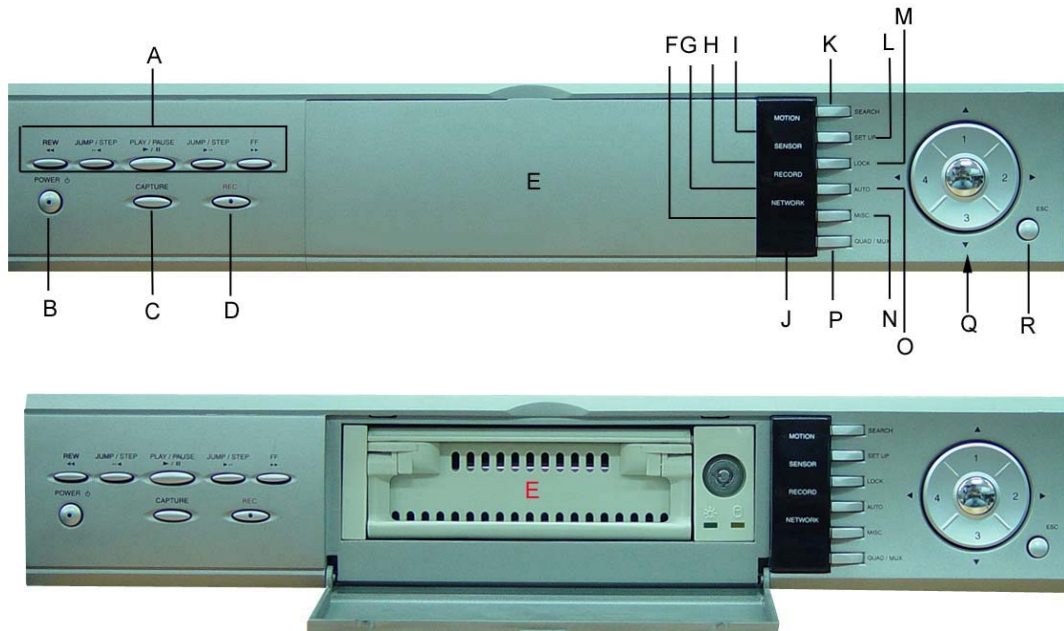


# 1. Features

- 4 channels real-time video display and 4 channels real-time quad video recording
- TRIPLEX – Simultaneous record, playback and network transfer
- Individual channel recording and playback with different frame rate
- High-quality live and playback resolution
- High-quality images with MPEG-2 video compression
- Network features: Remote searching or playback, remote live-monitoring, remote settings change, remote camera control, and remote upgrade
- Network via LAN (DHCP), ADSL (Dynamic and Static IP address)
- 4 channels audio recording
- Various recording triggers: Motion detection, manual recording button, sensor, and schedule
- Search menu geared with graphic user interface, which provides fast, simple, and detailed information
- User-friendly setup menu with graphic user interface
- Easy to schedule a complicated weekly recording plan
- Convenient search menu that displays recording status
- The OSD icons on screen provide various helpful and well-explained information
- Up-to-date motion-detection that offers 4 area-setup for each channel
- USB ports for JPEG data backup and software upgrade using USB flash memory stick
- Still image capture and review as JPEG format
- Internal Pan/Tilt/Zoom/Focus controller
- Easy operating with the buttons on the front and the remote controller
- User verification by password certification
- Video loss detection
- Web-viewer
- CD-RW Backup, S/W upgrade

## 2. Name, Function and Connection

### 2-1. Front View



#### A. PLAYBACK BUTTONS

REW, REW JUMP/STEP, PLAY/PAUSE, JUMP/STEP, and FF buttons are used for playing recorded videos.

#### B. POWER

Press this button to power on/off DVR. A red light appears when the power of DVR is turned on.

#### C. CAPTURE

Press this button to save a captured still-image during playback as a JPEG file.

#### D. RECORD

Press this button to start/stop manual recording. A red light appears during the recording.

#### E. REMOVABLE HDD RACK **NOT applicable to CD version**

Removable HDD rack to install default hard disk drive

#### F. NETWORK LED

A red light appears when the network client is connected to DVR.

#### G. RECORD LED

A red light appears during DVR is recording.

H. SENSOR LED

A red light appears when sensor perceives event.

I. MOTION LED

A red light appears when DVR detects motion.

J. IR RECEIVER

Remote Controller signal receiver

K. SEARCH

Press this button to begin searching the recorded video.

L. SETUP

Press this button to begin changing DVR setup.

M. LOCK

Press this button to lock/unlock the buttons of DVR.

N. MISC

Press this button once to show or hide the status icons on live screen and playback screen,

Press twice to move to "1.Brightness 2.Contrast 3.AlphaBlending 4.OSD Position" adjustment menu of each channel,

Press triple to move to "1.Pan/Tilt 2.Zoom/Focus 3.Camera Initial" control menu of each channel.

O. AUTO

Press this button to activates/deactivates channel rotating function during full screen display of single channel.

P. QUAD/MUX

To switch the display from 1-channel video to 4-channels video in live display, and vice versa.

Q. DIRECTION / "SEL" BUTTON

These can be used as arrow keys and number key. ▲▼◀▶ buttons are used as 1, 2, 3, and 4, respectively.

◀▶ button: Used to change possible values in Setup menu

▲▼ button: Used to move items in Setup menu

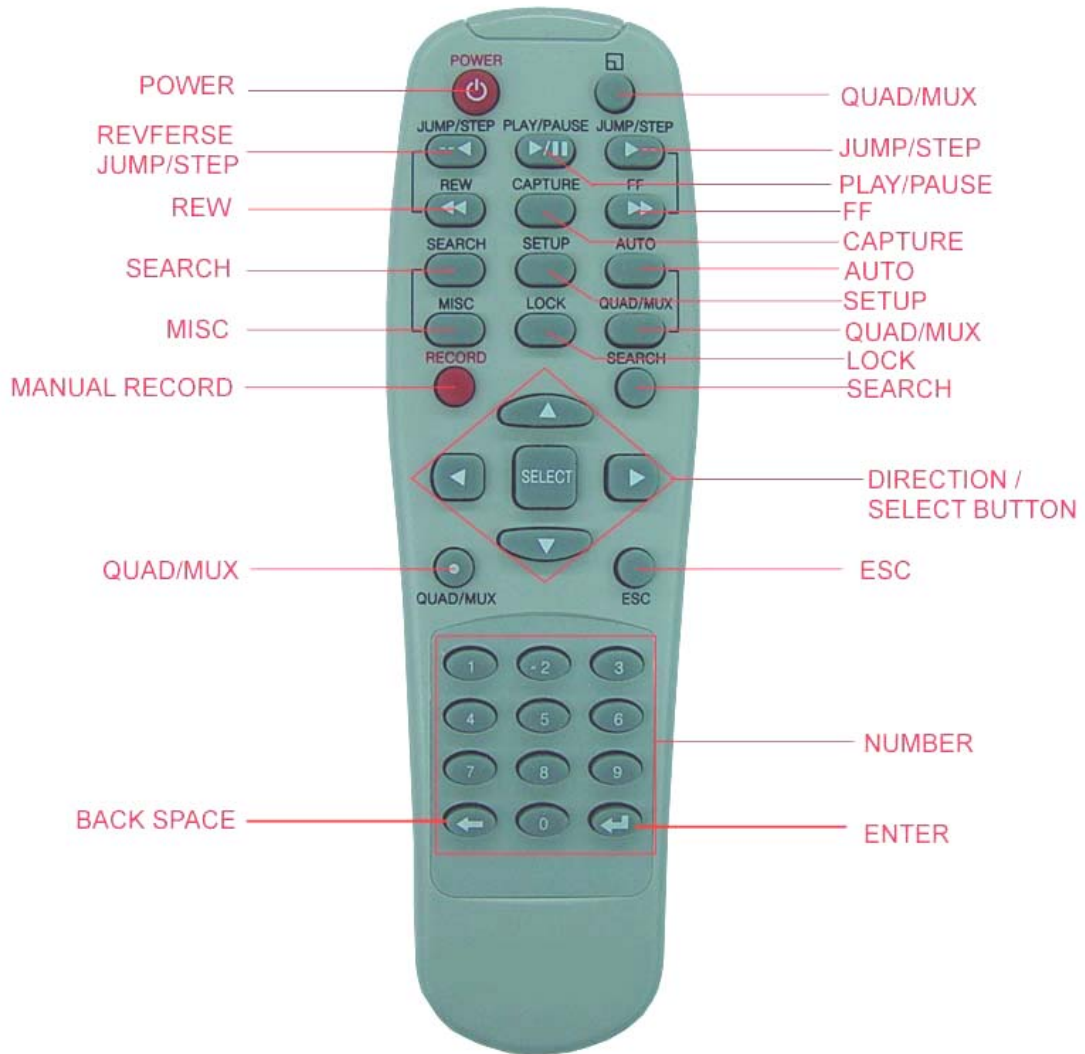
"SEL" button in the middle is used for various purposes.

"SEL" button: Used to enter each sub menu. Also used to select number values.

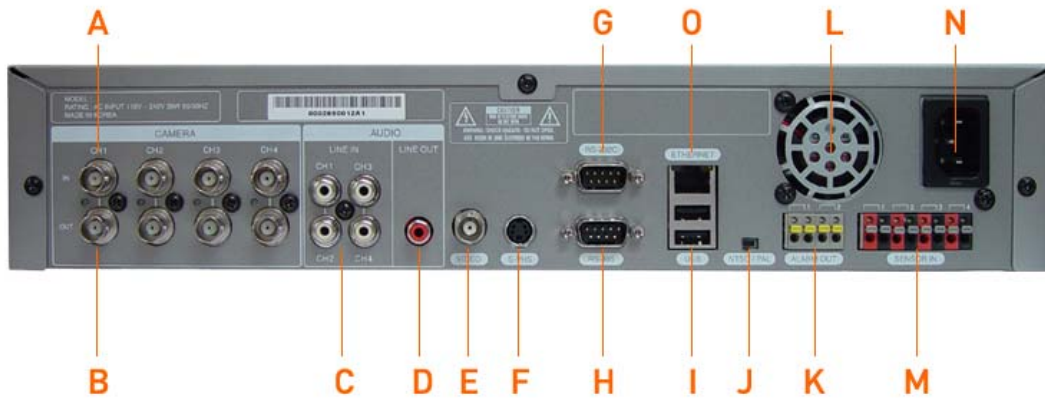
R. ESC

Press this button to go back to the previous menu

## 2-2. Remote Control



## 2-3. Rear View



- A. CAMERA INPUT  
BNC Input Connectors for camera
- B. LOOPBACK OUTPUT  
BNC Loop-back Output Connectors for cameras
- C. AUDIO IN  
RCA Audio Input Terminals
- D. AUDIO OUT  
RCA Audio Output Terminal
- E. VIDEO OUT  
BNC Monitor Out Connector
- F. S-VHS  
S-VHS Monitor Out Connector
- G. RS-232C  
Connector for DVR Control and Upgrade
- H. RS-485  
Camera Control
- I. USB PORT
- J. NTSC/PAL SWITCH
- K. ALARM OUT
- L. POWER FAN
- M. SENSOR IN
- N. POWER IN
- O. 10 BASE T ETHERNET  
Connector for Network Connection

## 2-4. Specification

VIDEO	INPUT	4 composite BNC (NTSC/PAL) – 1.0Vp-p	
	OUTPUT	1 composite BNC (NTSC/PAL) – 1.0Vp-p	
		1 S-VIDEO	
		4 composite loop-back	
AUDIO	INPUT	4 Line In (RCA)	
	OUTPUT	1 Line Out (RCA)	
ALARM	INPUT	4 (Power input: <b>DC 10~12V</b> )	
	OUTPUT	2	
RECORD	COMPRESSION	MPEG-2	
	VIDEO FORMAT	NTSC	PAL
	RESOLUTION	360x240, 720x480	360x288, 720x576
	QUAD MODE	120fps/4CH(360x240/CH)	100fps/4CH(360x288/CH)
	MUX MODE	120fps/4CH(360x240/CH) 30fps/4CH(720X480/CH)	100fps/4CH(360x288/CH) 25fps/4CH(720X576/CH)
	FRAME SIZE	2~3KB(360x240), 10~16KB(720x480)	2~3KB(360x288), 10~16KB(720x576)
	STILL IMAGE CAPTURE	720x480/360X240 (JPEG)	720x576/360X288 (JPEG)
ARCHIVING	MODE	Manual, Motion, Sensor, Motion & Sensor	
	METHOD	By Resolution, fps & Quality	
	MOTION DETECTION	4 Areas setup per channel	
MULTI TASK	TRIPLEX	Record, playback and transfer	
CONTROL UNIT		IR Type Remote Control and Front key pads	
SERIAL PORT	CONSOLE	1 RS-232C (9pin male DSUB connector)	
	CAMERA CONTROL	1 RS-485 (9pin male DSUB connector)	
NETWORK	TCP/IP (LAN INTERFACE)	1 10-base T Ethernet	
	FUNCTIONS	Live, Search, Setup, Backup, P/T/Z/F	
HDD	AVAILABLE CAPACITY	40, 60, 80, 120, 160, 200, 250GB	
BACKUP	STILL IMAGE BACKUP	2 USB1.1 for USB Flash memory stick	
	VIDEO BACKUP	CD-RW	
PHYSICAL	DIMENSIONS (W x L x H)	38cm x 30cm x8.5cm	
	NET WEIGHT	5.5Kgs (without HDD)	
	PACKAGE WEIGHT	7.2Kgs (with HDD)	
ELECTRICAL	POWER SOURCE	AC115/230V, 50-60HZ	
	POWER CONSUMPTION	30W (approximately)	

## 2-5. Packing List

### CONTENTS

1. DVR
2. MANUAL
3. POWER CORD
- 4.
5. REMOTE CONTROLLER
6. BATTERY
7. CD - CLIENT SOFTWARE

### 3. Factory Default

- LIVE
  - CHANNEL ROTATION
    - ◆ CHANNELS----- 1 2 3 4
    - ◆ DURATION-----5 SECONDS
  - CHANNEL INFO-----1 2 3 4
    - ◆ LABEL----- CH1
  - STATUS DISPLAY----- SHOW
  - ALPHA BLENDING----- 10%
- RECORD
  - QUAD
    - ◆ GENERAL
      - QUALITY-----HIGH QUALITY
      - SAVE EVENT LOG-----OFF
      - NET FRAME DROP-----ON
    - ◆ CHANNEL
      - FRAME-----AVAILABLE=116
      - RATE-----1 FRAME/SEC
      - RECORDED BY
        - ◇ SENSOR-----OFF
        - ◇ MOTION-----OFF
        - ◇ MANUAL----- OFF
        - ◇ CONTINUOUS-----ON
      - AUDIO-----1 2 3 4
    - ◆ SENSOR
      - SENSOR NUMBER----- 1
        - ◇ TYPE----- NORMAL OPEN
        - ◇ RELAY OUTPUT
          - ALARM----- 1 2
          - CHANNEL----- ON
          - DURATION----- 5 SECONDS
    - ◆ MOTION
      - REGION----- FULL
      - RELAY OUTPUT
        - ◇ ALARM NUMBER----- 1 2

- SENSITIVITY----- L 1 2 3 4 5 6 7 8 9 H
- POST RECORD----- 2 SECONDS

■ MUX

◆ GENERAL

- RESOLUTION -----360 X 240
- QUALITY----- HIGH QUALITY
- SAVE EVENT LOG-----OFF
- NET FRAME DROP-----ON

◆ CHANNEL

- CHANNEL NUMBER -----CH1
  - ◇ FRAME RATE ----- AVAILABLE=116
  - ◇ RATE-----1 FRAME/SEC
  - ◇ RECORDED BY
    - SENSOR----- OFF
    - MOTION----- OFF
    - MANUAL----- OFF
    - CONTINUOUS-----ON
  - ◇ AUDIO----- 1 2 3 4

◆ SENSOR

- SENSOR NUMBER----- 1
  - ◇ TYPE----- NORMAL OPEN
  - ◇ RELAY OUTPUT
    - ALARM----- 1 2
    - CHANNEL----- 1 2 3 4
    - DURATION----- 5 SECONDS

◆ MOTION

- CHANNEL NUMBER -----CH1
  - ◇ REGION----- FULL
  - ◇ RELAY OUTPUT
    - ALARM NUMBER----- 1 2
  - ◇ SENSITIVITY----- L 1 2 3 4 5 6 7 8 9 H
- POST RECORD----- 2 SECONDS

■ SCHEDULE

● SYSTEM

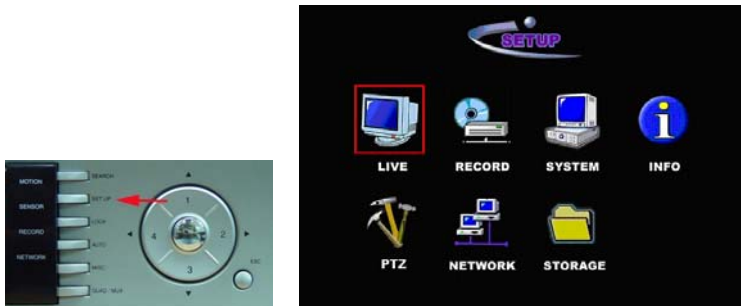
- ADMIN PASSWORD----- SELECT
- USER PASSWORD----- SELECT

- FACTORY DEFAULT----- SELECT
- DATE FORMAT-----YYYY/MM/DD
- CURRENT DATE-----YYYY/MM/DD
- CURRENT TIME----- HH:MM:SS
- GMT AREA----- [GMT+0:00]
- DAYLIGHT SAVING----- OFF
- INFO
  - SITE ID----- DVR
  - LOG----- SELECT
  - SYSTEM -----SELECT
  - CAPTURED IMAGE----- SELECT
  - SEND MAIL -----OFF
- PTZ
  - PTZ CHANNELS ----- 1 2 3 4
    - ◆ CAMERA TYPE -----
    - ◆ CAMERA ID----- 1
- NETWORK
  - CLIENT ACCESS -----ON
  - PORT NUMBER ----- 4456
  - NETWORK TYPE-----LAN
    - ◆ DHCP-----OFF
    - ◆ DDNS-----ON
    - ◆ DDNS SERVER IP----- xxx.xxx.xxx.xxx
    - ◆ IP ADDRESS -----xxx.xxx.xxx.xxx
    - ◆ GATEWAY-----xxx.xxx.xxx.xxx
    - ◆ SUBNET MASK----- xxx.xxx.xxx.xxx
- STORAGE
  - STORAGE OVERWRITE----- ON
  - HDD FORMAT----- MASTER
  - AUTO ERASING (30DAYS) ----- OFF
  - CD-RW BACKUP ----- SELECT (CD-RW version only)
  - S/W UPGRADE W/ CD-RW ----- SELECT (CD-RW version only)

## 4. Setup

### 4-1. Initial menu

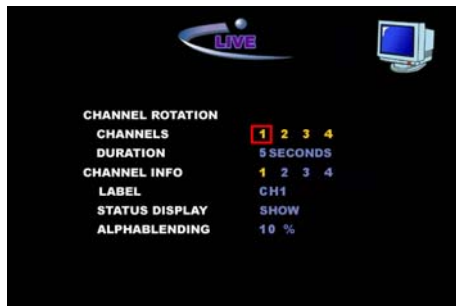
Press the Setup button, then Setup menu will appear.



### 4-2. LIVE

#### 4-2-1. Channel Rotation

1. Select LIVE and press SEL button to show LIVE setup screen.
2. Select a live display rotation channel among channel 1,2,3,4 with SEL button. (Yellow means that the channel is included in channel rotation during live display. The only yellow colored channels will be appeared in channel rotation during live display. White means that the channel is not included in channel rotation during live display.)

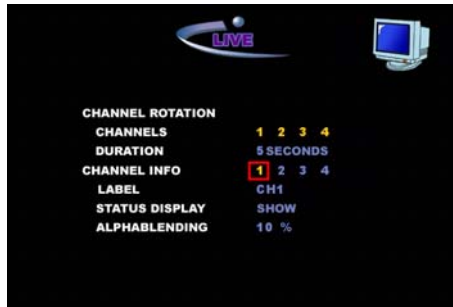


3. Select a channel for channel rotation, move the cursor to "Duration" to set the rotation time of display screen. (Duration time varies 2, 3, 5, 10, 15, 20, & 30 seconds)

#### 4-2-2. Channel Info

##### 4-2-2-1. LABEL

1. Select LIVE and press SEL button to show LIVE setup menu
2. Go to CHANNEL INFO and select the channel you wish to change the channel name of. The name of the chosen channel shows up at LABEL field.



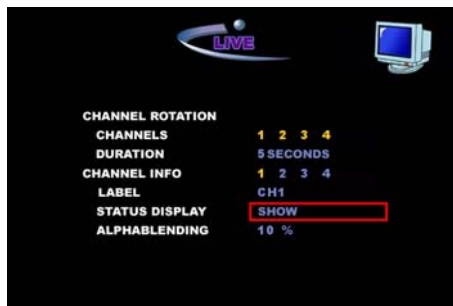
3. Press SEL button when the cursor is LABEL field (channel name). A keyboard will appear for you to type in a new name.



4. Name the label (channel name) by using ▲▼◀▶ buttons and SEL button. Press enter to save. The name is changed in LABEL field.

#### 4-2-2-2. Status Display

1. Select LIVE and press SEL button to show LIVE setup menu
2. Select whether to <Show> or <Hide> the status Information by using ◀▶ buttons.

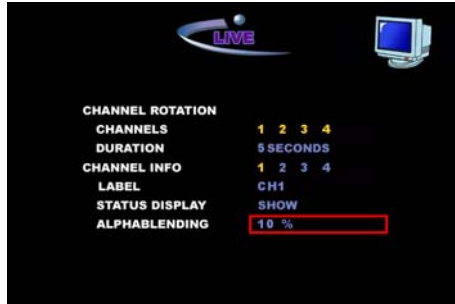


<SHOW> shows the status information on the live screen (channel name, HDD Status, Current Time, LOCK, NETWORK)

<HIDE> hides the status information on the live screen. When <Hide> is checked, press the MISC button to show the status information.

#### 4-2-2-3. ALPHA BLENDING

1. Select LIVE and press SEL button to show LIVE setup menu.
2. Adjust Alpha Blending from 0% to 90% by using ◀▶ buttons.

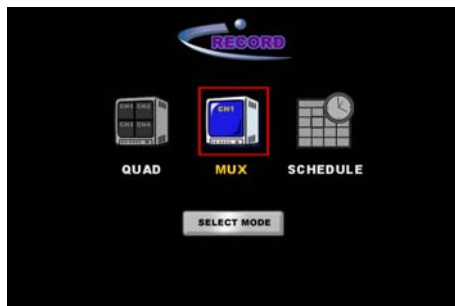


## 4-3. RECORD

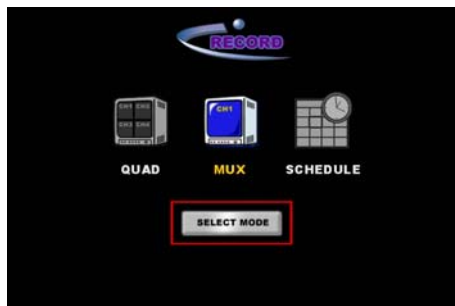
In Record Setup, you can choose from QUAD, MUX, and SCHEDULE recording mode. In each mode, the recording quality, recording frame, audio, sensor, motion detector, and other details can be customized.

### 4-3-1. Select Recording Mode (QUAD, MUX, SCHEDULE)

1. Select RECORD and press SEL button to go to the recording mode select screen.



2. Move the cursor to SELECT MODE bar and press SEL button.



The current recording mode is highlighted in colors.

3. Use ◀▶ buttons to move the cursor to the desired mode (QUAD, MUX or SCHEDULE) and press SEL button.



4. The selected mode becomes highlighted. Press ESC button to go back to LIVE mode, and from then the selected recording mode will be applied to recording sessions.

### 4-3-2. QUAD Recording Mode



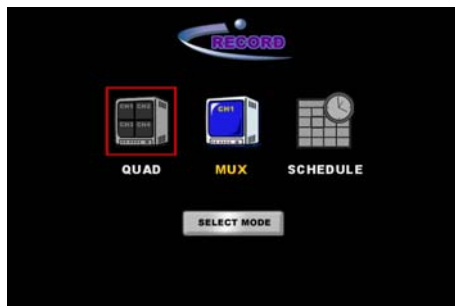
< QUAD - NTSC >



< QUAD - PAL >

#### <Screen and Resolution Setting in QUAD Mode Recording>

1. Select RECORD and press SEL button to go to Select Mode for recording.



2. Select QUAD on the Select Mode screen to go to QUAD setup screen.



### 4-3-2-1. GENERAL Setup

In QUAD Setup screen, select GENERAL to go to the GENERAL setup screen.



- QUALITY – Press ◀▶ button to select recording quality.

DVR supports three types of recording quality in QUAD recording mode.  
<LOW QUALITY> offers somewhat harsh picture quality and small file size.  
<NORMAL QUALITY> offers average picture quality and medium file size.  
<HIGH QUALITY> offers fine picture quality but file size is the largest.  
The user should choose the appropriate quality level considering his/her purpose.

- SAVE EVEN LOG – Press ◀▶ button to set ON or OFF

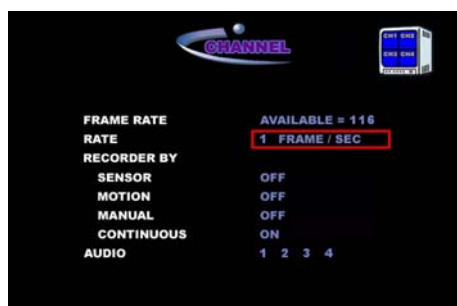
<ON> – LOG will be recorded when events occur.

- NET FRAME DROP - Press ◀▶ button to set ON or OFF

<ON> – When network bandwidth is not sufficient for transmitting all frames, DVR transmits only I frame, dropping B and P frame.

### 4-3-2-2. CHANNEL Setup

Select CHANNEL in QUAD setup screen to go to CHANNEL setup screen.



- FRAME RATE – It shows the available frame rate.
- RATE – Press ◀▶ button to select the recording speed.

The QUAD recording mode supports  
NTSC: 1, 4, 8, 15, 22, and 30FPS  
PAL: 1, 4, 7, 13, 18 and 25FPS

- SENSOR – Press ◀▶ button to set <ON> or <OFF>.

<ON>: Video will be recorded when the sensor is activated.  
Please refer to “4-3-2-3. SENSOR Setup”.

- MOTION – Press ◀▶ button to set <ON> or <OFF>.

<ON>: Video will be recorded when the motion is detected.  
Please refer to “4-3-2-4. MOTION Setup”.

- MANUAL - Press ◀▶ button to set <ON> or <OFF>

<ON>: Video will be recorded when the user press RECORD button.

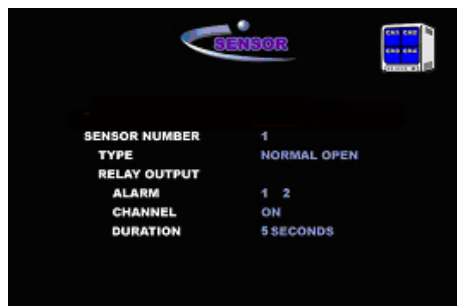
- CONTINUOUS - Press ◀▶ button to set <ON> or <OFF>

<ON>: Video will be ALWAYS recorded when DVR is in operation.

- AUDIO – Move the cursor on the one of <1>, <2>, <3>, and <4> and press SEL button to select the audio port that will be recorded. The selected audio channels will be highlighted in Yellow.

### 4-3-2-3. SENSOR Setup

In QUAD setup screen, select SENSOR to go to SENSOR setup screen.



5 seconds of Pre-Record will be applied to all channels as default.

- SENSOR NUMBER – Press ◀▶ button to select sensor that one want to set and link with the recording channel.
- TYPE - Press ◀▶ button to select the type of sensor to be activated.

Select the right sensor type according to the type of installed sensor with DVR.  
NORMAL OPEN – Normal Open type sensor  
NORMAL CLOSE – Normal Close type sensor

- ALARM - Press ◀▶ button to select the port on which an alarm out is made

when sensor is activated.

- CHANNEL - Press ◀▶ button to set <ON> or <OFF>

<ON>: Video will be recorded when the sensor is activated.

- DURATION - Press ◀▶ button to select the duration of alarm output and the recording time of the linked channel.

Available alarm output and channel recording duration – 5, 10, 15, 30, 60, 120, and 180 seconds.

#### 4-3-2-4. MOTION DETECTION Setup

In QUAD setup screen, select MOTION to go to MOTION setup screen.



- REGION – FULL

In QUAD mode, the motion detection is applied to full screen region only.

- ALARM NUMBER - Press ◀▶ buttons to select the port on which an alarm out is made when motion is detected.
- SENSITIVITY – Move the cursor on the field of SENSIVITY “L 1 2 3 4 5 6 7 8 9 H” and select sensitivity using ◀▶ buttons. The selected sensitivity will be highlighted in Yellow color.

SENSITIVITY “1” - Only reacts to big movements (low sensitivity).

SENSITIVITY “5” - Reacts to average movements (medium sensitivity).

SENSITIVITY “9” - Reacts even to small movements (high sensitivity).

- POST RECORD – Using ◀▶ buttons, select the duration of post-recording.

### 4-3-3. MUX Recording Mode



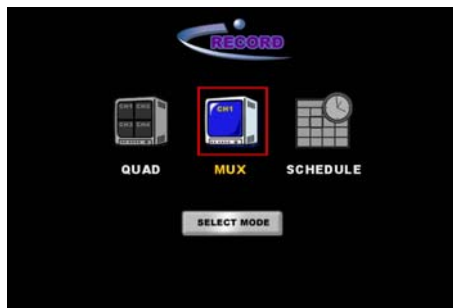
<RESOLUTION: 360X240>



<RESOLUTION: 720X480>

#### Difference in recording resolution depending on image resolution setting in MUX mode

1. Select RECORD and press SEL to move to RECORD select mode.

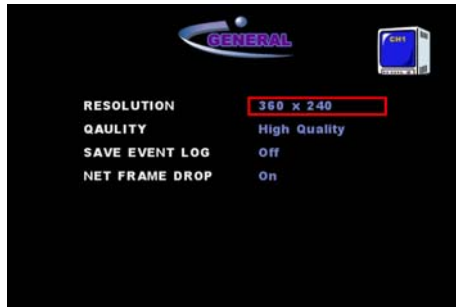


2. Select MUX in RECORD select mode screen to go to MUX setup screen.



#### 4-3-3-1. GENERAL Setup

In MUX setup screen, select GENERAL to move to GENERAL select mode.



- RESOLUTION – Press ◀▶ button to select recording resolution.
- QUALITY – Press ◀▶ button to select recording quality.

DVR supports four types of picture quality in MUX recording mode.  
 <LOW QUALITY> offers somewhat harsh picture quality but small file size.  
 <MEDIUM QUALITY> offers average picture quality and average file size.  
 <HIGH QUALITY> offers fine picture quality and big file size.  
 User should choose the appropriate picture quality considering his/her purpose.

- SAVE EVEN LOG – Press ◀▶ button to set ON or OFF

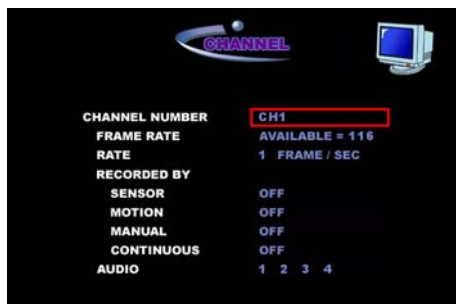
<ON> – LOG will be recorded when events occur.

- NET FRAME DROP - Press ◀▶ button to set ON or OFF

<ON> – When network bandwidth is not sufficient for transmitting all frames, DVR transmits only I frame, dropping B and P frame.

### 4-3-3-2. CHANNEL Setup

In MUX setup screen, select CHANNEL to go to CHANNEL setup screen.



- CHANNEL NUMBER - Press ◀▶ button to select the channel.
- FRAME RATE – It shows the available frame rate.
- RATE – Press ◀▶ button to select the recording speed of the channel.

The MUX recording mode supports  
 NTSC: 360x240 - 1 to 30FPS / 720X480 - 1, 4, 8, 15, 22, and 30FPS  
 PAL: 360X288 - 1 to 25FPS / 720X576 - 1, 4, 7, 13, 18 and 25FPS

- SENSOR – Press ◀▶ button to set <ON> or <OFF>.

<ON>: Video will be recorded when the sensor is activated.  
Please refer to “4-3-3-3. SENSOR Setup”.

- MOTION – Press ◀▶ button to set <ON> or <OFF>.

<ON>: Video will be recorded when the motion is detected.  
Please refer to “4-3-3-4. MOTION Setup”.

- MANUAL - Press ◀▶ button to set <ON> or <OFF>

<ON>: Video will be recorded when the user press RECORD button.

- CONTINUOUS - Press ◀▶ button to set <ON> or <OFF>

<ON>: Video will be ALWAYS recorded when DVR is in operation.

- AUDIO – Move the cursor on the one of <1>, <2>, <3>, and <4> audio inputs and press SEL button to select the audio port that will be recorded. The selected audio channels will be highlighted in Yellow.

### 4-3-3-3. SENSOR Setup

In MUX screen, select SENSOR to go to SENSOR setup screen.



5 seconds of Pre-Record will be applied to all channels as default.

- SENSOR NUMBER – Press ◀▶ button to select sensor that one want to set and link with recording channel.

- TYPE - Press ◀▶ button to select the type of sensor to be activated

Select the right sensor type according to the type of installed sensor with DVR.  
NORMAL OPEN – Normal Open type sensor  
NORMAL CLOSE – Normal Close type sensor

- ALARM - Press ◀▶ button to select the port on which an alarm out is made

when sensor is activated.

- CHANNEL - Press ◀▶ button to select the channel to record when sensor is activated.
- DURATION - Press ◀▶ button to select the duration of alarm output and the recording time of the linked channel.

Available alarm output and channel recording duration – 5, 10, 15, 30, 60, 120, and 180 seconds

#### 4-3-3-4. MOTION DETECTION Setup

In MUX setup screen, select MOTION to go to MOTION setup screen.



- CHANNEL NUMBER - Press ◀▶ buttons to select the channel to set the motion detection.
- REGION – Press ◀▶ buttons to select the process of the motion detection area setup.

<FULL>: The motion detection is always applied to full screen region.

<INDIVIDUAL>: The user can set 4 motion detection areas per channel. Please refer to “5-11. Motion Detection Region Setup” for individual motion detection area setup.

- ALARM NUMBER - Press ◀▶ buttons to select the port on which an alarm out is made when motion is detected.
- SENSITIVITY – Move the cursor on the field of SENSIVITY “L 1 2 3 4 5 6 7 8 9 H” and select sensitivity using ◀▶ buttons. The selected sensitivity will be highlighted in Yellow color.

SENSITIVITY “1” - Only reacts to big movements (low sensitivity).

SENSITIVITY “5” - Reacts to average movements (medium sensitivity).

SENSITIVITY “9” - Reacts even to small movements (high sensitivity).

- POST RECORD – Using ◀▶ buttons, select the duration of post-recording.

### 4-3-4. SCHEDULE Recording Mode

SCHEDULE supports the weekly recording plan. The default recording mode of schedule is MUX recording mode and recording frame rate set in MUX recording mode is applied. (Please refer to “4-3-3-2. CHANNEL setup”)

1. Select RECORD and press SEL to move to RECORD select mode.



2. Select SCHEDULE to go to the screen where recording schedule can be set. The screen will show the plan chart of one day of the week.



#### 4-3-4-1. Applied Function with Respect to the Cursor's Location

- TIME: Applies to the whole region
- CH1: Applies only to the CH1 column
- CH2: Applies only to the CH2 column
- CH3: Applies only to the CH3 column
- CH4: Applies only to the CH4 column
- 1~23: Applies only to the specified time slot
- PREV: Move to the previous day of the week
- NEXT: Move to the next day of the week
- COPY PREV: Copy schedule of current day to the previous day of the week and move to that day.
- COPY NEXT: Copy schedule of current day to the next day of the week and move to that day.

#### 4-3-4-2. Mapping Recording methods and Front Buttons

Front Buttons	Recording Method	Detailed Feature
REW	SENSOR	Record when the sensor is activated
BACK JUMP/STEP	MOTION	Record when motion is detected
PLAY/PAUSE	RECORD	Record continuously
JUMP/STEP	MOTION & SENSOR	Record by sensor and motion detection
FF	NONE	No recording
CAPTURE	QUAD	Record in QUAD mode



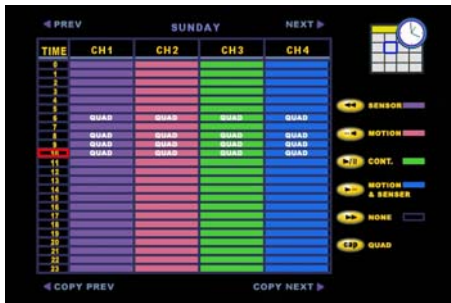
When the recording setups in QUAD and MUX mode differ from what is used in schedule, DVR records by using the method that would record more.

(E.g. If MUX channel 1 is set to record by MOTION and it is to be recorded by SENSOR in SCHEDULE, channel 1 will be recorded by both SENSOR and MOTION.)

#### 4-3-4-3. Schedule setup as QUAD recording mode

To set QUAD recording mode, place the cursor on TIME and 0 to 23 and press CAPTURE button then QUAD passage will appear on each cell.

When Schedule is set as QUAD recording mode, recording frame rate and settings in QUAD setup will be applied. (Please refer to “4-3-2-2. CHANNEL setup”)

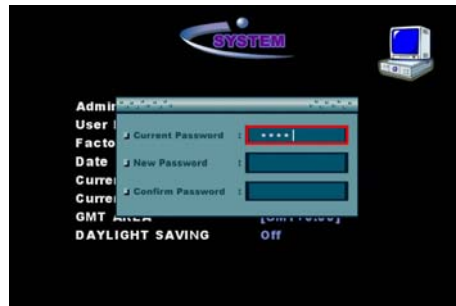


## 4-4. SYSTEM

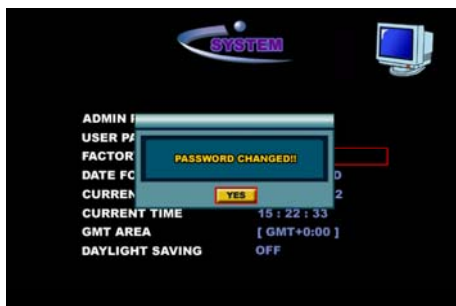
Select SYSTEM and press SEL button to go to SYSTEM setup menu.

### 4-4-1. ADMIN PASSWORD

ADMIN PASSWORD can be edited here.



1. Place the cursor on “Select” in the field of ADMIN PASSWORD and press SEL button.
2. CURRENT PASSWORD: Enter the current password using 1,2,3, and 4 and press SEL button.
3. NEW PASSWORD: Enter a new password using 1,2,3, and 4 and press SEL button.
4. CONFIRM PASSWORD: Retype the new password and press SEL button to confirm the new password. When “Password Changed” appears as bellow, press “YES” using SEL button to confirm the change.



The factory default password is “1111”.

To delete password, just press SEL button without typing any numbers in the NEW PASSWORD and CONFIRM PASSWORD field.

Applied region and authorization of ADMIN PASSWORD & USER PASSWORD

- ADMIN – All setting changes and other features are accessible
- USER – Making setup changes and turning off the power is disallowed

The user can make Password (ADMIN PASSWORD & USER PASSWORD) ONLY using the numbers of “1”, “2”, “3”, and “4”. The available figures of the password (ADMIN PASSWORD & USER PASSWORD) are 8 figures.

## 4-4-2. USER PASSWORD

USER PASSWORD can be edited here.



1. Place the cursor on the “Select” and press SEL button.
2. CURRENT PASSWORD: Enter the current password and press SEL button.
3. NEW PASSWORD: Enter a new password and press SEL button.
4. RETYPE PASSWORD: Retype the new password and press SEL button.

To delete password, just press SELECT without typing any numbers in the NEW PASSWORD and CONFIRM PASSWORD field.

## 4-4-3. FACTORY DEFAULT

Reset DVR to factory default settings.



1. When the system is reset with factory default settings, all customized settings shall be removed.
2. Users can maintain the user defined and customized settings very easily with network client S/W, please refer to “7-6-5. Saving and loading settings.”

## 4-4-4. DATE FORMAT

It display format of the date and the user can changed the format of date.



Supported date formats and examples

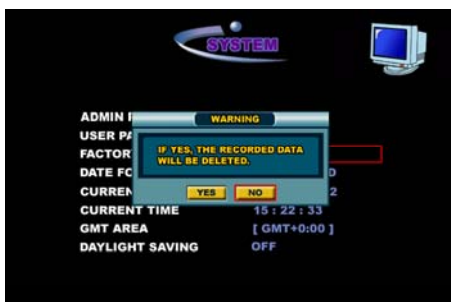
- YYYY-MM-DD → 2003-07-11
- MM-DD-YYYY → 07-11-2003
- DD-MM-YYYY → 11-07-2003
- YYYY/MM/DD → 2003/07/11

#### 4-4-5. CURRENT DATE

It displays current date, which can be edited.



1. Place the cursor on the Current Date field and press SEL button. This will highlight the first part of the date (one of year, month, or day depending on the display format) in yellow.
2. Press ▲▼ buttons to set the date in the shown date format.
3. Press SEL button to apply the changed date.
4. If there are existing data on the date of editing, DVR display "If yes, the recorded data will be deleted." as shown below.



- Press “YES” to delete the related data or press “NO” to keep the data and cancel the date change.

**WARNING**

If the user selects <YES>, all the data from the changed date will be deleted.

#### 4-4-6. CURRENT TIME

Displays the current time, which can be edited.

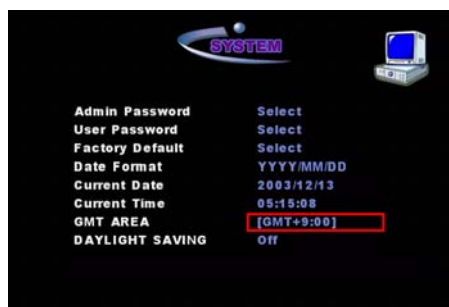
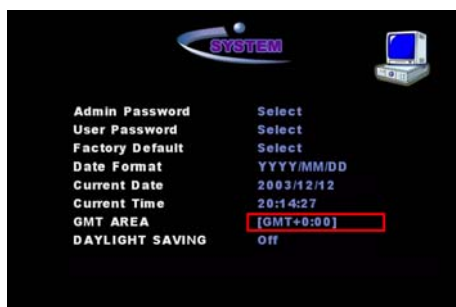


- Place the cursor on the Current Time field and press SEL button. This will highlight the front part of the displayed time yellow.
- Use ▲▼ buttons to set the time in hr/min/sec format.
- Press SEL button to apply the changed time.
- If there are existing data at the time of editing, DVR display “If yes, the recorded data will be deleted.”
- Press “YES” to delete the related data or press “NO” to keep the data and cancel the time change.

WARNING - If the user selects <YES>, all the data from the changed time will be deleted.

#### 4-4-7. GMT AREA

Press ◀▶ buttons to add or lessen to adjust the time of DVR in accordance with GMT time zone of the country or territory. Then the time in the field of CURRENT TIME will be changed.



**NOTICE**

To apply DAYLIGHT SAVING function properly, GMT AREA setting should be done before DAYLIGHT SAVING setting. Please refer to WORLD TIME ZONE MAP.

## 4-4-8. DAYLIGHT SAVING

1. Press ◀▶ buttons to decide whether to apply DAYLIGHT SAVING or not by selecting <ON> or <OFF>.



2. After selecting <ON>, move the cursor to BEGIN (MM/DD/HH) field and press SEL button. This will highlight the front part of the displayed date in yellow.
3. Use ▲▼ buttons to set the date in MM/DD/HH format.
4. Press SEL button to apply the changed time.



5. When CURRENT DATE and CURRENT TIME is located between BEGIN and END, DLS (DAYLIGHT SAVING) is applied and operated.



### NOTICE

- The Northern Hemisphere: The date and time in BEGIN is earlier than END.
- The Southern Hemisphere: The date and time in END is earlier than BEGIN.

### EXCEPTION

- DLS can't start from 23:00.
- DLS can't be applied, if the date of BEGIN and END is same.

## 4-5. INFO

Select INFO from the SETUP menu and press SEL button to go to INFO setup screen.

### 4-5-1. SITE ID

Site description of DVR is shown and can be edited here.



Enter in the site description by using ▲▼◀▶ buttons and SEL button and press the ENTER key on the keyboard to save and apply the new description.

### 4-5-2. LOG

LOG files are shown here.



Place the cursor "Select" LOG field and press SEL button. The window will appear as below.



1. Select date using ▲▼ button and SEL button on the left window. Then the cursor will be shifted to the right window.

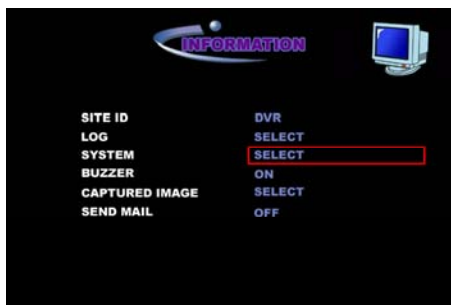


2. Press ▲▼ buttons and SEL button to open the LOG list.



### 4-5-3. SYSTEM

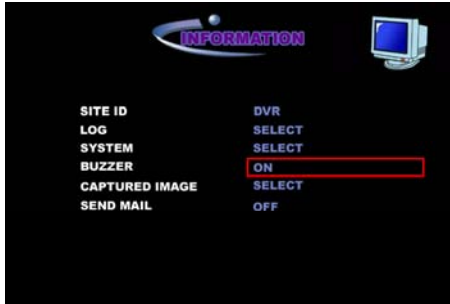
Displays DVR information such as name of tools.



- SYSTEM NAME – It shows the model name of DVR.
- SERIAL ID – It shows the serial ID of DVR.
- SOFTWARE VERSION – It shows the software version of DVR.
- HARDWARE VERSION – It shows the hardware version of DVR.
- CURRENT IP ADDRESS – It shows, if available, the assigned IP address that is in use by DVR.
- HDD CAPACITY – It shows the HDD capacity of DVR.

### 4-5-4. CAPTURED IMAGE

The images that were captured during playback can be displayed here.



Captured images are sorted by date/time, which indicates the time of recording. Select a file from the list to view the captured image.

To capture a still image and view, please refer to “5-8. Still Image Capturing, Viewing, and Viewing.”

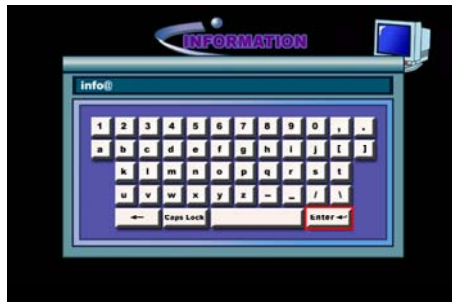
### 4-5-5. SEND MAIL (IP ADDRESS Mailing)

If the network is linked with LAN-DHCP or ADSL, which support dynamic IP addresses, DVR can send out the dynamic allocated IP addresses by mails. It is unnecessary for a distant user to confirm the IP address when he/she connects to the network since he/she can view it after receiving it by email.

1. Press ◀▶ buttons to decide whether to send mail or not by selecting <ON> or <OFF>.



Move the cursor to MAIL ADRESS field and press SEL button to type in the mail address on the keyboard that appears.



To type @, press “Caps Lock” button. Then @ will appear on the top line.



3. Press ▲▼◀▶ buttons and SEL button to type the ADSL service ID on the keyboard, and use “ENTER” button on the keyboard to save and apply the saved ID.
4. Edit PASSWORD using the same method as editing SERVICE ID.
8. Press ◀▶ buttons to set DDNS to <ON>.
5. Use ▲▼◀▶ buttons to edit DDNS SERVER IP Address. And press SEL button to apply the changed DDNS SERVER IP address.
6. The assigned IP address appears in the CURENT IP ADDRESS field.

For setting a mail address that will receive the assigned IP addresses that are frequently changed, please refer to “4-5-5. SEND MAIL (IP ADDRESS Mailing).”

## 4-8. STORAGE

Select STORAGE and press SEL button to go to STORAGE setup screen.



### 4-8-1. STORAGE OVERWRITE

Set up storage overwriting of the hard disk.

<ON>: The oldest data will be deleted and replaced with new data if the hard disk has fully been recorded.

### 4-8-2. HDD FORMAT

You can format the hard disk by deleting all stored data.

1. Place the cursor on “SELECT” and press SEL button. DVR will show “**All data will be deleted from HDD.**” to confirm the procedure.



2. If you select "YES," DVR will reconfirm the formatting procedure, showing "Do you really want to delete all data?"



3. Formatting will proceed when you select "YES". If you select "NO", the hard disk formatting will not proceed and all saved data will be maintained.

**WARNING**

Formatting the hard disk by deleting all saved data will delete the captured images as well. If you wish to preserve the captured images, please save those images by network client S/W before proceeding of HDD formatting.

### **4-8-3. AUTO ERASING (30DAYS)**

<ON>: The data prior 30days from the temporary date will be automatically deleted.

### **4-8-4. CD-RW BACKUP (Available only in model with CD-RW)**

This menu is to be enabled only when DVR has CD-RW.

Please refer to "5-15. Video back up in CD".

### **4-8-5. S/W UPGRADE W/ CD-RW (Available only in model with CD-RW)**

This menu is to be enabled only when DVR has CD-RW. The upgrade guide will be provided by another material.

## 5. OPERATIONS

### 5-1. Power ON/OFF

#### 5-1-1. Power ON

- Connect the camera input cables to the camera input port on the back of DVR.
- Connect the monitor cable to the video output port on the back of DVR.
- Connect the power cable to the power input port on the back of DVR.
- Press the POWER button only after DVR and other equipments have been fully connected. The LED on the POWER button and SENSOR, MOTION, RECORD, and NETWORK LED on the front right view will light up when DVR starts up.



- The graphic image (with logo or without logo) will appear while DVR is being booted.
- After the logo disappears, a divided screen shows up on the monitor.
- The LOCK function is automatically activated when DVR is initially started up. To use the 'LIVE screen viewing' and other functions, press the LOCK button and enter in the password. (The factory default password is '1111'.)
- The LED on the POWER button stays lit up while DVR is being operated.

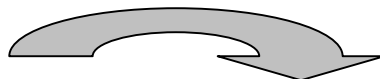
#### 5-1-2. Power OFF

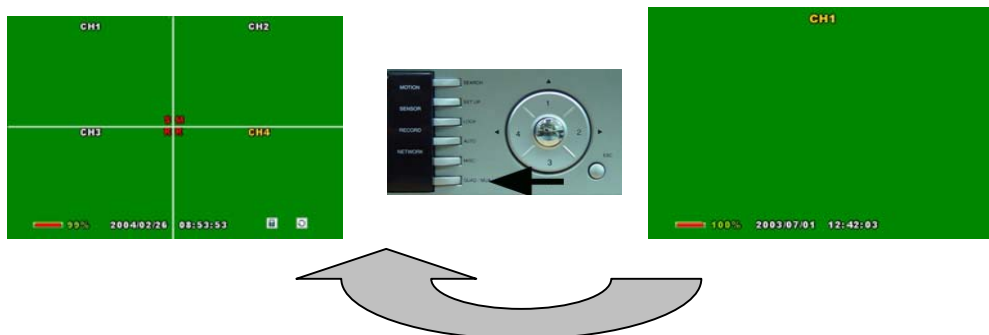
- DVR cannot be turned off using the POWER button when the LOCK function is on. Deactivate the LOCK function by pressing LOCK and entering the password.
- Turn off DVR by pressing the POWER button on the front view of DVR.
- When DVR is being turned off, the LED on the POWER button and SENSOR, MOTION, RECORD, and NETWORK LED on the front right view stay on for a while.
- The LED is no longer lit when DVR is turned off.

### 5-2. LIVE Display

#### 5-2-1. QUAD Screen Setup

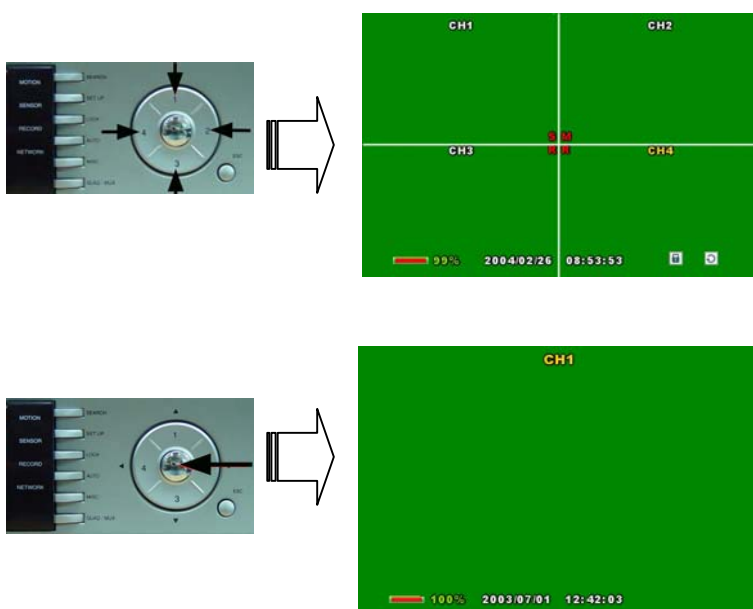
You can switch from Quarterly Divided Screen Setup from Full Screen mode and vice versa by pressing QUAD/MUX button.





## 5-2-2. Individual Full Screen Setup

Press the channel buttons on DVR to select a channel. The selected channel is highlighted as yellow. Press SEL button to display the channel in full screen.



## 5-2-3. Auto Channel Rotation




This function is useful when viewing each of the channels in full screen one by one. To set time interval and channels to rotate, please refer to “4-2 LIVE Setup/ A. Channel Rotation”

## 5-3. OSD ICON

### 5-3-1. OSD ICON on LIVE Screen

OSD Icon shows the operation status of DVR on the LIVE screen.



- (1) Channel Name
- (2) It shows the recording trigger.
  - ◆ R – When recording is triggered by Manual record button.
  - ◆ M – When recording is triggered by Motion detection.
  - ◆ S – When recording is triggered by Sensor.
- (3) Remaining space in Hard Disk
- (4) Date
- (5) Time
- (6) LOCK, AUTO, NETWORK Status
  - ◆  – When NETWORK CLIENT is connected.
  - ◆  - DVR is locked by a password.
  - ◆  – Auto Channel Rotation is turned on

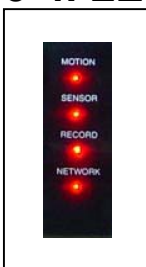
### 5-3-2. Show/Hide OSD ICON on LIVE Screen

You can hide OSD Icon by pressing MISC button. Press MISC button again and press ESC button to show OSD Icon.



Please refer to “4-2. LIVE Setup / B. STATUS INFO”.

### 5-4. LED Information



- A. MOTION – LED lights up when motion is detected.
- B. SENSOR – LED lights up when sensor is activated.
- C. RECORD – LED lights up when recording is in progress
- D. NETWORK – LED lights up when Network client is connected.

## 5-5. Recording

### 5-5-1. MANUAL Recording

In Manual Recording, manually press the buttons on DVR to record. This method is useful when recording is necessary while monitoring live channels. The recordable channels are limited to the channels that its Record By Manual function is turned on. This is explained under “4-3-2-2. CHANNEL Setup (QUAD) / 4-3-3-2. CHANNEL Setup (MUX)”. When the RECORD button is pressed, the LED on the RECORD button, the RECORD LED, and “R” icon on the screen lights up and starts recording. Press the RECORD button again to stop recording.

### 5-5-2. SCHEDULE Recording

In Scheduled Recording, DVR automatically records at the specified time. Please refer to “4-3-3. SCHEDULE Record Mode” for Scheduled Recording Setup.

### 5-5-3. SENSOR Recording

When SENSOR is operated, SENSOR LED, RECORD LED and “S” on the screen light up and the channel that is connected to the Sensor starts to record. Please refer to “4-3-2-3. SENSOR Setup (QUAD)” / “4-3-3-3. SENSOR Setup (MUX)”.

### 5-5-4. MOTION Recording

When motion is detected, MOTION LED lights up, RECORD LED and “M” on the screen light up and the channel that is connected to the motion is recorded. Please refer to “4-3-2-4. MOTION Setup (QUAD)” / “4-3-3-4 MOTION Setup (MUX)”

### 5-5-5. CONTINUOUS Recording

DVR is always recording, when DVR is running. Please refer to “4-3-2-2. CHANNEL Setup (QUAD)” / “4-3-3-2. CHANNEL Setup (MUX)”.

## 5-6. PLAYBACK

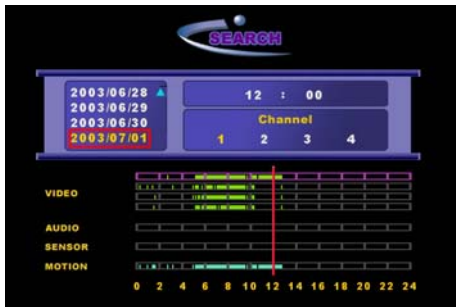
### 5-6-1. Search when DVR has one HDD

- A. Press the SEARCH button to go to the Search Menu.

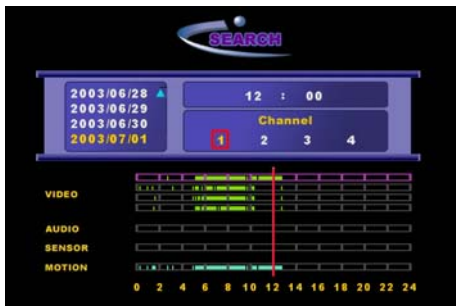


- B. Select the date firstly with ▲▼ buttons. Press SEL button to move to select channel.

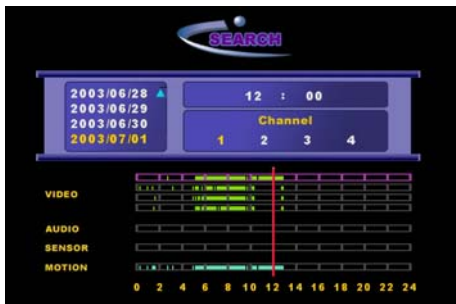
The selected date is highlighted yellow.



- C. Select a desired channel with ◀ ▶ buttons. Selected channel is highlighted yellow. Press SEL button to set the time. Refer to Audio Recording and SENSOR & MOTION related recording information.



- D. Move the TIME BAR (Red Vertical Bar) to select time at the bottom of the Recording Information Columns. Move the time bar using ◀ ▶ buttons. The time bar moves by 7, 15, 22, 30, 37, 45, 52, 00 minutes. The selected time is shown up on the upper part of the Select Channel field.



- E. To change the date again, move to Date by pressing SEL button.  
F. After completing time selection, move to the playback screen by pressing the PLAY/PAUSE button.

<Displayed types depending on different recording modes during play>

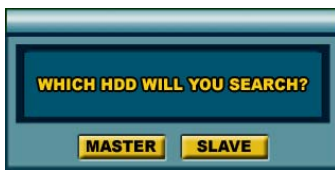
- QUAD – 4 channels are displayed at once
- MUX (Resolution: 360 X 240) – The selected channel is displayed. The channel is played in full screen mode. Press SEL button to playback with the original recording resolution during playback.
- MUX (Resolution: 720 X 480) – The selected channel is displayed.

<SHOW/HIDE OSD ICON during play>

During playback, press the MISC button to hide the OSD ICON (date, channel name, time, playing speed, time bar).

### 5-6-2. **NOT applicable to CD version** Search when DVR has two HDD

- A. At first you need to set removable HDD as SLAVE and fixed HDD as master. The installation guide will be provided by another material.
- B. Press the SEARCH button to go to the Search Menu. Then the window for HDD selection will be appeared.



- C. Select HDD that you want to search and playback. And then the next steps are the same as "5-6-1. Search when DVR has one HDD".

### 5-6-3. Playback buttons



- A. **PLAY/PAUSE**  
Press the button to play channels in normal speed (X1).  
Press it again to pause.
- B. **FF**  
Press the button to play channels faster than the normal speed (X1)  
The fast-forwarding speed is shown up on the upper right corner of the display screen.
  - i. X2 – twice as fast
  - ii. X4 – 4 times as fast
  - iii. X16 – 16 times as fast
- C. **JUMP/STEP**  
When playback is paused, press the button to step forward to the next frame.  
During play or fast-forward, it jumps 2 minutes forward from the current spot.
- D. **REW**  
Press the button to reverse play channel faster than the normal speed ( - X1).  
The speed is shown up on the upper right corner of the display screen.
  - i. - X2 – twice as fast
  - ii. - X4 – 4 times as fast

iii. - X16 – 16 times as fast

E. JUMP/STEP

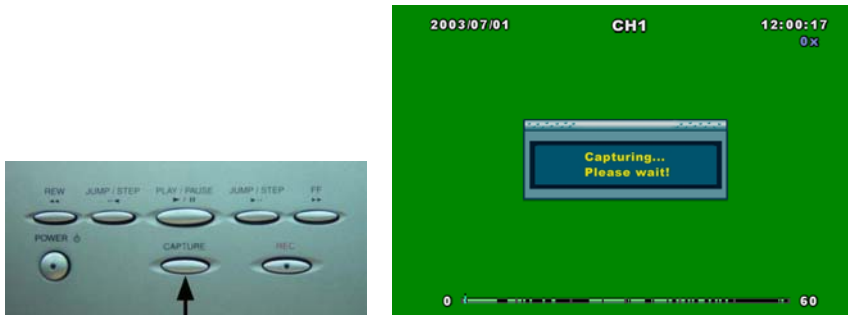
When playback is paused, press the button to step backward to the previous frame.

During play or fast-forward, it jumps 2 minutes backward from the current spot.

## 5-7. Still Image Capturing, Viewing, and Backup

### 5-7-1. Capturing Still Image

During playback, press the Pause PLAY/PAUSE button to pause playing screen at desired spot and press the CAPTURE button. It saves 3 consecutive frames as one file.



You must press the Play/Pause button to pause the screen, then press the Capture button in order to capture images.

### 5-7-2. Viewing Captured Image

Select a list to play the images. Saved frames can be viewed in order by pressing SEL button. The image that is saved in 360X240 is played in 360X240 in the middle of the monitor screen. The image that is saved in 720X480 is played in 720X480 in full of the monitor screen.





### 5-7-3. Still image Backup in USB flash memory stick

1. Connect an USB flash memory stick into USB port.
2. Select the still image that you want to backup in an USB flash memory stick. Please refer to “5-8-2. Viewing Captured Image”.
3. Press SEL button. Then the still image will be stored in an USB flash memory stick.

Compatible USB Devices are: <UNIDRIVE "KMF-UD" USB1.1, 128MB>  
 <SANDISK CRUZER mini (SDC22-128) 128MB> \* <IOMEGA "MINI DRIVE" USB2.0, 128MB>  
 <SONY MICRO-VAULT USB2.0, 128MB> \* other types may or may not fuction with this DVR.

## 5-8. PTZF

### 5-8-1. PTZF Operation

To control the PTZF functions of the camera, connect the controller to the RS-485 port.

For speed dome cameras that supports RS-485, connect them directly to the RS-485 port. But if the camera is controlled with RS-232C, one needs to use Signal Converter (RS-485 to RS-232C).

1. In PTZ from the SETUP menu, set the protocol type of the camera for the channel you wish to control to be the same as the camera that is installed. If the camera has a specific camera ID, move the cursor on the field of <Camera ID> and select the camera ID using ◀▶ buttons.



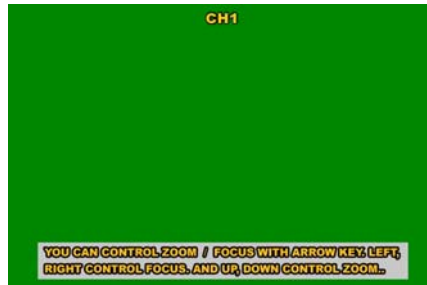
2. Press the MISC button **in triple** to go to the screen where PTZF can be adjusted.



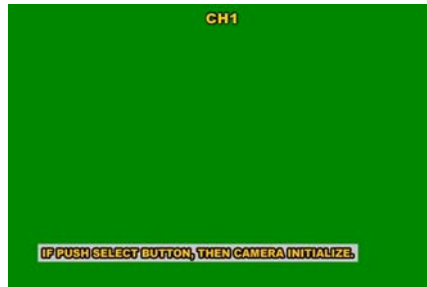
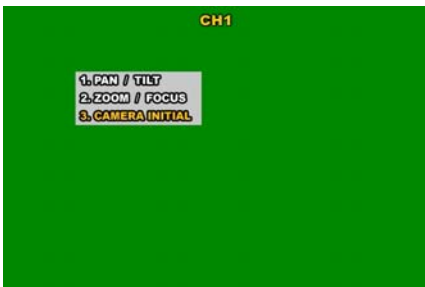
3. PAN/TILT – to pan or tilt the selected channel



4. ZOOM/FOCUS – to zoom or focus the selected channel

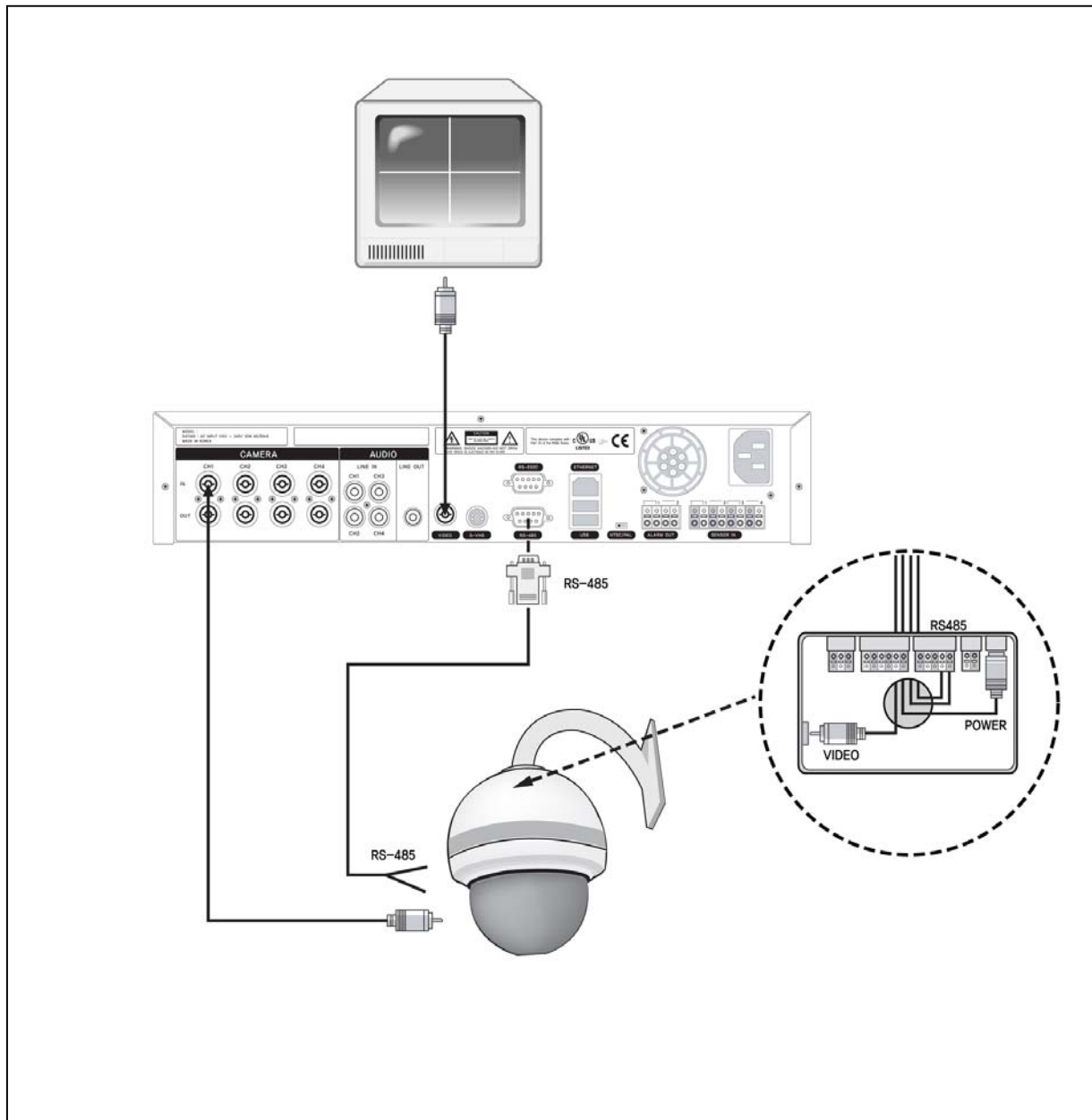


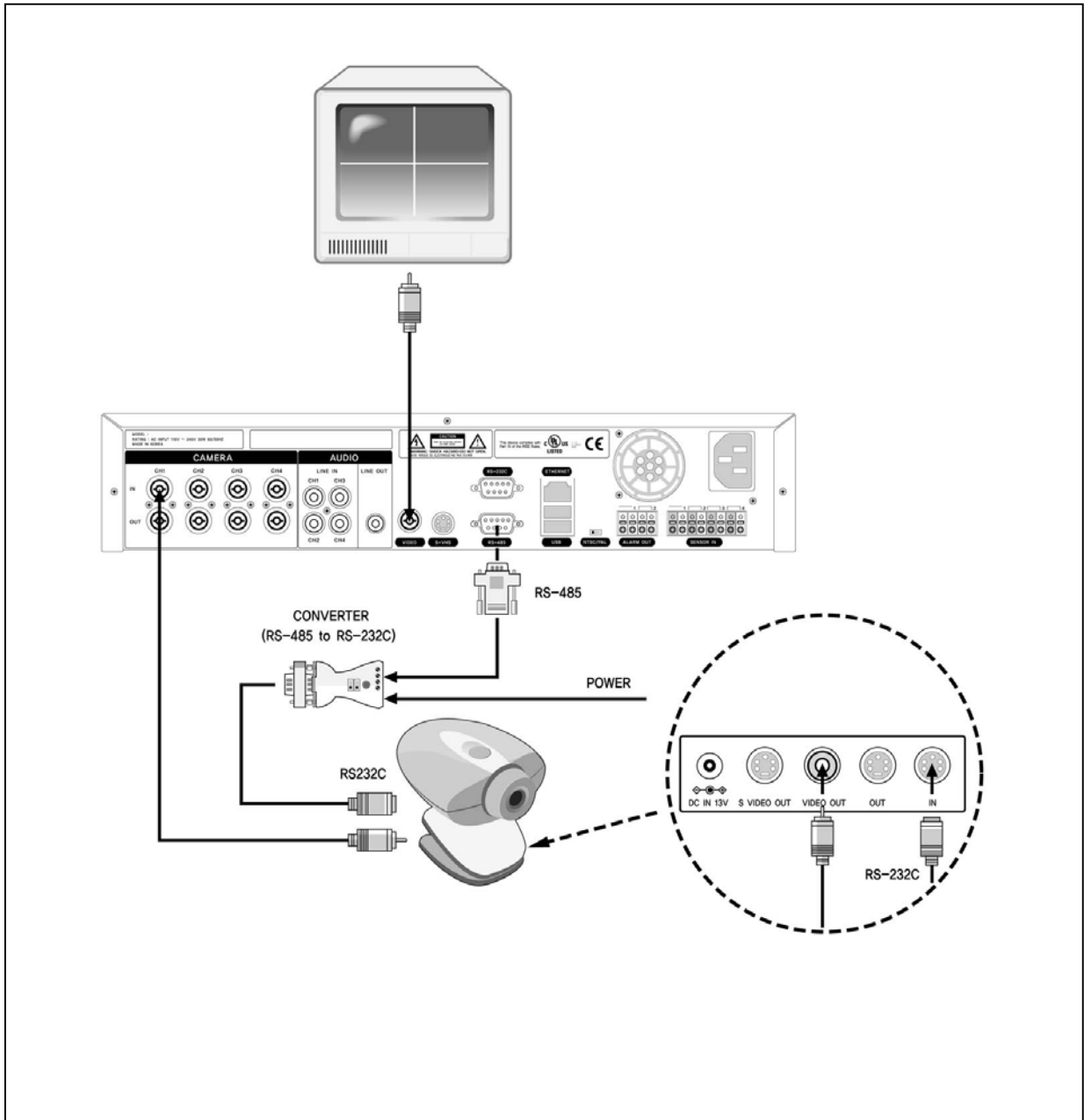
5. CAMERA INITIAL – to go to CAMERA INITIAL settings for the selected channel



This menu is to initialize the PTZ setting of the camera.  
 Although the camera is initialized, no message will be appeared.

## 5-8-2. PTZF Camera link to RS-485





## 5-9. Brightness, Contrast, Hue, Saturation & Alpha-blending Adjustment

Press the MISC button twice to go to the screen where brightness, contrast and alpha-blending can be adjusted.

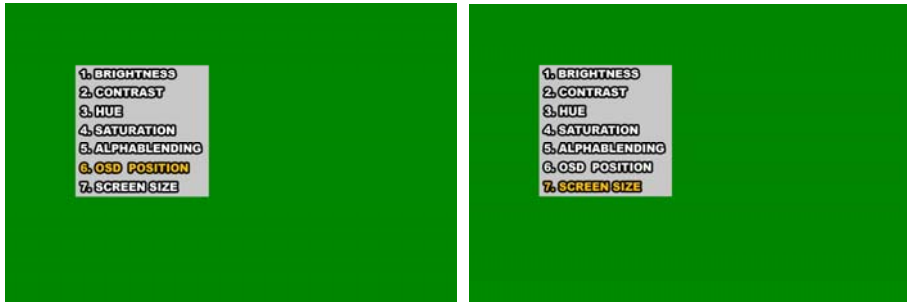


1. BRIGHTNESS – to adjust the BRIGHTNESS of the selected channel using ◀▶ buttons.
2. CONTRAST – to adjust the CONTRAST level of the selected channel using ◀▶ buttons.
3. HUE – to adjust the CONTRAST level of the selected channel using ◀▶ buttons.
4. SATURATION – to adjust the CONTRAST level of the selected channel using ◀▶ buttons.
5. ALPHABLENDING – to adjust the ALPHABLENDING of the selected channel's status icon using ◀▶ buttons.

## 5-10. OSD position and Screen size Adjustment

The position of OSD on LIVE screen can be adjusted up and down.

Depending on the characteristics of the monitor, being able to adjust the position of OSD and Screen Size may be a very useful feature.



### 5-10-1. Adjusting OSD Ceiling & Bottom Line

Place the cursor on CEILING/BOPTTOM LINE and then use ▲▼ and SEL button, and the dark horizontal line across the top/bottom of the screen to adjust the OSD position.



### 5-10-2. Adjusting Screen size

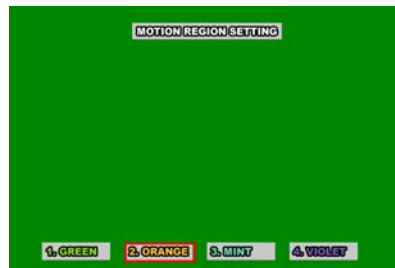
If your monitor does not display verges of screen, you can make the screen size shrunk. Select SCREEN SIZE menu and then set screen size with SEL button.

## 5-11. Motion Detection Region Setup

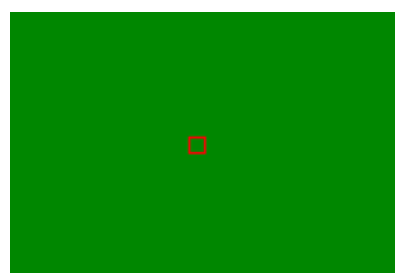
MUX recording mode not only allows full screen motion detection but also lets you assign 4 motion detection regions per channel.

### 5-11-1. Region Setup

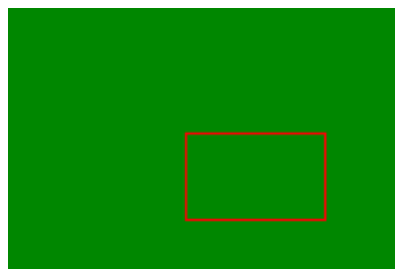
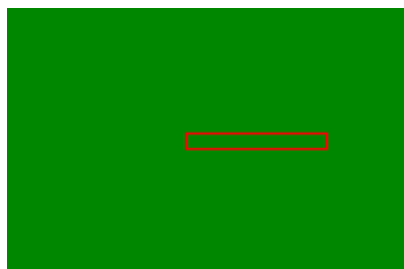
1. Select INDIVIDUAL on REGION field in the MOTION menu and press SEL button to go to Motion Region Setting screen.



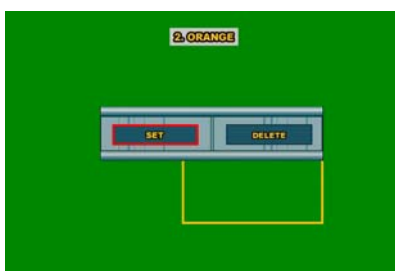
- From 1. GREEN 2. ORANGE 3. MINT 4. VIOLET, select the region you wish to adjust. Place the cursor on "1.Set" and press SEL button to obtain a box that lets you select a region.



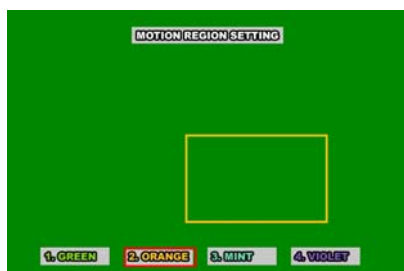
- Move the cursor using ◀▶▲▼ buttons to select the desired region.



- After selecting a region, press SEL button and save the region data.



- Press the ESC button to go back to Motion Region Setting screen.

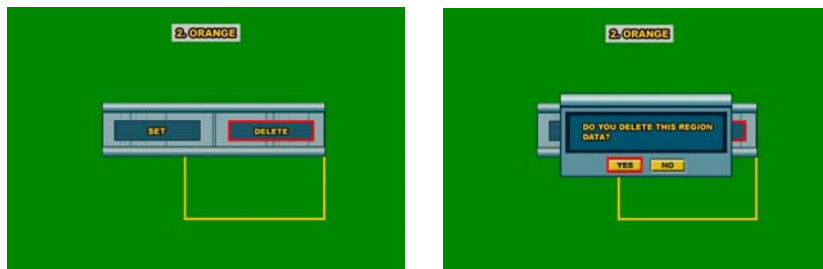


## 5-11-2. Deleting Region

1. Select INDIVIDUAL for REGION in the MOTION menu and press SELECT button to go to Motion Region Setting screen.



2. From 1. GREEN 2. ORANGE 3. MINT 4. VIOLET, select the region you wish to delete. Place the cursor on "2.DELETE" and press SEL button. When DVR asks "Do you Delete This Region Data?" select "YES" to delete the selected region. A mode for setting a new region will proceed.



## 5-12. Audio

### 5-12-1. Audio Setup and Connection

1. Connect the audio input and audio output cable to the audio connection port on the back of DVR.
2. In CHANNEL menu of MUX menu, select the desired audio input channel for each video channel by highlighting it yellow.



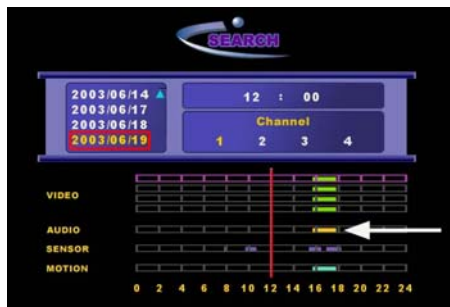
3. When recording by sensor, motion detection, manual or schedule begins, on a channel that the audio is linked to, audio recording begins automatically.

- In MUX recording mode, if you wish to listen to the audio of a channel live, select the channel from live screen using the number buttons. (The channel label becomes highlighted yellow as bellow). Audio live is not available for listening when the SETUP menu is being set up.



## 5-12-2. Playback

- Connect the audio cable to the audio output port on the back of DVR.
- Check the status part where audio is recorded (highlighted in yellow) from the SEARCH menu. (Audio field will be highlighted in yellow even when only one channel is recorded.)

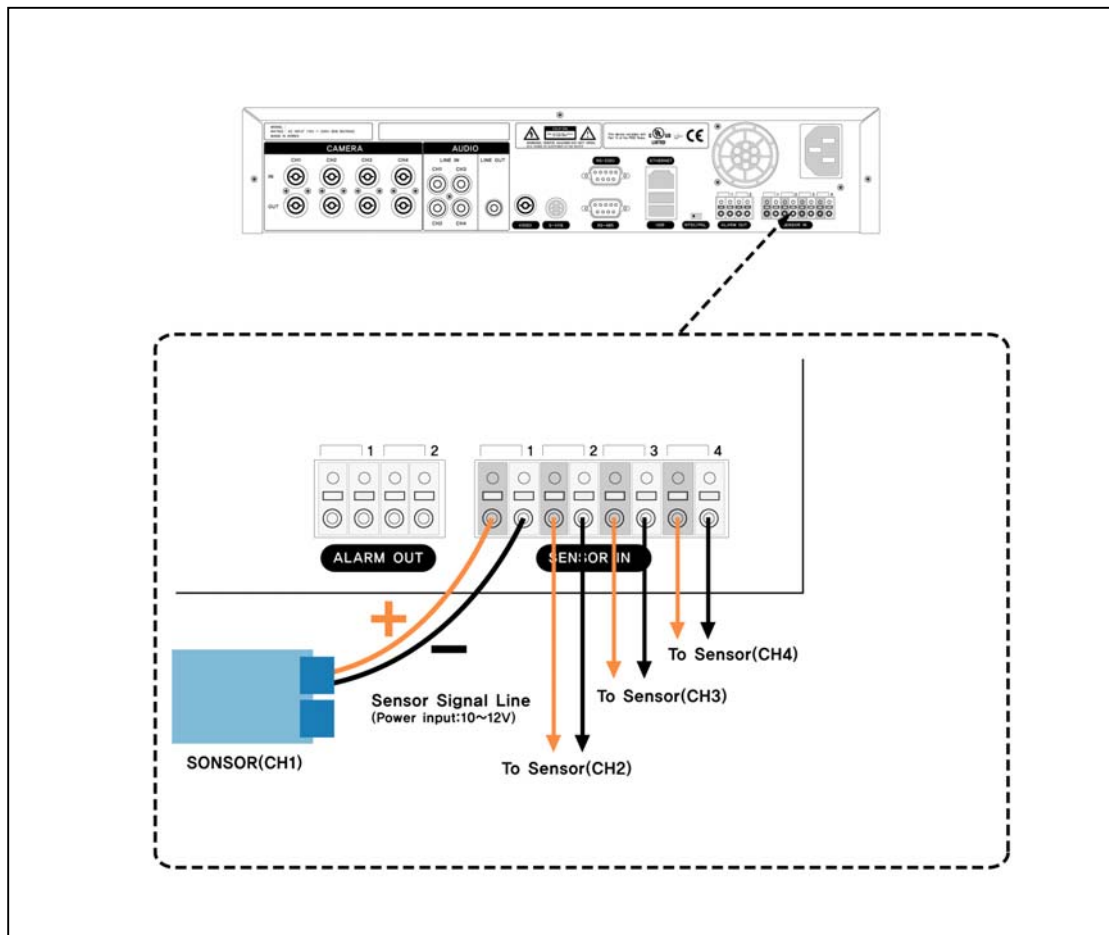


- Use ◀▶▲▼ buttons and SEL button to select the date, channel and time you wish to play. Press the PLAY/PAUSE button to play the audio with video.

## 5-14. Sensor Installation

DVR can connect up to 4 sensors. There are two simple steps to install the sensors.

- Connect THE SENSOR SIGNAL LINE
- Connect the sensor power line (10~12V)



### Warning

Vice versa connection of Positive and Negative will occur a fatal error or a malfunction of DVR.

## 5-15. Video back up in CD

### 5-15-1. Back up in CD

1. Please go to "STORAGE" in the SETUP menu.
2. And then go to CD-RW BACKUP and place the cursor "SELECT" and press SEL button.  
The window for CD back up will appear as bellow. Please set the channels and time to backup.



3. If the recorded data on DVR is QUAD mode, you need to select Q on VIDEO. If you do not select Q, QUAD mode will not be backed up on the CD.
4. If the selected data volume exceeds CD media size, you need to put another CD in. And then DVR automatically proceeds backing up from the end of the data of the previous CD.
5. BACKUP is completed, the following message will appear.




6. BACKUP is failed, the following message will appear.

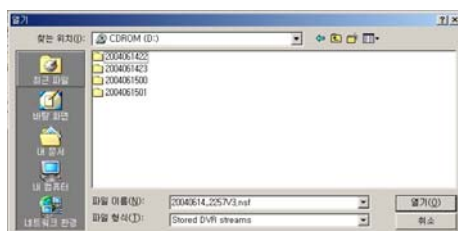


**Warning**

When user proceeds CD-RW BACKUP, all the other functions such as networking and recording will be on hold.

### 5-15-2. Playback Data in CD

1. Please put CD in CD-RW in PC.
2. Please start Network Client S/W. 
3. Please go to SEARCH and select PLAYBACK VIDEO button.  And then Search window will pop-up.



4. Please select and open the backed up data.

**The file format of the backed up data is \*.nsf. You can review and playback the backed up data on CD only in Network Client S/W.**