

# Stand Alone Type

## User's Manual



4 Channel Network DVR

D V R



## GENERAL SAFETY



The reference DVR design is aimed to demonstrate how the DVR works. Review the following safety precautions to avoid injury and prevent damage to this product or any products connected to it.

- 1. Use proper power source**  
Do not operate this product from a power source that applies more than the specified voltage (90~260Vac).
- 2. Never insert anything metallic into the DVR case.**  
Putting something into the DVR case can be a source of dangerous electronic shock.
- 3. Do not operate in wet & dusty conditions.**  
Avoid places like a damp basement or dusty hallway.
- 4. Do not expose this product to rain or use near water.**  
If this product accidentally gets wet, unplug it and contact an authorized dealer immediately.
- 5. Keep product surfaces clean and dry.**  
To clean the outside case of the DVR, use lightly dampened cloth with water (no solvents).
- 6. Provide proper ventilation.**  
This DVR has a built in fan that properly ventilates the system.
- 7. Do not operate with suspected failures.**  
If there are any unusual sounds or smells coming from the DVR, unplug it immediately and contact an authorized dealer or service center.
- 8. Do not attempt to remove the top cover.**  
Warning: You may be subjected to severe electrical shock if you remove the cover of the DVR.
- 9. Handle DVR box carefully.**  
If you accidentally drop your DVR on any hard surface, it may cause a malfunction. If the DVR doesn't work properly due to physical damage, contact an authorized dealer for repair or exchange.
- 10. Use standard lithium cell battery. (NOTE: Manufacturer has preinstalled battery.)**  
The standard lithium cell 3v battery located on the mother board should be replaced if the time clock does not hold its time after the power is turned off. Warning: unplug the DVR before replacing battery or you may be subjected to severe electrical shock. Properly dispose of old batteries.
- 11. Install this product under good air circulation conditions.**  
This DVR system contains a hard disk drive inside, which generates much heat during operation. Therefore, do not block air holes (bottom, upper, sides and back) of the DVR that cool down the system while running. Install or place this product in an area where there is good air circulation.

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## Chapter 1. Introduction to the Digital Video Recorder (DVR)

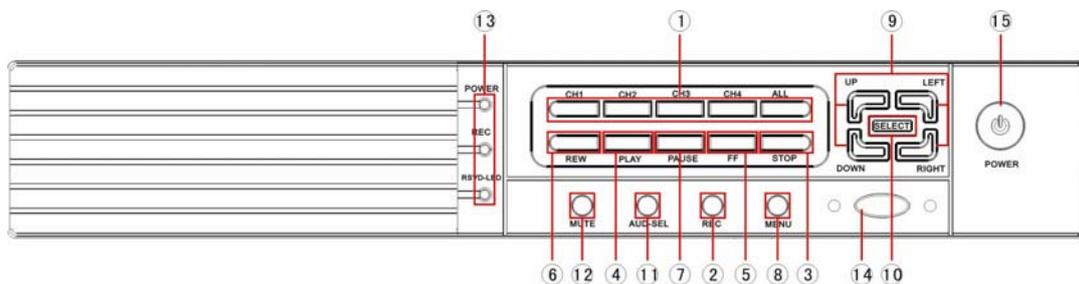
The following document is a reference Digital Security System, designed to simultaneously record/retrieve up to 4 channels of video streams. It utilizes the latest digital image compression technology to compress the input channel video streams, and uses a hard disk to record the compressed video stream.

- Chapter 4, "Hardware Installation" explains how to install the DVR and other accessories in your home.
- Chapter 5, "DVR Menu" explains how to operate/manage the DVR.

## Chapter 2. Unit Description

### A. DVR Front Panel

This chapter briefly describes the buttons on the front panel of the DVR. These buttons operate the basic functions, such as recording, playback, fast-forward, reverse, etc. For more details on the DVR's on-screen menu, refer to "Chapter 5. DVR Menu".



#### (1) All, 1, 2, 3, 4

These buttons allow you to select camera images in live recording or playback mode. There are 5 display mode selection buttons on the front panel (All, 1~4,). The default display setting of the DVR is to show all 4 channels at the same time reducing each channel's image size. With this setting, you can see all 4 channels on your TV screen at the same time. However, when you want to see only one channel on full screen, which means one large image, you can simply select one channel and it will be displayed. If you push "All" camera selection button, DVR will display all 4 channels (cameras) at the same time in quad screen.

#### (2) REC

Press "REC" button to start recording. This mark '●' on the selected channels of the screen means that channel is now recording.

#### (3) STOP

Press "STOP" button to stop record or playback.

#### (4) PLAY

After recording, press the "PLAY" button to start video playback.

Playback will start with the latest event and continue playing sequentially through the contents on the hard disk drive. Please see "Playback Control" in Chapter 5 for more details.

#### (5) FF

To play the recorded stream faster, press the "FF" button.

There are six levels of fast forward playback speed.

(a)FF 1: Plays every frame without skipping any video frames at the speed of 50/60FPS.

(b)FF 2: Play two times faster (x2) than the normal play.

(c)FF 3: Play three times faster (x3) than the normal play.

(d)FF 4~FF 6: Increased playback speed by skipping more frames at a time during playback. To change the fast forward play back speed level, press the "FF" button again.

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### **(6) REW**

To play the recorded stream backward, press the "REW" button.

There are 6 modes of REW, 1~6. To change the reverse playback speed level, press the "REW" button again.

### **(7) PAUSE**

To pause the video playback, press the "PAUSE" button.

Then the video displaying will be stopped.

To continue playback, push the play "PLAY" button or "PAUSE" button again to resume the previous mode.

### **(8) MENU**

To display menu option, press the "MENU" button.

### **(9) UP (↑) / DOWN (↓) / RIGHT (→) / LEFT (←)**

To change a menu field or change the DVR configuration values, use the UP, DOWN, LEFT, or RIGHT buttons.

### **(10) SELECT (Enter ↵)**

This button is used to change the setup value.

### **(11) AUD-SEL**

Switch audio out channel. The DVR can record two audio channel. There are two icon "I" Show in the monitor. The current output channel will show icon "I<"

### **(12) MUTE**

Mute audio out sound.

### **(13) LED Light**

There are LED lights located on the front panel (some models on the side panel). When the LED Light is ON, it indicates the following conditions:

- (a) Green LED – Power is on.
- (b) Red LED –DVR is currently recording video.
- (c) Yellow LED –DVR is operating in normal mode.

### **(14) IR**

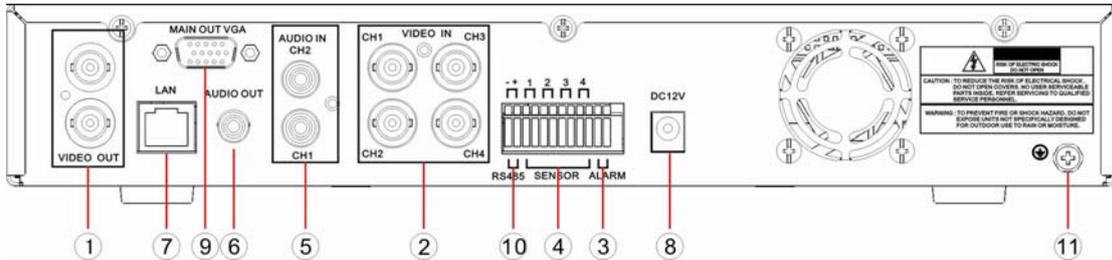
IR window.

### **(15) Power Switch**

\* Depending on the model of the DVR, this option could not be installed.

## B. DVR Rear Panel

[Note] See “Chapter 4. Hardware Installation” for more details.



### (1) VIDEO OUT

Connect DVR to TV monitor using a RCA cable or BNC cable with RCA adapter.

### (2) VIDEO IN (or CHANNEL IN)

Connect DVR to cameras(s). Each channel port indicates a single camera connection. The DVR has 4 camera connection ports.

### (3) ALARM

There is an alarm output terminal in case you need to install alarm devices.

### (4) SENSOR

You can use this sensor terminal block to install up to 4 motion sensors into DVR. If you add the motion sensor devices to your DVR, the video recording can be triggered by motion detection. Even though you do not install motion detection hardware, you can utilize soft motion detection (Refer to Chapter 5, Section O – Sensor Setup).

### (5) AUDIO IN

Use this port to connect DVR to cameras that has a microphone function so that you can record sound. There are two audio input ports.

### (6) AUDIO OUT

Connect DVR to “AUDIO IN” on your TV so that you can hear recorded sound from TV speakers.

### (7) LAN

Using a LAN cable, connect the DVR to your computer or routing device, such as a DSL modem or hub. The LAN (RJ-45) jack is for remote viewing of the DVR via the Internet.

### (8) AC-DC POWER ADAPTER JACK

Connect the power adapter into the DVR and plug the power cable into the wall. Some DVR models do not have a power adapter so you may not see this. In case, just plug power cable from the behind the DVR into the wall.

### (9) VGA output

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**(10) RS485**

Support PTZ camera control.  
Protocol: PELCO-D / PELCO-P

**(11) Grounding**

**(12) USB HOST Port (Optional)**

- a) The USB Host port is for backing up video from the hard disk onto a USB Flash memory device.
- b) Mouse operation, support USB interface mouse.

\* Depending on the model of the DVR, this option could not be installed.

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## Chapter 3. Getting Started

- (1) Install a hard disk drive into your DVR (some models come with the HDD already installed).
- (2) Connect the DVR to a TV set.
- (3) Connect cameras to the DVR.
- (4) Connect the LAN cable from the DVR to a network router
- (5) Connect any other accessories (sensors or alarm) if necessary.
- (6) Plug the power cord into the power jack on the wall.
- (7) Turn on the power switch on the DVR.
- (8) Start TV Monitoring and Recording.

Here are some check list you might need to remind when using the DVR.

- √ Make sure that a hard disk drive and camera(s) are properly installed (see "Chapter 4. Hardware Installation")
- √ The hard disk jumper setting must be set to master (see "Hard Disk Drive Installation" in Chapter 4). Otherwise, DVR may not boot up.
- √ The DVR offers you the flexibility to choose between a faster recording frame rate (Maximum Rate: 30 frames per second) for more natural motion or recording for longer periods using a slower frame rate (Minimum Rate: 1 frame per second). If you record using a 120GB hard drive (HDD), you will be able to record for up to six months using the slowest frame rate of one frame per second.
- √ There is an exception to entering "View" mode at start up. If the power is turned off while recording (i.e. a power failure), the DVR will enter "Power Recovery" mode at start up, detect that it has been shut down, and then reinitiate the recording process.

**[Note] See the next chapter 4 "Hardware Installation" for more details such as hard disk drive and camera installation.**

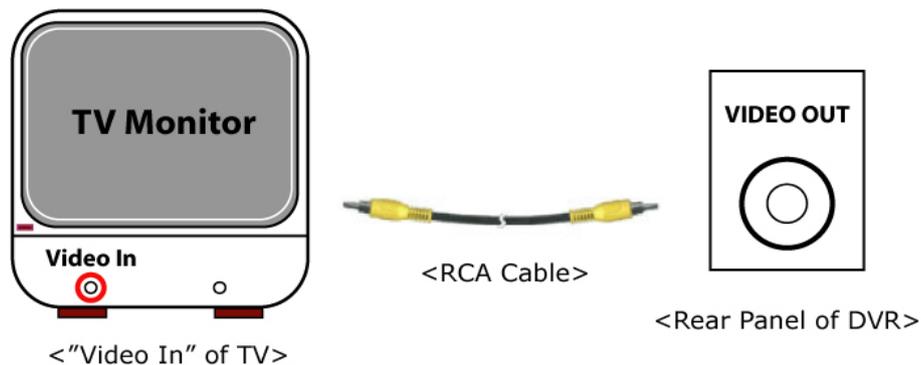
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## Chapter 4. Hardware Installation

### A. Connecting DVR to Your TV Set

#### (1) Video Input/Output Connection (For TV monitor screen display)

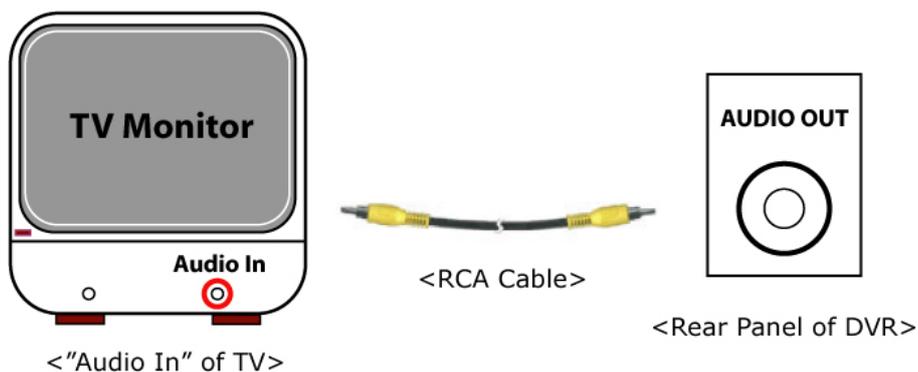
Any TV set that has a "video input" terminal is suitable for displaying the picture. The figure below shows the video signal line connection.



Using an RCA cable, connect "VIDEO IN" of your TV to "VIDEO OUT" on the rear panel of the DVR.

[Note] You need to purchase an RCA cable separately for the DVR-TV video connection.

#### (2) Audio Input/Output Connection (For TV speaker)



Using an RCA cable, connect "AUDIO IN" of your TV to "AUDIO OUT" port on the rear panel of the DVR.

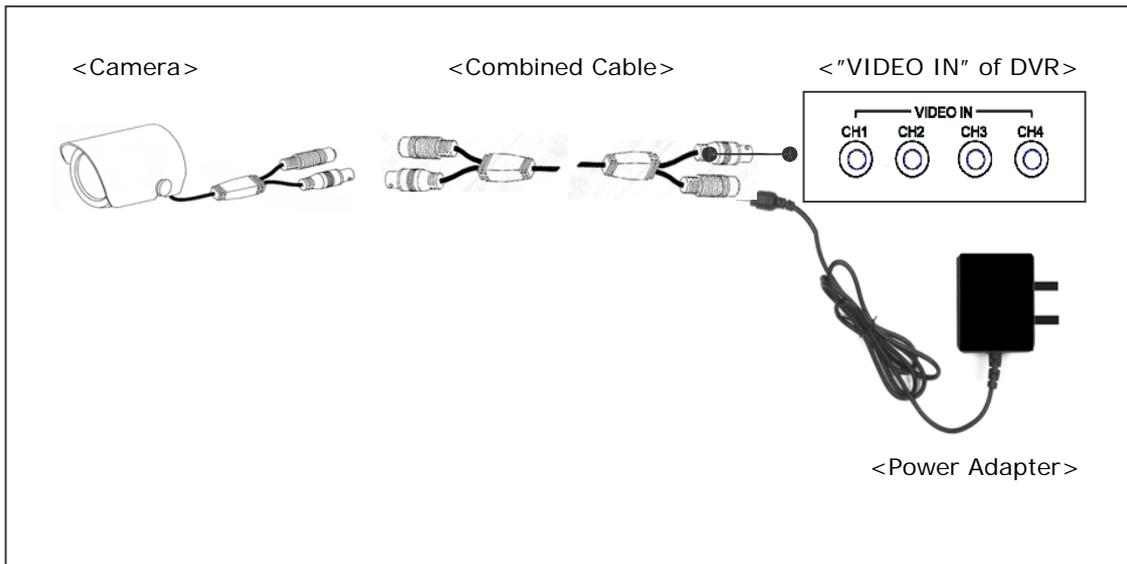
[Note] You need to buy a RCA cable separately for the DVR-TV audio connection.

## B. Camera Installation

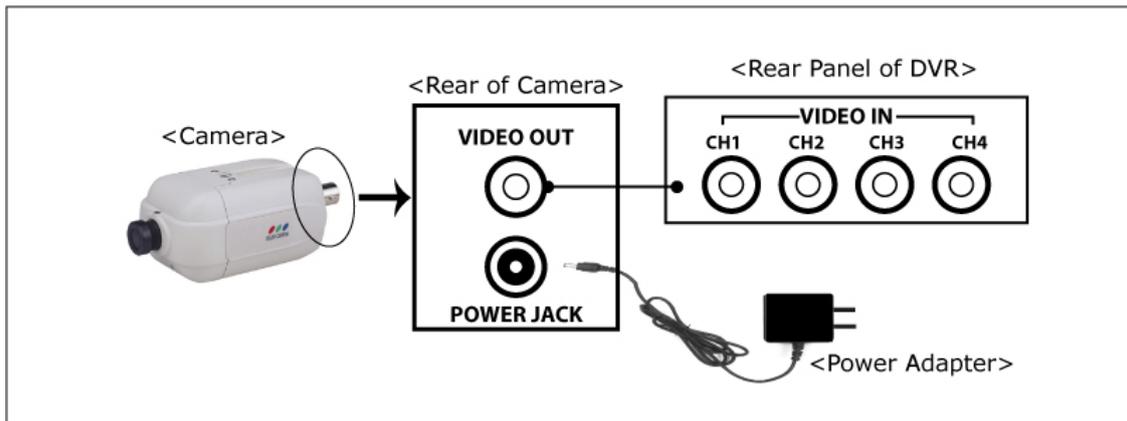
### (1) For cameras that have no built-in microphone

If your cameras have cables consisting of power and video cables, connect "VIDEO IN" or "CHANNEL IN" of your DVR, using the combined camera cable included in the package, and plug in the camera power adapter.

**<Connection Type 1 – For indoor/outdoor cameras or other brands that comes with a splitter cable>**



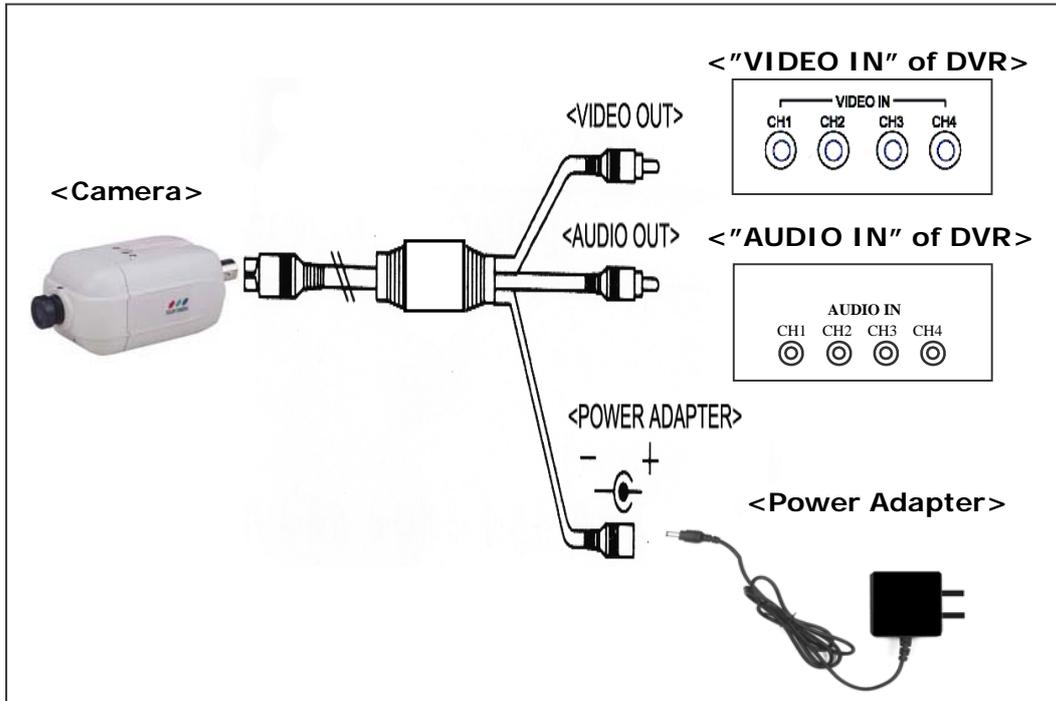
**<Connection Type 2 - For cameras that have a video output jack on the rear>**



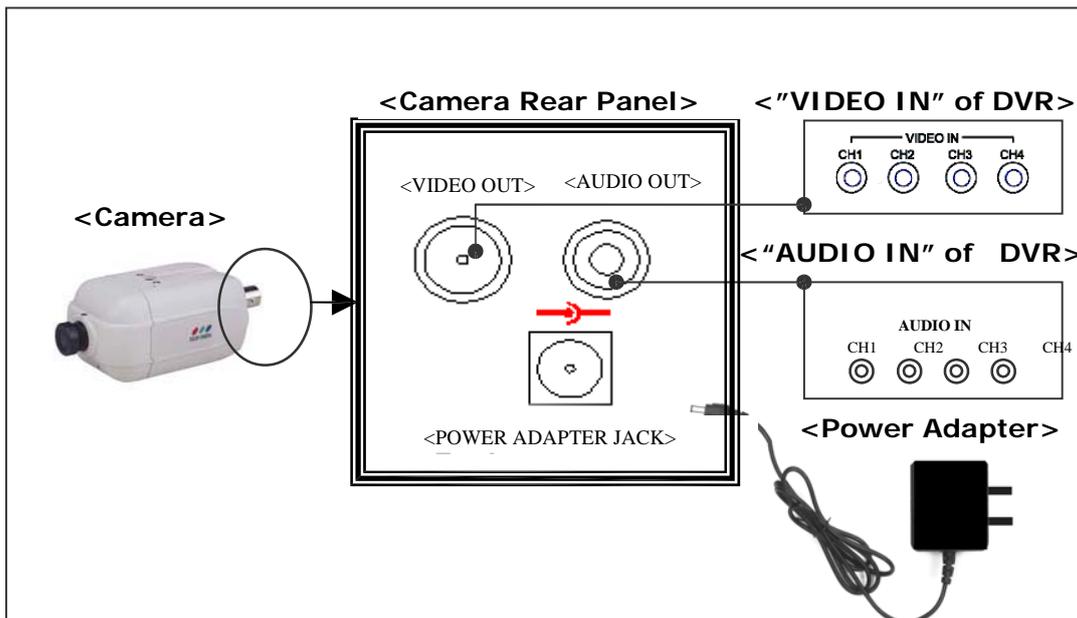
**(2) For cameras that have a built-in microphone**

If you've purchased cameras that have a built-in microphone, follow the diagram below for installation.

**<Connection Type 1 – For camera that comes with a video/audio splitter cable>**



**<Connection type 2 – For cameras that have direct video/audio output holes>**



## C. Sensor Installation

The DVR can support up to 4 sensors (not included in the DVR package) in up to four locations.

There are two steps for sensor installation:

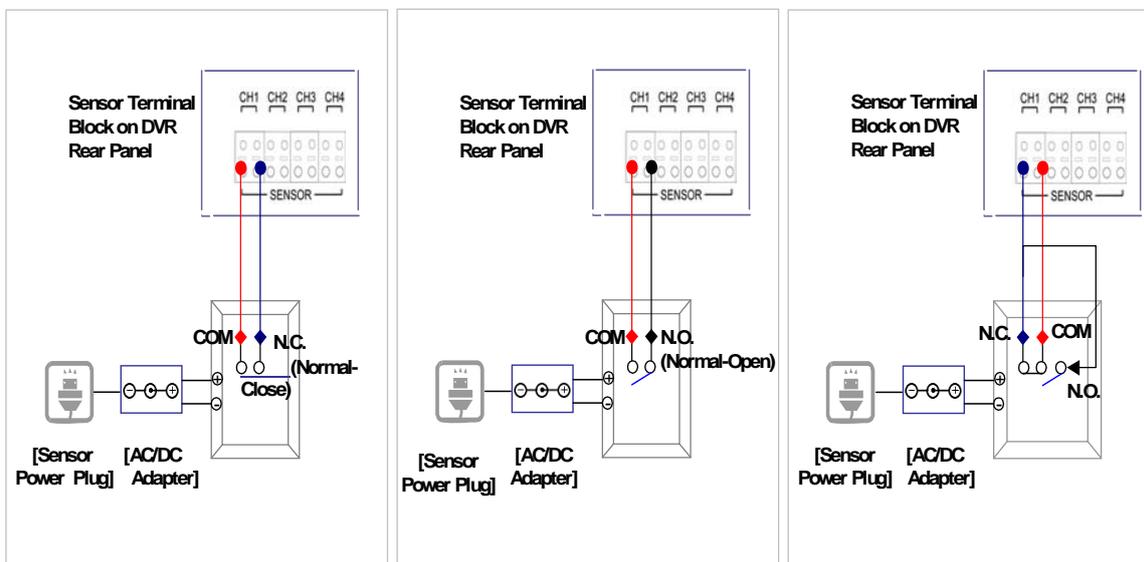
- (a) Connect the sensor signal lines to the signal input terminal.
- (b) Connect the sensor power lines to the appropriate power source.

In general, there are three different types of sensors readily available for purchase at any local home electronics store. (1) Normal-Close (2) Normal-Open (3) Normal-Close & Open. Below is a brief diagram on how each type of sensor is installed into the DVR. The procedure for sensor installation is shown below.

1. Sensor Type I (Normal-Close Sensor)

2. Sensor Type II (Normal-Open Sensor)

3. Sensor Type III (Normal-Open/Close Sensor)



[Note]

\* After you install sensor(s), the programmed recording mode must be set to "S" for "sensor" during the hour that you are recording (See 'Chapter 5. H. Record Schedule).

\* Contact an authorized dealer for information about buying the appropriate sensors for your needs and for information concerning proper installation procedures.

## D. Alarm Installation

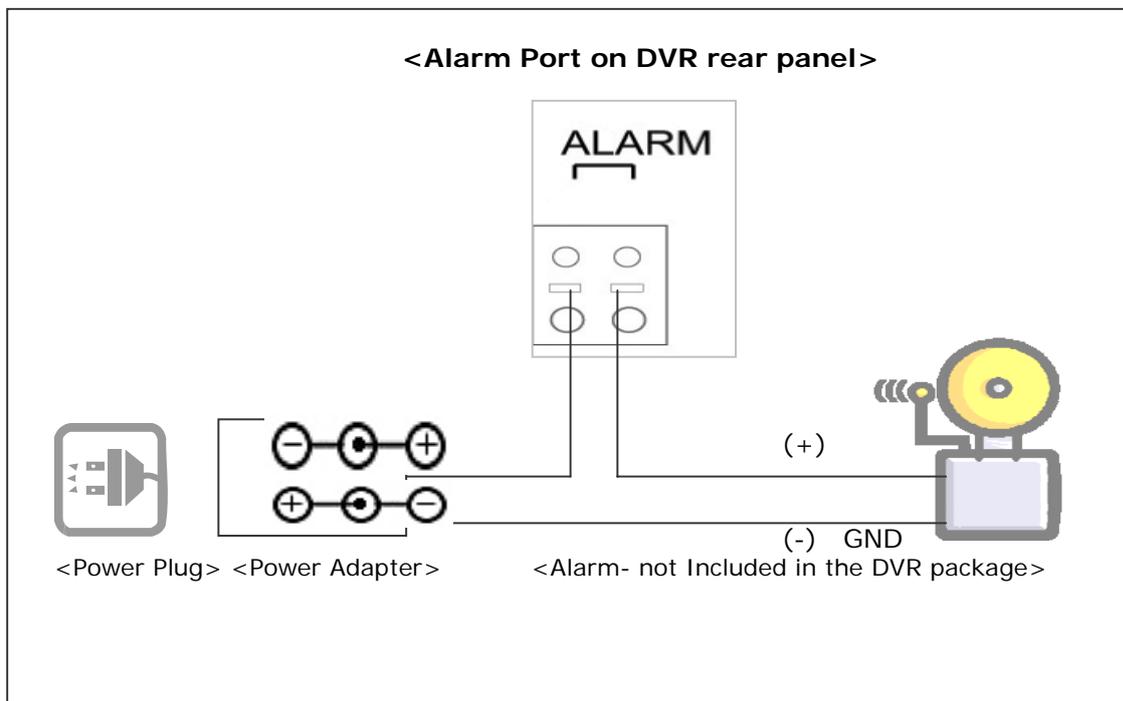
The DVR has an internal switch for sounding an alarm. The switch is normally open, but when the sensor is triggered, the alarm is activated as well. The circuitry is as follows.

[NOTE] Contact an authorized dealer for information about buying the appropriate alarm for your needs and for information concerning proper installation procedures.

There are two steps for alarm installation.

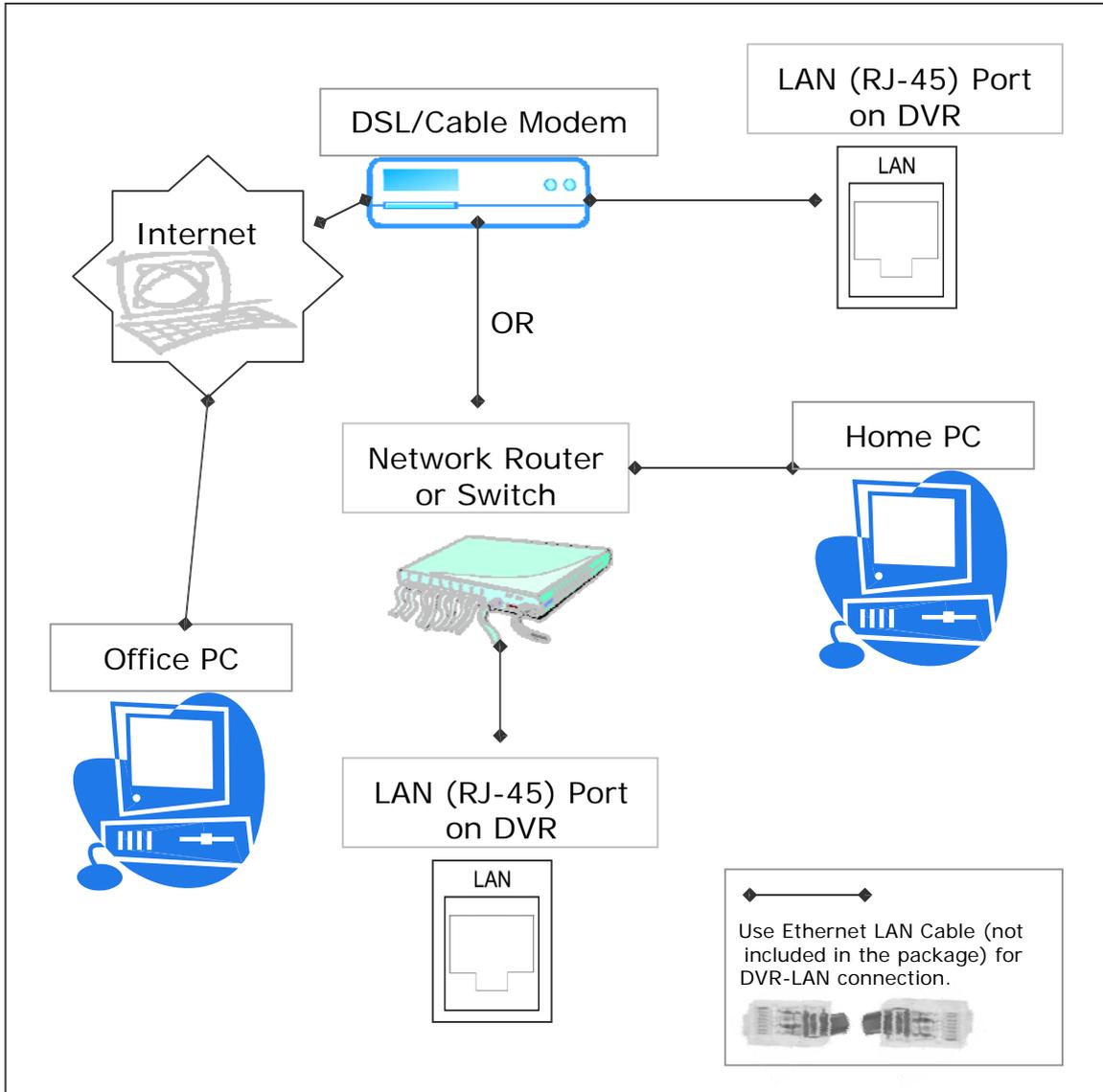
- (a) Connect the alarm power lines to the alarm switch terminal.
- (b) Connect the alarm power lines to the appropriate power source.

The following diagram shows how you install alarm device into your DVR.



## E. LAN-DVR Connection

See the diagram below for steps to connect your DVR to a local area network or the Internet. For remote monitoring from your computer, you must have a LAN connection available or Internet access service.



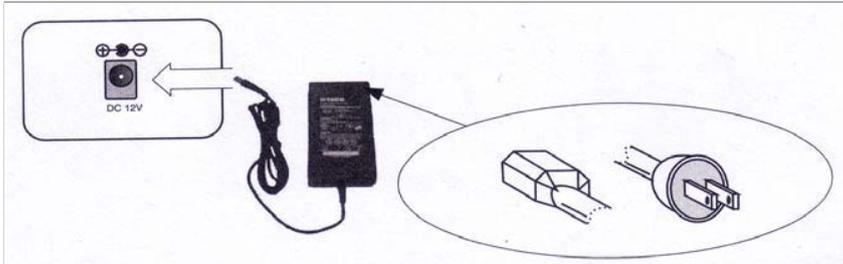
Suitable network routers and switches are available in electronics retail stores from Net gear, D Link, or Linksys.

\*\*You need to register at [www.dyndns.org](http://www.dyndns.org) to get a free account. After registration, you will have a username and password. You can also register your domain name on the website. Please refer to Chapter 5, P. Network Setup for more details. There you will learn how to input the DynoDns username, password, and domain name. You can log in from anywhere by using Internet Explorer and entering your DVR's domain name.

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## F. Power Connection

Connect a DVR power adapter to the adapter jack at the rear of the DVR unit.



\*\* Note that the power connector type could be different from the above description and could be changed without notice.

Now, the DVR is ready to go!! Turn on the power button at the rear side of the DVR.

The next chapter will explain about the DVR menu and how to operate a DVR.

## Chapter 5. DVR Menu

Below you'll find a screen shot of the DVR main menu. Press the MENU button to display.

### A. Main Menu

CHANGE  
SETTINGS  
IN MAIN  
MENU



Press the UP "▲" or DOWN "▼" key on the DVR front panel to move the red arrow sign ">" up or down in order to change the settings. In the main menu, the arrow indicator ">" will be shown on the screen right next to one of the eleven menu selections (i.e. to the left of CAMERA SELECT).

## B. Camera Setup

Depending on your system, there are 4 cameras that can be connected to the DVR. Use the key buttons on the front panel to select which cameras are turned ON or OFF for real-time viewing on the screen. Toggle ON/OFF by pressing the 'SELECT' button.



In the example above, cameras 1, 2, and 3 are ON, while camera 4 is OFF.

## C. Record Setup

### SELECT CAMERA(S) FOR RECORDING

Selecting the camera channel/s on RECORD SETUP menu is the same as CAMERA SETUP options.



\* Choose the cameras you want to Record by selecting 'ON'.

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## D. Record Mode

	<p>If you press the "REC" button, the DVR goes into 'REC' mode. The DVR will proceed to continue recording based on set 'Record Schedule'. In record mode, you can change channel view and switch the audio channel. However, you cannot playback while in record mode.</p>
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## E. View Control

<b>SINGLE OR MULTI- SCREEN VIEW</b>	<p>In EACH mode, you can use the following keys to select the camera that you want to see in full screen during playback.</p>
<b>Cam 1-4</b>	<p>Each View CH1-CH4 button controls FULL SCREEN display for the selected channel (From cameras 1~4)</p>
<b>ALL</b>	<p>This button activates the simultaneous display of all 4 channels on screen.</p>

## F. Record Frame Rate

### ADJUST BETWEEN 1 TO 30 FRAMES PER SECOND

The total frame rate per second is 50/60. You can set the frame rate per channel (1~30). If the frame rate you select causes the total frame rate to exceed 60FPS, the software automatically changes the largest frame rate value to a smaller value.

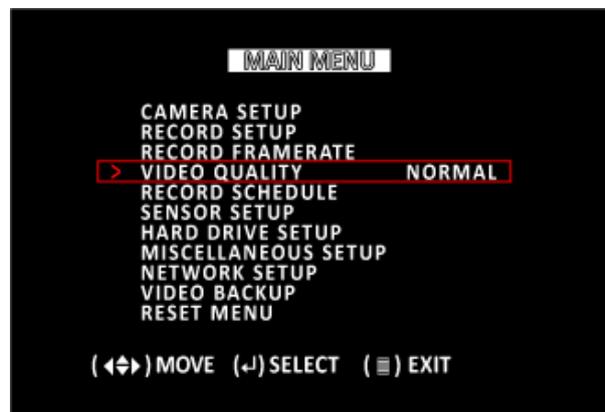
The higher the record frame rate, the more natural the motion will appear during playback. The lower the record frame rate, the more space you will save on the hard disk drive. There are various record frame rate settings to choose from (between 30 frames and 1 frame per second).



## G. Video Quality

- Highest
- Higher
- High
- Better
- Normal
- Low
- Lower
- Lowest

There are eight different video quality settings. The higher the video quality, the clearer the image will be during playback. The lower the video quality, the more space you will save on the hard disk drive.



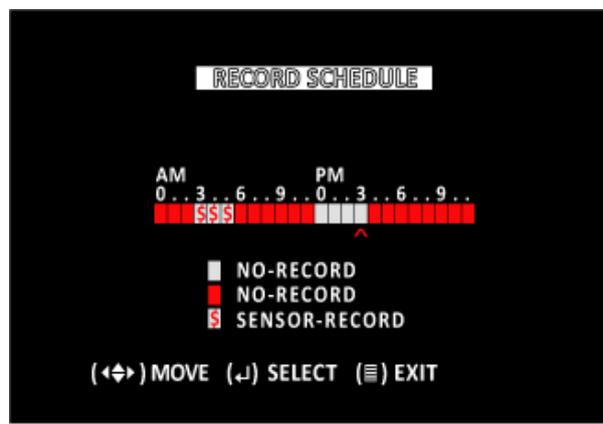
\* The video quality in View Mode is not affected by the video quality

setting. These settings only affect the video quality during playback of a recording.

## H. Record Schedule

- **ALWAYS**
- **SENSOR**
- **NO REC**

The time line below indicates the hours of the day based on an AM/PM clock. For each hour, you may toggle between NO-RECORD, RECORD, or SENSOR-RECORD.



Press the "LEFT" and "RIGHT" arrow to maneuver and use the "SELECT" button to change between continuous recording, sensor recording and no recording. Once you have finished, press "MENU" to exit.

(RECORD) System will record continuously during this period.

(SENSOR-RECORD) System will record when sensor is triggered.

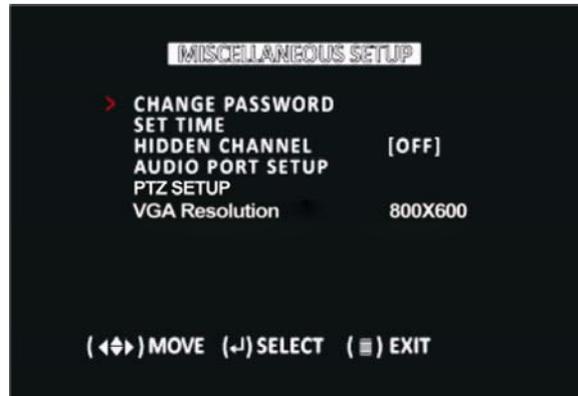
(NO-RECORD) System will not record during this period.

**You must press the "REC" button to record in these three modes.**

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## I. Miscellaneous Setup

- CHANGE PASSWORD
- SET TIME
- HIDDEN CHANNEL (ON/OFF)
- AUDIO PORT SETUP
- PTZ SETUP
- VGA Resolution



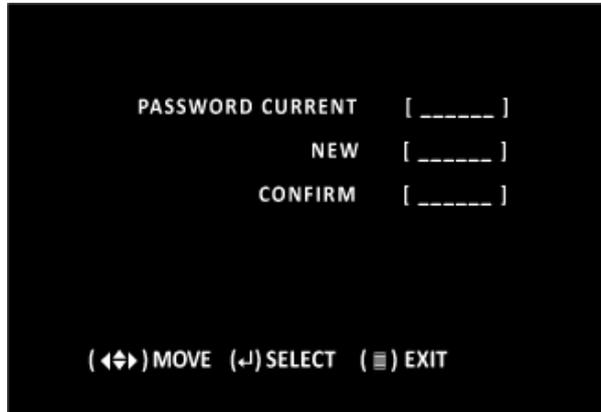
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## (1) PASSWORD CHANGE

- **6-DIGIT  
PASSWORD**

- **DEFAULT  
PASSWORD  
SETTING:  
111111**

When you select, "CHANGE PASSWORD", the menu below will open.



[NOTE] The Factory Default Password is 111111. This number (1) corresponds with the button for camera "one" on the front of your DVR.

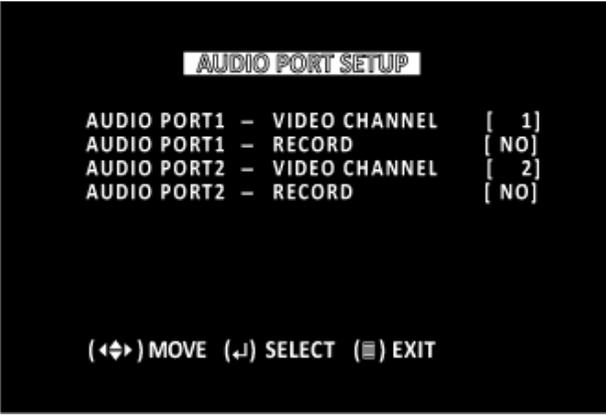
1. Press this button six times.
  2. Once you input the current password, you can set a new password.
  3. Then confirm the password you have set.
- You can use a combination of any of the buttons on the front of your DVR to set a new password.
  - When the new password is accepted, the following screen message will flash: **"Password changed"**
  - The message will blink 3 times. Then the "MENU" will return. If the password is not accepted, you will receive a message that informs you that it was not accepted and the "MENU" returns. You may try again by repeating the same steps.

## (2) SET TIME

<ul style="list-style-type: none"><li>• Year</li><li>• Date</li><li>• Hour</li><li>• Minute</li><li>• Second</li></ul>	You can change time/date/hour/year using the SET TIME menu.
	
	<p>2007/09/19 = year/month/day    11:38:57 = hour/minute/second</p> <p>Use the LEFT "◀" and RIGHT "▶" buttons on the front panel to move the "^" cursor below the numbers back and forth. Then use the "SELECT" button to change the numeric values of date &amp; time.</p>

## (3) AUDIO PORT SETUP

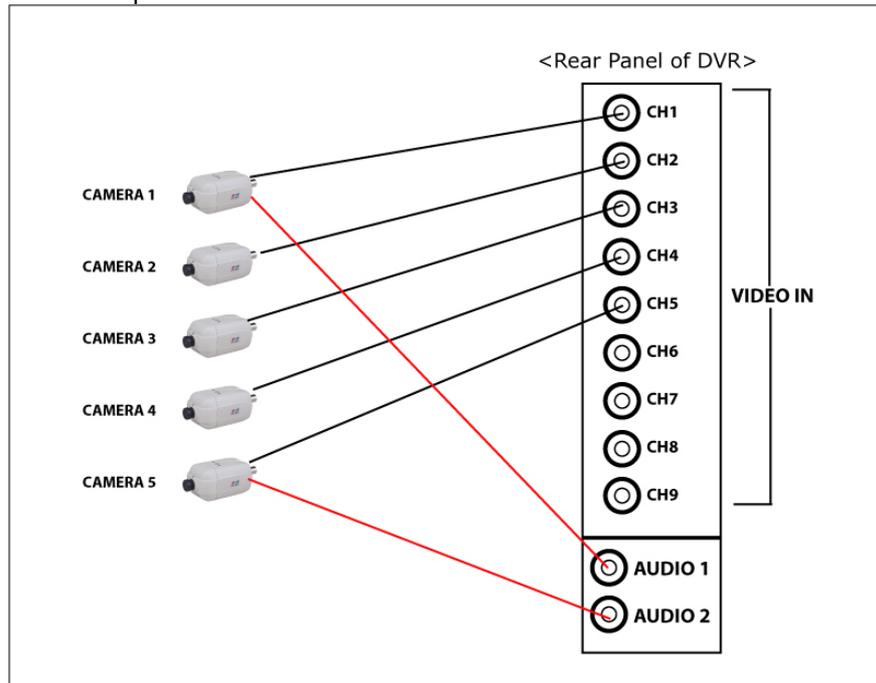
**[Note]** This menu is available for the DVR models that have AUDIO INPUT/OUTPUT only.

<p>AUDIO RECORD, MUTE ON/OFF</p> <p>AUDIO CHANNEL NUMBER</p>	
--	--

When you move the cursor to "AUDIO PORT#-RECORD" and push the "SELECT" button, the option will be changed to NO or YES. If the option is YES, the audio will be recorded onto the hard drive when you push the RECORD button.

When you move the cursor to "AUDIO PORT#-VIDEO CHANNEL" and push "SELECT" button, the option will be changed to "2". If the option is "2" then the audio input channel will be changed to "2". If you push "SELECT" button one more time, the option will be changed to "3" and one more pushing make the channel to "4".

For Example:



The setup screen for the above configuration would look like this:



## J. Record Control

### RECORDING BY CAMERA

When the "RECORD" button is pressed, the recording process starts immediately. The recording channel indicators (red dot) next to CH1 and CH2 on the top of the screen indicate that those channels have been selected to record and are recording.



## K. Factory Reset

### BACK TO DEFAULT SETTING

#### RESET (Initialization):

To reset the DVR settings back to factory default, press the "PAUSE" button 5 times and "STOP" button 5 times. After resetting, the password will return to the default value (111111) and all DVR settings on the menu will return to default except MAC address. Second method: Take off the battery on the DVR main board for 5 minutes and it will clear all DVR setting.

\* However, it will not erase any video data on the hard disk drive.

## L. Record Playback Control

### PLAYBACK CONTROL

When you press the MENU button during PLAY mode, the SEARCH TIME window will open as illustrated below. While in this window, you can either choose and playback a recorded event or manually input a specific time to be viewed.

#### To choose and playback a recorded event:

When you first open the SEARCH TIME window, the arrow will be pointing at the most recent event (0002). Use the UP "▲" and DOWN "▼" buttons to find the event that you want to view and then press the PLAY button. The event you have chosen will start playing.

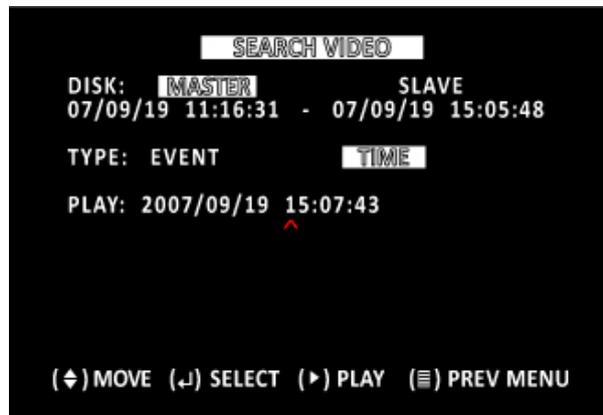


2007/09/19 = year/month/day 15:05:43 = hour/minute/second

[NOTE] When the arrow is pointing at a specific event, the date and time below HARD DRIVE: MASTER shows the beginning (date and time) to the ending (date and time) of that recorded event.

**PLAYBACK  
CONTROL**

**To manually input a specific time to be viewed:**



1. Open the SEARCH TIME window by pressing the "MENU" button during "PLAY" mode. The arrow will be next to the most recently recorded event (A).

[NOTE] The date and time displayed under HARD DRIVE: MASTER now corresponds with the beginning and ending period of what has been recorded on your hard drive (C).

[NOTE] If you have set up your hard drive as a "slave" drive, the caption under SEARCH TIME will read HARD DRIVE: SLAVE.

2. Press the "DOWN" button and the arrow will move below the date and time references under HARD DRIVE: MASTER (D).

3. Move the arrow left or right by using the UP "▲" and DOWN "▼" buttons. Change the date and time digits by pressing the SELECT button.

4. Finally, input the desired starting date and time, press the PLAY button and the DVR will start playing.

## M. Hard Disk Drive Setup

### HARD DISK DRIVE INFORMATION



1. OVERWRITE ENABLED:  
If you choose YES (default setting), recording continues and overwrites previous recordings when hard disk drive space is full. If you choose NO, the recording session stops when the hard drive capacity is reached.
2. MASTER HDD SIZE:  
It shows the size of the primary hard disk drive installed in The DVR.
3. MASTER HDD USED:  
It shows the space used on the first hard disk drive for recording.
4. MASTER HDD FORMAT:  
If you format the hard drive, it will erase all the data recorded on the first hard disk drive.
5. SLAVE HDD SIZE  
It shows the space available on the secondary hard disk drive in the DVR.
6. SLAVE HDD USED  
It shows the space used on the secondary hard disk drive for recording.
7. SLAVE HDD FORMAT  
If you format the hard drive, it will erase all the data recorded on the secondary hard disk drive.

[NOTE] Your DVR may not support a slave hard drive.

## N. Hard Disk Drive Format

### HARD DISK FORMAT Part (A) (DVR with built-in HDD)

When you press the "SELECT" key, you will be prompted to input a password when the hard disk format menu appears.

PASSWORD INPUT (6) : \_ \_ \_ \_ \_ \_

When you key in the correct password, the following message will flash 3 times.

**"Password Correct  
Hard Disk Formatted"**

Otherwise, the following error message will be displayed on the screen.

**"Password Incorrect"**

[NOTE] The Factory Default Password is 111111. This number (1) corresponds with the button for camera "one" on the front of your DVR.

**HARD DISK  
FORMAT  
Part (B)  
(DVR with  
removable  
HDD, not  
included)**

When you install new hard drive, you will see the following message when the DVR system boots up for the first time.

Checking HDD.....

MASTER [IC35L040AVVN07-0 ]-NEW  
DVR NEEDS TO FORMAT HDD  
ALL DATA WILL BE LOST  
(SELECT)FORMAT/(MENU)CANCEL?

<When booting up with a new hard disk drive>

The recognized hard drive is now the new one, and if you push (SELECT) button, the DVR system will format the MASTER hard disk. If you push (MENU) button, system will not format the hard drive. Upon the next boot up of DVR system, it will continue to prompt you to format the hard drive.

Checking HDD.....

MASTER [IC35L040AVVN07-0 ]-USED  
DVR NEEDS TO FORMAT HDD  
ALL DATA WILL BELOST  
(SELECT)FORMAT/(MENU)CANCEL?

<When booting up with a used hard disk drive>

If you attach a hard drive that has been previously used in another DVR system from the same vendor, you will see "-USED", meaning the attached hard drive could possibly contain some important video streams. If you want use this hard drive for this system, it needs to be formatted.

If the user selects "(SELECT) FORMAT", the following message will be displayed.

Checking HDD.....

MASTER [IC35L040AVVN07-0 ]-NEW  
DVR NEEDS TO FORMATHDD  
ALL DATA WILL BE LOST  
FORMAT...

<When formatting new hard drive>

---

The following message will be displayed on the screen.

Checking HDD.....

MASTER [IC35L040AVVN07-0 ]-NEW  
DVR NEEDS TO FORMAT HDD  
ALL DATA WILL BE LOST  
FORMATCOMPLETED

<When hard disk drive formatting is finished>

If user selects "(MENU) CANCEL", the following message will be displayed.

Checking HDD.....

MASTER [IC35L040AVVN07-0 ]-NEW  
DVR NEEDS TO FORMAT HDD  
ALL DATA WILL BE LOST  
FORMAT CANCELED – HDD IGNORED

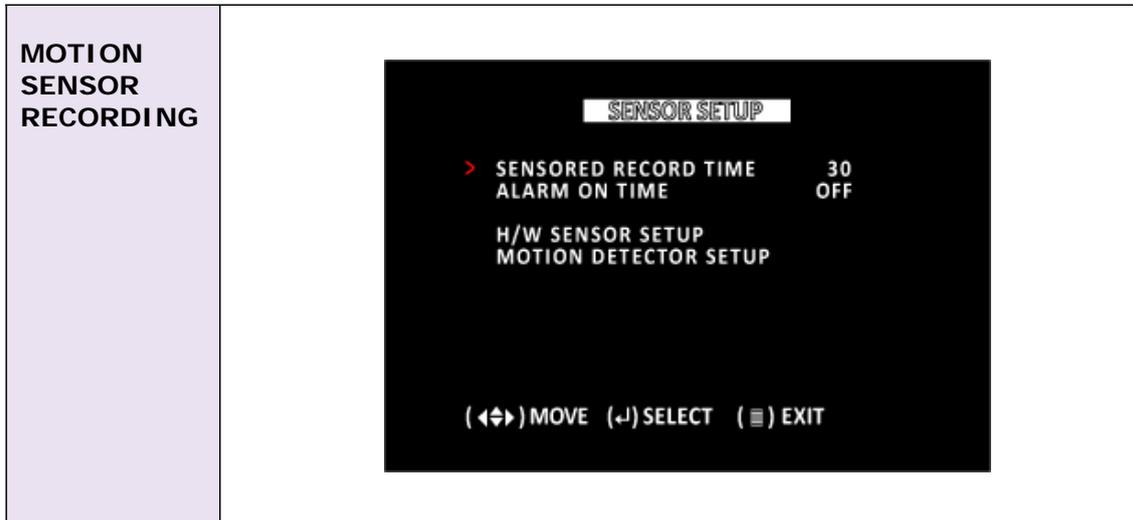
<When hard disk drive formatting is canceled>

In the case of a used hard drive, the same procedure is applied.

---

## O. Sensor Setup

[Note] You need to buy sensors separately to make this sensor recording functions to operate on your DVR system.



### SENSORED RECORD TIME

This indicates the length of recording time after the sensor's last detection of movement.

### ALARM ON TIME

It indicates how long the alarm lasts after a sensor is triggered.

\* SENSORED RECORD TIME and ALARM ON TIME are measured in seconds.

### HARDWARE SENSOR SETUP

It indicates the sub menu for setting up the external motion sensor devices.



In this example, Channel 1 & 2 have sensors installed, Open and Close, respectively.

### MOTION DETECTOR SETUP

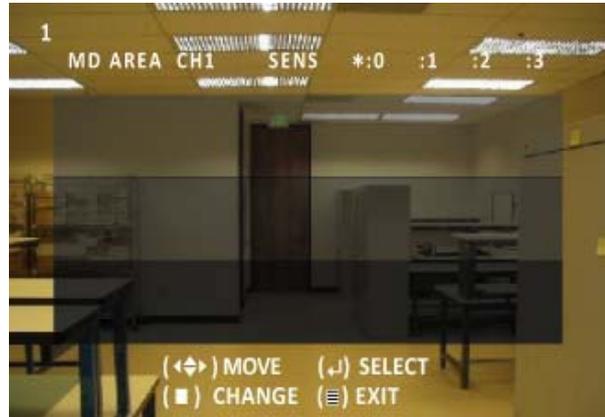
It indicates the sub menu for setting up the software motion sensing without any external sensor devices.



In this example, Channels 1, 2, and 4 have Motion Detection enabled.

**MOTION  
SENSOR  
RECORDING**

The image below shows the Motion Detection Area setup. As you see in the example below, there are 3 shaded regions. Each region represents different levels of motion sensitivity required to activate sensor recording.



Adjust the sensitivity by first selecting the specific region in the view you would like to set. Then press 'STOP' button to adjust the sensitivity.

A blinking block (cursor) shows the particular setting sensitivity for that block. The Level 0 setting means the block area is disabled. Level 3 is the highest level of sensitivity. By pushing the "SELECT" button you can choose the sensitivity of the blinking block.

## P. Network Setup

### NETWORK SETUP

-This menu option is available for DVR models that have a LAN port only



[Important!] The MAC ADDRESS is issued by the manufacturer and should be on a label located on the back of your DVR. Nevertheless, keep this number in a safe place for further reference.

[NOTE] The IP ADDRESS, SUBNET, GATEWAY, and DNS are provided by your Internet Service Provider (ISP) when you setup your account. Keep your ISP account information in a safe place for further reference. If DHCP (vs. STATIC) is selected, these values will be automatically assigned by the DHCP client.

- Use the UP "▲" and DOWN "▼" buttons to move the arrow to the other categories in the NETWORK SETUP menu.

**NETWORK  
SETUP**

**-USER  
SETUP**



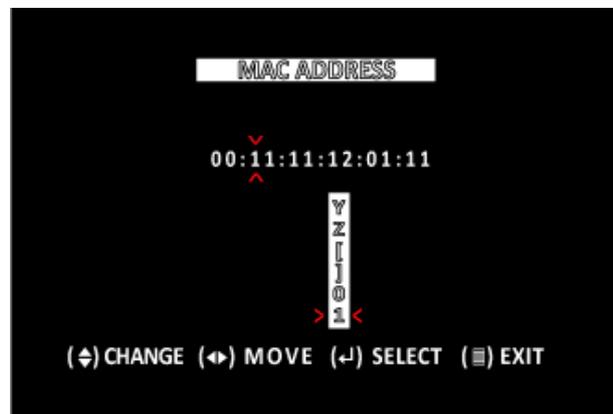
When a user connects to the DVR via the Internet, Internet Explorer will prompt the user to enter a username and password. There are two kinds of user, ADMIN and USER.

The default value for username and password of "USER" is blank, nothing. This allows the user to connect without username or password.

However, in order to control the DVR, the user must login as "ADMIN", and at that time, must type the username and password set by this menu.

**NETWORK  
SETUP  
(cont.)**

-This menu option is available for DVR models that have a LAN port only



- Use the UP "▲" and DOWN "▼" buttons to move the arrow from left to right and use the "SELECT" button to change the numbers.
- Once you have finished making your changes, press the "MENU" button.
- Press the "MENU" button again to exit NETWORK SETUP.
- For more details about each network configuration item, see the following.

<p><b>NETWORK SETUP (cont.)</b></p> <p><b>-This menu option is available for DVR models that have a LAN port only</b></p>	<p><b>IP ALLOCATION:</b> This option provide user to enable or disable DHCP function. It is useful when user has the static public IP address for DVR because user do not need to get IP address from DHCP server.</p> <p><b>MAC ADDR:</b> On a local area network (LAN), the MAC (Media Access Control) address is your computer's unique hardware identity number. (On an Ethernet LAN, it is the same as your Ethernet address.) When you are connected to the Internet from your computer (or host as the Internet protocol thinks of it),a corresponding table relates your IP address to your computer's physical (MAC) address on the LAN.</p> <p><b>IP ADDR:</b> Within an isolated network, you can assign IP addresses at random as long as each one is unique. However, connecting a private network to the Internet requires using registered IP addresses (called Internet addresses) to avoid duplicates. The IP address is assigned by your Internet Service Provider (ISP), but you may assign values to the lowest digits of the address (to designate unique addresses for your DVR, your PC and other devices on your LAN). Contact your ISP for more information regarding to your own IP address.</p> <p><b>SUBNET:</b> It refers to a subnet mask used to determine what subnet an IP address belongs to. A number that is used to identify a sub network so that IP addresses can be recognized on a local area network.</p> <p><b>GATEWAY:</b> In enterprises, the gateway is the computer that routes the traffic from a workstation to the outside network that is serving the Web pages. In homes, the gateway is usually housed at the ISP. The gateway connects networks that have different protocols. The gateway address is provided by your ISP.</p> <p><b>DNS ADDRESS:</b> It is needed to resolve the DIPS server name when the name is not IP address but Internet Host name.</p> <p><b>PORT NUMBER:</b> These port numbers are used to communicate with PC Client. It could be changed to another values. The default value is 80.</p> <ul style="list-style-type: none"> <li>• We support <a href="http://www.DynDns.org">www.DynDns.org</a> domain name service. If you register your domain name for the DVR, you can use this service. This allows you to connect to your DVR without the need for a static or public IP address.</li> </ul>
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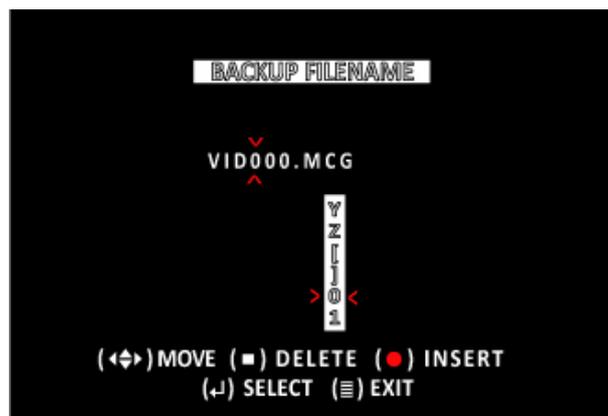
## Q. Video Backup (USB Model only)

To download or backup any recording using CD-R/CD-ROM/CD-RW or USB device, select 'VIDEO BACKUP' from the main menu. This will bring up the following screen:



Select 'START', then enter the date and time from which you would like the backup file to begin. Select 'END', then enter the date and time at which you would like the backup file to end. The DVR will generate the file size based on your entries.

Next, assign a 'FILENAME' to the backup file. The files are saved in .MCG format. Enter the name by using the 'RIGHT' or 'LEFT' buttons to choose your desired letter/number. Then press 'SELECT'. When you are done, press the 'MENU' button.



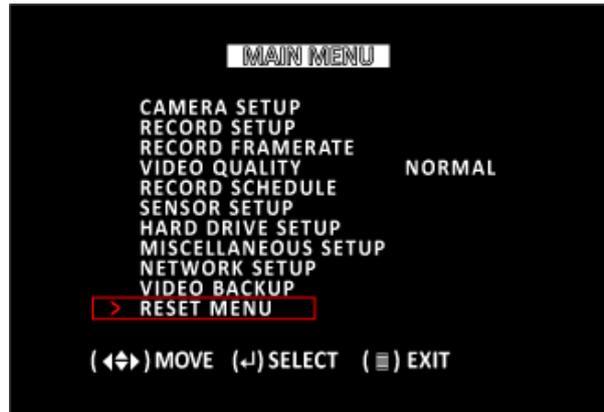
Finally, select whether to 'BACKUP TO CD-R/CD-ROM/CD-RW' or 'BACKUP TO USB DEVICE'.

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## R. Reset Menu

### RESTORE FACTORY DEFAULT SETTINGS

Selecting 'RESET MENU' will restore all of the factory default settings for the DVR.



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## Chapter 6. Trouble Shooting Guide

### **1. What kind of camera should I buy for this DVR?**

Any BNC or RCA interface indoor/outdoor/infrared camera will work with the DVR. It doesn't matter the color of the camera. However, web cameras that require a USB interface are not compatible with the DVR.

### **2. What kind of sensor device should I buy for sensor recording?**

Any motion detection sensor is compatible with our DVR.

### **3. What kind of alarm device should I buy for DVR?**

Most sound alarms are compatible with our DVR.

### **4. I can't turn on DVR.**

Make sure that the power switch is on. If the power switch is on and you still can't turn on DVR, make sure that the power cord is plugged in correctly and the green power light on DVR front panel is on.

### **5. I see nothing but a blue screen after I turn on DVR.**

Check the camera input and video output connection on DVR rear panel. If you can't find any problem with these connections, check whether the camera power cable is firmly connected.

### **6. I pushed the MENU button but it doesn't show menu directory.**

When DVR is in record mode no button on the front panel will not work. You will see the red light on the front panel when DVR is recording. To end recording, press the STOP button.

### **7. I push Record button but nothing records.**

Make sure the "Record Schedule" menu shows that the current time is marked by a "red block", not as a "white block".

### **8. I turn on DVR and no buttons work. (Depending on the DVR model)**

Check if the hard disk rack is firmly locked. You will see a green light on the DVR side panel when DVR is locked after it turns on. Also, make sure hard disk drive jumper is set as a "master". If none of the above works, check the two connectors (power cable & IDE cable) from hard disk drive to DVR to see if they are firmly connected.

### **9. I installed only one camera to channel 1 but channel 1 screen does not show anything.**

Under Menu and Camera Select, select 1.

### **10. Can I record everything 24 hours 7 days a week without stopping?**

Yes. On Record Schedule on the Menu, select "Red Block" for 0 – 24 periods.

### **11. Can I prevent other people from stopping the recording while I am gone? Would creating a password do it?**

The only way to prevent it is to place the DVR in a room where nobody else can enter.

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**12. Can I still record all the events while I review the previous recording?**

No. Our DVR currently doesn't support recording while playback.

**13. How long is the warranty period?**

A. One year after the date of purchase. We will gladly offer replacement for all defective units.

**14. What is the correct jumper setting for using a single hard disk drive?**

Single master without slave. Most of HDD drives come with the jumper setting as a master without slave so you may not need to change the jumper setting after you purchase HDD and install it into DVR. Check the documentation that came with your hard drive.

**15. What is the limitation of the hard disk drive size that I can install in the DVR?**

Please refer to the packaging, which your unit was purchased for information regarding the specific hard drive capacity of your model.

**16. How can I erase all data on the hard disk drive?**

Select "HDD Format" option on the menu.

**17. Why do I need a password?**

You may need a password to format hard disk drive. The password is for your protection.

**18. I forgot my password. What should I do?**

Press the "PAUSE" button 5 times and "STOP" button 5 times and it will reset the DVR settings to factory default. Then the password will reset to factory default (111111).

\* Channel 1 button is as same as numeric number.

Second method: Take off the battery on the DVR main board for 5 minutes and it will clear all DVR setting.

**19. Can my desktop PC read the video data on hard disk drive in DVR?**

Yes, MS-Windows can detect HDD but cannot recognize the file system. You must use a PC application (ie. PC Viewer) to view the video image.

**20. What happens if I install my PC hard disk drive into the DVR?**

You can use a PC hard disk drive in the DVR. However, once it runs in DVR, it will delete any PC operation system and files on the hard disk drive.

**21. What kind of hard disk drive should I purchase to make the DVR run?**

Any PC compatible IDE, ATA hard disk drive will work. SATA will also work fine if the DVR system supports SATA

**22. Does this DVR kit come with sensors, cameras, or hard disk drive?**

Some models come with a hard disk drive and cameras. Some models don't. Please check the package contents information on the DVR box. If the DVR unit that you've purchased contains a digital video recording system only, then you need to buy

accessories separately to complete a digital video recording surveillance system. A single hard disk drive and a single camera are minimum requirements to make a digital surveillance system to complete.

## Technical Specifications

### E4H 4-Channel DVR

Items		Descriptions
Video Standard		NTSC, PAL
Video Input/Output		4 Channel / 2 Channel CCIR656
Audio Input/Output		2 Channel / 1 Channel CCIR656
Monitoring	Resolution	NTSC : 720 x 480@30fps (Each Ch) PAL : 720 x 576@25fps(Each Ch)
	Features	Full-D1, 1-CH / 4-CH Display
Recording	Resolution	NTSC : 720 x 240@60fps (4Ch. Total) PAL : 720 x 288@50fps (4Ch. Total)
	Features	Variable Frame Rate / Variable QL per Channel
	Quality	8-Level (Highest~Lowest)
Audio		ADPCM2 CODEC
Video		MPEG4 for Network; MPEG2 for Recording
Motion Detection		Settable Window and Level
Microprocessor		32-bit RISC Processor
Network		TCP/IP /IE Browser
sensor		4 input 1 output
RS485		PELCO-P PELCO-D
Record mode		Continue, sensor trigger, schedule
Power		12V/5A

## Recording Time Table

(Per 80GB of storage with the installation of 4 cameras.)

Unit: Hour

Standard	Quality	60 fps	48 fps	32 fps	16 fps	1 fps
NTSC	Highest	8	10	15	30	473
	Higher	11	14	20	41	654
	High	13	17	25	50	794
	Better	15	19	28	56	889
	Normal	17	21	32	63	1010
	Low	19	23	35	69	1111
	Lower	21	26	39	77	1235
	Lowest	22	27	41	82	1307
Standard	Quality	50 fps	36 fps	24 fps	12 fps	1 fps
PAL	Highest	8	11	17	34	404
	Higher	12	16	24	49	585
	High	14	19	29	58	694
	Better	15	21	32	64	766
	Normal	18	25	37	74	889
	Low	19	26	39	77	926
	Lower	21	29	44	88	1058
	Lowest	23	32	49	97	1170

\* Frame Size (Rough data size) per Each Camera

Unit: KBytes/Frame

Quality		Highest	Higher	High	Better	Normal	Low	Lower	Lowest
Size	NTSC	47	34	28	25	22	20	18	17
	PAL	55	38	32	29	25	24	21	19

- ❖ The figures in the table above were estimated under ideal recording conditions and may vary from your actual recording situation.
- ❖ In the table above, multiply by 2 for recording hours with an 160 GB HDD and 3 for recording hours with a 320 GB HDD.
- ❖ The complexity of the image and the amount of motion recorded greatly influences the recording capacity of your hard drive (HDD). The higher the frames per second and the higher the video quality setting, the lower your HDD recording capacity will be. In the same manner, the lower the frames per second setting and the lower the video quality setting, the higher your HDD recording capacity will be.
- ❖ Note that the lower frame rate does not mean a lower video quality. The video quality remains the same whether the frames per second setting is set high or low. One frame per second is the same as taking a photo every second.

\*\*\* NTSC: Max. 60 fps, PAL: Max. 50 fps