# Installation And User Guide

# DVR-EZ

## 4 Channel Digital Video Recorder

## Regulatory

**FCC Certification**

This equipment has been tested and found to comply with the limits for a class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference a their own expense.

**CE Mark**

This product is marked with the CE symbol and indicates compliance with all applicable EEC directives.

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# Introduction to Digital Video Recorder

● This digital video recorder (DVR) records and retrieves real-time video streams from up to 4-channels simultaneously. Advanced M-JPEG digital video image compression technology is used to compress the input video streams for storage onto an internal hard disk drive (HDD).

The following operation guide explains how to operate and manage the DVR. It also details installation methods, network configuration and remote viewing software.

## Packing List

| Item | Quantity |
|---|---|
| Digital Video Recorder | 1 |
| AC-DC Power Converter | 1 |
| Power Cord | 1 |
| Software CD | 1 |
| USB Cable | 1 |

# Specification

| | | | |
|---|---|---|---|
| Image Compression | | Advanced M-JPEG | |
| Video Signal | | NTSC | PAL |
| Image Resolution | | 720 X 480 | 720 X 576 |
| Display Rate<br>Display Rate | | 120 fps (4 x 30) fps) | 100 fps (4 x 25) |
| Video Record Resolution | Each Mode | 320 x 112 | 320 x 136 |
| | Quad Mode | 640 x 224 (total) | 640 x 272 (total) |
| Frame Rate | Each Mode | 7.5 fps | 6.25fps |
| | Quad Mode | 30 fps | 25 fps |
| Video Recording Mode | | Continuous / Schedule / Alarm / Motion | |
| Display Mode | | Full Screen / Quad | |
| Video Input | | 4 x BNC, 1.0Vp-p 75Ω | |
| Audio Input | | 4CH RCA set by DVR software. Sound REC: Select 1 CH photograph | |
| Audio Output | | 1CH RCA | |
| Video Output | | 2 x BNC, 1.0Vp-p 75Ω , 1 x S-Video | |
| Quick Search | | Yes | |
| Integral Motion Detection | | Adjustable sensitivity and detection area | |
| Events | | 128 | |
| Quick Playback | | Yes | |
| Backup | | HDD, USB 2.0 | |
| Search Mode | | Time, Date | |
| Alarm Input | | 4 x Alarm Input, N-O or N-C type, TTL Input | |
| Alarm Output | | 1x Alarm Output , N-O type, TTL Output | |
| Buzzer | | Set ON OFF | |
| 12V Camera Power Output | | 350mA per channel | |
| Power | | 12V DC | |
| Temperature | | -10℃ ± 50℃ (40℉ to 122℉) | |
| Weight | | 4 Kg | |

# Video Record Time

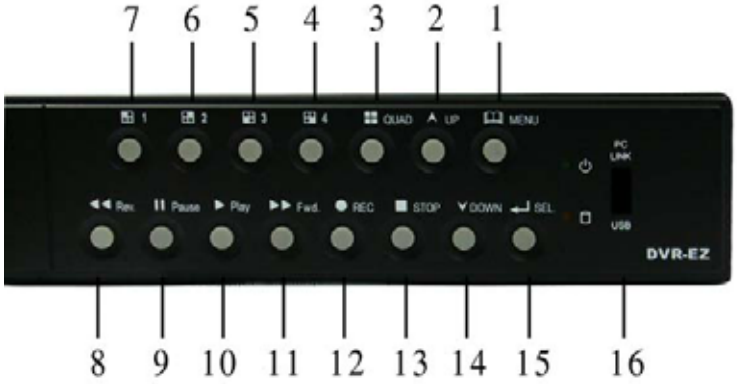
| **NTSC Format** | | | 30 fps | 15 fps | 7 fps |
|---|---|---|---|---|---|
| Video Signal | Display Format | Video Quality | | | |
| **NTSC** | Quad Screen | High | 60 Hours | 120 Hours | 240 Hours |
| | | Normal | 90 Hours | 180 Hours | 360 Hours |
| | | Low | 112 Hours | 224 Hours | 448 Hours |
| | Each Screen | High | 114 Hours | 228 Hours | 456 Hours |
| | | Normal | 170 Hours | 340 Hours | 680 Hours |
| | | Low | 224 Hours | 448 Hours | 896 Hours |
| PAL Format | | | 25 fps | 12 fps | 6 fps |
| Video Signal | Display Format | Video Quality | | | |
| **PAL** | Quad Screen | High | 64 Hours | 128 Hours | 256 Hours |
| | | Normal | 92 Hours | 184 Hours | 368 Hours |
| | | Low | 116 Hours | 232 Hours | 464 Hours |
| | Each Screen | High | 116 Hours | 232 Hours | 464Hours |
| | | Normal | 172 Hours | 344Hours | 688 Hours |
| | | Low | 256 Hours | 452 Hours | 904 Hours |

· The above table assumes a HDD capacity of 160Gb.

# Features

- Motion Detection on all four channels.
- Five levels of sensitivity on motion detection.
- Two adjustable motion detection fields per channel.
- Audio input on all four channels, single audio recording.
- Three levels of video quality.
- Four alarm inputs (either NO or NC). Single alarm output.
- Watchdog, recording automatically resumes after power loss.
- Quick search from time/date and event menu
- Stores up to 128 events of motion detection.
- Video Loss Buzzer, can be set to On or Off
- Password Protection.
- USB2.0 Support.
- Alarms when HDD is full : Displayed by OSD.
- 12V power output available for camera.

# DVR Front Panel Operation Guide

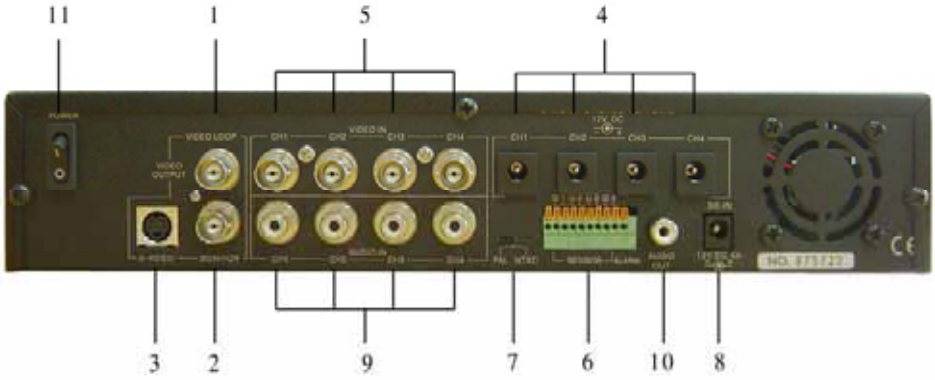



1. **Menu button**：Press to display Operation menu option
2. 2. **Up button**：used in menu
3. **All channels button**：Press to display all channels
4. **Channel 4 button**：Press to display channel 4
5. **Channel 3 button**：Press to display channel 3
6. **Channel 2 button**：Press to display channel 2
7. **Channel 1 button**：Press to display channel 1
8. **Reverse :** Press to rewind playback
9. **Pause button**：Press to pause playback
10. **Playback button**：Press to start playback
11. **Fast forward button**：Press to play the recorded stream faster
12. **Recording button**： Press to start recording
13. **Stop Recording / Stop Playback button**：Press to stop recording or playback .The authorized password is requested upon stopping record .Default password is **111111**

**( Button 7 shown above; refer to page 18 )**

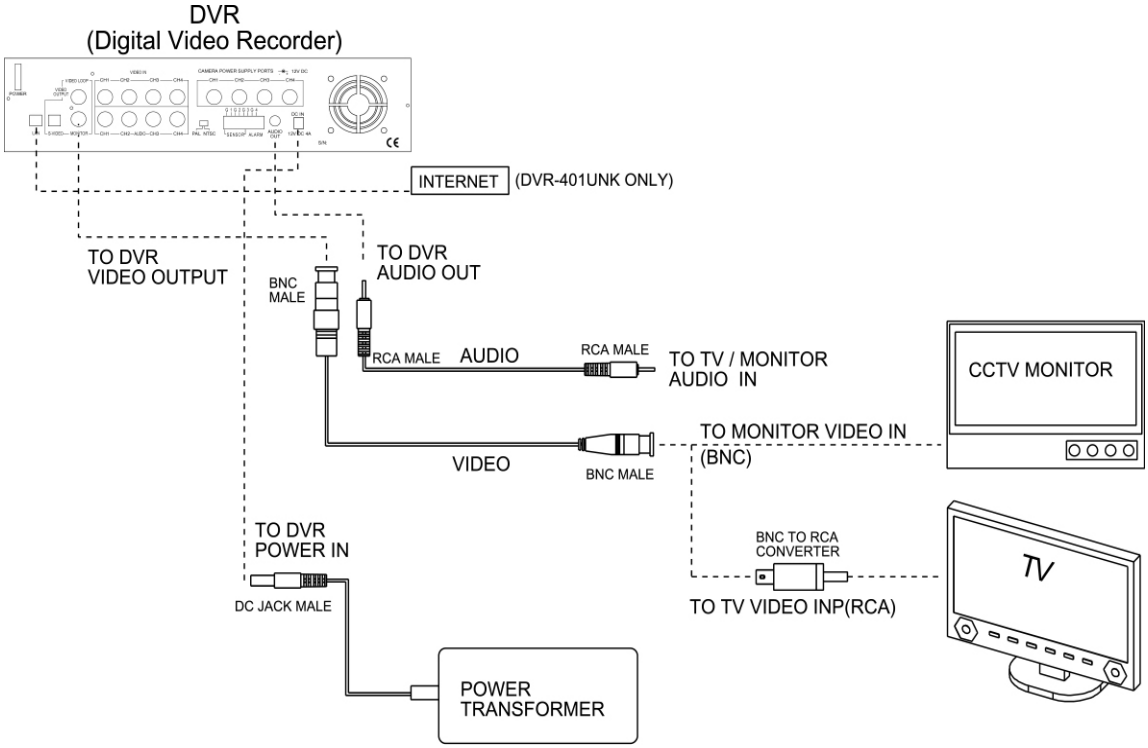
14. **Down button** : used in menu
15. **Select button**：change the setting value or enter into a sub menu
16. **USB Link Port**

# DVR Back Panel functions




1. VIDEO Output (BNC ONE)
2. VIDEO Output (BNC TWO)
3. S-Video Output
4. Camera Power Supply
5. Video Input
6. Sensor / Alarm Input
7. Video Format Switch (NTSC / PAL)
8. DVR Power In (DC- in, 12 volts, 4.0A)
9. AUDIO INPUT
10. AUDIO OUTPUT
11. Power Switch

# DVD Installation
# Video Output & Video Input Connections

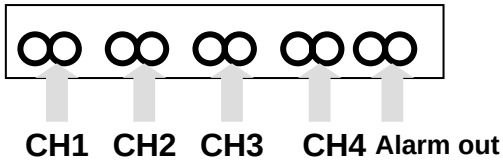


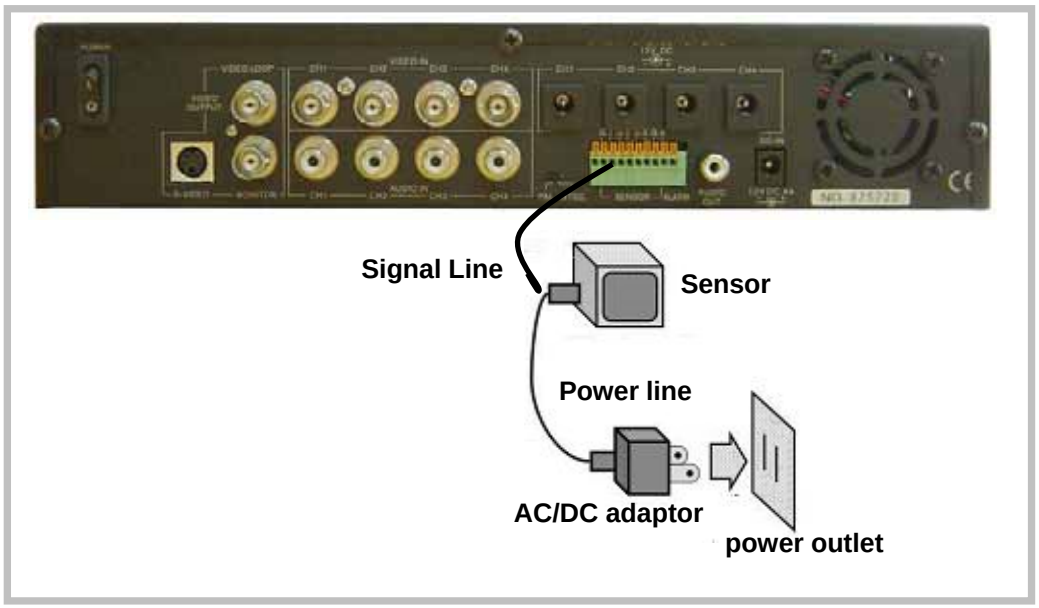
# Sensor Installation

The DVR has 4 sensor inputs, one for each channel. The sensor Installation Procedure is as follows:

I. Connect the sensor signal line to the unit. The sensor signal terminal is on the DVR rear panel.

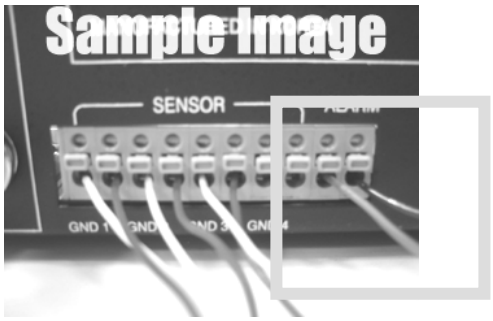
II. Connect the sensor adaptor jack into the sensor, and plug in the power adaptor.

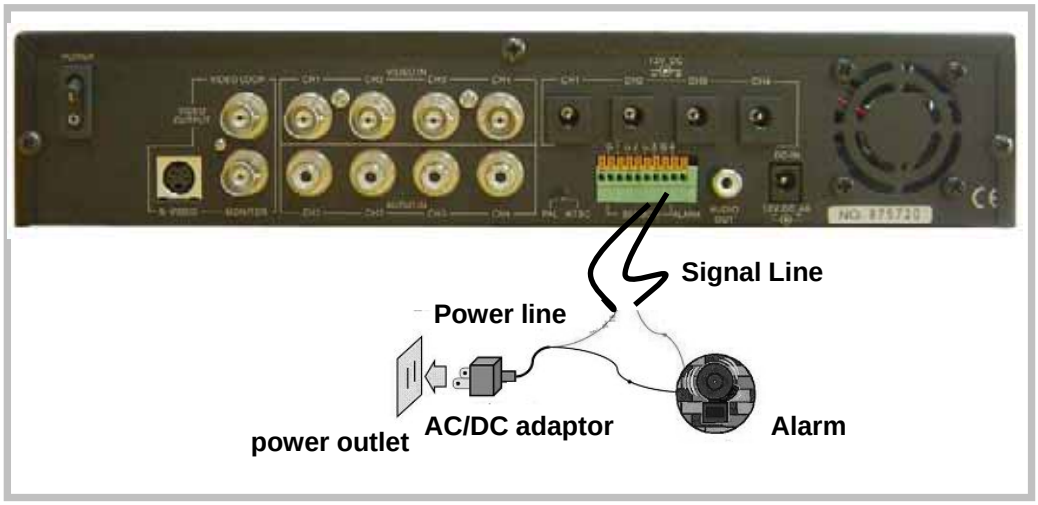


# Alarm installation

The DVR includes one internal switch for sounding an alarm when any of the sensor inputs is activated. The switch is normally open and closed upon activation. The circuitry is shown in the above figure. The alarm is installed as follows:
I.The alarm requires a power supply, which is normally supplied with the alarm.
II.Connect the alarm power line to the alarm switch terminal on the rear of the DVR.



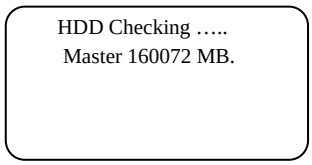



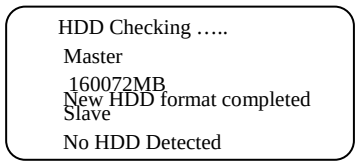
# Switch On the DVR

Before turn on the power, please make sure Video Format is in right position
NTSC Area : North America, Japan, Philippines, Taiwan & etc.
PAL Area : Europe, South America, Australia, Mid-East & Africa
Asian Countries most use PAL like Indonesia, Thailand, Malaysia and etc.

Once the DVR has been properly installed (please refer to pages 9 ~11 for further details on DVR installation) the unit is ready to record and display. Apply power and switch on.

Following power on, the DVR takes a few seconds checking the HDD. If a new hard drive is detected, the DVR will format the drive automatically. One of the below messages are displayed:



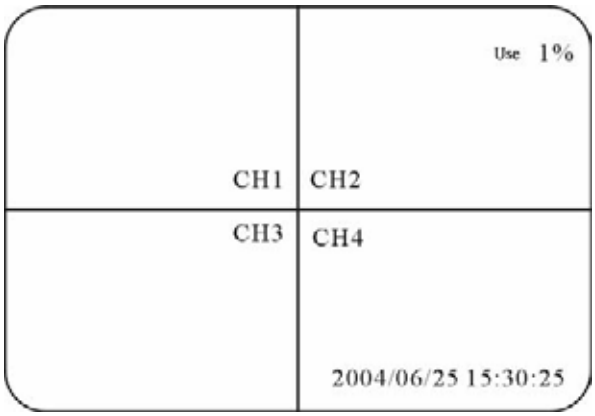




Press **II** Pause button ( in front panel, page 18, will restore the unit to factory settings. *"DVR Reset Completed"* message will be displayed on the monitor and request the re-start of the DVR in order to make the changes effective.

On the completion of the re-start of DVR, the unit will start to operate. Users can display a quad view on the monitor (if four CCD camera are connected to the DVR) by pressing "*All Channel Button"*, button on the front panel (Refer to page 18). To see a specific display of connected CCD cameras, please press the *"channel button"* respectively to the channel the CCD camera is installed on the back panel.

# Record

Press ● button on the front panel to start record. The DVR will record the selected images and save them onto the HDD. A sample of recording a quad view is shown below:



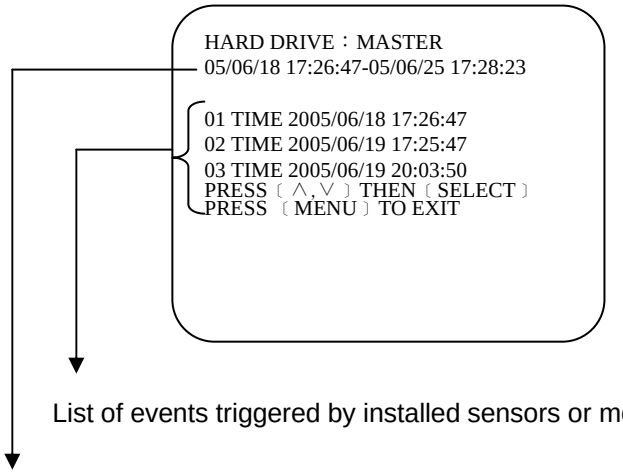

A circular symbol displayed on the screen indicates the activation of recording. Any specific channel or quad view can be displayed on the monitor by pressing the appropriate Channel Select button while recording is in the process.

Press the ■ button to stop video recording. The DVR will prompt for a password to stop video recording, the default password is set to “111111” – use the Channel 1 Select button to input the value “1”. Refer to “Operation Guide: Sub Menu” in order to reset password.

ESP-EZ DVR provides independent functions of recording and displaying. This DVR unit is capable of recording selected channel images without displaying them on the monitor or displaying non-selected images. See “Operation Guide: Camera Select” and “Operation Guide: Record Select” menus for camera selection and record selection.

# Play Menu

Press ▶ (play button) to open the playback menu as shown below.




List of events triggered by installed sensors or motion detection.

Available recordings in the HDD can be played.

Pressing ⏩ button to start a time and date search.

Position the cursor using the ▲ and ▼ buttons to select the date and/or time. Use ↵ button to cycle through the available options. After reaching the desired option use the ▲ and ▼ buttons to move onto the next variable. When the correct date and time has been entered press ▶ button to start the playback.

Use ⏩ button to speed up the playback rate. Pressing twice doubles the playback speed. Pressing the ⏪ button reverses the playback.

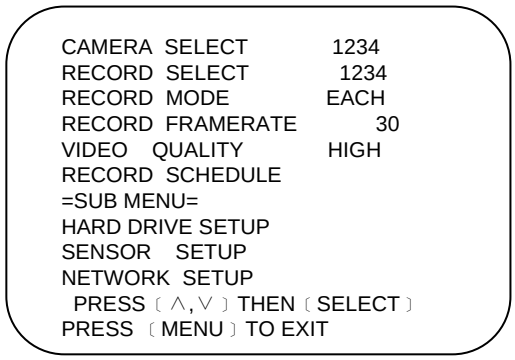
When the menu first appears the cursor is set to the first logged event. Press the ▶button to playback that event or use the ▲ and ▼ buttons to select another listed event.

Press ⏸ button to pause playback

Press ■ button to stop playback.

# MAIN MENU

Press the 🕮 button to display the main menu.




Use the ▼ and ▲ buttons to move the cursor up and down.
Press ↵ to enter the selected sub-menu.
Use the ▼ and ▲ buttons to position the cursor.
Press ↵ to cycle through until reaching the desired option.
Press 🕮 to make the selection and return to the main directory.
Press 🕮 to return to real time display.

## Operation Guide: CAMERA SELECT

Used to select and display (on the menu bar) the number of cameras connected to the DVR.
The Video Loss buzzer is enabled if a camera is selected in this menu but there is no video signal present on that channel.

Use the ↵ to cycle through the options, some examples are shown below:
(1 2 3 4)：Cameras 1, 2, 3 and 4 have been selected.
(12--)：Cameras 1 and 2 have been selected.
(-2 3-)：Cameras 2 and 3 have been selected.
(----)： No cameras have been selected.

## Operation Guide: RECORD SELECT

Used to select the cameras whose video input will be recorded on the HDD. Desired cameras must be pre-selected in the “Camera Menu” in order to perform record properly.
Use ↵ to cycle through the options.
Press 🕮 to make the selection and return to the main directory.

**NOTE:** Desired channels cannot be recorded properly if the corresponding cameras are not pre-selected in the “Camera Menu.”

## Operation Guide: RECORD MODE

Can be set to either “EACH” or “QUAD”. When set to “EACH” all selected cameras (in the Record Select menu) are recording on the HDD in full screen. When set to “QUAD” all selected cameras (in the Record Select menu) are recorded on the HDD as a quad screen image.
Use ↵ to cycle through the options.
Press 🕮 to make the selection and return to the main directory.

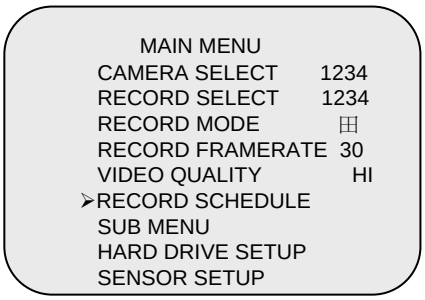
## Operation Guide: RECORD FRAME RATE

The default value is 30 fps for NTSC and 25 fps for PAL. There are a number of different frame rate settings:
NTSC: 30fps, 15fps, 10fps, 7fps, 5fps, 4fps, 3fps, 2fps, 1fps
PAL: 25fps, 12fps, 8fps, 6fps, 4fps, 3fps, 2fps, 1fps
The higher the frame rate the more natural the video stream will look when it’s played back but will use the greatest amount of HDD storage.
The frame rate is divided by the number of cameras selected in the Record Select menu, for example:
If the frame rate is set to 25fps (PAL) and four cameras have been selected then each camera will be recorded at 6.25fps.
Use ↵ to cycle through the options.
Press 🕮 to make the selection and return to the main directory.

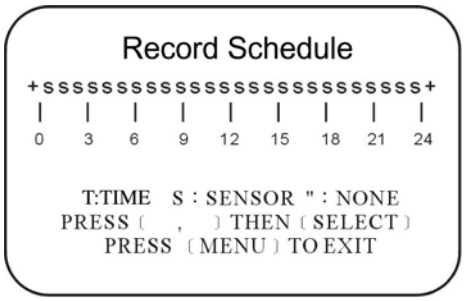
## Operation Guide: VIDEO QUALITY

There are three options for video quality, HIGH, NORMAL and LOW. The higher the video quality the clearer the recorded images will be but will use a greater amount of HDD storage.
Use ↵ to cycle through the options.
Press 🕮 to make the selection and return to the main directory.

## Operation Guide: SCHEDULE RECORD




**Select this option to change a recording schedule during the day (24-hour period)**




**Numbers below indicate the time duration in 24 hour format.**

**(T) 24-hour recording.**

**(S) Motion recording.**
**The DVR only starts recording when an event (motion, GPIO) is triggered.**

**Use the ▼ and ▲ buttons position the cursor at each hourly interval.**
**Press ↵ button to choose one of the three settings.**
**Press 🕮 to return to the main menu.**

SETTING EXAMPLE:
0:00 ~ 7:00 SENSOR RECORDING
7:00 ~11:00 RECORDING DISABLED
11:00 ~18:00 RECORDING
18:00 ~24:00 SENSOR RECORDING

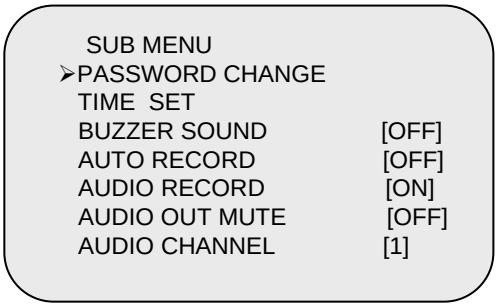
```
+ S S S S S S - - - - T T T T T T T S S S S S S +
  :         :       :               :             :
  0         6       11              18            24
```

**NOTE**

SENSOR RECORDING INSTALLATION (MOTION)
The DVR has 4 alarm inputs that can be configured as normally closed, normally open, motion detection +NC and motion detection +NO on the “SENSOR SETUP” menu.

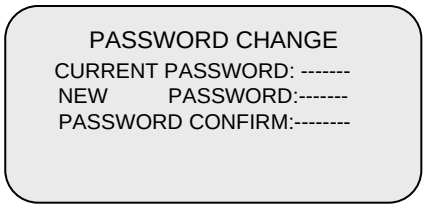
**NOTICE : AUTO RECORD**
**In PC LINK mode the Auto Record Function is disabled. Recording will start again automatically 55 seconds after the USB cable is disconnected.**

## Operation Guide: SUB MENU




**Sub Menu allows users to change system password, system date and time, as well as various audio functions and auto record. Use (⮝⮟) to move cursor and select. Press (↵) to either cycle through the options or enter subsidiary menus.**

## Operation Guide: PASSWORD CHANGE




In the situation of requesting stop recording or HDD format, the DVR prompt for password to perform.

Select “PASSWORD CHANGE” - Its subsidiary menu (Left side figure) replaces the “SUB MENU” (the default password is 111111)

Enter the requested data.

**NOTE**

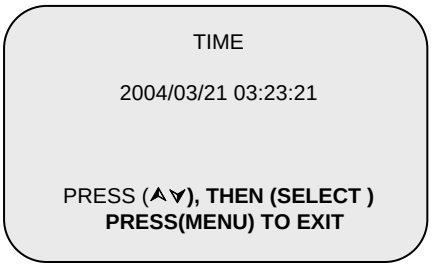
**FRONT PANEL BUTTONS DEFINITION**

| | |
|---|---|
| **means “1”** | **means “5”** |
| | **means “6”** |
| **means “2”** | **means “7”** |
| | **means “8”** |
| **means “3”** | **means “9”** |
| **means “4”** | **means “0”** |

**NOTICE: WHAT IF I FORGET PASS WORD?**

**If the password is mislaid or forgotten press the ( ‖ ) Pause button 5 times, which returns the DVR to the default setting(11111).**
**The password can then be changed again.**

## Operation Guide: TIME SETUP

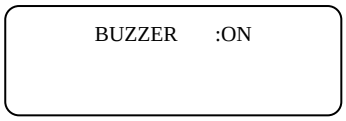



▼ **and** ▲ -- Position Year, Month, Day, Hour, Minute or Seconds.

↵ -- Cycle through options (0,1,2 …9)

🕮 -- Exit

## Operation Guide: BUZZER SETUP




Use the ▼ and ▲ to select buzzer options
Press ↵ to choose ON/OFF.
Press 🕮 to return to the main menu.

ON: DVR buzzer sounds when video loss is detected on any of the cameras selected in the “Record Select” menu

## Operation Guide: AUTO RECORD SETUP

Press ↵ to choose ON/OFF.
Press 🕮 to return to the main menu.

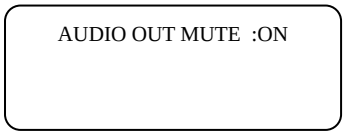
ON: DVR records automatically after one minute even DVR is under display mode.

## Operation Guide: AUDIO RECORD SETUP

Use the ▼ and ▲ to select audio record options
Press ↵ to choose ON/OFF.
Press 🕮 to return to the main menu.

ON: DVR records audio from selected channel.

## Operation Guide: AUDIO MUTE



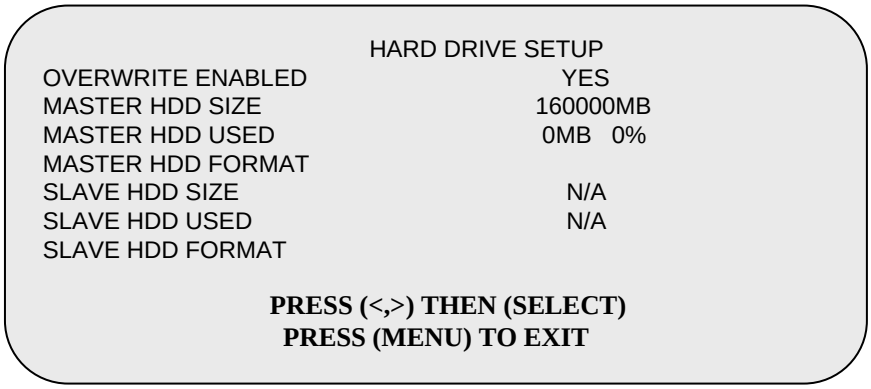

Use ▼ and ▲ to select audio out mute.
Press ↵ to choose ON/OFF.
Press 🕮 to return to the main menu.

## Operation Guide: AUDIO CHANNEL SELECT

Use ▼ and ▲ to select audio channel.
Press ↵ to cycle through options.
(Channel 1,2,3,4)
Press 🕮 to return to the main menu.

DVR only records one channel of audio.

# Hard Disk Drive Setup Menu




## Operation Guide: OVER WRITE

“YES”. The DVR will record continuously and overwrite the recorded data when the HDD is full.
“NO”. The unit will stop recording once the HDD is full.

Use ▼ and ▲ to select OVERWRITE ENABLED.
Press ↵ to choose YES/NO.
Press 🕮 to return to the SUB menu.

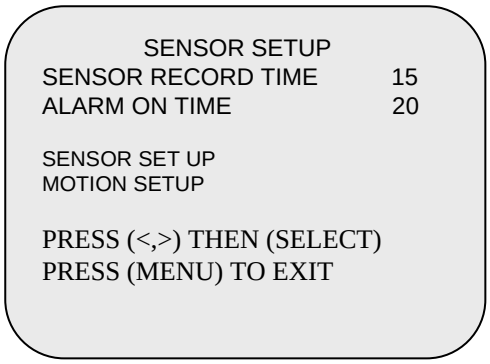
## Operation Guide: HDD SIZE AND HDD USED

Displays the storage capacity of the Master (and if installed the Slave HDD) and the amount of Storage used.

## Operation Guide: HDD FORMAT

Use the▼ and ▲ buttons to select the “HDD Format” option
Use the ↵ button to select the format option.
The system prompts for a password. If the password is accepted the format will commence and delete all images stored on the selected HDD.
If an incorrect password is entered the system will display a message showing “Password Incorrect” and return to the Hard Drive Setup menu.

## SENSOR SETUP MENU

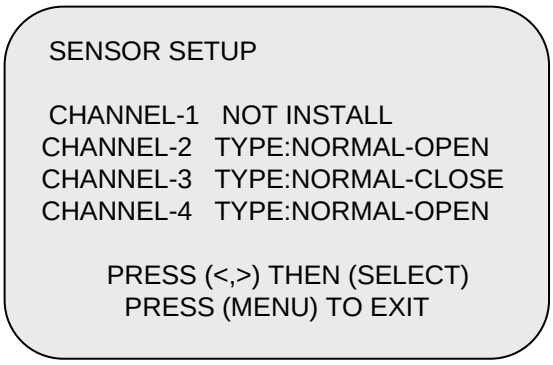



**SENSOR RECORD TIME:**
Recording duration once sensor
Being triggered.
Selects record time from 0 ~180 seconds.

**ALARM OUT TIME:**
It controls how long ( in second)
the alarm sounds after being triggered.
Selects alarm ON time from 0 ~ 30 or
continuous.

**SENSOR SET UP**

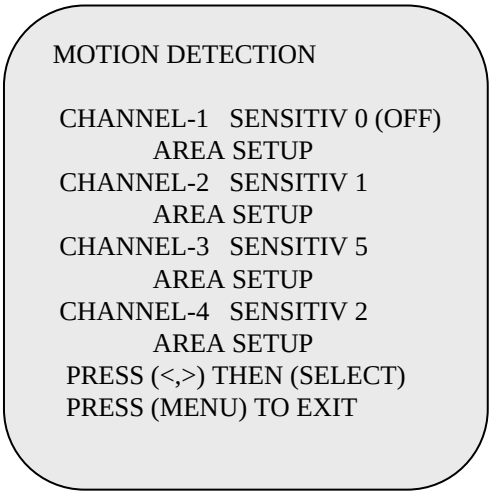
Use the▼ and ▲ buttons to select
channels 1 ~ 4.
Use the ↵ button to select options
(Normal Open/Close)
Press the 🕮 button to exit




In <u>normal open</u> mode
the cable line Connected between
the sensor and the unit is cut off by
an intruder, the unit starts recording**.**

In <u>normal close</u> mode,
the cable line connected between
the sensor and the Unit is cut off by
an intruder , the unit stops recording.

## MOTION SETUP MENU




**MOTION SET UP**

SENSITIVITY: Sets the sensitivity level for Motion Detection. 0 (OFF) to 5 (maximum sensitivity).

▼ and ▲ buttons to select the sensitivity for each Channel

↵button to select the level.

AREA SETUP: Used to define up to two zones per Channel where motion is to be detected.
Selecting a “Channel Area Set Up” brings that Channel up full screen on the monitor.

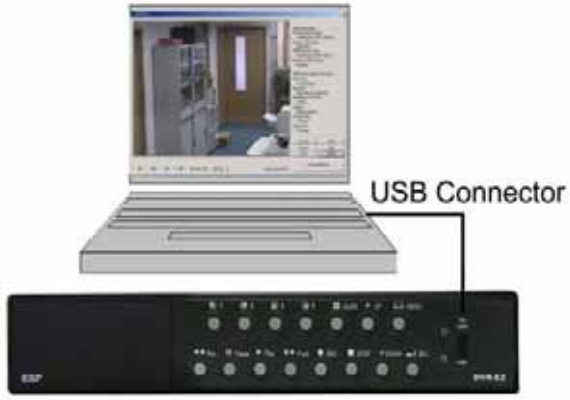
A rectangle is displayed, which will define the top left hand corner of the first motion detection zone. Use ▼ and ▲ buttons to move the rectangle up and down and ⏩ and ⏪ buttons to move the rectangle left and right. Use ↵button to set the position of the top left hand corner of the zone. The rectangle will move to another position in readiness to define the bottom right corner of the first motion detection zone.

Use the same procedure shown above to select the correct position for the bottom right corner.

**The rectangle again moves position.**
**Repeat the above instructions to set a second motion detection zone**

# How to Backup through USB port to PC

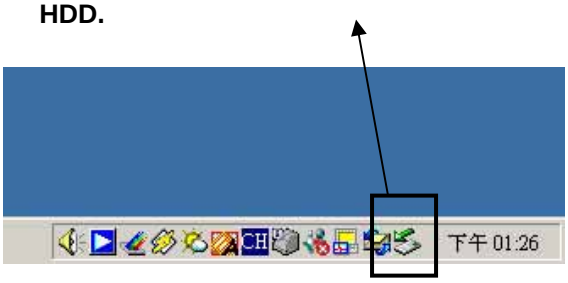
## Backup through USB port




The unit provides one USB port to simple backup over the connection with PC. Please mind the following steps to successful link.

**Step 1**.
Connect the USB cable between the unit and PC
**Step 2.**
Select "LINK TO PC" under submenu of the unit
**Step3.**
The "linking" will take around 30sec.
**Step4.**
The connection is ready for PC backup as "Linked" indicates on the screen.
**Step 5.**
Open the PC viewer on PC, once PC identifies one unknown Hardware device

**There is a USB device icon show on your screen when PC detects DVR HDD.**




Notice:
1.the unit employs USB 2.O, so it will take around 5 min to hand shake with USB 1.0.

2. Before operating backup over USB, please install PC viewer software into your PC.

3. Using "**USB Player**" (Software in CD) to backup via USB.

**NOTE:**
**Before attempting to make PC Link using the USB ports please make sure that the DVR is not in Record or Playback mode.**

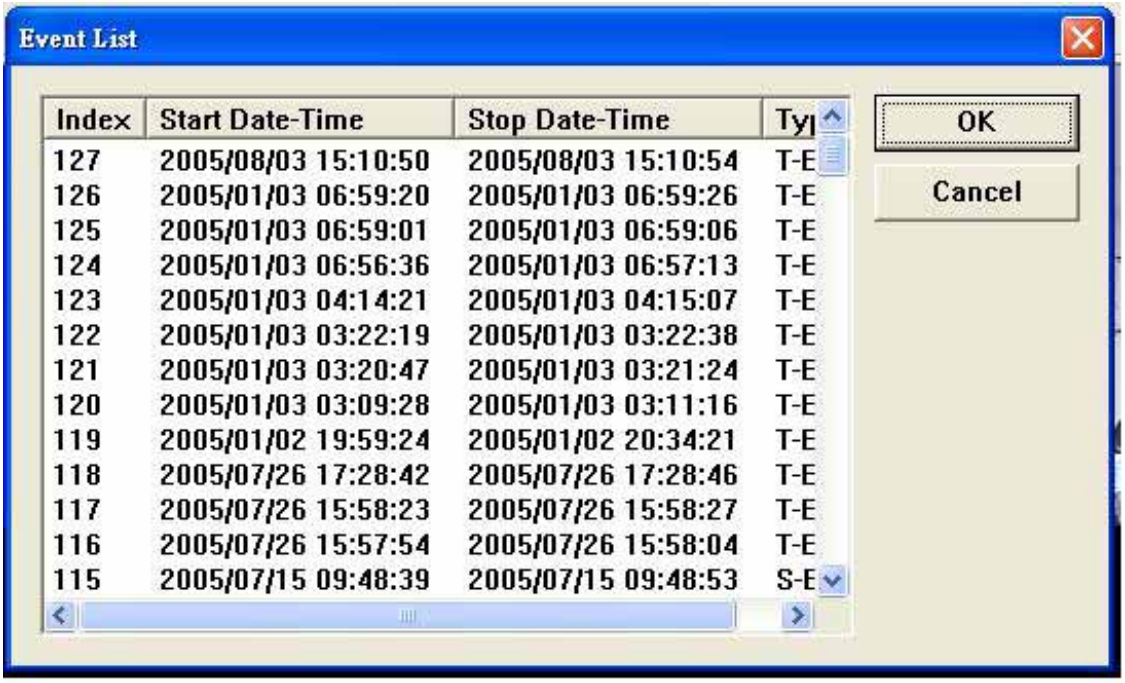
Hints：
When PC detects USB storage setup, PC has connected DVR host already. Switch on PC LINK play program for 20~30 seconds, you can see following footage.

| | |
|---|---|
| 1. Fast rewind | 9. Channel selection |
| 2. Play next frame | 10. BMP picture file |
| 3. Rewind | 11. Copy MYS file |
| 4. Pause | 12. Copy AVI file |
| 5. Play | 13. MYS player |
| 6. Play previous play | 14. SOUND ON/OFF |
| 7. Fast forward | 15. Video search bar |
| 8. EVENT Search | |

**If there is no picture, HDD is not detected. Close the software of USB LINK and disconnect the USB cable. Five seconds later , connect the USB cable again. When the USB device is detected by the system , run USB LINK software.**

## PRINT EVENT

Move the mouse to 8 ( Event search), and select the event you want.Then, click OK to play the event recorded. The menu is shown below.




Copy the images and record the images

DVR host play program offers dynamic and static image output. You can easily copy the static image, and store it in BMP file, or store a certain part of record in AVI file. The converted images can be played by PC software (such as Media Player).

**Hints：**
USB LINK work system supports Win 2000 / XP.

Technical Support

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