

# 1CH Digital Video Recorder

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


## 1 Channel Digital Video Recorder



FCC E

V1.1

## SAFETY PRECAUTIONS

	<b>CAUTION</b> RISK OF ELECTRIC SHOCK. DO NOT OPEN!
<b>CAUTION : TO REDUCE THE RISK OF ELECTRICAL SHOCK, DO NOT OPEN COVERS. NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.</b>	

This label may appear on the bottom of the unit due to space limitations.



The lightning flash with an arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated ?dangerous voltage? within the product enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to presence of important operating and maintenance (Servicing) instructions in the literature accompanying the appliance.

**WARNING : TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE UNITS NOT SPECIFICALLY DESIGNED FOR OUTDOOR USE TO RAIN OR MOISTURE.**



Attention: installation should be performed by qualified service Personnel only in accordance with the National Electrical Code or applicable local codes.



Power Disconnect. Units with or without ON-OFF switches have power supplied to the unit whenever the power cord is inserted into the power source ; however, the unit is operational only when the ON-OFF switch is in the ON position. The power cord is the main power disconnect for all unites.

<b>BEFORE READING THIS DOCUMENT .....</b>	<b>5</b>
<b>UNIT DESCRIPTION .....</b>	<b>6</b>
1 FRONT PANEL.....	6
2 REAR PANEL.....	7
3 CONTROLLER .....	8
<b>INSTALLATION.....</b>	<b>9</b>
1.CAMERA CONNECTION.....	9
2.MONITOR CONNECTION .....	9
3.TRIGGER CONNECTION .....	10
4.NETWORK CONNECTION .....	10
5.HDD CONNECTION .....	10
6.POWER CONNECTION .....	10
<b>OPERATION .....</b>	<b>11</b>
1.LOG-IN .....	11
2.RECORDING.....	12
3.PLAY .....	15
4.SETUP.....	17
(1)Start of SETUP.....	17
(2)DISPLAY SETUP.....	19
(3) CAMERA SETUP.....	19
(4) TIME/DATE SETUP .....	21
(5) ALARM/MOTION SETUP .....	22
(6)RECORD SETUP .....	25
(7)TCP/IP SETUP.....	27
(8)MISCELLANEOUS SETUP .....	28
<b>HDD BAY .....</b>	<b>33</b>
1.HDD EXTENSION .....	33
2. HDD BAY .....	33
<b>SPECIFICATIONS .....</b>	<b>34</b>
1.SPECIFICATION.....	34
2.CONFIGURATION OF SINGLE CHANNEL DVR.....	35
3.RS-232C HEX-CODES TABLE .....	35

<b>MANUAL FOR REMOTE VIEWER SOFTWARE .....</b>	<b>37</b>
1.GENERAL DESCRIPTION .....	37
2.TCP/IP SETUP IN DVR UNIT .....	37
3.STATIC IP AND DYNAMIC IP .....	38
4.LIVE VIEW VIA IP NETWORK .....	41
5.SEARCH RECORDED PICTURES VIA IP NETWORK .....	45

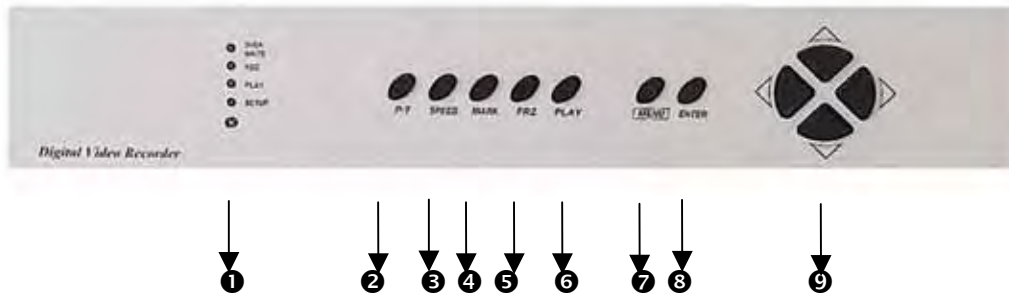
- **Before reading this document**

- (1) This document is intended for both the administrator and users of stand-alone DVMR unit
- (2) This manual contains information for configuring, managing and using stand alone DVMR unit.
- (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 unit.
- (5) For question and technical assistance of this product, contact your local dealer.

- (1) Check electricity at the place you want to install the DVR 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 DVR 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 on the left side of the unit and do not close up an opening on the right side of the unit.
- (3) Put the DVR unit at well-ventilated place and do not put heat-generating objects on the unit. When it is installed inside 15 inch mounting rack together with other devices, please check built-in ventilation fan of the rack is properly running.

## ● Unit Description

### 1 Front Panel



❶ **LED:** (over write/Rec/Play/Setup)

❷ **P/T:** Enter into or exit from PAN/TITL control mode.

❸ **SPEED:** In full screen, this button shows pictures in rotation.

❹ **MARK:** mark when it is in playback mode

❺ **FRZ:** On-off switch to freeze pictures in live mode

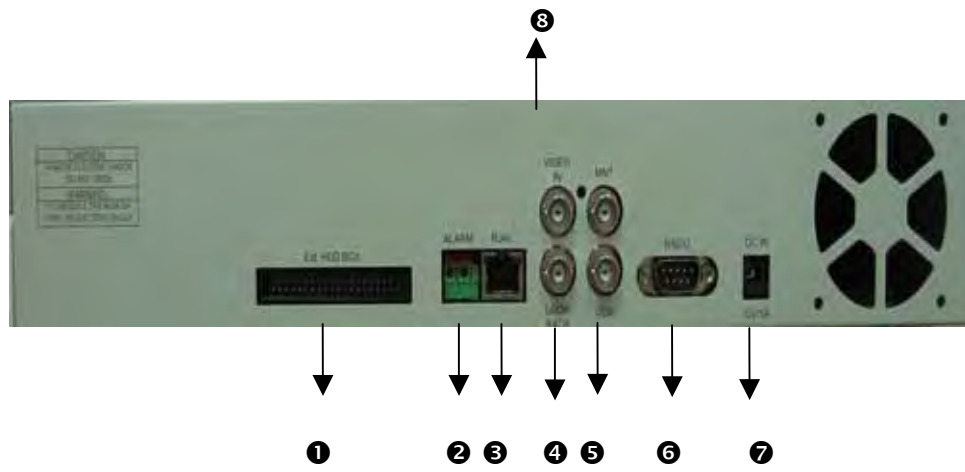
❻ **PLAY:** Play-Back

❼ **MENU:** used to change menu in system setup

❽ **Enter:** Used as selection key in system setup or changes contents displayed in live display.

❾ **Dirrection button**

## 2 Rear Panel



❶ HDD BOX

❷ TRIGGER

❸ RJ45

❹ LOOP BACK

❺ VCR

❻ RS232/RS485/IO ALARM Connection

❼ DC Power

❽ VIDEO OUT

### 3 Controller

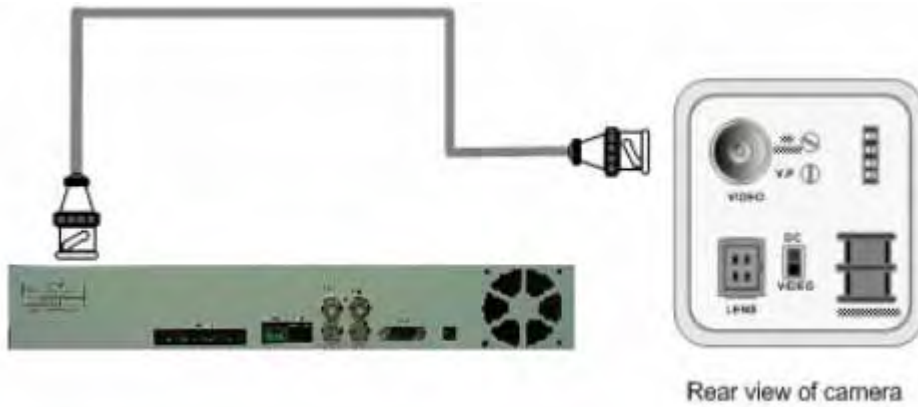


- ❶ **P/T:** Enter into or exit from PAN/TITL control mode.
- ❷ **SPEED:** In full screen, this button shows pictures in rotation.
- ❸ **MARK:** mark when it is in playback mode
- ❹ **FRZ:** On-off switch to freeze pictures in live mode
- ❺ **PLAY:** Play-Back
- ❻ **MENU:** used to change menu in system setup
- ❼ **ENTER:** Used as selection key in system setup or changes contents displayed in live display.

- **INSTALLATION**

- 1.Camera connection**

Connect camera the camera input on the rear panel of the system.



- 2.Monitor connection**

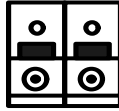
Connect the monitor to the monitor out on the rear panel of the system.



### 3. Trigger connection

Connects to trigger port of multiplexer in case you replace time lapse VCR used in connection with multiplexer.

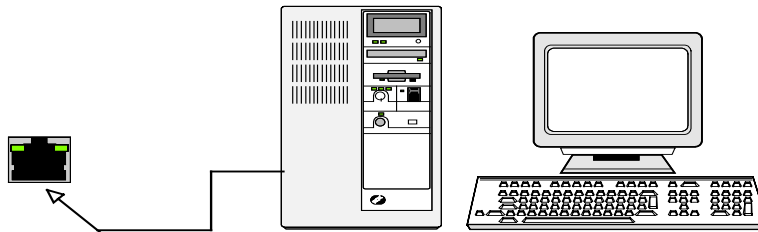
TRIGGER



TRIGIN/GND

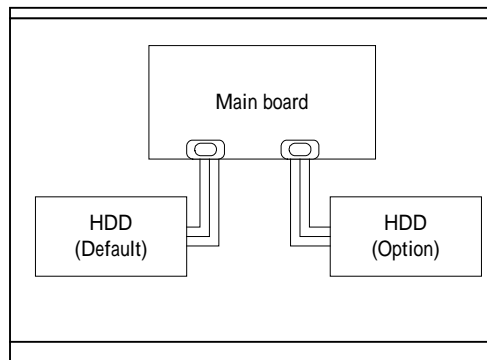
### 4. Network connection

Connects to HDD BOX, Multiplexer or network



### 5. HDD connection

Be sure to set jumper setting for each HDD as per HDD manufacturer's specification



### 6. Power connection

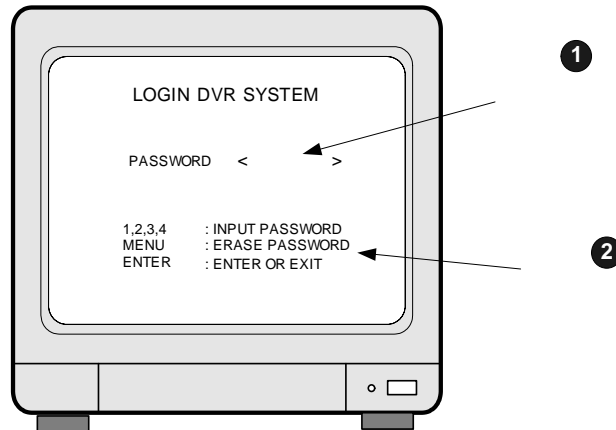
Connect the power to the power connection on the rear panel of the system, and

turn on the switch.




## ● 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 above.

(3) Use  button to enter password that has 1 to 8 digits with numbers from 1 to 4.

(4) Use [MENU] button to change.

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

- If password entered matches previously set number, “ADMIN GRADE LOGIN OK” message appears.

- If password entered does not match previously set number “CURRENT PW INPUT ERROR” message displayed.

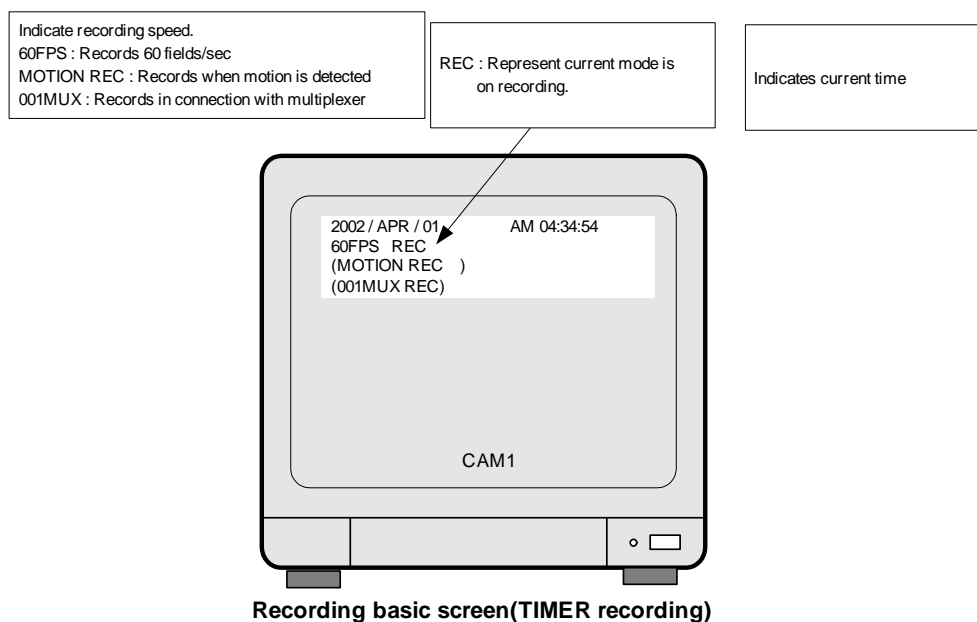
- Factory default password is as below.

ADMIN (Adminstrat or mode) :“1”	USER (User mode) :“2”
---------------------------------	-----------------------

**NOTICE :** To protect hard drive from damaged, turn off the power switch of DVMR unit after you first press [MENU] button. If you press [MENU] button, DVMR unit stops recording, and HDDhead is not in the process of writing.

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



## 2. Recording



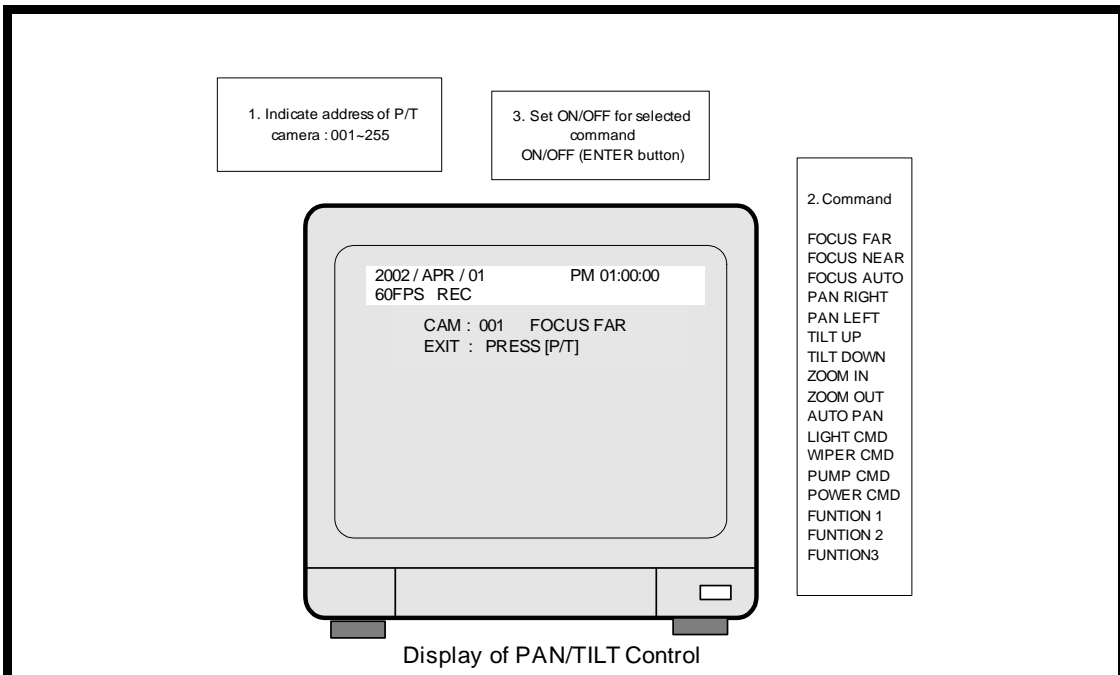
### (1)PLAY

Changes to playback mode from recording mode.

### (2)P/T

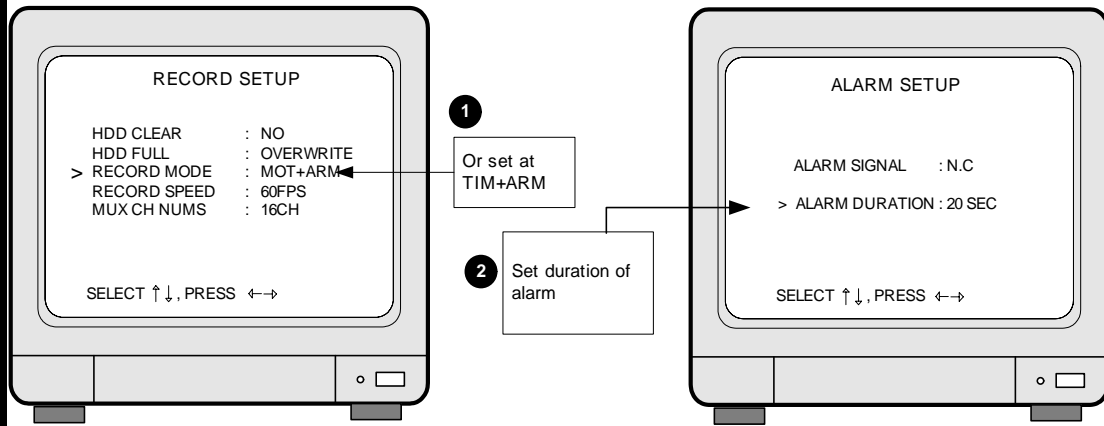
- ① Press 《P/T》 button
- ② Use  button to choose the address of the P/T camera.
- ③ Use  button to choose the address of the P/T camera.
- ④ With 《ENTER》 button, select ON/OFF.
- ⑤ Press 《P/T》 button to come back to recording screen.

For details, refer to manual of PAN/TILT camera.



(3)Sensor recording

- ① When there is sensor input, recording starts.
- ② It records for preset period of time.



MOT+ALARM : Records when motion detected or when alarm is activated for preset duration time in above example.

Refer to REC MODE SETUP in page 29 for more detail of TIME+ALARM OR MOTION+ALARM and ALARM SETUP in page16 for more detail of ALARM DURATION.

#### (4) Scheduled recording

Records as scheduled, and setting can be done by date or by day of the week.

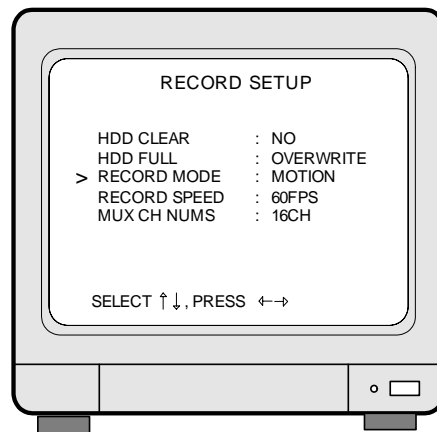
For each day, 2 different time intervals can be set at ON or OFF in the unit of 30 minutes, and same for each day of the week. Therefore users can set 4 recording time intervals of recording or not recording for every day.

For more details, refer to SCHEDULE REC SETUP in MISCELLANEOUS SETUP in page 29

#### (5) Recording motion detection

Refer to ALARM/MOTION SETUP in page 25

It must be set at MOTION or MOT+ALM to record whenever motion is detected.



Display of RECORD MODE

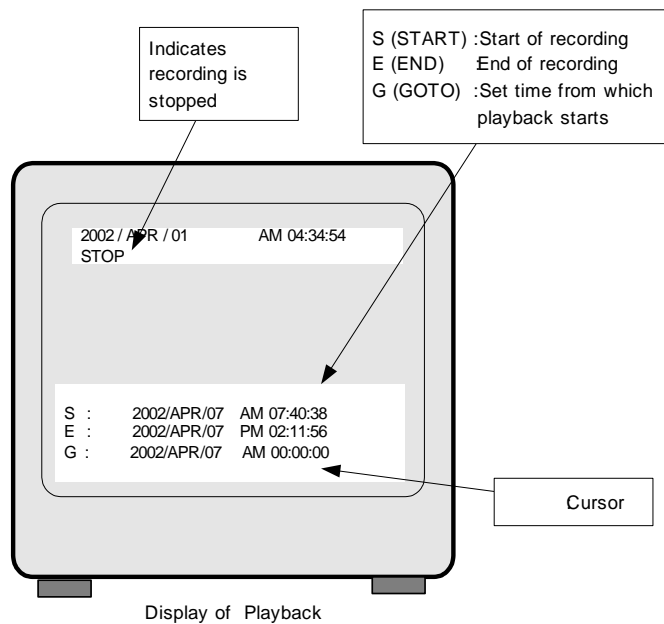
#### (6) Attention

- ❶ Recording is stopped during SYSTEM SETUP.
- ❷ Recording is stopped during playback or when in SEPUP menu.
- ❸ Recording is not possible if no camera is connected.




### 3. Play

#### (1) How to replay

- ❶ Press [PLAY] button to begin playback.
- ❷ Screen on the right will appear.
- ❸ Press [PLAY] button to start playback from the first of recorded data.



#### (2) GOTO time settings



- ❶ Select G(GOTO) submenu and move cursor using   key to set.
- ❷ Using  key, set year, month, date, time at which you want to start.
- ❸ Press [PLAY] button to start playback.

**NOTICE** : During playback or settings in SETUP menu, recording is stopped.





**NOTICE** : When value out of range of start and end of data entered, it starts from START time.

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

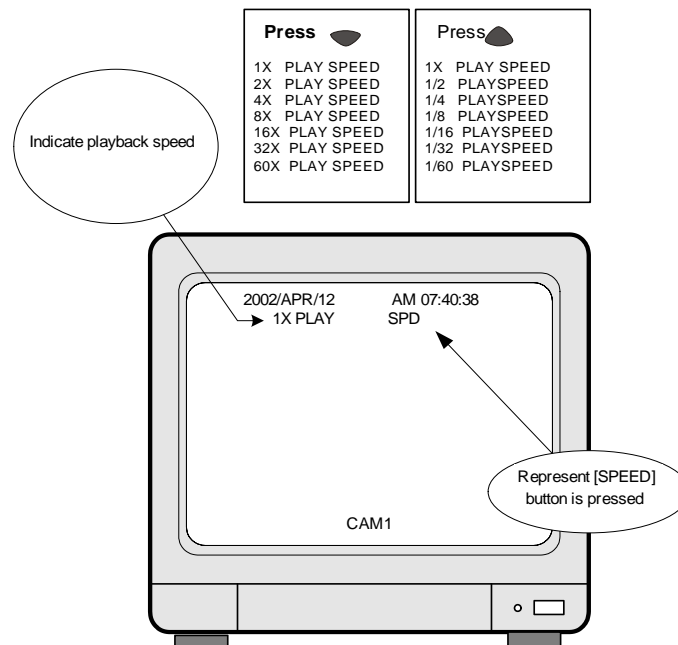
(3) Pausing and advancing picture by picture

- 1 During playback, press [PAUSE] button to pause. Press once more to play again.
- 2 After [PAUSE] button, press   button to advance picture by picture in both direction. It is useful to check one after the other carefully.

(4) Playback speed setup

- 1 During playback, press [speed] button.
- 2 Screen on the right will appear.
- 3 Set direction of playback using   key.
- 4 Set speed of playback using   key.

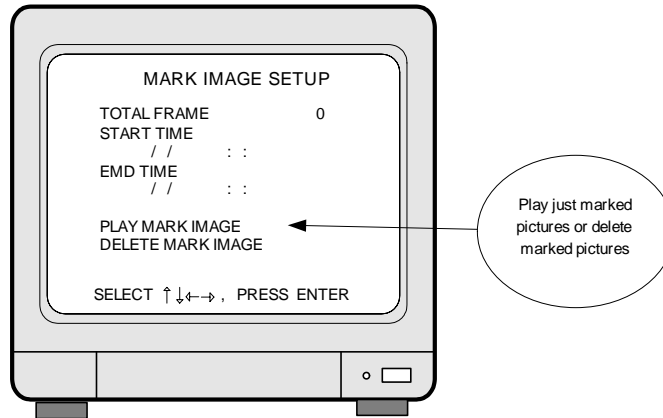
(High speed up to x60 and slow speed up to 1 field/60 sec are available)



(5) MARK IMAGE SETUP

You can store some pictures very specially if you press [MARK] button during playback. Pictures between you first press [MARK] button and you press [MARK] button again shall be protected from being overwritten when HDD is full. And it is very useful feature to utilize some important pictures to be safe from being deleted by mistake.




Refer to MARK IMAGE SETUP in MISCELLANEOUS SETUP in page 32



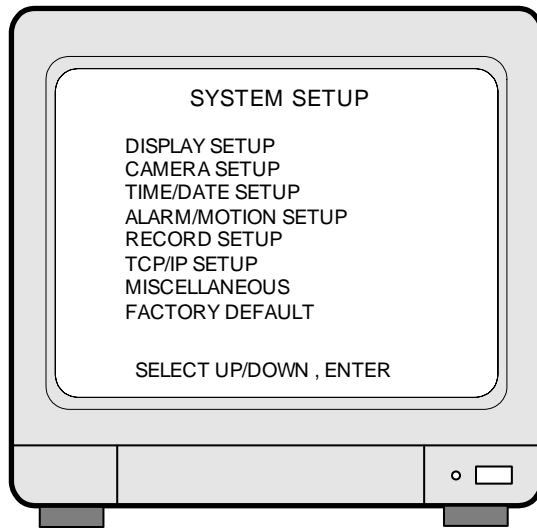
Display of MARK IMAGE SETUP

## 4. Setup

### (1) Start of SETUP

- ❶ Press [MENU] button.
- ❷ Log into the system by entering password.
- ❸ Select SEPUP item using  button
- ❹ Press [ENTER] button to enter submenu of selected SETUP item.
- ❺ Select SEPUP item in submenu using  button, and change value using  button
- ❻ Press [ENTER] button to select SEPUP item, and press [MENU] button to go back to previous menu.
- ❼ If you choose FACTORY DEFAULT, all settings shall be changed to settings done by manufacturer, and we recommend you to set at FACTORY DEFAULT in the first operation, or when you replaced EPROM for upgrading DVMR program or replaced HDD.

You can set all group of settings at FACTORY DEFAULT as a whole or group by group. If you want it as a whole, set ALL SET at ON by pressing [ENTER] button, and set ALL SET at OFF and set each group of FACTORY DEFAULT at ON or OFF independently by pressing [ENTER] button. After you decide ALL SET or group by group set, move to RESET NOW and press [ENTER].



Display of SYSTEM SETUP

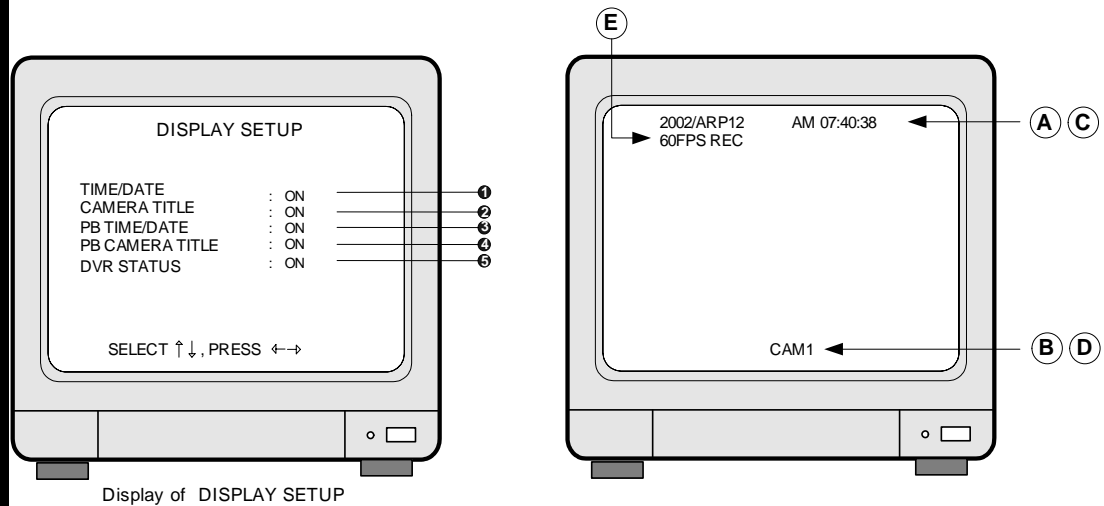
SETUP items remain unchanged even though you choose FACTORY DEFAULT

- 1)Time and date of TIME/DATE SETUP
- 2)All recorded data on HDD
- 3)Marked data
- 4)ADMIN password
- 5)ALARM LIST SETUP

**NOTICE** : In the first operation of this DVMR, we recommend users to set at FACTORY DEFAULT before you select various parameters of operation.

## (2) DISPLAY SETUP



This is about the contents displayed on the display screen.

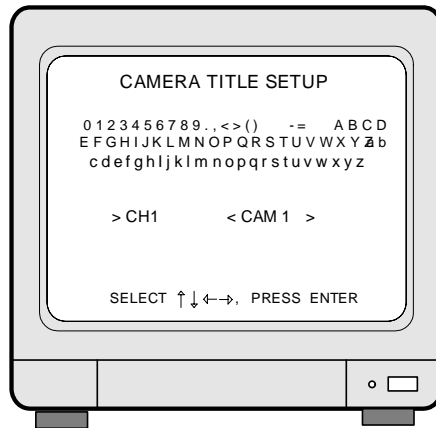


- ① (A): If TIME/DATE is on, time and date is indicated on live screen.
- ② (B): If CAMERA TITLE is on, camera title is displayed on live screen.
- ③ (C): If TIME and DATE is on, time and date of recorded pictures is displayed in playback.
- ④ (D): If PB CAMERA TITLE is on, camera title is displayed in playback.
- ⑤ (E): If DVR STATUS is on, operation status of DVMR like REC/PLAY is displayed.

## (3) CAMERA SETUP

- ① TITLE SETUP : Input title of camera.

Press [ENTER] button then move to any location you want using  button, and then select letters using  button. After complete to change, press [MENU] button to return to main menu.

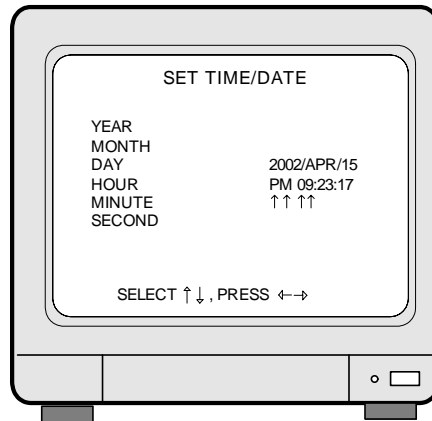


Display of CAMERA TITLE SETUP



② COLOR BAR TEST : Displays COLOR BAR CHART. Use to adjust colors of monitor.

#### (4) TIME/DATE SETUP

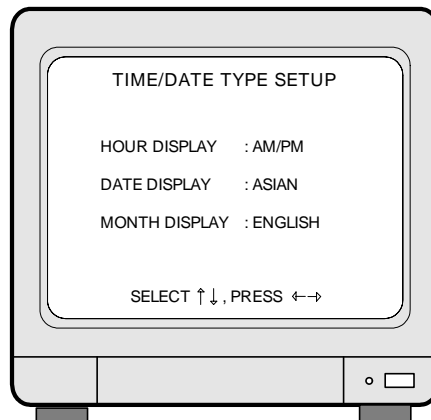
❶ SET TIME/DATE : Sets year/month/day/hour/minute/second



Display of SET TIME/DATE

With  button, move to year/month/day/hour/ minute /second, and change value using  button.

❷ SET TIME/DATE TYPE : Sets notation of TIME/DATE

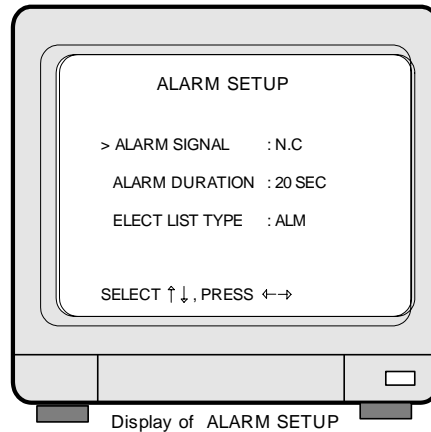


Display of TIME/DATE TYPE SETUP

- 1). HOUR DISPLAY : Choose AM/PM type or 24 hours time indication
- 2). DATE DISPLAY : Select Asian type, American type, or European type.
- 3). MONTH DISPLAY : Choose indication of MONTH in Alphabet or Number

## (5) ALARM/MOTION SETUP

❶ **ALARM SETUP** : Sets type of sensors connected to DVMR unit.



OFF : Not in use.

NC : Normal closed. When an event happens, contact is opened.

NO : Normal open. When an event happens, contact is closed.

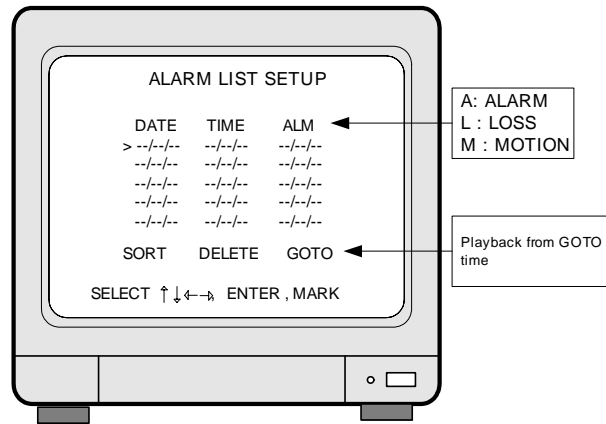
ALARM DURATION: Duration of recording when an ALARM is activated.

(set time : 10, 20, 30, 40, 50 sec, 1 MIN, 3 MIN, 5 MIN)

SELECT LIST TYPE : “A” indicates Alarm, “L” indicates Loss, and “M” indicates Motion.

You can select group of events, NONE, A, L, and M, by pressing [left] and [RIGHT] buttons. If you select NONE, no event list shall be provided.

❷ **ALARM LIST SETUP** : Shows list of alarms up to 400. If total alarm exceeds 400, it overwrites from the beginning. Alarm list is very useful to manage DVMR system, in case it is in use in connection with alarm sensors.



Display of ALARM LIST SETUP

Use button, move to any of SORT/DELETE/GOTO

1. SORT : Originally the list shown is arranged in the sequence of date and time.  
If you press [ENTER] button, list shall be rearranges in the sequence of ALARM, LOSS, and MOTION.

1) DATE/TIME : Order in data and time 2) ALM : Order in type (ALARM, LOSS, MOTION)

2. DELETE : When DELETE is selected, you can enter into any one of MARK, PAGE, ALL. Move to any one of 3 using button and press [ENTER] button to enter.

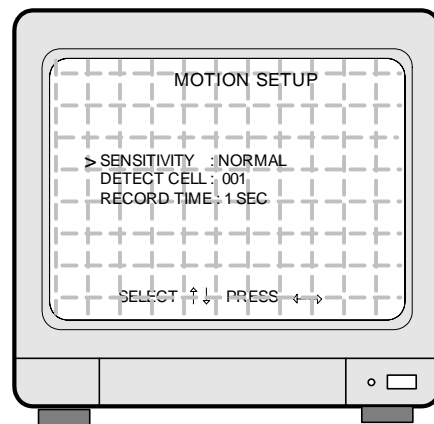
- 1) MARK : Delete selected item in the list.
- 2) PAGE : Delete all item in the current page.
- 3) ALL : Delete all items in the list.

Move using button, and select using [MARK] button

3. GOTO : Starts playback from marked item in the list.

Move to an item in the list using button, and press [MARK] button.

### ③ MOTION SETUP



Display of MOTION SETUP

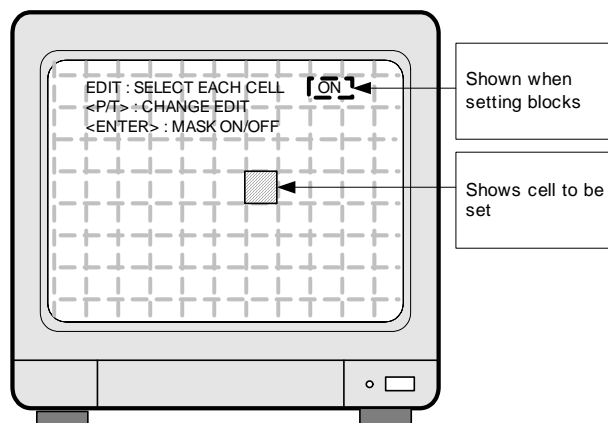
**SENSITIVITY** : Adjust motion detection sensitivity in 5 steps.

VERY LOW – LOW -- NORMAL -- HIGH — VERY HIGH

**DETECT CELL** : Defines size of objects to be detected. The smaller DETECT CELL, smaller object can be detected. Can choose from 1 to 20. If DETECT DELL is set at 5, motion detection is activated only in case 5 DETECT CELLS are simultaneously activated.

**MOTION REC DURATION** : Sets recording time when a motion is detected. Set value from 1 sec to 3 minutes according to frequency of motion in picture taking area. **FACTORY DEFAULT** value is 1 sec.

④ **MOTION MASK SETUP** : Sets detection area in picture taking area.



Display of MOTION MASK SETUP

- 1) Press [P/T] button to choose desired EDIT mode.
- 2) Use direct buttons to assign BLOCK and [ENTER] button to set.
- 3) MASK area in green color is detection area and the rest is no detection area.
- 4) Detection area is indicated in green and no detection area is in colorless.

SELECT EACH CELL : Select cell by cell.

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

SELECT HOR LINE : Selects all cells in a horizontal line.

SELECT AREA : Select areas.

SELECT BLOCK: Select BLOCK

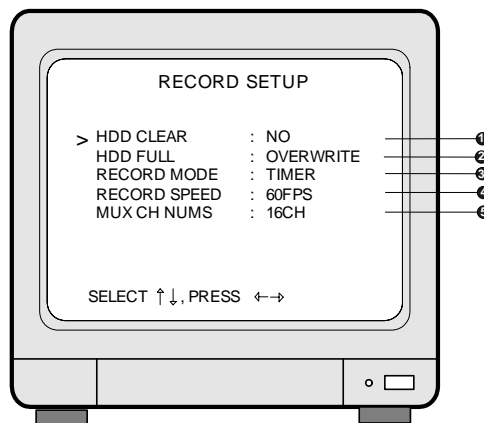
When [ENTER] button is pressed, "ON" is displayed in the first line(MODE) of the screen. Then move using direction buttons to set.

CLEAR BLOCK: Delete BLOCK

SELECT ALL CELLS : Select all cells in area shown.

CLEAR ALL CELLS: Delete all cells.

## (6) RECORD SETUP



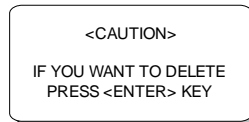
Display of RECORD SETUP

❶ **HDD CLEAR** : If YES is selected, it deletes contents of the HDD.


Using  button, set HDD CLEAR at YES and press [MENU] button.

You will see messages on the right, and then press [ENTER] button to delete all

image data on HDD.



Notice : Be careful to delete data on HDD, because you can not recover deleted data

❷ **HDD FULL** : You can select **OVERWRITE** or **STOP RECORDING** using  button. When HDD is full, the system deletes old data to record current pictures, if you set at **OVRWRITE**. It stops and shows warning message when it is full, if set at **STOP RECORDING**.

❸ **RECORD MODE**

- 1) **TIMER** : Records at a certain time interval set at **RECORD SPEED**.
- 2) **TIMER+ALARM** : Combination of **TIMER** and **ALARM**. If alarm is activated, the system records at its maximum recording rate(60 FPS) for **ALARM DURATION**.
- 3) **MOTION** : The system records just when motion is detected for **MOTION DURATION**.
- 4) **MOTION+ALARM** : The system just records when motion is detected, and records when alarm is activated for **ALARM DURATION** at 60 FPS.
- 5) **MUX/REC** : Select when you use this DVMR in connection with multiplexer, replacing time lapse VCR.

**RECORD SPEED** : Adjust recording frame rate. 0.1 indicates 1 field per 10 second.(Select any one among 60/30/15/10/5/2/1/0.5/0.2/0.1 FPS)

❹ **RECORD SPEED** : Adjust recording frame rate. 0.1 indicates 1 field per 10 second.(Select any one among 60/30/15/10/5/2/1/0.5/0.2/0.1 FPS)

If you selected **MUX/REC** in **RECORD MODE**, you are requested to select record speed from 001 to 480. This is to synchronize with switching time of multiplexer, that is, recording hour of tape in former time lapse VCR.

**Set speed :**                    001   002   004   -----036   -----048

**Tape recording hour :**    2      4      8            72            960

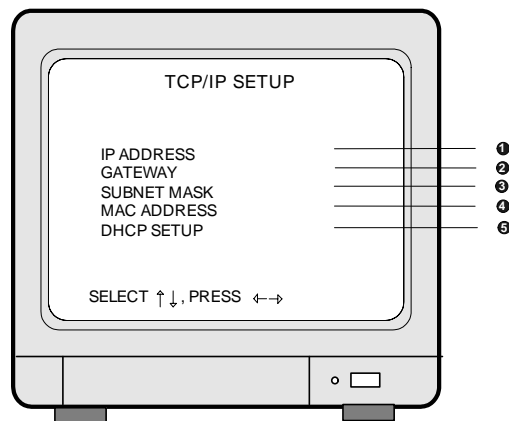
(based on 2 hrs tape)

⑤ MUX CH NUMS : When you use this DVMR unit in connection with multiplexer, replacing time lapse VCR, set numbers of camera connected to multiplexer.

### (7) TCP/IP SETUP

TCP/IP option of stand-alone DVMR enables users to see live pictures and search recorded pictures via IP network, far apart from DVMR unit. It is also possible to control PTZ camera while you see live pictures.

To see live pictures or search recorded pictures, users must assign static IP address to DVMR together with Gateway and Subnet mask, and install Remote Viewer program in client PC from which you are going to access to DVMR unit. For detail procedure for installing Remote Viewer program and settings, refer to Remote Viewer Program manual on CD included in the package.



① IP ADDRESS : Move using button and change numbers using button.

(DEFAULT value : 192, 168, 002, 100 0080)

② In case port number of 80 is protected by firewall, change port number to other one not protected by firewall.

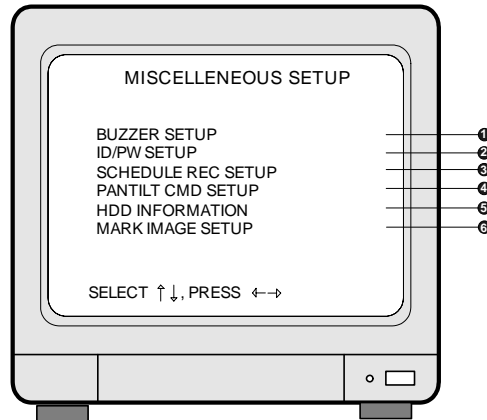
(DEFAULT value : 192, 168, 002, 001)

③ SUBNET MASK: Move using button and change numbers using button.

(DEFAULT value : 255, 255, 255, 000)

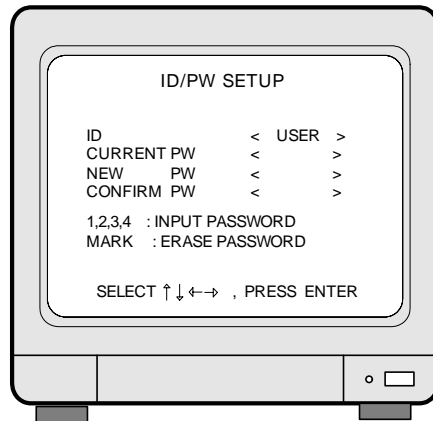
- ④ **MAC ADDRESS** : It is unique ID number provided by DVMR manufacturer, and the user must not change under any condition. When modified, it can cause collision with other systems in the Internet line and cause problem in operation. Make sure this number remains unchanged always.
- ⑤ **DHCP SETUP** : If you press ENTER button, you can enter into sub-menu of DHCP SETUP. In this menu, you can select DHCP or MANUAL by pressing ENTER button. If you set IP DETECT MODE at DHCP, DVMR unit automatically connects to IP network during the process of booting and you see IP information if you enter REQUEST IP. You have to memorize this IP information and input this information into SETTING of Remote viewer program installed on your PC (client PC). If it fails to connect automatically or you set IP DETECT MODE at MANUAL, you have to get IP information by executing ipconfig or winipcfg in the client PC from which you want to access to DVMR unit, to assign IP information for DVMR unit.

(8) MISCELLANEOUS SETUP





Display of MISCELLANEOUS SETUP

- ① **BUZZER SETUP** : Sets buzzer ON/OFF.  
You can set each group of BUZZER at ON or OFF independently. They are SYSTEM, BUTTON, ALARM, MOTION, and LOSS.
- ② **ID/PW SETUP** : Sets User ID and PASSWORD



Display of ID/PW SETUP

- 1) Using  button, select item to be changed and press [ENTER] button to be ready for changing
- 2) Using  button, enter current number first and enter new number. Numbers must be equal or less than 8 digits, and each digits must be from 1 to 4.

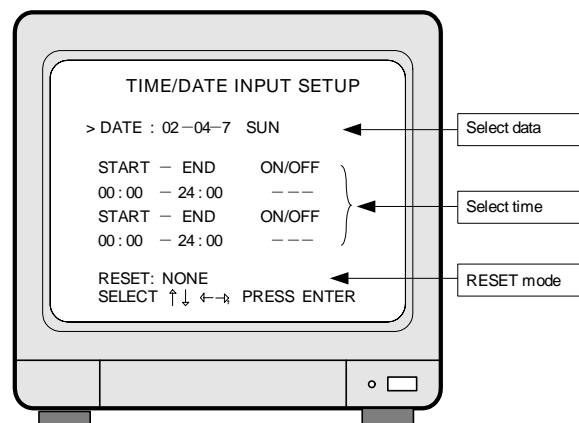
Default setting :

ADMI PASSWORD : 1 ()

USER PASSWORD : 2 ()

Change PASSWORD to your own one as soon as this product is installed

### ③ SCHEDULE REC SETUP



Display of SCHEDULE REC SETUP

Records according to schedule by day or day of the week. Two time spans can be set for a day and a day of the week respectively. In total, 4 spans of recording or not recording can be set in a day.

**1) Recording schedule for a day** : Record during set time in set day

Select date : Select recording date using  button.

Select time : Enter into setting mode by pressing [MARK] button.

Using direction button, set time to start recording and time to end recording.



Setting of time/minutes is done by pressing [ENTER] button, and it increased in the unit of 30 minutes per pressing [ENTER] button.

(Notice) Changing is possible just “RESET : NONE” is displayed.

ON/OFF selection : After completing input of schedule, choose ON or OFF using [ENTER] button. ON indicates to record and OFF means not to record.

After completing to set schedule, press [MENU] button to leave.

In RESET mode, you can delete recording schedule.

Using   button, move to the date to delete, and press [ENTER] button to delete.

Press [ENTER] button to delete all recording schedule.

(NONE : Input time/date    DATE : Delete schedule of selected data  
ALL: Delete all schedule)

Press [MENU] button to leave SCHEDULE REC SETUP.

**2) Recording schedule for a day of the week** : Set time for each day of the week as procedure for recording schedule for a day.

**3) Example of schedule setting**

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 of hours.

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

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

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

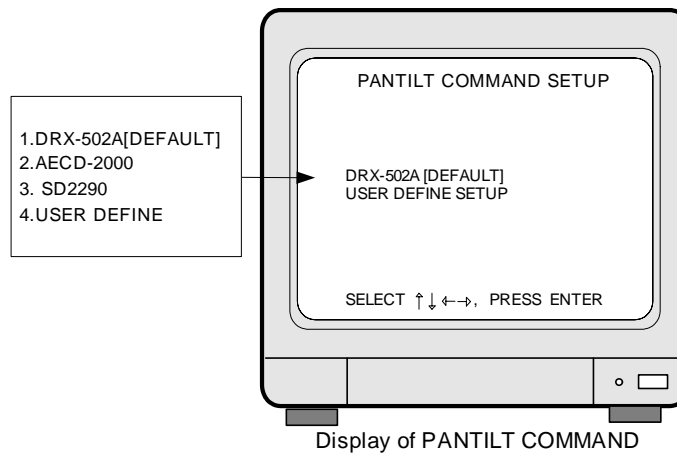
Just record from 1 to 3 and not record for the rest of hours(In case ON and OFF are exists, the system give priority to ON).

4)Note for schedule recording :

If you set scheduled recording, DVMR unit does not record before the set time.  
It only starts recording at START time and ends at END time.

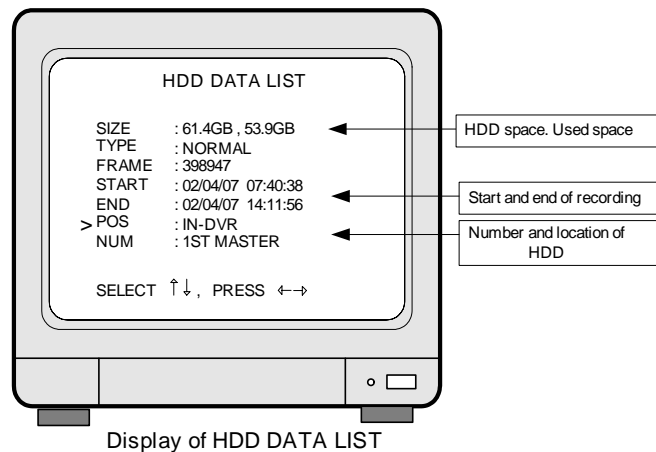
④ PANTILT CMD SETUP : If you want to connect PTZ camera which is not included in the list of PTZ camera, you have to input protocol of PTZ camera you are going to connect to DVMR unit.

You can input protocol of PTZ camera you are going to connect in USER DEFINE SETUP For details, refer to Manual for incorporating PTZ protocols.



⑤ HDD INFORMATION

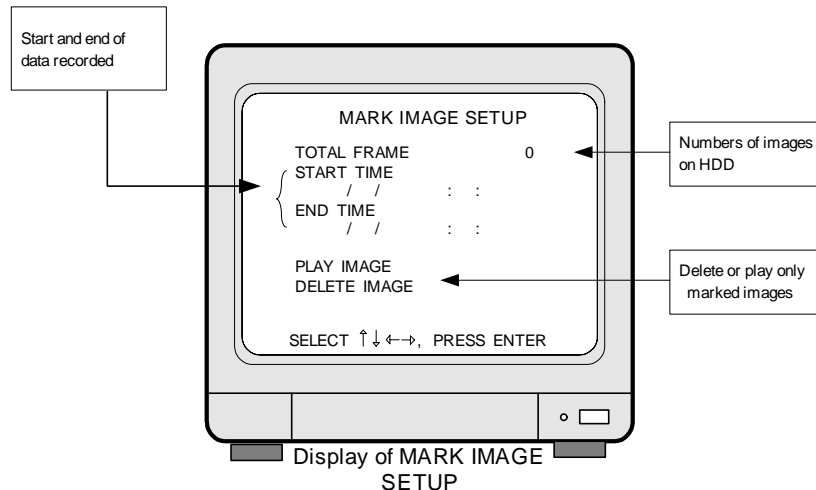
1) HDD DATA LIST : Show general information of HDD




2) HDD AUTO DETECT : Allows to detect HDD just in case first HDD search after purchase failed

## ⑥ MARK IMAGE SETUP

MARK IMAGE function is very useful, because it protects marked images from being overwritten. During playback, you can mark images to store them on HDD safely free from being overwritten after HDD starts to overwrite.



- 1) While you see pictures replayed, press [MARK] button. You will see " PAUSE " and " SPD " displayed.
- 2) Using  button, move as many as you want to mark, and then press [MARK] button.
- 3) Pictures between 1st [MARK] button and 2nd [MARK] button are all marked and stored separately on HDD.
- 4) If you mark many images, instead of choosing image by image, cancel PAUSE by pressing [PAUSE] button in step 1). Images are replayed in normal speed. Then press [MARK] button to end mark images.  
If HDD space assigned for marked image is full, " FULL " is displayed and [MARK] button does not work.  
(HDD space for marked images : The system arranges automatically, and it corresponds to space for recording 10 minutes in maximum recording rate.)
- 5) To play marked images, select PLAY IMAGE, and to delete marked images select DELETE IMAGE.

**Notice :** HDD CLEAR command does not clear marked images, and DELETE MARK IMAGE command just delete marked images.

- ⑦ PRODUCT ID : Serial number of product. Necessary for manufacturer to know manufacturing date, program version number, and others.

## ● HDD BAY

### 1.HDD EXTENSION

Default HDD installed in DVMR unit

- (1)1~2 HDDs as per customer requirements
- (2)EIDE, 3.5 inch, 7200 rpm, LBA mode type
- (3)HDD capacity : Up tp 120GB/unit  
Compatibility with up to 120GB confirmed

### 2. HDD BAY

In case up to 2 HDDs installed in a DVMR unit is not sufficient and needs to increase storage capacity, connect HDD Bay to DVMR unit.

Models of Tera-Tray

TeraTray-04 : Includes up to 4 HDDs

TeraTray-10 : Includes up to 10 HDDs

TeraTray-20 : Includes up to 20 HDDs

- (1) Configuration of Bay connection to DVMR unit



- (2) Very economical way to expand storage capacity

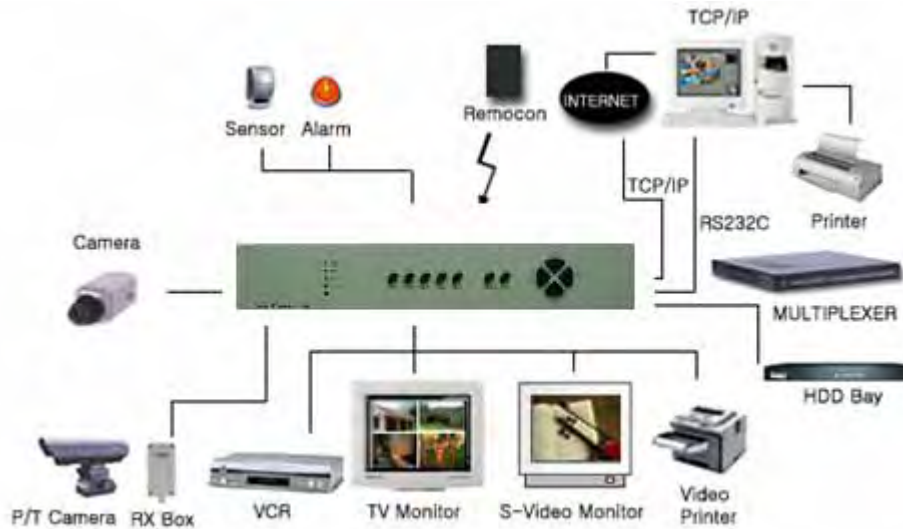
If each of 22 HDD is 120 GB in capacity, total HDD capacity connected to a unit of DVMR unit is 2.6 TB. We can add huge capacity of HDD space to a unit of DVMR just at the price level of normal EIDE HDD.

# ● SPECIFICATIONS

## 1.Specification

MODEL NO	Single channel stand-alone DVMR	
VIDEO I/F	INPUT	1 CH INPUT 1.0 VP-P, 75 OHM UNBALANCED (BNC TYPE)
	OUTPUT	2 OUTPUT VBS : 1.0VP~P.75 OHM UNBALANCED (BNC TYPE)
	HORIZONTAL RESOLUTION	500TV LINES
	S/N RATIO	MORE THAN 4dB
	COLOR	16.7 MILLION
MONITORING METHOD	ZOOM	LIVE & PB AVAILABLE
	SCREEN QUALITY	FULL : 720(H)X480(V) ACTIVE PIXELS
RECORDING /PLAY FUNCTION	SPEED	0.1~30 FRAME/SEC
	MEDIA	HDD, EIDE, LBA MODE, UP TO 140 GB/UNIT, UP TO 2 HDDs
	COMPRESSED PICTURE	M-JPEG
	PICTURE PRESERVATION METHOD	FIELD SWITCHER METHOD FULL SCREEN PRESERVATION
	REC. MODE	REAL-TIME/ TIME-LAPSE / EVENT
	TRACK PLAY	SEARCH, STILL
OTHER FUNCTION	WEB INTERFACE	TCP/IP
	POST ALARM FUNCTION	1~59SEC, CONTINUOUS TIMING ESTABLISHMENT POSSIBILITY
	BACK-UP	PREVIOUS VCR, TIME LAPS VCR USAGE : VCR OUTPUT UTILIZATION REMOTE BACK-UP USING TCP/IP
	OTHERS	RS232C, RS485, MAX 4 ALARM INPUT
	CAMERA CONTROL	PAN/TILT/ZOOM AND FOCUS REMOTE CONTROL : EXTERNAL EQUIPMENT, WIPER,PUMP,FAN AND HEATER
	CONFIGURATION	PLUG&PLAY
	HDD	INTERNAL1 OR 2 HDD OPTIONAL HDD BAY SUPPORT 6HDD/1UNIT, MAX 22 UNITS/UNIT POSSIBLE HDD MIX USGE OF DIFFERENT MANUFACTURER
MECHANICAL	OPERATION TEMPERATURE	41F~ 104F (5C~ +40C)
	OPERATION HUMIDITY	LESS THAN 90%
	IR REMOTE CONTROLLER	BUILT-IN
	DIMENSION	15" RACK SIZE 1.5U 380*65*285mm
	WEIGHT	APPROX. 4KG (STANDARD EXPORT PACKAGE)
	POWER SUPPLY	12V DC 5A

## 2. Configuration of single channel DVR



## 3. RS-232C Hex-Codes table

Following ASCII code are for programmers who want to control the DVMR unit via RS-232C port.

If you connect to RS-232C, you can operate DVMR unit using key board of PC, in addition to operation using operation buttons on the front of DVMR unit.

MENU	'M'	SPEED	'Q'	UP	'U'
ENTER	'E'	MARK	'I'	DN	'J'
PLAY	'P'	P/T	'Q'	LEFT	'H'
PAUSE	'F'	ZOOM	'T'	RIGHT	'K'
DEFAULT KEY"0"					

# Remote Viewer Software

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

## 4 Channel Digital Video Recorder



CE FC  
V1.1

# Manual for Remote Viewer Software

## 1 General description

TCP/IP option of enables users to view live pictures, search recorded pictures, or control PTZ camera via Internet line, far apart from the DVR unit, and users can store selected recorded pictures on HDD of client PC. Arg stand-alone DVR does not include web server for access to DVR unit via Internet line, and you must install Remote Viewer software included in the package on client PC before you try to access to DVR unit over IP network

## 2. TCP/IP SETUP in DVR unit

Before you install Remote Viewer software, be sure to input IP address and others in TCP/IP SETUP of DVR unit. Then, execute **SETUP.exe** on Remote Viewer software CD included in the package of YOKO stand-alone DVR with TCP/IP option.

### **3.Static IP and Dynamic IP**

Practical guideline not to be confused in running Remote Viewer due to mistake in assigning right IP Address, Gateway and Subnet mask to DVR unit.

- (1) We recommend you to get static IP and input this static IP Address into DVR unit to which you want to access via IP network.

If static IP Address is not available, you can also assign dynamic IP to your DVR and also to your client PC. However you would better get new IP information by executing “ipconfig” command in the client PC with Windows 2000 and Windows XP, and “winipcfg” command in the client PC with Windows 98 and ME, and input this numbers, that are IP Address, Gateway, Subnet Mask, into DVR unit to which you are going to access via IP network. As far as DVR is in operation without stop, it is considered that this IP Address is assigned just to this DVR unit. Of course, you have to restart the client PC to get different dynamic IP address for client PC after you get IP information for DVR unit.

If Gateway Router or IP sharer is connected to Internet by ADSL, and client PC is connected to a LAN network under Gateway Router or IP sharer, please make it sure that you first get dynamic IP by executing “ipconfig” command or “winipcfg” command in the client PC according to Windows operating system, and input this numbers, that are IP Address, Gateway, Subnet Mask, into DVR unit to which you are going to access via IP network. considered that this IP Address is assigned just to this DVR unit. Of course, you have to restart the client PC to get different dynamic IP address for client PC after you get IP information for DVR unit. Of course, you have to restart the client PC to get different dynamic IP address for client PC.

(a) Windows 2000

First you need to get to the command prompt using the command shell. The best way is from the run menu. **Start--> Run -->** and type in **Command**. Then either hit enter or click OK.

At the command prompt, type in **ipconfig**. This will pull up the information that you need to find your IP Address for DVR unit.

(b) Windows XP

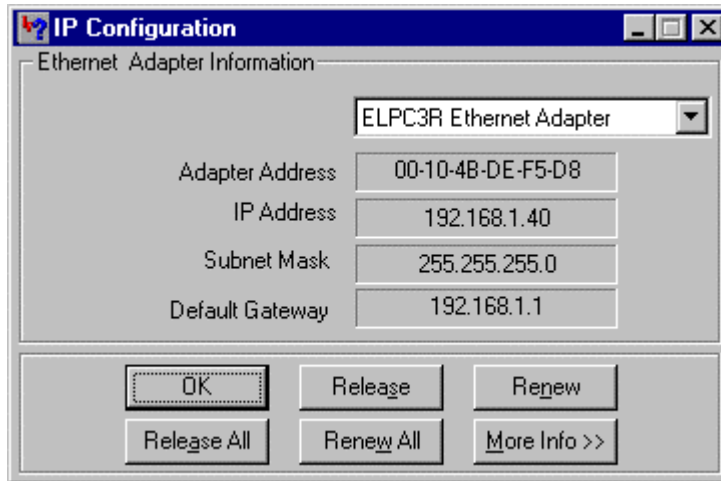
If you want to get IP Address for your DVR in Windows XP, you can run **ipconfig** in one easy step. Open Run and type "cmd /k **ipconfig**" without the quotes. This will open the command prompt and start **ipconfig** the easy way. Assign IP Address you get to DVR unit.

(c) Windows 98 and ME

To run winipcfg, grab the Run item from the Start menu and type **winipcfg** into the Open: box. Hit OK (or return). Those comfortable with DOS can launch it from a DOS prompt.



When **winipcfg** launches, you'll get a window like this one:



Now, hit the "Release" button and then hit "Renew". If all goes well, you'll get new information, and it is for your DVR unit. Write down this information on separate paper and input IP Address, Subnet Mask, and Default Gateway into your DVR to which you want to access via IP network.

(d) Confirm if IP Address is working by executing pingtest

Execute pingtest with IP Address which you assigned to DVR unit, check if it is successful before you try to access to DVR unit via IP network. If it is not successful, you may not be able to access to DVR unit via IP network, and we recommend you to get help from your network administrator.

#### 4.Live view via IP network

Click Remote Viewer icon to view live pictures via IP network. You will see then following window.



Function of each button in live-view window :

- : **Power switch**. Press power switch to quit. Before press power switch button, press disconnect button first.
- : **Connect button**. Press connect button to connect to DVR unit via IP network to see live pictures of DVR unit. You will see the same live pictures, which are displayed on monitor of DVR unit with a certain time delay depending on transfer rate of IP network.
- : **Disconnect button**. Press disconnect button to cut connection to DVR unit via IP network for seeing live pictures of DVR unit.

- : **Screen division button.** You can select 1 or 4 to see live pictures of any single channel or 4 channels, in case of 4 channel DVR. If you select 1, you can further select channel number from 1 to 4 to see pictures of selected channel. If you selected 4, you will see channel number from 1 to 4 are all activated.
- : **Channel number button.** You can select channel number to see live pictures from selected channel.
- : **Status window.** It shows Date and Time. Further it displays “Connection established” and a circular fan on the left bottom is rotating when connection button is activated, or “Waiting for connection” when disconnection button is activated.
- : **Set button.**  
**Setting :** It is in the middle of 3 buttons. Press this button to input IP Address and others and to set circular monitoring interval and scan rate, In SETTING window, you can set folder where you will save picture you selected during playback(scan) or series of pictures in AVI format. Name of file is generated automatically, and picture or series of pictures are saved on the folder you assigned in advance with file name consisting year-month-day-hour-minute-second.

**System Setting**

CONNECTION	OPTION
LABEL : INTRANET IP load	Circular Monitoring Interval 03 SEC
IP Address : 192 . 168 . 10 . 253	Scan Rate (Fast mode ) 64X
PORT : 8000	Reconnection Count 4
ID :	<input type="checkbox"/> Run in full screen mode
PASSWORD : *	<input checked="" type="checkbox"/> Receive Events
PT TYPE : User Define	<input checked="" type="checkbox"/> Display PlayTime On Image

**SAVE OPTION**

Set Path to Save Recorded Images E:\

Record Duration 05SEC

OK CANCEL

- ❶ LABEL : Assign a name to IP/PORT .
  - ❷ IP load : Select a set of IP/Port from history table .
  - ❸ Display Play Time On Image : Display time on image in playback(scan) mode .
  - ❹ Set Path to Save Recorded Images : Set folder where you will save picture you selected during playback(scan) or series of pictures in AVI format .
  - ❺ Record Duration : Set duration of a AVI file .
- Input IP Address you already input into DVR unit(TCP/IP SETUP) in **IP ADDRESS**.
  - Input Port number you already input into DVR unit in **PORT**. Just input 80, which is default port number.
  - Input "ADMIN" in **ID**.
  - Input the same password you set into DVR in **PASSWORD**. Default password is "1".
  - Select type of PTZ camera if you connected PTZ camera to your DVR unit in the **PT TYPE**. To control PTZ camera via IP network, you first input PTZ command for your PTZ camera into our DVR units, and please refer to user manual of our DVR unit for details.
  - Select **circular monitoring interval** ranging from 0.1 sec to 30 sec. The smaller it is, the faster circular monitoring interval is. The absolute circulation interval is a little different from set value depending on data transfer rate of IP network.
  - Select **scan rate** ranging from 1x to 64x. The larger it is, the faster search speed is. The absolute search is a little different from set value depending on data transfer rate of IP network. be as per settings of circular monitoring interval.

- **Scan.** : Press scan button to enter into search window. Using various operation buttons, you can search recorded pictures, save selected pictures on client PC, or print pictures. Refer to following paragraph “3. Search recorded pictures over IP network” for details
- **Rotate** : Press rotate button to see live pictures from channel 1 to 4 in rotation. Screen division must be set at 1 to see live pictures one after another in rotation. Speed of rotation shall search recorded picture (scan window), you can down load and save series of pictures in AVI format on client PC, by pressing RECORD button, and it is a very useful function because you can save this data on portable storage media to show to somebody in other place using MS Media Player.

: **PTZ control.** You can control Zoom, Focus, and Pan/Tilt of PTZ camera while you see live pictures via IP network. Of course, you must input PTZ command for a specific PTZ camera you connected to your DVR unit, into your DVR unit.

**Notice** : From time to time, connection shall be cut unexpectedly due to conditions of network line, and you will see disconnect button( ) is activated. Just press connect button( ) button again, and you can continue to see live pictures



## 5. Search recorded pictures via IP network

Function of each button in search window :

- : **Power switch**. Press power switch to quit.
- : **Full screen button**. Press full screen button to search recorded picture channel by channel in full screen.
- : **Quad button**. Press Quad button to search recorded pictures in quad screen, 4 pictures from 4 channels at the same time.
- : **Channel selection button**. Press any one from 1 to 4 to see picture of corresponding channel, if you first chose full screen button( ).  
Time displayed in green color is the time picture recorded.
- : **Date selection button**. You can select date to search pictures recorded in selected date. When you first enter into search mode, it displays the day, and you would better have an information about start and end time and date of recorded pictures to fix date.





: **Time selection button.** You can set time to search pictures recorded at set time by dragging vertical line to the left or right. See time to be displayed on the left ( ) in green color and find an exact location for the time from which you want to search.

: **Search operation button.** You can search recorded data using various buttons useful for searching effectively as follows.



-  : Play backward(x1)
-  : Pause/Reverse play in set speed
-  : Play forward(x1)
-  : Pause/Play in set speed
-  : Play fast forward
-  : Move to next hour(on the hour)
-  : Stop
-  : Play fast backward

**Speed of playback according to scan rate set .**

Scan rate set in 3- -a)	 or 	 or 
1x	1x	1x
2x	1x	2x
4x	1x	4x
8x	1x	8x
16x	1x	16x
32x	1x	32x
64x	1x	60x

Maximum playback speed of YOKO DVR is 60x.

Ⓢ : **Command button.** We have 3 different buttons that are, save, print, and event.

**Save**

During searching recorded pictures, you can save pictures one by one in the folder in client PC by pressing save button. File name automatically designated shall be date and time when selected picture was recorded.

**Print**

During searching recorded pictures, you can print picture, one by one, you see.

**Event**

Press event button to see alarm list saved in DVR unit, and you can search recorded pictures based on event list by clicking any one of list.

**Notice :** We recommend you to click operation buttons one after the other with enough time interval to give enough time for DVR unit to execute commands from client PC. Too fast clicking operation buttons one after the other with too short time interval may cause system hang-up in client PC.

**Notice :** From time to time, connection shall be cut unexpectedly due to conditions of network line. Whenever it is cut, quit search window by pressing power switch( ), and then press connect button in live-view window and scan button to enter into search window again, to continue searching.

**Notice :** Compatibility of Remote Viewer Software with different kinds of operating systems and PC hardware may not be simply specified due to the characteristics of network that it is much related with not only PC hardware and operating system but also other software installed on the client PC and conditions of network(internet) line. Basically, YOKO' Remote Viewer Software is compatible with typical Windows operating system from Windows 98 to Windows XP.

**Notice :** To see continuous live view, we recommend not to select motion recording in RECORD SETUP menu of DVR. If it is set at motion recording in SETUP menu of DVR, image transmission is done only there is motions detected.

**Notice :** While you search recorded data using client software in client PC, DVR unit to which you access via IP network is in playback mode, and no recording is done as far as you search recorded data. However, while you are in connection with DVR unit via IP network for live view, DVR unit records as set.

**Notice :** While you using client software to see live view via network, please remember to UN-play multiplexer to avoid unexpected errors occurring.