

Thank you for purchasing our product.  
Please read this User s Manual before  
using the product.

**DVMR-4C this document may contain ERRORS**



**4 Channel Digital Video Multiplex Recorder**

## User s Manual



## STAND-ALONE DVMR

The most stable and reliable real stand-alone Digital Video Multiplex Recorder

**STAND-ALONE DVMR**

ALL ABOUT IMAGE RECOGNITION & PROCESSING

DIGITAL VIDEO  
**DIGITAL VIDEO RECORDER**  
RECORDER

ALL ABOUT IMAGE RECOGNITION & PROCESSING

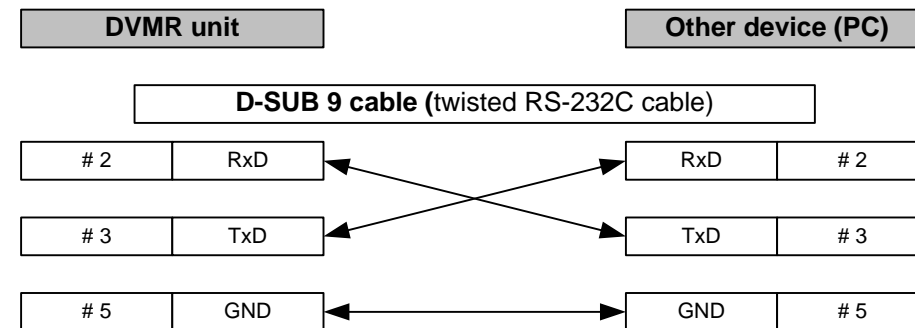
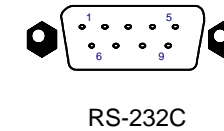
Table of Contents

<b>1. About this document</b>	<b>2</b>
<b>2. Before reading this document</b>	<b>2</b>
<b>3. Unit Description</b>	<b>3</b>
1) Front Panel	3
2) Rear Panel	4
<b>4. Installation</b>	<b>5</b>
<b>5. Operation</b>	<b>9</b>
1) Log-in	9
2) Record	10
3) Play	13
4) System Setup	15
① Basic Operation	15
② DISPLAY SETUP	16
③ CAMERA SETUP	17
④ TIME/DATE SETUP	19
⑤ ALARM/MOTION SETUP	20
⑥ RECORD SETUP	23
⑦ MISCELLANEOUS SETUP	24
<b>6. Specification &amp; Configuration</b>	<b>28</b>
1) SPECIFICATIONS	28
2) Stand alone DVMR	29
3) RS-232C Hex-codes table	29
4) Arrangement RS-232C pin	30

4. Arrangement RS-232C pin

▷ RS-232C

Pin No.	Definition
1	NC
2	RxD
3	TxD
4	NC
5	GND
6	NC
7	NC
8	NC
9	NC



6. Specification and Configuration

2. Configuration



3. RS-232C Hex-codes table

Following ASCII-codes are for programmers who want to control the DVMR via RS-232C port.  
RS-232C specification (baud rate/parity/data length/stop bit) : 19200, N, 8, 1

1 Byte ASCII-code.

MENU	'M'	PIP/ MARK	'I'	CH1	'1'	UP	'U'
PLAY	'P'	FRZ	'F'	CH2	'2'	DN	'J'
MODE	'D'	SEQ/ SPEED	'Q'	CH3	'3'	LEFT	'H'
PANTILT	'T'	ZOOM	'Z'	CH4	'4'	RIGHT	'K'
DEFAULT KEY '0' (Default setup: Displays and records on Quad mode)							

1. About this document

Before installing stand alone DVMR, be sure to thoroughly review and follow the instructions in this

User's Manual. Pay particular attention to the parts that are marked **NOTICE**.

Also, when connecting with external application, first turn the power OFF and follow manual instruction for appropriate installation.

2. Before reading this document

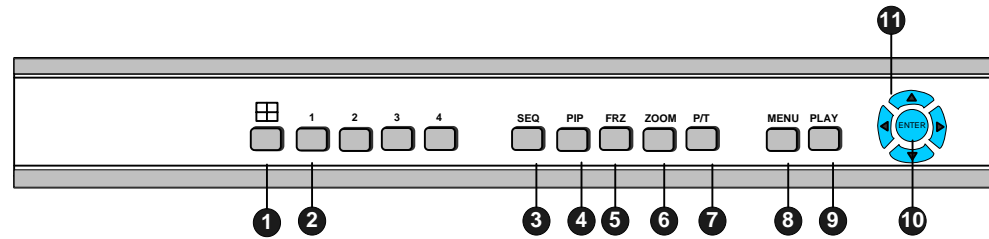
1. This document is intended for both the administrator and users of stand alone DVMR Model.
2. This manual contains information for configuring, managing and using stand alone DVMR Model.
3. To prevent fire or electrical shock, do not expose the product to heat or moisture
4. Be sure to read this manual before using stand alone DVMR Model.
5. For questions and technical assistance of this product, contact your local dealer.

► Strong recommendation on installation of the DVMR unit

1. Check electricity at the place you want to install the DVMR unit is stable and meets our electricity requirements.  
Unstable electricity will cause malfunction of the unit or give critical damage to the unit.
2. Several chips on the main board of the DVMR unit and hard disk drive inside the unit generate heat, and it must be properly discharged.  
Do not put any objects just beside exhaust port(fan) on the left side of the unit and do not close up an opening (fresh air in-take) on the right side of the unit..
3. Put the DVMR unit at well-ventilated place and do not put heat-generating objects on the unit.  
When it is installed inside 19 inch mounting rack together with other devices, please check built-in ventilation fan of the rack is properly running.

3. Unit Description

1. Front Panel



- 1. **MODE** : Button for quad split screen.
- 2. **1,2,3,4** : Choose each indicated camera.
- 3. **SEQ** : The display screen automatically rotates.
- 4. **PIP** : Assigns PIP (Picture in picture) .
- 5. **FRZ** : : Display screen is paused.
- 6. **ZOOM** : Enlarges the display screen by 200% or 400%.
- 7. **P/T** : Manages PAN/TILT CONTROLLER.
- 8. **MENU** : Use for changing the menu of SYSTEM SETUP. When you press [MENU] button, recording is stopped.
- 9. **PLAY** : is for playback.
- 10. **ENTER** : Is used as the SELECT key in some function.
- 11. **Direction button**

**NOTICE** : If several buttons are simultaneously or incorrectly pressed, the system may not function properly.

6. Specification and configuration

1. SPECIFICATIONS

MODEL NO	Stand alone DVMR	
VIDEO I/F	INPUT	4 CH INPUT 1.0 VP-P, 75 OHM UNBALANCED (BNC TYPE)
	OUTPUT	3 OUTPUT VBS : 1.0VP~P.75 OHM UNBALANCED (BNC TYPE)
	HORIZONTAL RESOLUTION	480TV LINES
	S/N RATIO	MORE THAN 40dB
MONITORING METHOD	COLOR	16.7 MILLION
	SPLIT SCREEN	FULL, QUAD DISPLAY
	ZOOM	LIVE & PB AVAILABLE
	PIP	AVAILABLE
RECORDING /PLAY FUNCTION	SEQUENCE	AVAILABLE
	SCREEN QUALITY	FULL : 720(H)X480(V) ACTIVE PIXELS 1/4 SCREEN : 360(H)X240(V) ACTIVE PIXELS
	SPEED	0.1~30 FRAME/SEC (EACH CHANNEL)
	MATERIAL	HDD
OTHER FUNCTION	COMPRESSED PICTURE	JPEG
	PICTURE RECORDING METHOD	FIELD SWITCHER METHOD FULL SCREEN RECORDING
	REC. MODE	REAL-TIME/ TIME-LAPSE / EVENT
	TRACK PLAY	SEARCH, STILL
MECHANICAL	POST ALARM FUNCTION	10sec ~ 5min, CONTINUOUS TIMING ESTABLISHMENT POSSIBILITY
	BACK-UP	CONVENTIONAL VCR, TIME LAPS VCR (VCR OUTPUT PROVIDED)
	OTHERS	RS232C, RS485, ALARM INPUT
	CAMERA CONTROL	PAN/TILT/ZOOM AND FOCUS REMOTE CONTROL : EXTERNAL EQUIPMENT, WIPER,PUMP,FAN AND HEATER
MECHANICAL	CONFIGURATION	PLUG&PLAY
	HDD	INTERNAL 1 HDD
	OPERATION TEMPERATURE	41F~ 104F (5C~ +40C)
	OPERATION HUMIDITY	LESS THAN 90%
	IR REMOTE CONTROLLER	Not Available
	DIMENSION	13" RACK SIZE 1U , 50X320X210 mm
WEIGHT	APPROX. 3KG (Without HDD)	
POWER SUPPLY	DC ADAPTER (12V DC 3.3A)	

**5** HDD INFORMATION

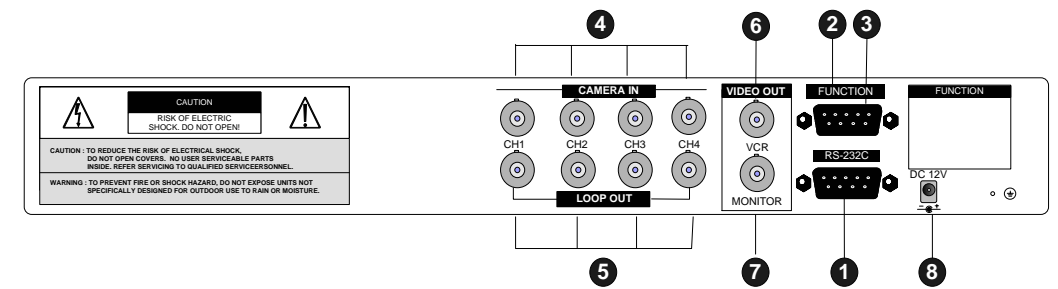
- 1 HDD DATA LIST : Shows general information of HDD.
- 2 HDD AUTO DETECT : Allows to detect HDD just in case first HDD search after purchase failed.

**6** PRODUCT ID

Serial number of products. Necessary for manufacturer to know manufacturing date, program version number, and others.

3. Unit Description

2. Rear Panel



1. RS-232C Port Connection

2. PAN/TILT Controller

3. Sensor Input/Output

4. Camera Connection

5. LOOP Output

6. VCR Connection

7. MONITOR Connection

8. D/C Power Connection

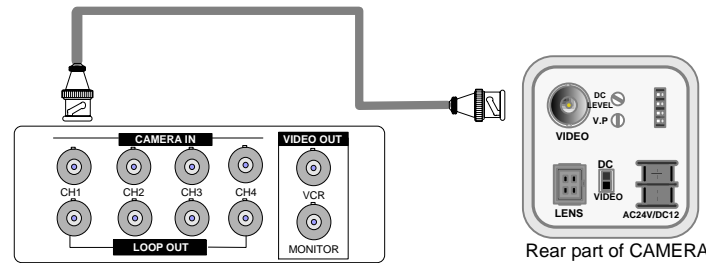
**NOTICE** : When connecting other applications with DVR, be sure to turn off the system and connect.

4. Installation

Procedure

1) Camera Connection

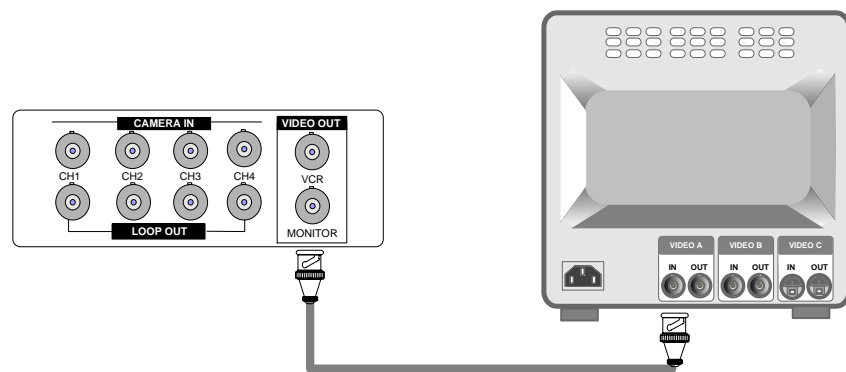
Connect the camera to the CAMERA INPUT on the Rear Panel of the system.



Notice : This DVMR system automatically detects video system of camera you connected to the unit when you boot DVMR system first. It is not necessary to set video system separately, and DVMR system set at NTSC or PAL system automatically when you boot the system.

2) Monitor Connection (Composite Connection Method)

Connect the monitor to the MONITOR OUT on the Rear Panel of the DVMR system.



Notice : Connect camera or monitor to DVMR system after letting the DC power of DVMR system is off status.

5. Operation

- 1 01:00-03:00 ON  
04:00-05:00 ON

Just record from 1 to 3 and from 4 to 5, and does not record for the rest hours.

- 2 01:00-03:00 OFF  
04:00-05:00 OFF

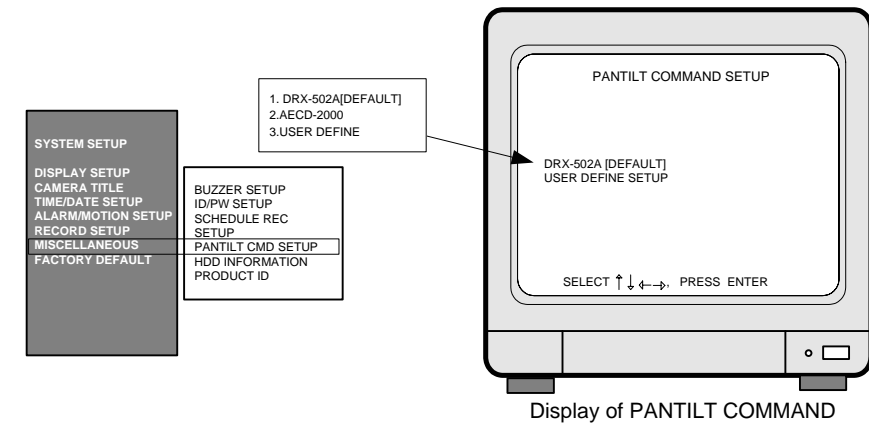
Not record from 1 to 3 and from 4 to 5, and records for the rest hours.

- 3 01:00-03:00 ON  
04:00-05:00 OFF

Just record from 1 to 3 (When both ON and OFF are set, priority is on ON.)

3. NOTE for scheduled recording :  
When scheduled recording is set, DVMR unit does not record before the set time. It only starts recording at START time and ends at END time.

- 4 PANTILT COMMAND SETUP : When PTZ camera whose protocol is already incorporated into this DVMR system (Default PTZ camera) is connected to this DVMR, just select model of PTZ camera in PANTILT COMMAND SETUP. If user want to connect PTZ camera which is not one of Default PTZ camera, users must input protocols of PTZ camera or speed dome camera by themselves in USER DEFINE SETUP. For detail procedure, refer to manual for incorporating protocol of PTZ camera into DVMR system.

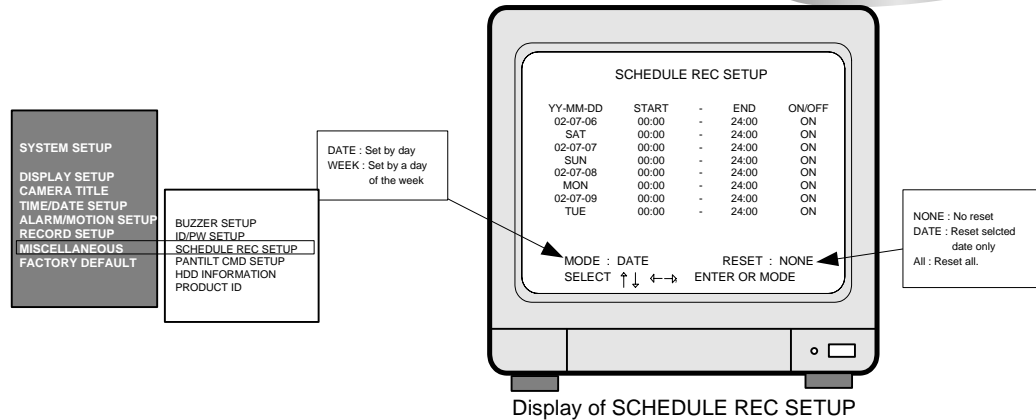


Procedure to control PTZ camera while you see live picture

1. Default PTZ camera : First select PTZ camera model connected to DVMR unit in the PANTILT COMMAND SETUP menu. In live view mode, press [P/T] button and set CAM (Starts from 000) at camera ID which is set on PTZ camera (DIP switch on PTZ camera) before you connect it to DVMR unit. Then select command you want to execute using [LEFT] and [RIGHT] buttons. While you press [PLAY] button, command you selected is executed.
2. USER DEFINE : In case you input protocols of PTZ camera which is not one of Default cameras, select USER DEFINE in PANTILT COMMAND SETUP. Then press [P/T] button and set CAM (Ranges from 001 to 004) at any one from 001 to 004. CAM number must be the same as CH number which you set when you input protocol of PTZ camera in USER DEFINE. Using [LEFT] and [RIGHT] button, select command you want to execute and press [PLAY] button to execute selected command. While you press [PLAY] button, command you selected is executed.

3 SCHEDULE REC SETUP :

5. Operation



Display of SCHEDULE REC SETUP

Records according to schedule by day or a day of the week. Two recording time spans can be set for a day and a day of the week respectively. In total, 4 recording time spans can be set in a day. DVMR system records just as you set if you set SCHEDULE REC SETUP, and DVMR system records 24 hours a day if you do not set SCHEDULE REC SETUP.

1. Scheduled Recording for a day:

- 1) Press ENTER button to enter into SCHEDULE REC SETUP menu. In the sub-menu, you are requested to select MODE or RESET. To first set up, select DATE or WEEK by pressing [ENTER] button.
- 2) Press [MODE] button to be ready for editing. Then move to the location for change using direction button.
- 3) Set recording time for START and END with [ENTER] button. Recording time increases by 30 minutes whenever [ENTER] button is pressed.
- 4) After set START and END time for a day and set ON/OFF using [ENTER] button.
- 5) After set all data, press [MODE] button once more to memorize settings you set in the system.
- 6) RESET is used to delete previously set recording schedule.
  - Select DATE, and move to the date by pressing [MODE] button, and press [ENTER] to delete. ALL deletes all recording schedule.
  - (NONE : Does not reset    DATE : deletes only selected date    ALL : deletes all)
- 7) When all input is ended, press [MENU] button to come back to SCHEDULE REC SETUP.

**NOTICE :** To move the cursor in SCHEDULE RECORD SETUP menu , RESET should be set at NONE.

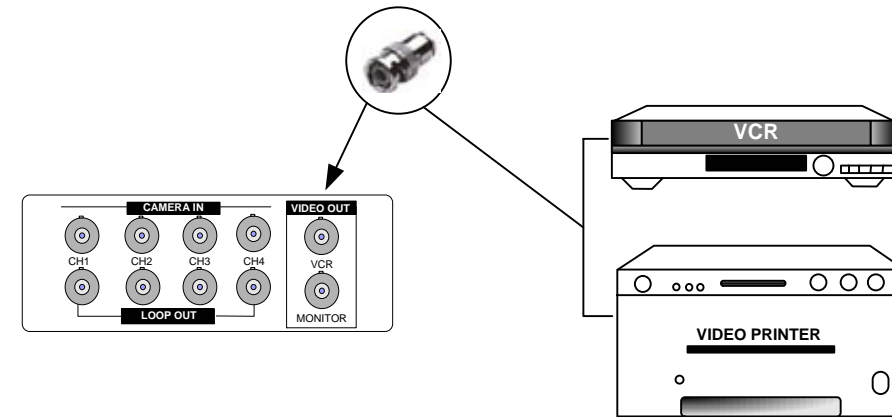
2. Scheduled recording by a day of the week :

Recording is activated on a day of the week at the time set in advance. To set schedule for a day of the week, first select WEEK in MODE of SCHEDULE REC SETUP by pressing [ENTER] button. Set recording time for each day of the week as the procedure for Scheduled Recording for a day.

4. Installation

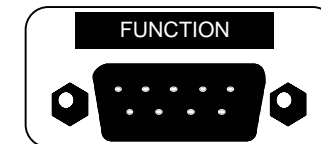
3) VCR & VIDEO PRINTER Connection

Connect VCR or VIDEO PRINTER to VCR OUT on the Rear Panel of the system.

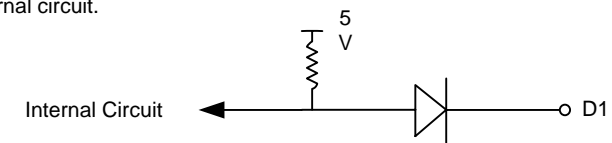


4) Sensor Connection

Connect the Sensor to the SENSOR INPUT/OUTPUT on the Rear Panel of the system



**NOTICE :** Sensor input is RECOGNIZED as LOW when alarm signal is on a level with GND, and it is recognized as HIGH when alarm signal is FLOATING or 5V. Following is internal circuit.



Thus, there is a danger of damage, when the sensor input goes to a Negative level or voltage higher than 5V.

4. Installation

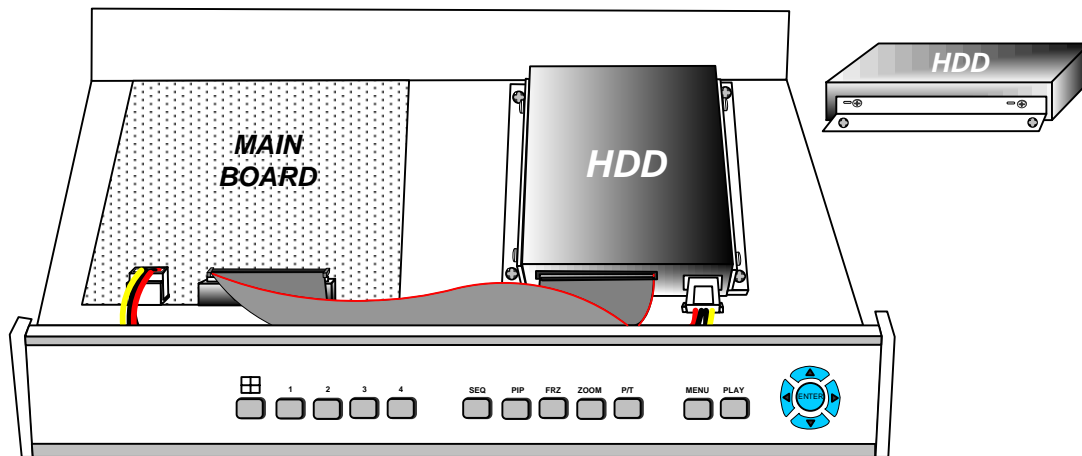
5) Network Connection

RS-232C : Connect to PC to operate DVMR

RS 485 : Connect to PTZ camera

For more details, refer to arrangements RS-232c pins in page 31.

6) HDD connection

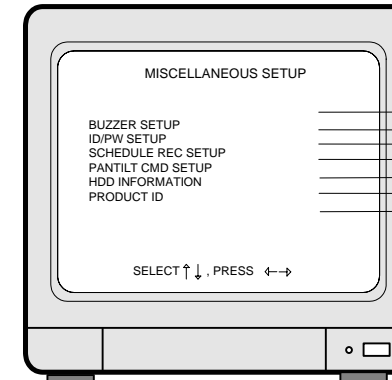


Connect main board and HDD using IDE HDD cable and power cable included in the package.  
 If you install just a unit of HDD, jumper setting of HDD must be on Master, as specified by HDD manufacturer.  
 Fix HDD on the bottom of DVMR case using screws included in the package.  
 Screws must be inserted from outside of the bottom.

**Notice :** In the first operation after installation of HDD, first do TIME SET and set at FACTORY DEFAULT on SETUP menu and HDD CLEAR for initialization of HDD.

5. Operation

8. MISCELLANEOUS SETUP

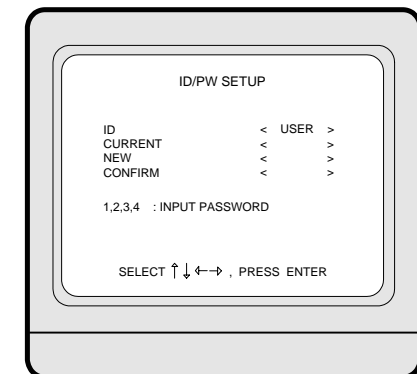
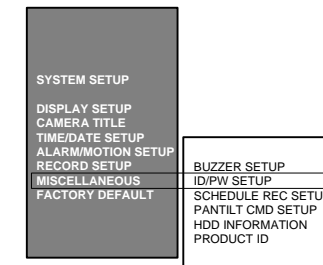


Display of MISCELLANEOUS SETUP

BUZZER SETUP is available for each group as follows.  
 SYSTEM BUZZER  
 BUTTON BUZZER  
 ALARM BUZZER  
 MOTION BUZZER  
 LOSS BUZZER

You can set each group of BUZZER independently and BUZZER is activated just in case you set at ON in corresponding group of BUZZER SETUP.

- 1 BUZZER SETUP : Sets different kinds of BUZZER ON/OFF.
- 2 ID/PW SETUP : Sets User ID and PASSWORD.



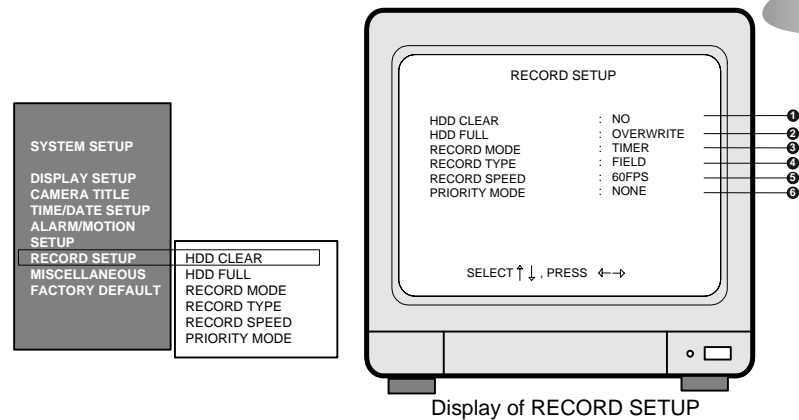
Display of ID/PW SETUP

- 1) With [UP]/[DOWN] button, select item to be changed, and press [ENTER] button to edit.
- 2) With [LEFT]/[RIGHT] button, move to wanted location and use [UP]/[DOWN] button to make Selection.
- 3) Press [ENTER] button after every SETUP and to be ready for next SETUP item.
- 4) After entering current password, enter new password and enter new password once more to verify.

**NOTICE :** In the very first setup stage, the ADMIN PASSWORD is "1", and USER PASSWORD is "2".  
 Change PASSWORD as soon as this product is purchased.

6. RECORD SETUP

5. Operation

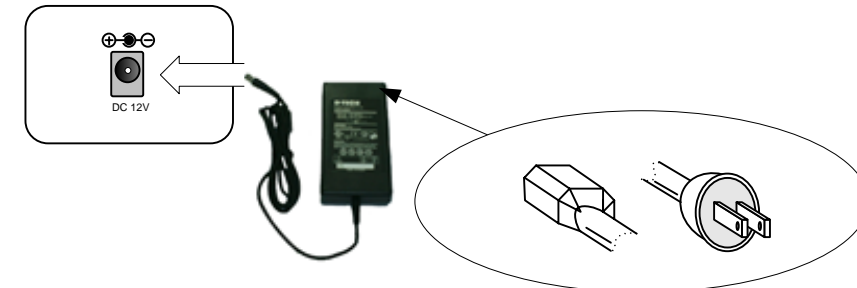


- 1 HDD CLEAR : If YES is selected, it deletes all data of the HDD.  
**Notice :** All data of the HDD is deleted and cannot be restored.  
 As times go by, HDDs in a DVMR unit will have bad sectors one after the other. Pictures recorded in bad sectors shall be damaged, and you may see incomplete pictures whenever you replay. However, our DVMR unit operates normally even though there is some bad sectors in hard disk drives.
- 2 HDD FULL : Select OVERWRITE or STOP RECORD. If OVERWRITE is selected, it delete previous contents on HDD to overwrite when HDD is full.
- 3 RECORD MODE
  - 1 TIMER : Records by time.
  - 2 TIMER+ALARM : Records by time or when the ALARM comes in. (POST-ALARM Functionality)
  - 3 MOTION : Records only when MOTION is detected.
  - 4 MOTION+ALARM : Records by MOTION or when the ALARM comes in.
- 4 RECORD TYPE
  - FIELD : Records images from each camera in rotation  
 60 fields/sec at 720X240 resolution  
 Selected for higher resolution recording.
- 5 RECORD SPEED : Adjusts recording frame rate : 0.1 indicates 1 field per 10 seconds.  
 (60/30/15/10/5/2/1/0.5/0.2/0.1 FPS)
- 6 PRIORITY MODE : Assigns recording priority of a specific channel.
  - 1 NONE : Each of 1,2,3,4 does not have priority.
  - 2 1 : Gives priority to #1 camera, and records in the sequence of 1-2-1-3-1-4-1-2....
  - 3 1,2 : Gives priority to #1 and #2 cameras, and records in the sequence of 1-2-3-1-2-4-1-2-3.

4. Installation

7) Power Connection

Connect the power to the POWER CONNECTION on the Rear Panel of the system.



Notice : To safely turn off DC power, be sure to press [MENU] button first before disconnect the power from DVMR system. If you press [MENU] button, DVMR system stops recording, and you can cut power to DVMR unit while HDD head is not in writing mode. It is necessary to press [MENU] button first and turn DC power switch off to protect HDD head from being damaged and eliminate possibility of mal-function of DVMR unit.

8) Turn on the POWER and Log-in to the system

Follow direction in the Log-in part of this manual to input the PASSWORD and start the system. Factory default password for account manager is "1", for user "2"

9) Detail setup in SYSTEM SETUP

For detail setup, refer to the instruction of SYSTEM SETUP.

5. Operation

1. Log-in

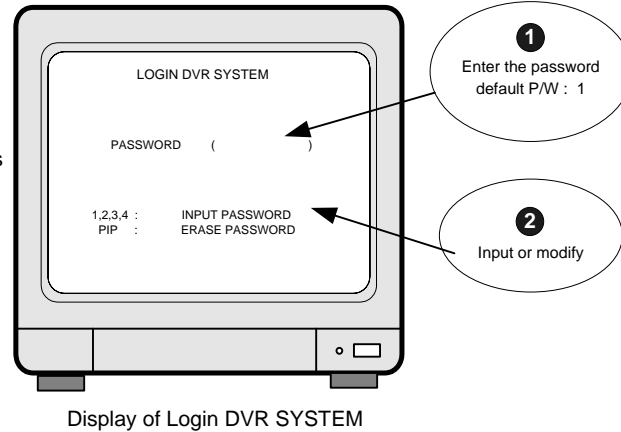
1) Press [MENU] button to enter the system menu after starting the system.

2) LOGIN DVR SYSTEM window appears as shown on the left.

3) Use [1] [2] [3] [4] button to enter password that has 1 to 4 numbers.

4) Use [PIP] button to change.

5) After entering the password, press [MENU] button to go back to the system menu.



Display of Login DVR SYSTEM

▷ If password entered matches previously set number, "ADMIN GRADE LOGIN OK" message appears.

If password entered does not match set number "CURRENT PW INPUT ERROR" message appears.

▷ Factory default password set by manufacturer is as below.

The system is equipped with two passwords.

ADMIN (Administrator) : "1"      USER (User) : "2"

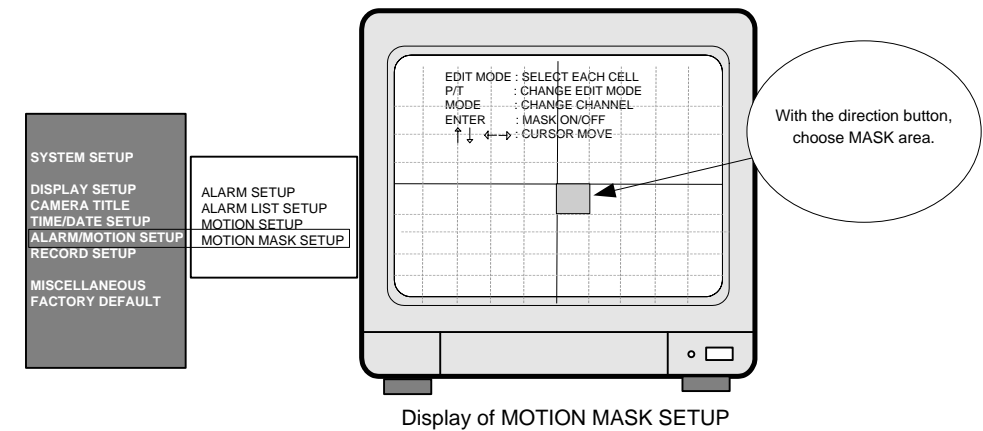
**NOTICE** : We recommend you to enter your own password as per procedure on page 24 to change the password.

**NOTICE** : Be sure to memorize the changed password.

**NOTICE** : When logged into USER MODE, only DISPLAY SETUP and TIME/DATE TYPE SETUP is possible.

5. Operation

4 MOTION MASK SETUP : Set detection area.



Display of MOTION MASK SETUP

1. Press [P/T] button to choose desired EDIT mode.

2. Use [LEFT]/[RIGHT] button to assign BLOCK, and press [ENTER] button to set.

3. MASK area in green color is detection area, and the rest is no detection area.

4. Detected area is indicated in Green, and not detected area is indicated as colorless.

5. With [MODE] button, select channel (1,2,3,4,quad) to set for each camera.

Setup is possible only on the Full screen.

▷ SELECT VER LINE : Select all in a vertical line.

▷ CLEAR VER LINE : Clear all in a vertical line.

▷ SELECT HOR LINE : Select all in a horizontal line.

▷ CLEAR HOR LINE : Clear all in a horizontal line.

▷ SELECT BLOCK : Select by BLOCK. When [ENTER] button is pressed, [START] is displayed.

▷ CLEAR BLOCK : Clear the BLOCK. Then select blocks using direction button.

▷ SELECT ALL CELLS : Select all. And press [ENTER] button to set.

▷ CLEAR ALL CELLS : Clear all.

5. Operation

(2) PAGE : Deletes current PAGE.

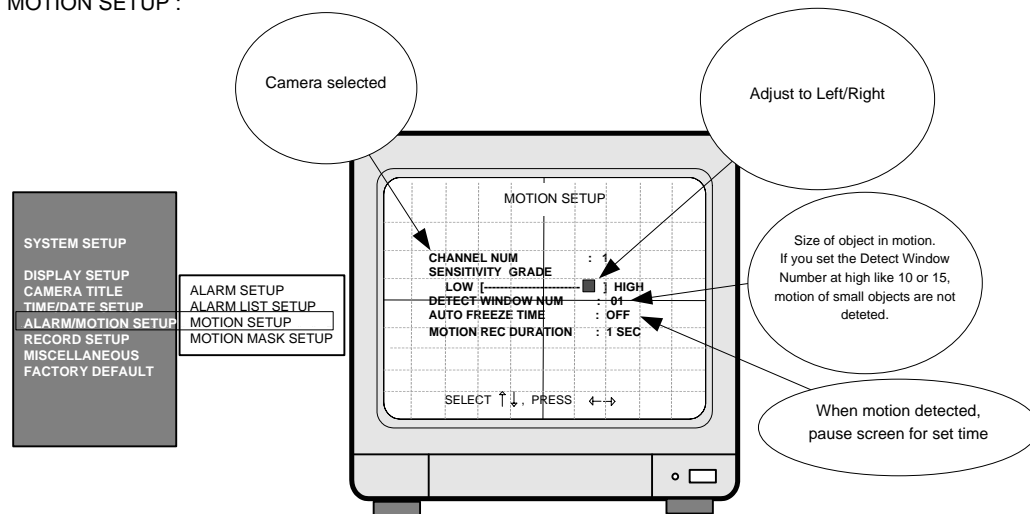
(3) ALL : Deletes ALL.

▶ Move to alarm number in the list using [UP]/[DOWN] button, and press [MODE] button to mark “\*”.

4) GOTO : Starts playback from the marked item in the list.

▶ Move to an item in the list using [UP]/[DOWN] button, and press [MODE] button to mark.

3 MOTION SETUP :



CHANNEL NUM : Selected camera number

SENSITIVITY : Adjusts motion Detection Sensitivity. (Not Sensitive ← → Sensitive)

DETECT WINDOW NUM : Detects moving objects bigger than DETECT WINDOW NUM.

Can choose from 1 to 20. If DETECT WINDOW NUM value is 5, motion detections is activated only in case 5 cells are simultaneously detected.

AUTO FREEZE TIME : When MOTION is detected, the screen freezes for set time automatically.

Not to use this functionality, set at OFF.

Setup Time : 1,2,3,5,10 SEC

MOTION REC DURATION : Sets duration of recording when a motion is detected.

Set value from 1 sec to 3 minutes according to frequency of motion, and FACTORY DEFAULT value is 3 sec.

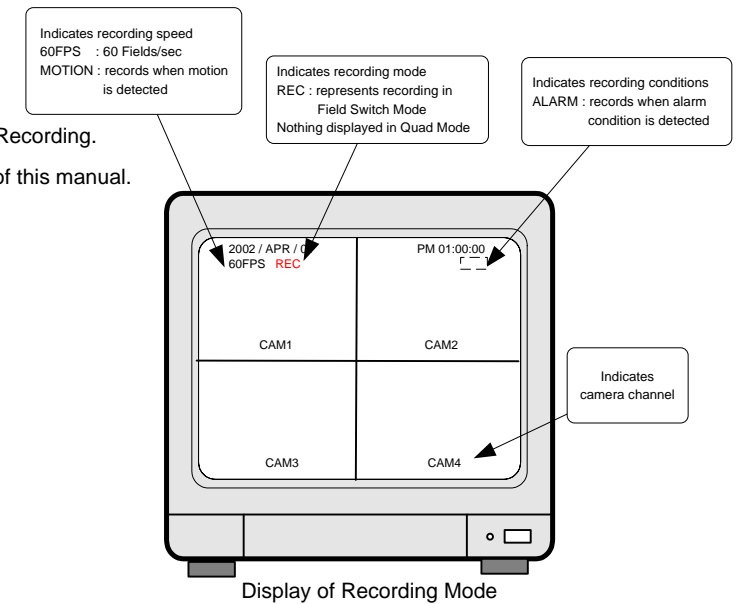
5. Operation

2. RECORD

1. PLAY

Changes to Playback Mode from Recording.

Refer to Playback part(PAGE.13)of this manual.



Display of Recording Mode

2. P/T

1) Press [P/T] button.

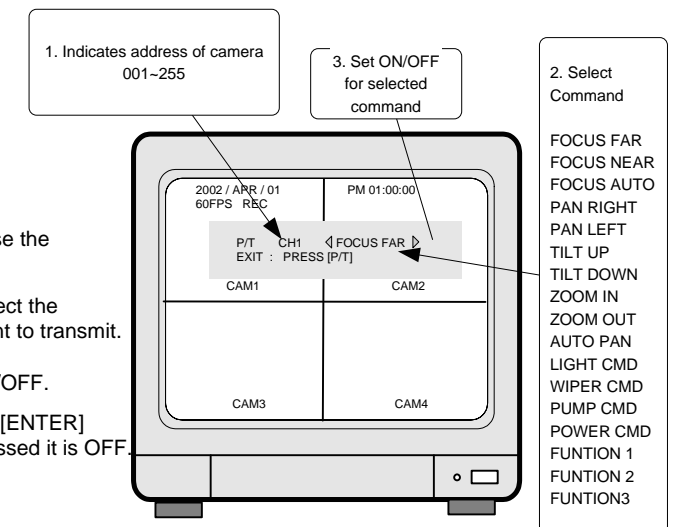
2) Use [UP]/[DOWN] button to choose the ADDRESS of the P/T camera.

3) Use [LEFT]/[RIGHT] button to select the command for P/T camera you want to transmit.

4) With [ENTER] button, select ON/OFF.

In most of cases, while you press [ENTER] button, it is ON, and while not pressed it is OFF.

5) Press [P/T] button to come back to recording screen.



Display of PAN/TILT Control (Ex: DRX-502A model)

5. Operation

3. PICTURE IN PICTURE (PIP)

1) Use [1] [2] [3] [4] button to select a camera and set a full screen.

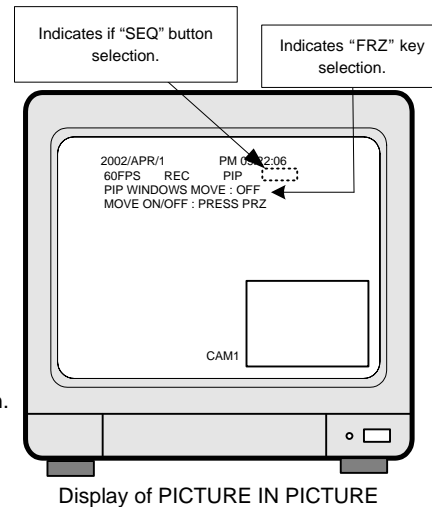
**NOTICE : PIP is not available in quad split screen.**

2) Press [P/P] button.

3) With [UP]/[DOWN] or [1] [2] [3] [4] button, select the camera channel in full screen, and with [LEFT]/[RIGHT] button select the channel of smaller screen.

4) Press [SEQ] button to make the image in smaller screen rotate.

▶ To change the location of smaller screen, press [FRZ] button and use direction button to move to desired location.

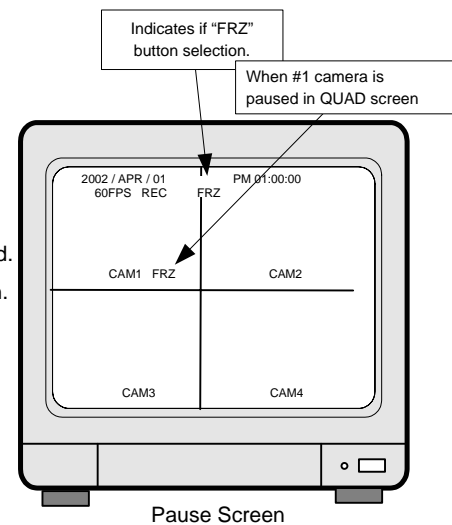


4. FRZ

1) Live full screen pauses when [FRZ] button is pressed.

2) To pause quad split screen, press [FRZ] button, and with [1] [2] [3] [4] button select channel. On the right of the camera name, "FRZ" message appears and the LIVE screen of that channel will be paused. When pressed once more, it will come back to LIVE screen.

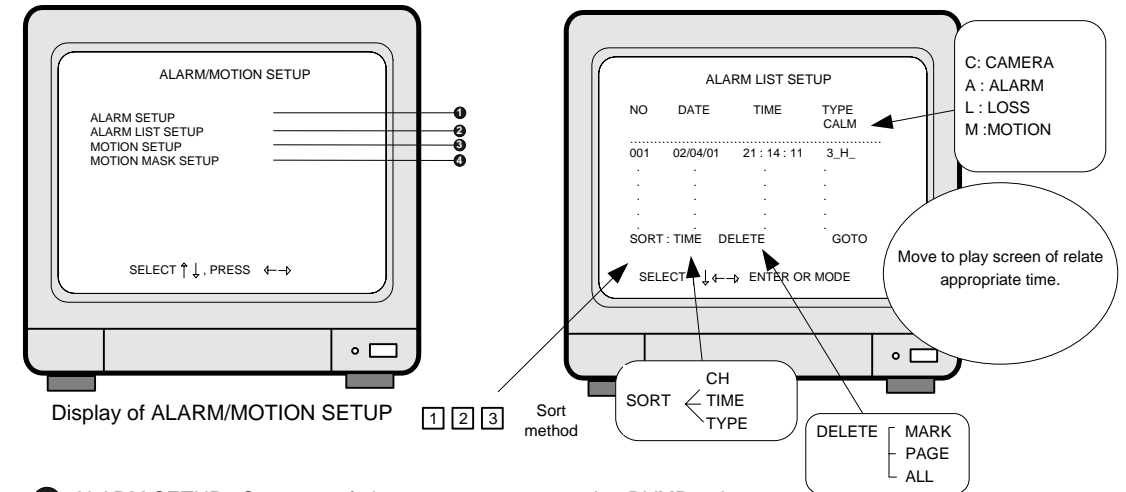
**NOTICE : When [FRZ] selected, [1] [2] [3] [4] button or [MODE] button does not work.**



To move to full screen of each camera, press [FRZ] button once more to end Freeze mode.

5. Operation

5. ALARM/MOTION SETUP



1 ALARM SETUP : Sets type of alarm sensors connected to DVMR unit.

OFF : No alarm sensor is connected.

NC : Normal Closed alarm sensor. When an event happens, Contact is opened.

NO : Normal Open alarm sensor. When an event happens, Contact is closed.

ALARM DURATION : Duration of recording, when an ALARM is activated.

SELECT LIST TYPE : Select type of event to be enlisted in the event list. "A" indicates Alarm, "L" indicates Loss, and "M" indicates Motion. You can select NONE if you do not want to have event list, and ALM if you want all of Alarm, Loss and Motion are enlisted in event list, by pressing [LEFT] and [RIGHT] button.

▶ ALARM POP-UP : When an alarm is activated, display screen is switch to full screen of image from relevant channel, and a color of camera number is changed to red. If an alarm is activated from 2 channels, display screen is changed to quarterly split screen (Quad screen), and a color of camera number of relevant channel is change to red.

2 ALARM LIST SETUP : Shows list of alarms up to 400. If total alarm exceeds 400, it overwrites from the beginning. Alarm list is very helpful to manage DVMR system.

1) With [LEFT]/[RIGHT] button, select SORT, DELETE or GO TO.

2) SORT

Press [ENTER] button to select submenu of SORT ,that are CH ,TIME and TYPE.

(1) CH : Sort by CHANNEL (2) TIME : Sort by TIME (3) TYPE : Sort by TYPE

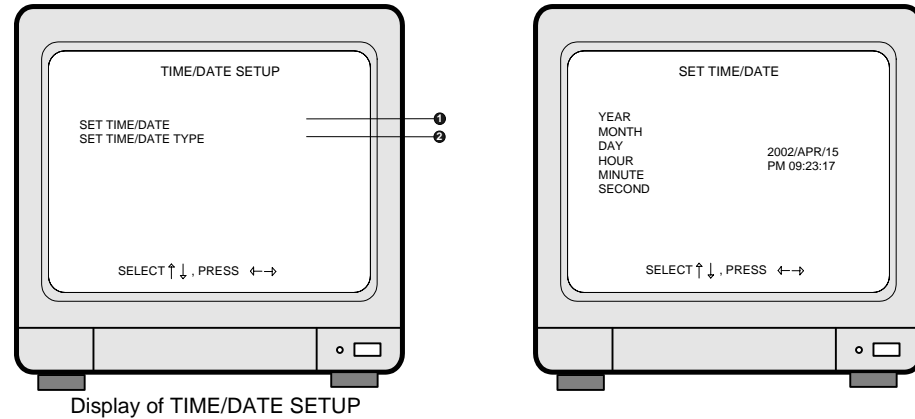
3) DELETE

Press [ENTER] button when DELETE is highlighted, and select MARK, PAGE or ALL using [LEFT]/[RIGHT] button and press [ENTER] button.

(1) MARK : Deletes marked item in the list.

5. Operation

4. TIME/DATE SETUP

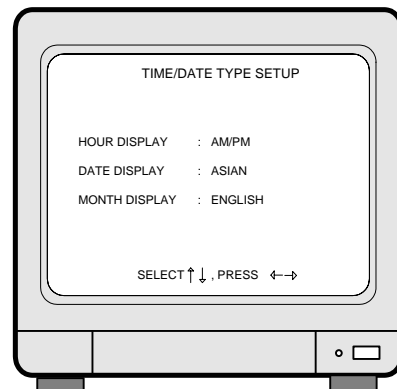


Display of TIME/DATE SETUP

- 1 SET TIME/DATE : Can set year/month/time/minute/second.  
Use [UP]/[DOWN] button to assign Year/Month/Time/Minute/Second and use [LEFT]/[RIGHT] button to change the value.

- 2 SET the notation of TIME/DATE :

- 1) HOUR DISPLAY :  
Changes to AM/PM or 24hour time indication
- 2) DATE DISPLAY :  
Converts into Asian type/American type /European type
- 3) MONTH DISPLAY :  
Month indication is changed to English or Number

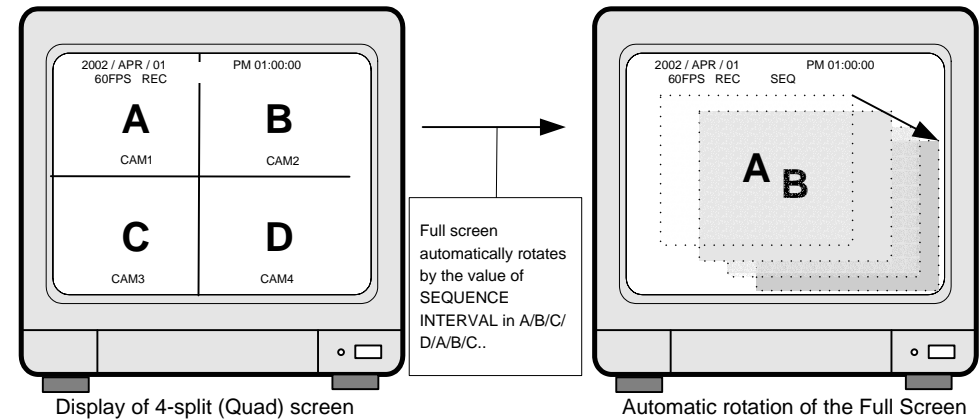


Display of Time/Date TYPE

5. Operation

5. SEQ

- 1) In LIVE full screen, press [SEQ] button to make picture from each channel rotate.
  - 2) It does not operate in quad split screen.
  - 3) During automatic rotation, press [SEQ] button to stop automatic rotation.
  - 4) During automatic rotation, press [MODE] button to stop automatic rotation and move to quarterly split screen.
  - 5) During automatic rotation, press 1,2,3,4 button to stop automatic rotation and move to each channel.
- ▷ To change the time interval of the automatic rotation, change the value of SEQUENCE INTERVAL as per procedure in PAGE 16.



Display of 4-split (Quad) screen

Automatic rotation of the Full Screen

6. Sensor Recording

- 1) When there is sensor input, the recording starts.
- 2) It records for preset period of time.  
For detail setup, refer to RECORD SETUP : REC MODE SETUP in PAGE 23 for TIME+ALARM and MOTION+ALARM and ALARM SETUP: ALARM DURATION in PAGE 20 for Time setup.

7. Scheduled Recording

- Records by date and by day of the week.  
Refer to MISCELLANEOUS SETUP ; SCHEDULE REC SETUP in PAGE 25 for detail setup.

8. Recording by MOTION DETECTION

Refer to ALARM/MOTION SETUP in PAGE 20~22.

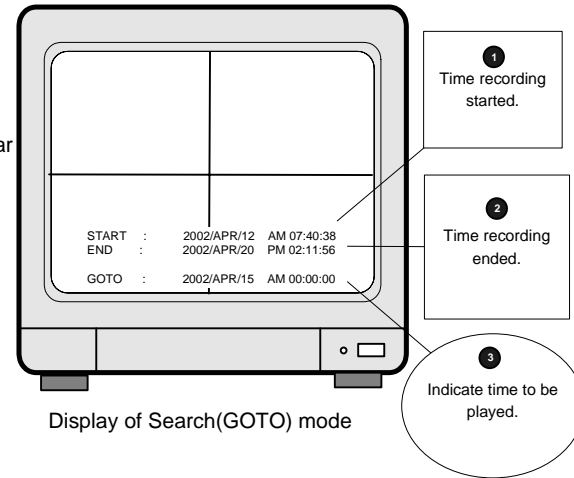
NOTICE

- 1) Recording is stopped during SYSTEM SETUP.
- 2) Recording is stopped during playback, or search in playback mode.
- 3) Recording is not possible if no camera is connected.

### 3. Play

#### 1. Playback setup

- 1) Press [PLAY] button to begin playback.
- 2) Display screen as shown on the right will appear
- 3) Press [ENTER] button again to start playback from START picture.  
(To start from a specific time, first set the GO TO time before press [ENTER] button.)
- 4) To come back to recording mode, press [MENU] button.



#### 2. GOTO time setting

- 1) At ③, use [LEFT]/[RIGHT] button to choose the date or time of GO TO.
- 2) Use [UP]/[DOWN] button, set desired time.
- 3) Press [ENTER] button to replay from the GO TO time.

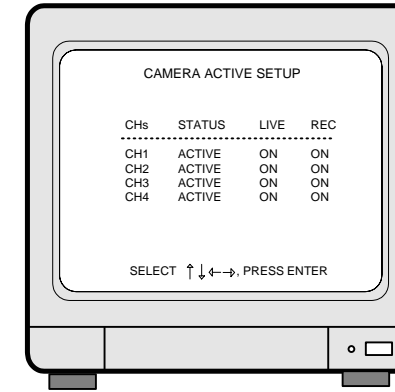
**NOTICE** : During playback or setting GO TO time, recording is stopped

**NOTICE** : When value that is out of the range of start and end is entered, it starts from START time

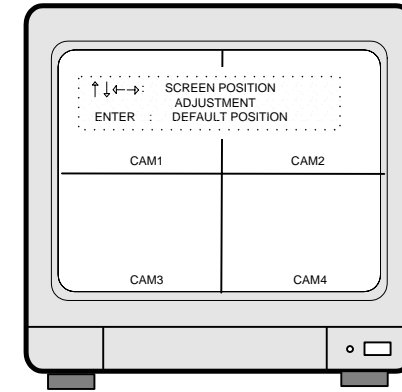
**NOTICE** : When value is in the range of START and END, but there is no recorded pictures at the set time, it moves to the closest time of the recorded pictures.

#### 3. Pausing and Searching at frame

- 1) During playback, press [FRZ] button to pause. (Will replay when pressed once more)
- 2) After pressing [FRZ], press [SEQ] button and use [LEFT]/[RIGHT] button to advance single frame to the right or left.



Display of CAMERA ACTIVE Setup



Display of Screen Position Adjustment

#### ③ ACTIVE CH SETUP :

With direction button, move to item to be changed, and press [ENTER] button to select ON/OFF.

1. STATUS : In normal cable condition it is indicated as ACTIVE, and when the cable is disconnected or has problem, it is indicated as LOSS.
2. LIVE : Decides whether to show LIVE screen image or not.
3. REC : Decides whether to record relevant channel or not.

#### ④ SCREEN POSITION SETUP

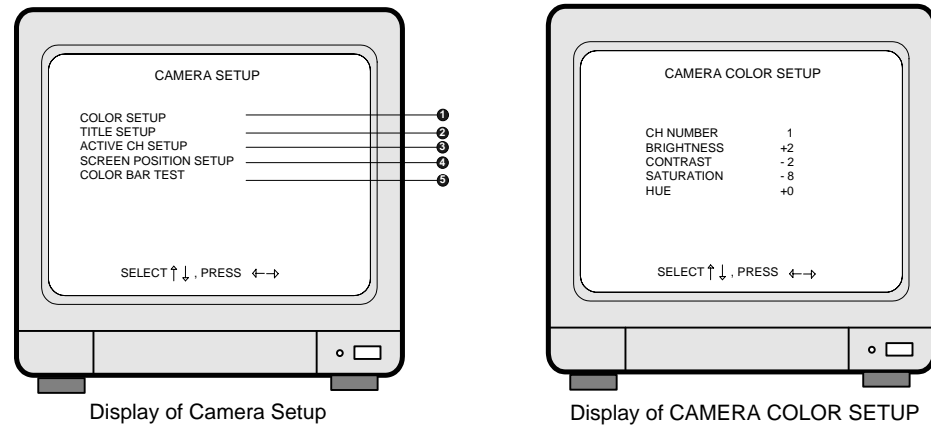
Use direction button to move the full screen according to the user's needs.

#### ⑤ COLOR BAR TEST : COLOR BAR CHART is generated.

Used for adjusting the monitor.

5. Operation

3. CAMERA SETUP



1 COLOR SETUP : Adjust Camera Image

- CH NUMBER : Select camera
- BRIGHTNESS : Adjust screen brightness (-31~ +32)
- CONTRAST : Adjust color contrast (-31~ +32)
- SATURATION : Adjust color saturation (-32~ +32)
- HUE : Adjust color hue (-31~ +32)

▶ Right adjustment of each element in COLOR setup will increase picture quality displayed.

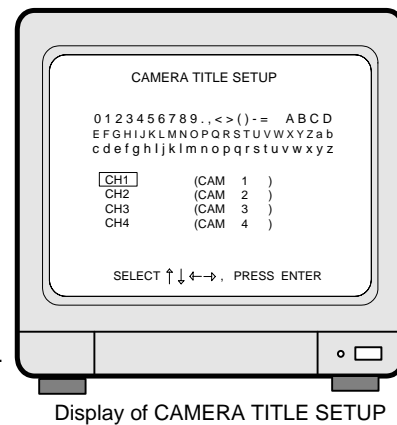
We recommend you to adjust each element of COLOR SETUP for cameras and monitor to be connected to the DVMR unit, for better appearance.

2 TITLE SETUP : Input TITLE of each camera

1) Use [LEFT]/[RIGHT] button to select CHANNEL and press [ENTER] button.

2) Go into CHANNEL content and use [LEFT]/[RIGHT] button to move to item to be and use [UP]/[DOWN] button to change the letters.

When modification is finished, press [MENU] button to come back to the MAIN MENU.



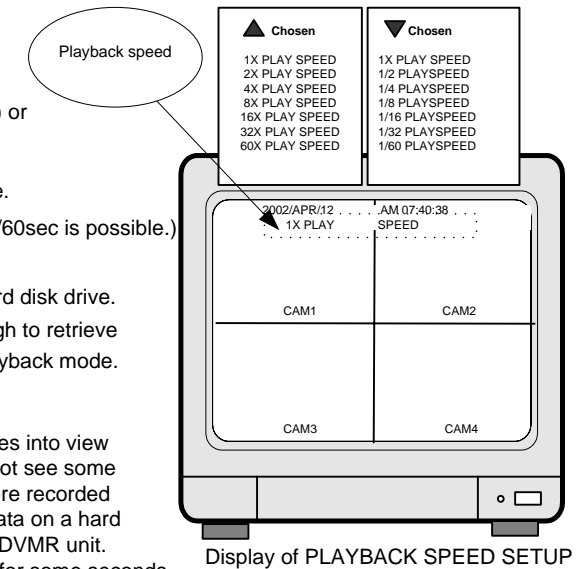
5. Operation

4. Playback Speed Setup

- 1) Display screen appear as like the right picture.
- 2) Use [LEFT]/[RIGHT] button to move forward (FF) or backward (REW).
- 3) Use [UP]/[DOWN] button to select the speed rate.  
(High speed up to x60 and slow speed up to 1field/60sec is possible.)

▶ We recommend you to install 7200rpm EIDE hard disk drive. 5400rpm EIDE hard disk drive is not good enough to retrieve recorded data in high speed and slow speed playback mode.

▶ During playback at 60x speed, blue screen comes into view instantaneously once in a while and you could not see some pictures at that moment even though all they were recorded correctly, due to limitation in speed of reading data on a hard drive, and it is not a critical error in operation of DVMR unit. To see pictures you could not see, just go back for some seconds and replay at a little lower speed than before.

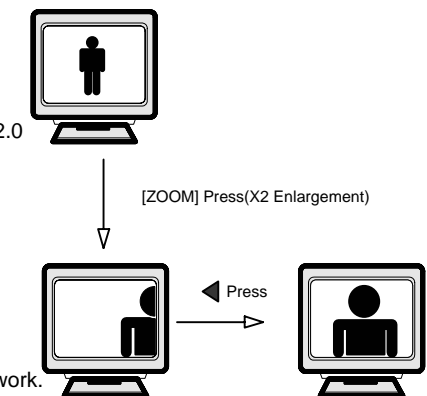


5. Display Enlargement.

- 1) Choose camera by pressing [1] [2] [3] [4] button.
- 2) Press [ZOOM] button, during Playback or FRZ mode.
- 3) The display will enlarge by 200%. And XY(000,000) RATE 2.0 will be displayed.
- 4) Move the area enlarged by using ENTER button.
- 5) Press [ZOOM] to go back to Playback or FRZ mode.

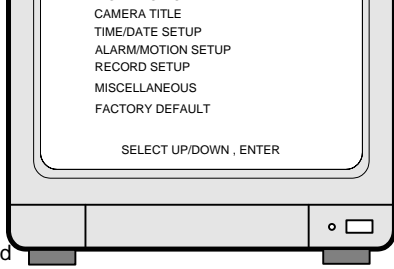
**NOTICE** : Execute in FULL SCREEN of each channel.

When [SEQ] button is pressed, ZOOM does not work.



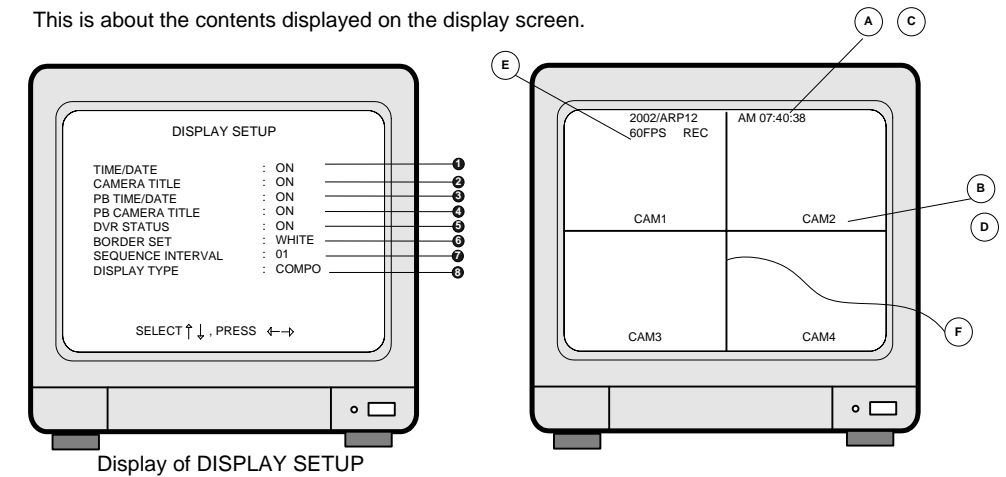
## 4. System Setup

### 1. Basic Operation

- 1) Press [MENU] button.
  - 2) Log into the system by entering the password with **1 2 3 4** button and press [MENU] button to enter SETUP MENU.
- 
- Display of SYSTEM SETUP
- 3) Use [UP]/[DOWN] button to select setup item.
  - 4) Press [ENTER] button to enter sub-menu of selected SETUP.
  - 5) Press sub-menu item with [UP]/[DOWN] button, and change the value with [LEFT]/[RIGHT] button.
  - 6) Press [ENTER] button to forward [MENU] button to go backward.  
[ENTER] button enables to enter and [MENU] button to go back.
  - 7) To go back to the very first SETUP condition recommended by manufacturer, set at FACTORY DEFAULT. You can set at FACTORY DEFAULT all in one (as a whole) or group by group. When cursor is at ALL SETUP, you can set at ON or OFF by pressing [ENTER] button. If you set ALL SETUP at ON, all groups of settings are SET as per FACTORY DEFAULT recommended by manufacturer. If you set ALL SETUP at OFF, then you are requested to set each group of settings separately one by one, ON or OFF, and groups of settings set at ON shall be reset whenever you set at FACTORY DEFAULT. To reset, you have to select ALL SET or each group of settings (ON or OFF), and then move to RESET NOW and press [ENTER].
- ▷ Items which remain unchanged when FACTORY DEFAULT is selected.
- |                                   |                       |
|-----------------------------------|-----------------------|
| 1. value of TIME/DATE SETUP       | 2. Date stored on HDD |
| 3. Marked image (Internal backup) | 4. ADMIN password     |
| 5. ALARM LIST SETUP               |                       |
- ▷ We recommend users to set at HDD CLEAR and FACTORY DEFAULT in the first operation and when you replaced EEPROM for updating DVMR program or replaced HDD.

### 2. DISPLAY SETUP

This is about the contents displayed on the display screen.



- ① TIME/DATE : ① Date and time is indicated on LIVE screen.
- ② CAMERA TITLE : Camera TITLE ② is indicated on LIVE screen.
- ③ PB TIME/DATE : On Playback screen, ③ Date and Time is indicated.
- ④ PB CAMERA TITLE : Camera TITLE ④ is indicated on the Replay SCREEN.
- ⑤ DVR STATUS : ⑤ indicates status of operation, such as REC/PLAY.
- ⑥ BORDER SET : Changes the color of the border ⑥  
- WHITE/ BLACK
- ⑦ SEQUENCE INTERVAL : Sets rotating time interval of pictures . In full screen in live mode or playback mode, pictures are rotating in a certain time interval when you press [SEQ] button, and SEQUENCE INTERVAL is for it.  
( Time interval from 1 second to 99 seconds)
- ⑧ DISPLAY TYPE : This DVMR system is available with Composite Monitor only.