

**15 INCH  
8 CHANEL DVR with LCD MONITOR**



**INSTRUCTION MANUAL**

Please read this manual thoroughly before use, and keep it handy for future reference.

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This Monitor was  
Manufactured by ISO 9001  
Certified Factory

# SAFETY INSTRUCTION

1. Read all of these instructions.
2. Save these instructions for later use.
3. Follow all warnings and instructions marked on the product.
4. Unplug this product from the wall outlet before cleaning.  
Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
5. Do not use this product near water.
6. Do not place this product on an unstable cart, stand or table.  
The product may fall, causing serious damage to the product.
7. Slots and openings in the cabinet and the back are provided for ventilation: to ensure reliable operation of the product, these openings must not be blocked by placing the product on a bed, sofa, rug or other similar surface.  
This product should never be placed near or over a heat register.  
This product should not be placed in a built-in installation unless proper ventilation is provided.
8. This product should be operated from the type of power source indicated on the marking label. If you are not sure of the type of power available, consult your dealer or local power company.
9. This product is equipped with a 3 wire grounding type plug having a third(grounding) pin. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the purpose of the grounding-type plug.
10. Do not allow anything to rest on the power cord.  
Do not locate this product where persons will walk on the cord.
11. If an extension cord is used with this product, make sure that the total of the ampere ratings on the products plugged into the extension cord do not exceed the extension cord ampere rating. Also, make sure that the total of all products plugged into the wall outlet does not exceed 10 amperes.
12. Never push objects of any kind into this product through cabinet slots as they may touch dangerous voltage points or short out parts that could result in a risk of fire or electric shock.  
Never spill any kind of liquid on the product.
13. Do not attempt to service this product yourself, as opening or removing covers may expose you to dangerous voltage points or other risks.

# SAFETY INSTRUCTION

Refer all servicing to service personnel.

14. Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions.
- A. When the power cord or plug is damaged or frayed.
  - B. If liquid has been spilled into the product.
  - C. If the product has been exposed to rain or water.
  - D. If the Product does not operate normally when the operating instructions are followed. Adjust only those controls that are covered by the operating instructions since improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore normal operation.
  - E. If the product has been dropped or the cabinet has been damaged.
  - F. If the product exhibits a distinct change in performance, indicating a need for service.

## CAUTION

*The power supply cord is used as the main disconnect device, ensure that the socket-outlet is located/installed near the equipment and is easily accessible.*

## ATTENTION

*Le cordon d'alimentation est utilisé comme interrupteur général. La prise de courant doit être située ou installée à proximité du matériel et être facile d'accès*

### CAUTION TO SERVICE PERSONNEL

POWER SUPPLY CORD IS USED AS MAIN POWER DISCONNECT DEVICE IN THIS PRODUCT. UNPLUG THIS PRODUCT FROM THE WALL OUTLET BEFORE REMOVING THE BACK COVER AND SERVICING

### EMISSION CHARACTERISTICS TESTED BY SEMKO

THIS PRODUCT HAS BEEN TESTED AND HAS SHOWN COMPLIANCE WITH THE NATIONAL SPECIFICATIONS SUCH AS SWEDISH MPR 1990.10.(MPR II)

# CAUTIONS

▶ **NEVER REMOVE THE BACK COVER**

Removal of the back cover should be carried out only by qualified personnel.

▶ **DO NOT USE IN HOSTILE ENVIRONMENTS**

To prevent shock or fire hazard, do not expose the unit to rain or moisture.

This unit is designed to be used in the office or home. Do not subject the unit to vibrations, dust or corrosive gases.

▶ **KEEP IN A WELL VENTILATED PLACE**

Ventilation holes are provided on the cabinet to prevent the temperature from rising.

Do not cover the unit or place anything on the top of unit.

▶ **AVOID HEAT**

Avoid placing the unit in direct sunshine or near a heating appliance.

▶ **TO ELIMINATE EYE FATIGUE**

Do not use the unit against a bright back ground and where sunlight or other light sources will shine directly on the monitor.

▶ **BE CAREFUL OF HEAVY OBJECT**

Neither the monitor itself nor any other heavy object should rest on the power cord.

Damage to a power cord can cause fire or electrical shock.

# FCC RF INTERFERENCE STATEMENT

## NOTE

*This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.*

*This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.*

*If this equipment does cause harmful interference to radio or television reception which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures.*

- Reorient or relocate the receiving antenna.*
- Increase the separation between the equipment and receiver.*
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.*
- Consult the dealer or an experienced radio, TV technician for help.*
- Only shielded interface cable should be used.*

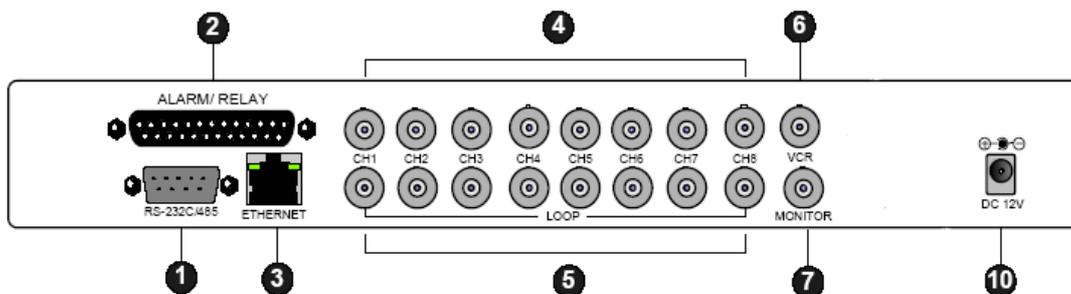
*Finally, any changes or modifications to the equipment by the user not expressly approved by the grantee or manufacturer could void the users authority to operate such equipment.*

## ► DOC COMPLIANCE NOTICE

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus set out in the radio interference regulation of Canadian Department of communications.

# CONNECTING WITH EXTERNAL EQUIPMENT

## A. REAR PORT



### 1. RS-232C and RS-485 port Connection

### 2. Sensor Input/Output

### 3. LAN (TCP/IP)

### 4. Camera Connection

### 5. LOOP Output

### 6. VCR Connection

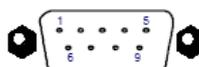
### 7. MONITOR Connection

### 10. D/C Power Connection

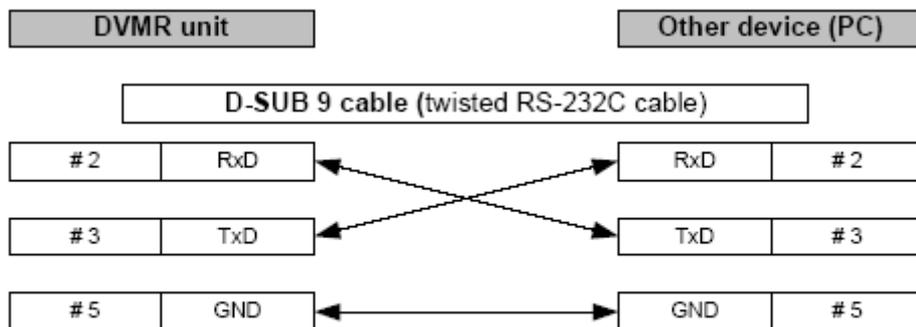
**NOTICE :** When connecting with other applications, be sure to turn off the system.

## B. Arrangement RS-232C Pin

Pin No.	Definition
1	NC
2	RxD
3	TxD
4	SD-(RS 485)
5	GND
6	SD+(RS 485)
7	NC
8	NC
9	NC



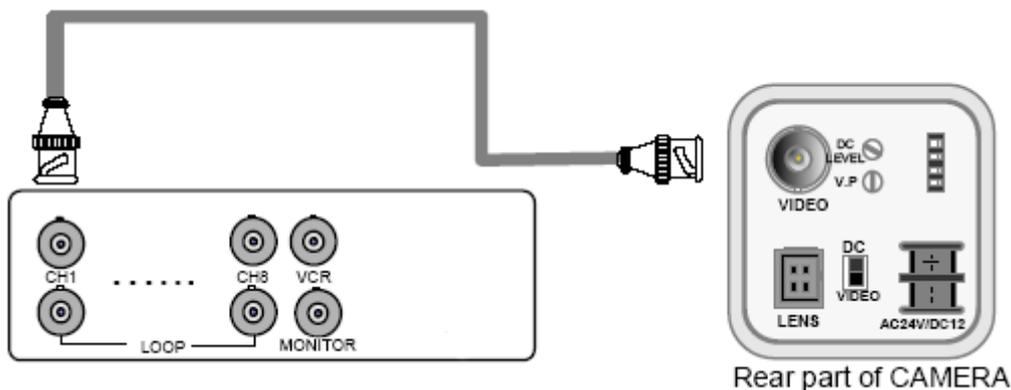
# CONNECTING WITH EXTERNAL EQUIPMENT



Connection to PC using RS-232C cable

## C. CAMERA Connection

Connect to the Camera to the CAMERA INPUT on the rear panel of system

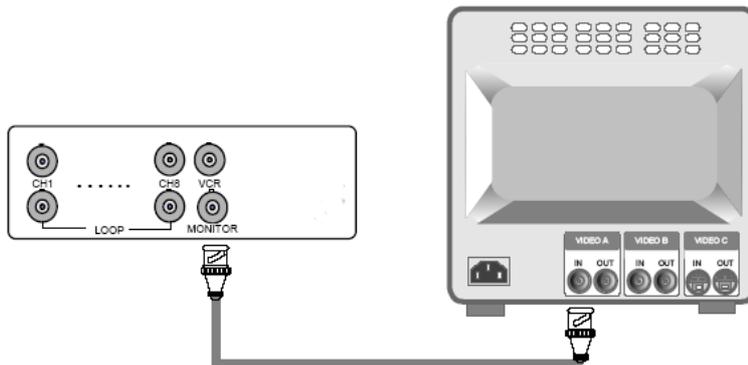


**Notice :** This DVR system automatically detects video system of camera you connected to the unit when you boot DVR system first. It is not necessary to set video system separately, and DVR system set at NTSC or PAL system automatically when you boot the system.

# CONNECTING WITH EXTERNAL EQUIPMENT

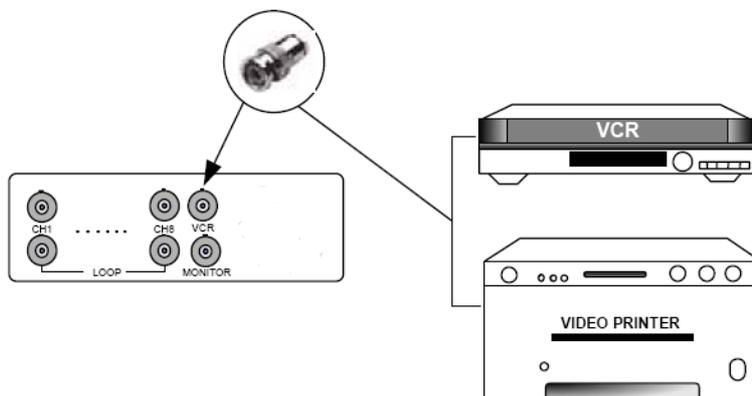
## D. MONITOR Connection (Composite Connection Method)

Connect the monitor to the MONITOR OUTPUT on the rear panel of system



## E. VCR & VIDEO PRINTER Connection

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

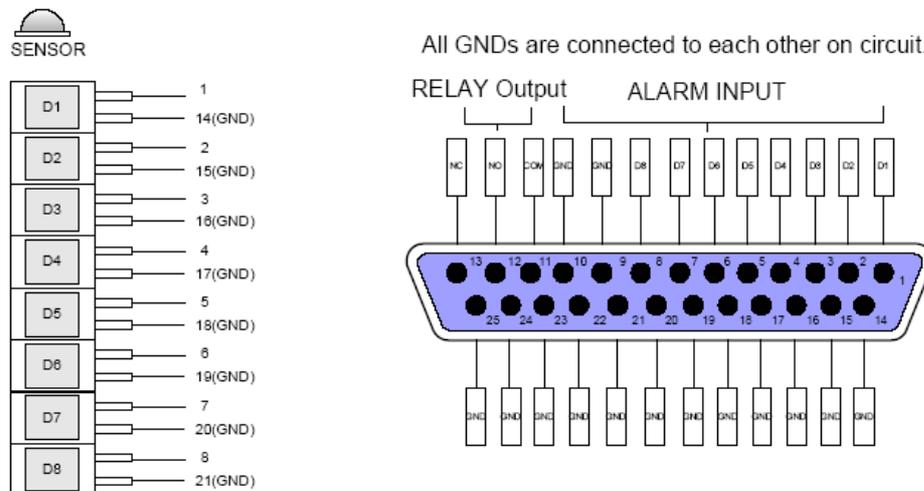


# CONNECTING WITH EXTERNAL EQUIPMENT

## F. SENSOR Connection

Connect sensors to D-SUB 25 Pin as specified below.  
 You can connect dry-contact type sensors. In case of sensors with TTL output (5 Volts system), GND of sensor must be connected to GND of DVMR unit and signal line to alarm input from D1 to D16 as shown in following figure.

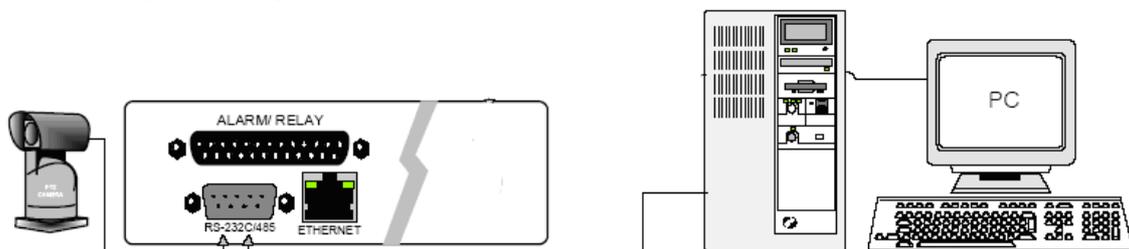
Short-circuit between any of D1 from D16 and GND is recognized as an alarm.



Relay output is output in case there is an alarm input, and is connected to external device using COM-NO (Normal Open) or COM-NC (Normal Close) contact.

## G. NETWORK Connection

- RS-232C : Connection to PC to operate DVMR
- RS 485 : Connection to PTZ camera
- RJ-45 (ETHERNET) : Connection to LAN, WAN or Internet

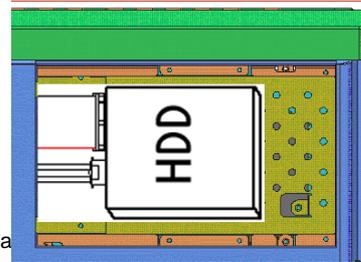


# HDD CONNECTION

## 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, and you can install it.

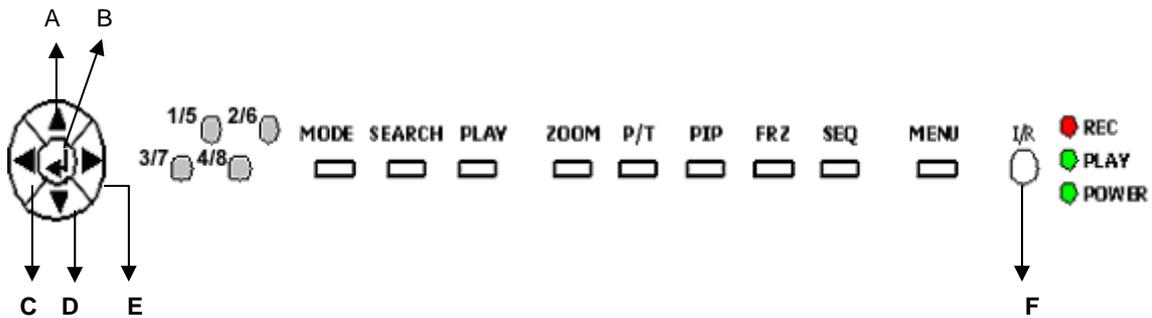
Fix HDD on the bottom of SecuBook case using screws included in the package. Screws must be inserted from outside of the bottom.



Notice : Formatting before installation is not required, because this DVR automatically detects HDD and formats. In the first operation after installation of HDD, first clear all data on HDD and set at FACTORY DEFAULT in SETUP menu of this DVR

# CONTROLS AND FUNCTIONS

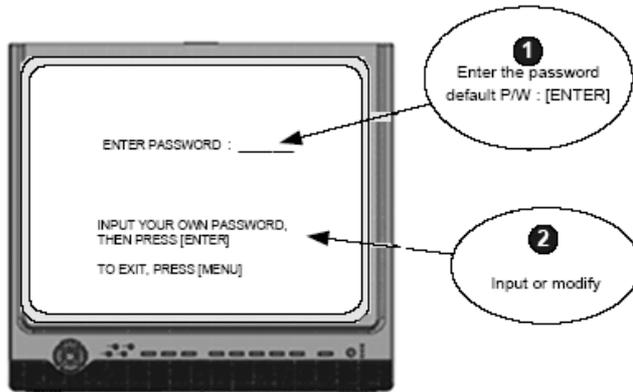
## 1. FRONT PANEL DESCRIPTION



- A, C, D, E : Direction Button
- B : 'Enter' Button – Some Functions in SETUP MODE, It is used as the Select Button
- 1/5, 2/6, 3/7, 4/8 : Chooses each indicated Camera
- MODE : Changes to quarterly split screen or Full display screen
- SEARCH : Search the Recording data
- PLAY : Starting playback
- ZOOM : Press [ZOOM] button, during playback or PAUSE mode, the display will enlarge by 200%.
- P/T : Manages PAN/TILT Camera
- PIP : Assigns PIP (Picture in picture)
- FRZ : Display screen is frozen
- SEQ : The display screen automatically rotates
- MENU : Used when changing the menu of SYSTEM SETUP
- F : Remote control Receiver
- LED Lamps : Represent status of operation

# CONTROLS AND FUNCTIONS

## 2. LOG-IN



- 1) Press [MENU] button to enter the system menu after starting the system.
- 2) DVR system asks you to enter password to verify authority of user as shown on the left.
- 3) When you get the DVR, you can enter into Setup menu by just pressing [ENTER] button.
- 4) In case you already have changed the password, enter your own password.

5) Press [ENTER] button after you enter password, to enter into SETUP menu.

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

▶ If password entered matches previously set password, "PASSWORD OK" message appears and you can enter into SYSTEM SETUP.

If password entered does not match previously set password, DVR system just go back to initial mode, that is, showing live pictures and recording as set before.

▶ Factory default password is [ENTER]

**NOTICE :** We recommend you to enter your own password as per procedure in PASSWORD SETUP/MISCELLANEOUS SETUP of setup menu.

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

In case you forgot password, you can not enter into SYSTEM SETUP and can not change parameters of DVR operation, and just leave DVR unit to run as settings you done before. In case you forgot own password and want to enter into SYSTEM SETUP, please contact dealer to get instruction for entering into SYSTEM SETUP for password change.

# CONTROLS AND FUNCTIONS

## 3. RECORD

### PLAY

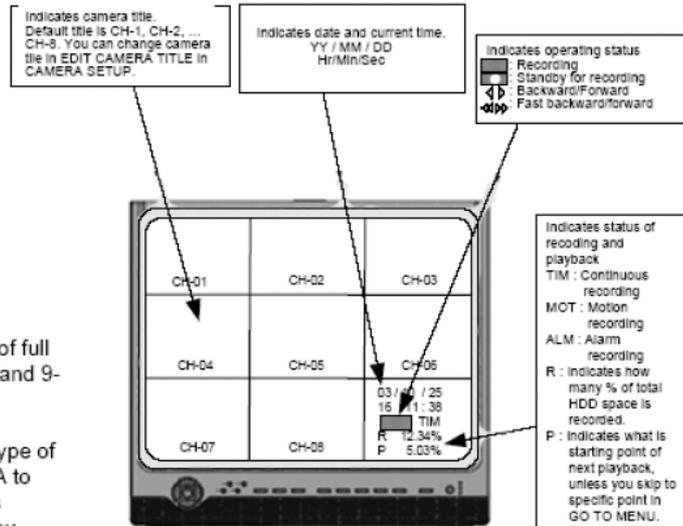
Changes to Playback Mode from Recording. If pressed shortly, playback starts from the stop point in previous operation.

If pressed for a long time, you can enter into GO TO MENU and select by PERCENT, TIME/DATE, or EVENT LIST the point from which you want to replay.

### MODE

Changes screen division in the sequence of full screen of specific channel, 4-split screen, and 9-split screen whenever pressed.

If it is pressed for a long time, it changes type of monitor from COMPOSITE to VGA or VGA to COMPOSITE in case VGA option board is included in the DVR package. In case you connect CRT type PC monitor to DVR unit, and monitor type is set at COMPOSITE, pictures displayed shall be flickering.



### P/T

In case you connected PTZ camera to any channel of DVR unit, press [P/T] button first to control this camera using operation buttons on the front panel.

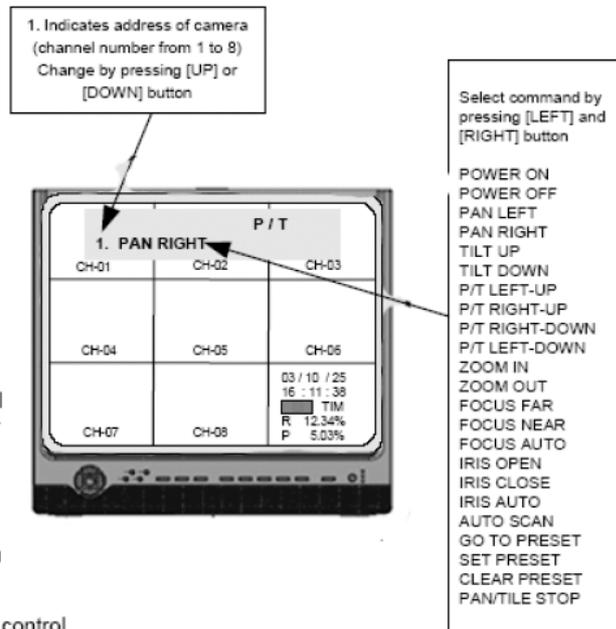
Be sure to select model of PTZ camera whose protocol is already incorporated into DVR system. Model of PTZ camera whose protocol incorporated is PELCO D type, DRX-502A. For PTZ camera whose protocol is not built-in protocol, you have to input protocol of that camera in USER DEFINE /PAN/TILT CMD SEPUP/MISCELLANEOUS SETUP.

After pressing [P/T] button, command with channel number(from 1 to 8) in front is displayed whenever you press [LEFT] or [RIGHT] button.

Select channel number first by pressing [UP] or [DOWN] button, and select command by pressing [LEFT] or [RIGHT] button.

Then, PTZ camera will move as per command you selected as far as you press [ENTER] button.

Press [P/T] button once more to stop PTZ camera control.

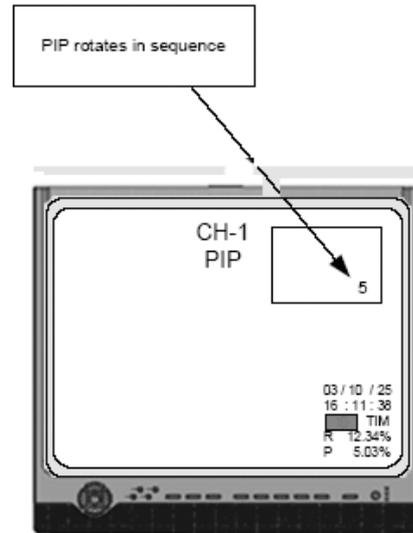


# CONTROLS AND FUNCTIONS

## PICTURE IN PICTURE (PIP)

1. When it is full screen display mode, press [PIP] button to see small size pictures rotating in sequence. To select channel for full screen, just press number button from [1/5], [2/6], [3/7], and [4/8]. Of course you have to press number button for longer time to select any of number 5 to 8.  
Press [PIP] button once more to return to full screen mode you started.
2. Press [SEQ] button to make fullscreen rotate just like PIP does, when it is in PIP mode.
3. You can set rotating time interval in TIMER SETUP/ MISCELLANEOUS SETUP in SETUP menu.  
In TIMER SETUP, you can set rotating time interval not only for PIP screen but also for FULL SCREEN and QUAD screen.

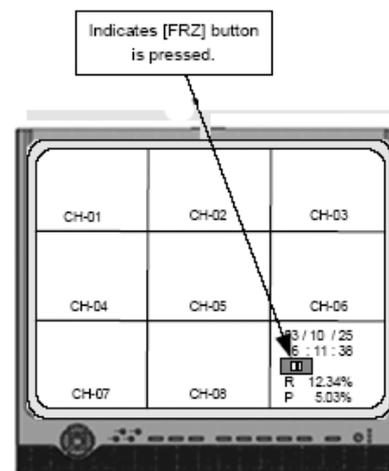
NOTICE : PIP is available just in full screen mode.



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

## FRZ

1. You can make pictures displayed freeze by pressing [FRZ] button in both live view and playback mode.  
  
In live view, it is just working when it is in full screen mode, while it works whether it is in full screen mode or 4-split or 9 split mode, in playback mode.
2. To exit FRZ mode, just press [FRZ] button again.
3. If you press number button from 1 to 4 shortly or for longer time, FRZ mode is automatically released and image of channel you pressed is displayed in full screen.

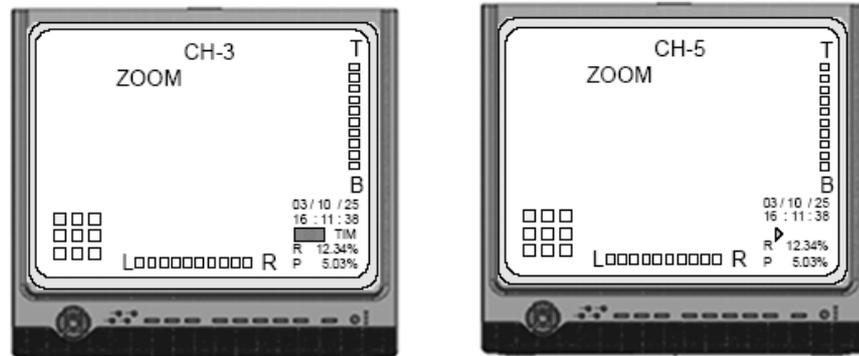


# CONTROLS AND FUNCTIONS

## SEQ

1. In live mode, full screen or 4-split screen rotate in sequence, whenever you press [SEQ] button shortly.
  2. If you press [SEQ] button for a long time in live view, full screen or 4-split screen automatically rotate until you press [SEQ] button for a long time again.
  3. Sequence of rotation is 1, 2, 3, 4, 5, 6, 7, 8, 1, and so on, if [SEQ] button is pressed for more than a sec when number 1 channel is in full screen.
  4. If [SEQ] button is pressed for a long time when it is in 4-split mode, sequence of rotation is 1/2/3/4 and 5/6/7/8, and so one.
  5. In playback mode, [SEQ] button is used to move to next channel when it is in full screen mode. That is, it shows full screen of next channel whenever [SEQ] button is pressed shortly in playback mode.
  6. To exit from SEQ mode, just press [SEQ] button again.
- ▶ To change rotating time interval of full screen or 4-split screen in live view, set FULL SCREEN or QUAD SCREEN value again in TIMER SETUP/MISCELLANEOUS SETUP.

## ZOOM

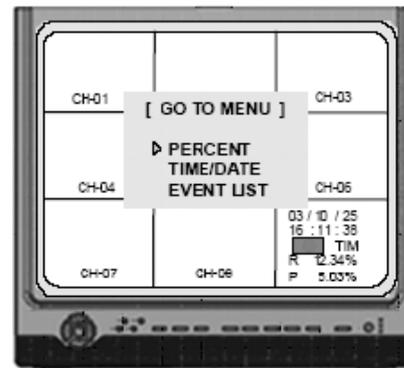


1. In full screen in live mode or in playback mode, press [ZOOM] button to see 2 times enlarged picture.
2. Vertical bar and horizontal bar on the bottom and on the right respectively show which are of picture is enlarged, and you can change area to be enlarged by pressing [LEFT], [RIGHT], [UP], and [DOWN] button.
3. Because it is enlarged 2 times digitally, picture quality is a little poor than picture you see in normal playback mode.
4. To exit ZOOM mode, just press [ZOOM] button again.

# CONTROLS AND FUNCTIONS

## Playback setup

- 1) Press [PLAY] button to enter into playback mode.
- 2) [PLAY] button is pressed, it just start from the previous stop point.
- 3) If you press [SEARCH] button, you can enter into GO TO MENU, and set the point from which you want to start playback. You can set starting point of playback by setting PERCENT, TIME/DATE, or EVENT LIST in GO TO MENU.
- 4) Display screen will appear as shown on the right picture.



## How to set in GO TO MENU

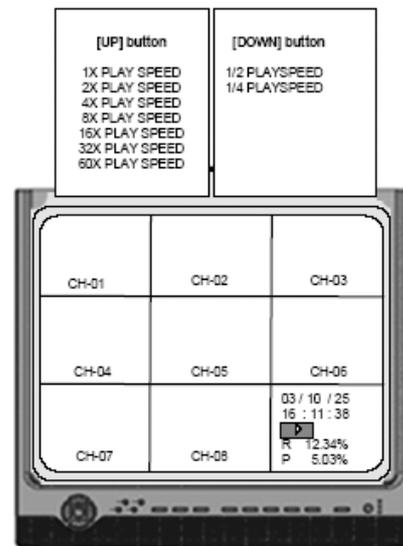
- 1) First select any one of PERCENT, TIME/DATE, and EVENT LIST using [UP] and [DOWN] buttons.  
If you select PERCENT, you are supposed to set starting point of playback by percent.  
If you select TIME/DATE, you are supposed to set starting point of playback by time and date.  
If you select EVENT LIST, you will enter into event list and select one of event list to start playback from selected event.
- 2) PERCENT  
Press [ENTER] button when triangular cursor is in front of PERCENT to select target by percent.  
In [PERCENT GO TO] menu, start and end point of recording shall be displayed. At the same time, how many % of total HDD(1 or 2 units in DVMR unit) space is recorded is displayed. Under this line, you are requested to set starting point of playback by % using [LEFT] and [RIGHT] button and [UP] and [DOWN] button.  
After you set starting point by %, press [ENTER] button shortly, and Target(starting point) is display in time/date and at the same time playback starts from the point you set, while all message is displayed. If it is the right point you want to start playback, then press [PLAY] button for longer time again to make messages disappear.  
To stop playback and go back to recording mode, press [PLAY] button shortly again.
- 3) TIME/DATE  
Press [ENTER] button when triangular cursor is in front of TIME/DATE to select target by time/date.  
In [TIME/DATE GO TO] menu, start and end point of recording shall be displayed.  
Under this line, you are requested to set starting point of playback by time and date. Using [LEFT] and [RIGHT] button and [UP] and [DOWN] button, set time and date from which you want to start playback. Then press [PLAY] button shortly, and it starts to playback from the point you set, however all messages are still displayed. If it is the right point from which you want to start playback, press [ENTER] button for longer time once more, and messages shall be disappeared..
- 4) EVENT LIST  
Press [ENTER] button when triangular cursor is in front of EVENT LIST to select target by event list.  
In [EVENT-LIST GO TO] menu, list of event shall be displayed.  
Just select event from which you want to start playback using [DOWN] and [UP] buttons, and then press [PLAY] button shortly to start playback. If it is the right point from which you want to start playback, press [ENTER] button once more to make all messages disappeared.

# CONTROLS AND FUNCTIONS

## 5) Playback Speed Setup

In playback mode, you can adjust speed of playback by pressing [UP] or [DOWN] button easily. Just press [UP] button, and you can increase playback speed from 1x to 2x, 4x, 8x, 18x, 32x, or 64x step by step. In playback speed from 2x to 64x, DVMR system skips a certain numbers of pictures recorded in sequence as per playback speed selected for fast search.

To the contrary, playback speed is down from 1x to ½ or ¼ by pressing [DOWN] button, Playback speed lower than ¼ is practically meaningless, and we recommend our users to freeze picture by pressing [FRZ] button and move picture by picture by pressing [LEFT] or [RIGHT] button for more precise search.



# CONTROLS AND FUNCTIONS

## Basic Operation

In SYSTEM SETUP, we can change different parameters for operation of DVR system, as you like.

However, we basically recommend our users to set at FACTORY DEFAULT, until you have full understanding about operation of DVR system.

To enter into SYSTEM SETUP, first press [MENU] button, and enter password. After password, press [ENTER] button and you can enter into SYSTEM SETUP.

In the first operation of DVR unit after you first install HDD, delete all data on HDD, whether it is used HDD or brand-new HDD, and set at FACTORY DEFAULT.



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 RUN and press [ENTER].

► Items remain unchanged even after FACTORY DEFAULT is done.

1. value of TIME/DATE SETUP
2. Date stored on HDD
3. ALARM LIST SETUP
4. ADMIN password

## CAMERA SETUP

In camera setup, we have 3 different sub-menu as follows.

- 1) Edit camera title  
Edit camera title.
- 2) Adjust color  
Adjust brightness, contrast and others relating to color of camera channel by channel.
- 3) Motion setup  
Set motion detection area, sensitivity, and detection window which specifies minimum size of object detected by the system.



# CONTROLS AND FUNCTIONS

## DISPLAY SETUP

### 1) Edit camera title

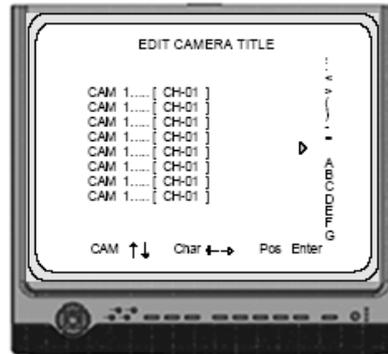
Camera tile is 9 characters in length and includes alphabet in a capital letter or small letter, numbers, and some special letters.

Default camera title is CAM 1, CAM 2, and so on for channel 1, channel 2 and so on.

Moving to a channel you want to change is done by pressing [UP] and [DOWN] button, moving next character in a specific camera tile is done by pressing [ENTER] button.

On the right side of display, there is series of letters in vertical, and letter just behind triangular cursor is written whenever you press [LEFT] or [RIGHT] button.

To save and exit EDIT CAMERA TITLE mode, press [MENU] button.



### 2) Adjust colors

You can change parameter of camera color like brightness, contrast, and others for each channel.

First select channel number whose parameters you want to change, using [LEFT] and [RIGHT] button.

When you select channel, image from selected channel is displayed. Then select element you want to change by pressing [UP] and [DOWN] button and adjust by pressing [LEFT] and [RIGHT] button. You can see how it looks like whenever you change values.

After you adjust parameters for channel you selected, then select next channel for change.

To save and exit ADJUST COLOR mode, press [MENU] button.



### 3) Motion setup

In motion setup mode, you can set motion detection area, sensitivity of motion, and detect window respectively, channel by channel.

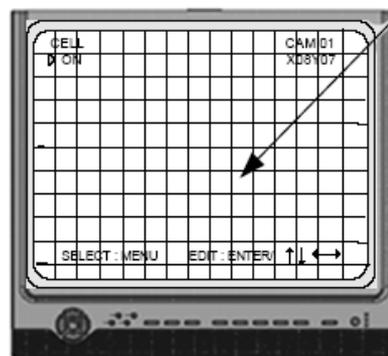
It is very important to set motion detection area, sensitivity, and detect window, when you are going to record just when motion is detected.

Motion detection area is important because DVR system just recognize motion in this area.

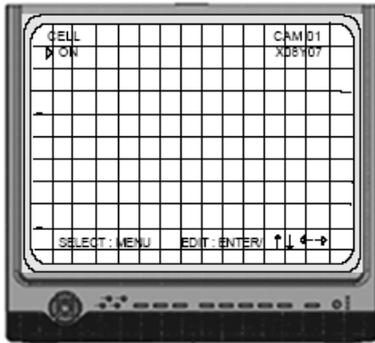
Sensitivity of motion specifies the sensitivity with which DVR system detect motion, and very slow movement may not be detected if sensitivity of motion is set at very low level.

Detection windows specifies size of moving object, and DVR system does not detect moving object which is smaller in numbers of cell than detection windows fixed in advance.

Cell(16x12) in green color indicates detection area, and color change to violet color in cells represents motion is detected



# CONTROLS AND FUNCTIONS



## Fix motion detection area cell by cell

In the display on the left, "CELL" on the top left is glittering, and x and y coordinates on the top right represent location of cell in selected channel, red in color, you can edit. Just besides triangular cursor on the top left shows if cell glittering in red color is "ON" or "OFF".

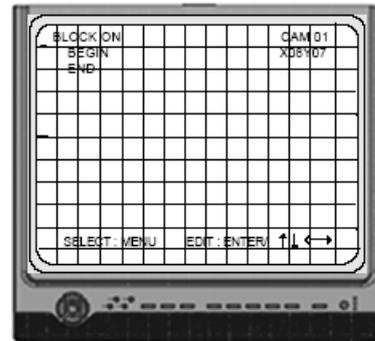
When status of cell glittering in red color is "ON", press [ENTER] button to change status of this cell to "OFF", which means not to detect motion in this cell. If you press [ENTER] button when it is in "OFF", then it is changed to "ON" and motion is detected in this cell.

If you press [MENU] button, display on the top left changed to "BLOCK ON" and you can set motion detection area block by block, as follows.

## Fix motion detection area block by block

To set motion detection area block by block, first press [ENTER] button and small triangular cursor shall be displayed just in front of "BEGIN". Then move cell glittering in red color to a position you want and press [ENTER] button again, then coordinates of cell you selected is displayed just on the right of "BEGIN" and small triangular cursor is displayed just in front of "END".

Again, move cell glittering in red color to other position and press [ENTER] button. Then cells belong to rectangular area you defined shall be changed to green color and these cells are set as motion detection area. You can repeat this process until you complete motion detection set up.



## Cancel motion detection area block by block

Just as you set motion detection area block by block, you can cancel motion detection area you set, block by block. To cancel detection area block by block, press [MENU] button until "BLOCK OFF" is displayed on the top left. Then you can set block just like you set motion detection area block by block.

## Cancel or set motion detection area as a whole(all cells of 16x12)

In case you want set all cells(16x12) as motion detection area or set all cells "OFF", press [MENU] button until "ALL" is displayed on the top left. Then press [ENTER] to make all cells detect motion or not detect motion.

## Adjusting sensitivity of motion detection

Press [MENU] button again until "SENSITIVITY" is displayed on the top left.

After "SENSITIVITY" is displayed, press [UP] OR [DOWN] button to adjust sensitivity level from 1 to 10.

In higher values, it detect motion more sensitively. If it is very low, very slow movement is not detected, even though moving object is bigger than detect window and movement is in detection area.

## Set detect window

Press [MENU] button again until "DETECT WINDOW" is displayed on the top left.

Detect window is set in numbers from 1 to 20, and it represent size of moving object. Practically number represents numbers of cells(in total, 16x12), and detect window implies relative size of moving object displayed in the monitor connected to DVMR unit. Just in case movement is detected in cells more than detect window, DVMR system recognize motion is detected.

## To exit

Press [MENU] button until "EXIT" is displayed on the top left, and press [ENTER] button to save settings and exit.

# CONTROLS AND FUNCTIONS

## TIME/DATE SETUP

Press [ENTER] button when half-tone green bar is on TIME/DATE SETUP.

Select items you want to change using [UP] and [DOWN] buttons, and change values using [LEFT] and [RIGHT] buttons.

After you set all, press [MENU] button to save you set and exit.



## RECORD SETUP

Press [ENTER] button when half-tone green bar is in on RECORD SETUP.

### 1) RECORD TYPE

When half-tone green bar is on RECORD TYPE, press [LEFT] or [RIGHT] button to select recording mode you want.

TIMER recording type indicates recording continuously at set recording speed(TIME INTERVAL).

MOTION recording type indicates recording just in case motion is detected for DURATION time at set recording speed (TIME INTERVAL).

ALARM represent recording just in case alarm is activated for DURATION time at set recording speed(TIME INTERVAL).



### 2) OVERWRITE

Move half-tone green bar to OVERWRITE to set if you will overwrite or stop recording when hard drive is full and just display warning message.

Press [LEFT] or [RIGHT] button to set at "ON" or "OFF". "ON" implies overwriting allowed when hard drive is full, while "OFF" implies stop recording when it is full.

We recommend to set at "ON" not to make DVR unit stop recording only with the reason it is full with data.

# CONTROLS AND FUNCTIONS

## 3) TIME INTERVAL

TIME INTERVAL implies recording speed, and 1/1 represents maximum recording speed of this DVR system, that is 60 fields/sec in total.

When half-tone green bar is on TIME INTERVAL, press [LEFT] or [RIGHT] button to select recording speed you want.

TIME INTERVAL set here is applied for all RECORDING TYPE, that are, TIMER, MOTION, or ALARM.

Recording speed for each TIME INTERVAL is as follows. (based on NTSC system)

- 1/1 x : 60 fields/sec in total
- 1/2 x : 30 fields/sec in total
- 1/3 x : 20 fields/sec in total
- 1/4 x : 15 fields/sec in total

⋮

and so on



## 4) EVENT OFF TIMER

EVENT OFF TIMEER sets time interval between event(video loss, motion detected, and alarm) to event not to enlist event which happen too frequently.

For example, if you set EVENT OFF TIMER at 60 sec, and motion detected now is detected less than 60 sec after previous motion, it is not enlisted in event list. However, motion detect now is after more than 60 sec, it is enlisted in event list. It is same for alarm or video loss.

EVENT OFF TIMER is to restrict event to be enlisted in event list, and it is useful in case you set recording mode at motion detection mode, alarm mode.

In case motion is detected very frequently, event list shall be full with just motion detected, and it is meaningless to have such event list.

Default value set by manufacturer is 60 sec.

## 5) REFRESH RATE

When you record in motion recording mode, and motion is detected in one of 8 channel and no motion is detected in all other channels in some times.

In this case, we may see pictures fairly long hours ago in playback in channels where no motion is detected, while pictures in a channel where we have many motion detected is updated very frequently.

Refresh rate is time interval for recording pictures from channels where no motion is detected for a long time. That is, even though there is no motion detected, DVR system records an image as per this REFRESH RATE time interval to show relatively recent pictures in corresponding channels, even though there are no motions detected.

## 6) DURATION

It is motion duration or alarm duration. When DVR records in motion recording mode or alarm recording mode, it records for DURATION time in case motion is detected or alarm is activated, respectively.

# CONTROLS AND FUNCTIONS

## HDD MANAGEMENT

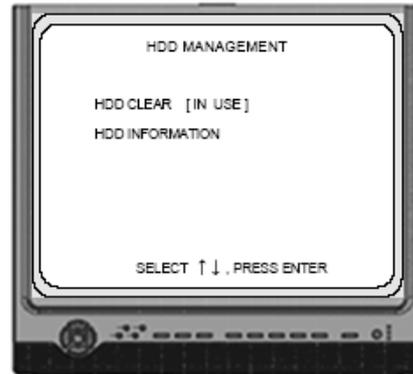
Press [ENTER] button when half-tone green bar is on HDD MANAGEMENT.

### 1) HDD CLEAR

When DVR system started to record and hard drive has data of pictures recorded, "IN USE" is displayed in square brackets.

If you want to delete all data on hard drive, press [ENTER] when half-tone green bar is on "HDD CLEAR". Then DVMR system asks you to enter password. Enter password and press [ENTER], and "EMPTY" is displayed in square brackets.

You are strongly requested to clear data on hard drive, when you first install hard drive or you add second hard drive, whether it is used one or brand new one, and set at FACTORY DEFAULT.



### 2) HDD INFORMATION

Press [ENTER] button when half-tone green bar is on HDD MANAGEMENT to enter into HDD INFORMATION.

In HDD INFORMATION, you can have information of HDDs as follows.

- Date of detecting HDD
- Drive number from 1 to 22
- Manufacturer and model of HDD
- Capacity(GB) of HDD detected

## MISCELLANEOUS SETUP

Press [ENTER] button when half-tone green bar is on MISCELLANEOUS SETUP.

In MISCELLANEOUS SETUP, we can set parameters for buzzer, alarm, timer(time interval), pan/tilt command, baud rate of RS-485, and password.

### 1) BUZZER SETUP

In DVR system, we can set buzzer "ON" or "OFF" for key, video loss, alarm event, and motion event independently, in BUZZER SETUP.

Or you can set all of them at "ON" or "OFF" by setting ALL BUZZER at "ON" or "OFF", by pressing [ENTER] button.

To save settings and exit, press [MENU] button.



# CONTROLS AND FUNCTIONS

## 2) ALARM SETUP

In DVR system, 8 alarm input, one for each channel, and 1 alarm output(relay out) is provided, and we can set type of alarm sensor independently in ALARM SETUP.

Or you can set all of input alarm sensors at "NO", "NC" or DISABLE by setting ALL at "NO", "NC" or DISABLE, by pressing [ENTER] button or [LEFT] or [RIGHT] button.

In the same way, we can set type of relay out at "NO", "NC" or DISABLE, by pressing [ENTER] button or [LEFT] or [RIGHT] button.

To save settings and exit, press [MENU] button.



## 3) TIMER SETUP

In DVR system, we have 3 kind of timer settings as follows.

### FULL SCREEN timer :

Rotating cycle time of full screen in live mode, when [SEQ] button is pressed for long time.

### QUAD SCREEN timer :

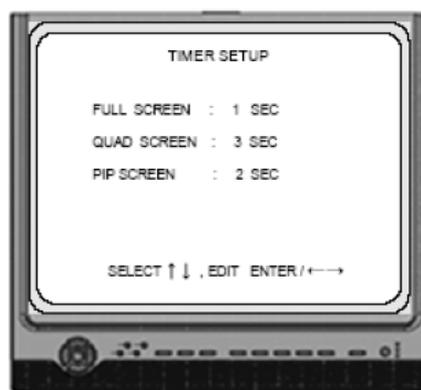
Rotating cycle time of quad(4-split) screen in live mode, when [SEQ] button is pressed for long time.

### PIP SCREEN timer :

Rotating cycle time of PIP screen in live mode, when [PIP] button is pressed in live mode.

If you press [SEQ] button for long time, full screen picture also rotates with time interval of FULL SCREEN timer, in addition to PIP.

To save settings and exit, press [MENU] button.



## 4) PAN/TILT CMD SETUP

Just with operation buttons on the front panel of DVR unit, we can control PTZ camera connected to DVR unit via RS-485 port, if protocol of PTZ camera connected to DVR unit is same as one of built-in protocols, just select model among models in PAN/TILT CMD SETUP.

In case PTZ camera you connected to DVR unit is not a model whose protocol is incorporated into DVR unit, you are requested to select USER DEFINE and input protocol by yourself.

To save settings and exit, press [MENU] button.



# CONTROLS AND FUNCTIONS

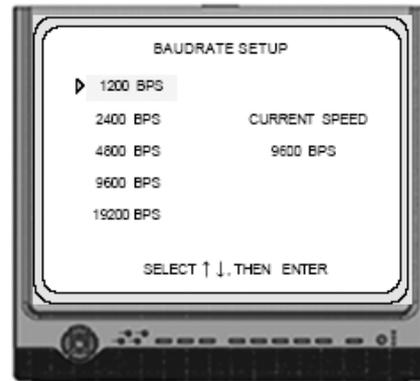
## 5) BAUDRATE SETUP

To control PTZ camera connected to DVR unit, you have to set baud rate of communication between PTZ camera and DVR unit.

To set baudrate, move half-tone green bar on baudrate you want to select, and press [ENTER] button then CURRENT VALUE is changed to the value you selected.

CONFIRMATION VIA RS485 PORT on the bottom of BAUDRATE SETUP is to test if communication between DVR unit and PTX camera with set baudrate is done correctly. Move half-tone green bar to CONFIRMATION VIA RS485 PORT, and press [ENTER] button. Then you can see TEST STRING sent by DVR unit is displayed on your PC, in case you also connected DVR unit to PC via RS-232C port.

To save settings and exit, press [MENU] button.



## 6) PASSWORD SETUP

You can set your own password in PASSWORD SETUP.

DVR system verify users entering into SETUP menu and users who input correct password is allowed to access SETUP menu and change any settings in SETUP menu. Also, you have to input proper password in SETTING in remote viewer(client program) to access DVMR unit via IP network, too.

Sequence to change password is as follows.

- Input current password in the first line and press [ENTER].
- Input new password in the second line and press [ENTER].
- Input new password again to confirm it and press [ENTER]
- Then "PASSWORD CHANGE" is displayed and changing password is completed.

Memorize new password and also keep it secretly.

In case you forgot password, contact dealer from which you purchased DVR unit. All of our dealers have master password which will enables you to enter into PASSWORD SETUP menu to generate new password.



# CONTROLS AND FUNCTIONS

## FACTORY DEFAULT

Press [ENTER] button when half-tone green bar is in on FACTORY DEFAULT.

FACTORY DEFAULT is parameters setting done just before delivery by manufacturer, and manufacturer recommend our users to use DVR unit with settings done by manufacturer until our users become to have full understanding about DVR system.

FACTORY DEFAULT can be set group by group or as a whole at once.



### 1) CAMERA COLOR

Parameter settings about color of camera like brightness, contrast and others of camera. If we set CAMERA COLOR at YES, all changes you made in ADJUST COLOR/CAMERA SETUP shall be deleted and return to settings done by manufacturer before delivery.

### 2) CAMERA TITLE

Default camera title is CH-01, CH-02, and so on.

### 3) MOTION MASK

Motion mask is for motion detection area, motion window, and sensitivity.

If we set MOTION MASK at YES, all changes you made in MOTION SETUP/CAMERA SETUP shall be deleted and return to settings originally done by manufacturer.

### 4) PAN/TILT COMMAND

As explained in PAN/TILT COM SETUP/MISCELLANUOUS SETUP, this DVR system includes built-in protocol models like PELCO D type and we can select model of PTZ camera connected to DVR unit.

In case PTZ camera you are going to connect to DVR unit is not one of models whose protocol is already incorporated into DVR system, you can input protocol of PTZ camera in USER DEFINE mode/PAN TILT SMD SETUP menu.

Even though you set PAN/TILT COMMAND at YES, built-in protocol remain unchanged

However, protocol you input in USER DEFINE model is deleted if you set PAN/TILT COMMAND at YES and set at FACTORY DEFAULT. Be careful not to set at YES to keep protocol you input as a USER DEFINE model.

### 5) SYSTEM STATUS

It is setting related recording parameters like recording speed, IP address, and others related to system. If you set SYSTEM STATUS at YES and set at FACTORY DEFAULT, you have to set recording speed, and input IP address and others again.

### 6) ALL SETUP

If you set ALL SETUP at YES and set at FACTORY DEFAULT, all groups of FACTORY DEFAULT are initialized. That is, all parameter settings is done again just as done by manufacturer before delivery.

# CONTROLS AND FUNCTIONS

## 8. TCP/IP SETUP

Press [ENTER] button when half-tone green bar is on TCP/IP SETUP.

TCP/IP setup must be done correctly to access to DVR unit via IP network from client PC far apart from DVR unit.

MAC ADDRESS is not allowed for users to change and it is very unique number assigned by manufacturer as per IEEE regulation.

IP ADDRESS, IP PORT, SUBNET MASK, and GATEWAY are what users must input manually, or our DVR can get those data automatically in case DVR unit is connected directly to DHCP server in IP network.

To input each element of IP data, move small triangular cursor to the item you want to change, and press [ENTER] button, then you can change using [UP]/[DOWN] and [LEFT]/[RIGHT] button.



### 1) Concept of accessing to DVR unit via IP network

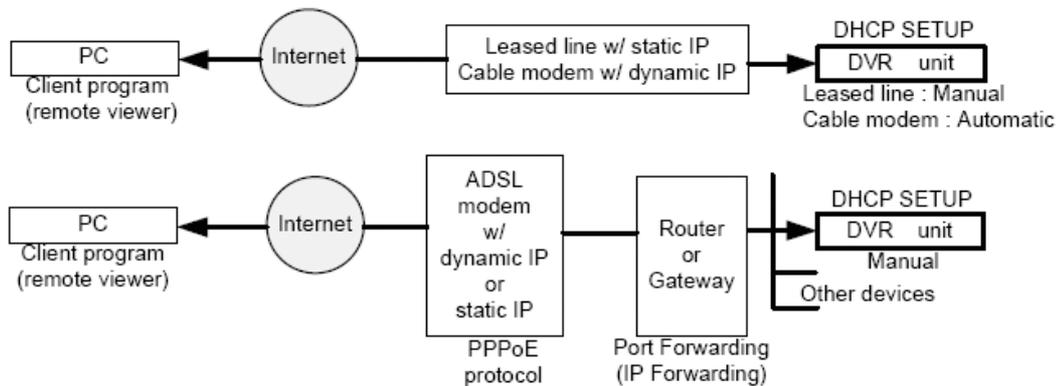


### 2) Conditions of IP network

#### a) Accessing to DVR unit in the same Intranet(LAN)



#### b) Accessing to DVR unit via Internet line



# SPECIFICATIONS

## 1. MONITOR SPECIFICATIONS

### ▶ LCD Type

15" Diagonal AM-TFT(Active-Matrix)

Pixel pitch(mm) : 0.297mm(H) X 0.297mm(V)

BRIGHTNESS: 430cd/m<sup>2</sup>(Typical)

CONTRAST RATIO: 400:1(Typical)

RESPONSE TIME: 25msec

### ▶ RESOLUTION(H x V)

1024 X 768 @75Hz

### ▶ FREQUENCY

HORIZONTAL: 30KHz - 62KHz

VERTICAL: 56Hz - 75Hz

### ▶ INPUT SIGNAL

ITU-656 (Digital 8Bit)

### ▶ ACTIVE DISPLAY AREA (W x H)

304mm X 228mm

### ▶ ELECTRICAL RATINGS

AC100 - 240V, 50/60Hz (auto switching)

### ▶▶ NOTE :

*Technical specifications are subject to change without notice.*

# SPECIFICATIONS

## 2. DVR SPECIFICATIONS

MODEL NO	DVR	
VIDEO I/F	INPUT	8 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	480TY LINES
	SIN RATIO	MORE THAN 4dB
MONITORING METHOD	COLOR	16.7 MILLION
	6P/UT SCREEN	FULL, QUAD DISPLAY, 9-SPLIT
	ZOOM	LIVE & PB AVAILABLE
	PIP	AVAILABLE
	SEQUENCE	AVAILABLE
RECORDING /PLAY FUNCTION	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
	COMPRESSED PICTURE	JPEG
	PICTURE RECORDING METHOD	FIELD SWITCHER METHOD FULL SCREEN RECORDING
	REC. MODE	REAL-TIME/ TIME-LAPSE /EVENT
OTHER FUNCTION	TRACK PLAY	SEARCH, STILL
	WEB INTERFACE	TCP/IP with client software
	POST ALARM FUNCTION	1~59SEC, CONTINUOUS TIMING ESTABLISHMENT POSSIBILITY CONVENTIONAL VCR, TIME LAPS VCR (VCR OUTPUT PROVIDED)
	BACK-UP	REMOTE BACK-UP USING TCP/IP INTERNAL BACK-UP(MARK IMAGE)
	OTHERS	RS232C, RS485, 8 ALARM INPUT
	CAMERA CONTROL	PAN/TILT/ZOOM AND FOCUS REMOTE CONTROL : EXTERNAL EQUIPMENT, WIPER,PUMP,FAN AND HEATER
	CONFIGURATION	PLUG&PLAY
MECHANICAL	1 HDD	INTERNAL 1 HDD
	OPERATION TEMPERATURE	41F~104F(5C~+40C)
	OPERATION HUMIDITY	LESS THAN 90%
	IR REMOTE CONTROLLER	BUILT-IN
	DIMENSION	13 INCHES IN WIDTH 445 mm x 415 mm x 130 mm
	WEIGHT	APPROX. 5KG (HDD 1EA)
POWER SUPPLY	DC ADAPTER (12V DC 8 A)	

# SPECIFICATIONS

## SYSTEM CONFIGURATION



# CDRW BACK\_UP FUNCTION

## How to back-up with CD-RW

Thank you for using our DVR-RW.

4ch DVR : Press MENU button to go into **SETUP MENU** ⇨ Press 1 button and ENTER ⇨ **MISCELLANEOUS SETUP** ⇨ **HDD INFORMATION** ⇨ Select **CD-R BACKUP**  
 8ch & 16ch DVR : Press MENU button to go into **SETUP MENU** ⇨ Press ENTER ⇨ **HDD MANAGEMENT** ⇨ Select **CD-R BACKUP**



1. Insert CD-R media into CD-RW drive and select the start time and date what you want to back-up.
  - \* START and END of time/date in HDD content only shows all of data information recorded. You cannot choose or change it.
  - \* 702 MB FREE of CD-R content means CD-R media information.
2. Move down to SIZE and push ENTER button, At the moment 700MB is selected, cursor will move down to BURN.
  - \* End of back-up time will be chosen automatically as much as the size of CD capacity you selected.
  - \* You can select the size of CD capacity on SIZE content but you cannot set or change the END of back-up time on CD-R content.
  - \* You can only change the START time and date.
3. Push the ENTER button at BURN content, Then, DVR start to burn CD.



4. When burning is completed, CD media will come out automatically. As you can see the above picture, CD-R content shows INSERT BLANK CD and Start Of back-up time will be set as just the end of back-up time automatically. End of back-up time will be selected as the same size as before. You can change this size as much as you want. If you want to back-up continuously, insert another CD media into CD-RW drive and burn it. If you don't want to burn anymore, press MENU button.
  - \* During burn CD, it's impossible to cancel.
5. Please install AJP Player in your PC. You can check CD data you burned through AJP Player.