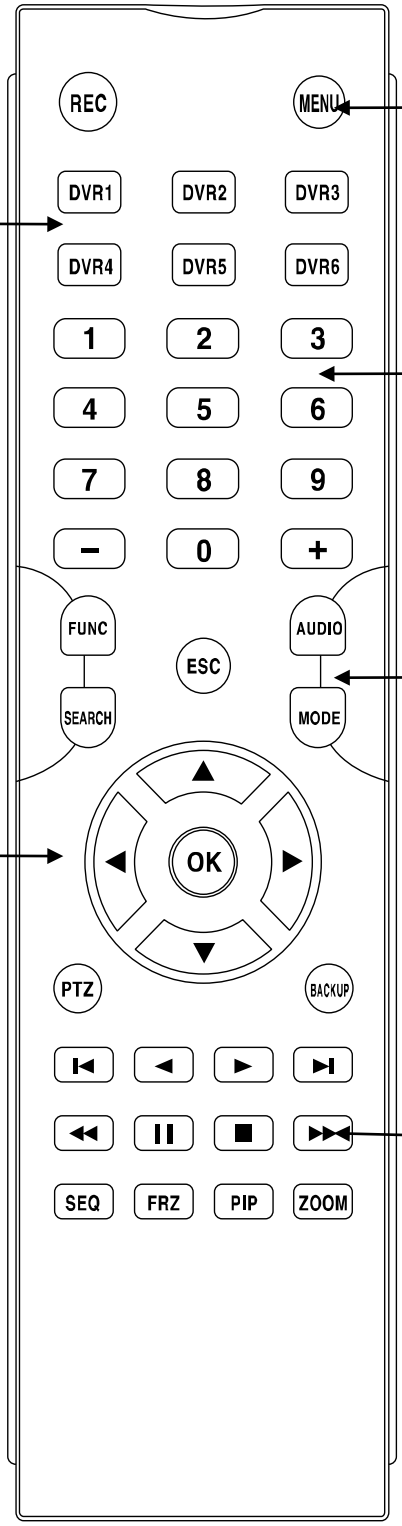
- H.264 Hardwqre Codec
- Real-Time Live Display in all Channel
- Pentaplex (Playback/Recording/Ethernet)
- Multi Language
- Remote monitoring and Download through Network
- Convenient Search Function with Jog/Shuttle
- VGA Option (Supporting TFT LCD Monitor)
- Firmware Upgrade via USB Port
- Easy PTZ Camera Control with Mouse
- Password Protection
- Remote Controller
- User Friendly Environment by Mouse



Contents		**MAX II - 8**	**MAX II - 16**
Compression Algorithm		H.264 Dual Codec	
Audio		G.726 or mp2	
General Feature			
Signal Format		NTSC or PAL (Auto Detect)	
Video	In	8CH	16CH
	Out	Main, Spot, VGA	
	Loop Out	8CH	16CH
Video Compression Rate		3 Steps Selectable	
Audio	In	2CH	4CH
	Out	1CH	
Alarm	In	8EA	16EA
	Out	1 NO/NC	
Storage		2EA S-ATA HDD	
Recording Speed (NTSC / PAL)	704x480 (704x576)	-	
	704x240 (704x288)	-	
	352x240 (352x288)	240 (200) ips	480 (400) ips
	352x120 (352x144)	-	
Resolution of Motion Detection Area		Area division : 16x12 Detection Division : 32x24	
Search Mode		Date/Time, HDD%, Event, Bookmark	
Recording Mode		Schedule (Time, Motion, Alarm) Holiday, Panic, Pre-Event	
Display Speed		Real-Time	
Multi Language		English, Spanish, French etc.	

Contents	MAX II - 8	MAX II - 16
PIP	1, 4, 9, 16, PIP	
Zoom	Digital Zoom x2	
Security	Key Lock	
Recording & Playback		
Multi-tasking	Quadplex (Live, Playback, Recording, Ethernet)	
Multi Channel Playback	Available	
Event Log Information	Available	
Pre-Alarm	Available	
Alarm / Relay		
Video Loss Alarm	Available	
Motion detection Alarm	Available	
Network		
Remote S/W : Monitoring, Search & Playback, Back-up	Integrated Romote Station	
Internet Explorer support	Available (No need to register)	
DDNS Support	Yes	
CMS (Central Management Software)	Yes	
Simultaneous remote user access	4 persons or more	
Network Speed Value	Selectable	
Remote Setup	Available	
Data Export	Own File Format	
Back-Up & Archiving		
CD-RW	Option	
DVD-RW	Yes	
USB Port	USB 2.0	
Others		
Operation	Mouse / Remote controller / Key Button	
PTZ Control	RS-485	
Menu	GUI	

10. Remote Controller



REC	Panic Recording
MENU	Menu

DVR ID (For multiple users)	**DVR1** ~ **DVR6**

1~9	Select CH / Input number
0	indicates 2 digits '0'+'0'='10' '0'+'1'='11'
+ -	<No functions>

SEARCH	Search Menu
AUDIO	Audio On/Off
MODE	Screen Division / Change Mode
ESC	<No functions>
FUNC	<No functions>

Move menu items & change value	▲◀▶▼
Enter menu & select	**OK**
PTZ On/Off	**PTZ**
<No function>	**BACKUP**

I◀	Playback from beginning
◀	Reverse playback
▶	Playback
▶I	Move to end and stop
◀◀	Decrease playback speed
II	Pause
■	Stop
▶▶	Increase playback speed
SEQ	Sequence
FRZ	Freeze
PIP	Picture In Picture
ZOOM	Zoom

Warranty Information

Digital Watchdog (referred to as "the Warrantor") warrants the Digital Video Recorder against defects in materials or workmanship as follows:

LABOR: For the initial two (2) years from the date of original purchase, if the Digital Video Recorder is determined to be defective, the Warrantor will repair or replace the unit, with new or refurbished product at its option, at no charge.

PARTS: In addition, the Warrantor will supply replacement parts for the initial two (2) years.

To obtain warranty or out of warranty service, please contact a Technical Support Representative at 1-866-446-3595 Ext 242 Monday through Friday from 9:00 AM to 5:00 PM Eastern.

A purchase receipt or other proof of the date of the original purchase is required before warranty service is rendered. This warranty only covers failures due to defects in materials and workmanship which arise during normal use. This warranty does not cover damage which occurs in shipment or failures which are caused by products not supplied by the Warrantor or failures which result from accident, misuse, abuse, neglect, mishandling, misapplication, alteration, modification, faulty installation, set-up adjustments, improper antenna, inadequate signal pickup, maladjustment of consumer controls, improper operation, power line surge, improper voltage supply, lightning damage, rental use of the product or service by anyone other than a Digital Video Recorder authorized repair facility or damage that is attributable to acts of God.

LIMITS AND EXCLUSIONS

There are no express warranties except as listed above. The Warrantor will not be liable for incidental or consequential damages (including, without limitation, damage to recording media) resulting from the use of these products, or arising out of any breach of the warranty. All express and implied warranties, including the warranties of merchantability and fitness for particular purpose, are limited to the applicable warranty period set forth above.

Some states do not allow the exclusion or limitation of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the above exclusions or limitations may not apply to you. This warranty gives you specific legal rights and you may also have other rights that vary from state to state.

If the problem is not handled to your satisfaction, then write to the Address above.

Service calls which do not involve defective materials or workmanship as determined by the Warrantor, in its sole discretion, are not covered. Costs of such service calls are the responsibility of the purchaser.

Digital Video Recorder

Stand-alone DVR

Real-time playback / USB backup