
Instruction Manual

16/9/4 Channel Digital Video Recorder



EDVR SERIES

EVERFOCUS ELECTRONICS CORPORATION

EDVR SERIES

Instruction Guide

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Federal Communication Commission Interference Statement

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 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. FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the users' authority to operate this equipment. This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter.

CE Declaration

This equipment has been tested and found to comply with the limits for a **CE Class A** digital device.

The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

In a domestic environment this product may cause radio interference. In which case the user may be required to take adequate measures.



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Safety Warning

WARNING

To reduce risk of fire or electric shock, do not expose this appliance to rain or moisture.

CAUTION

Do not remove cover. No user serviceable parts inside. Refer servicing to qualified service personnel.

Note:

This equipment has been tested and found to comply with the limits for a Class A digital device,
The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note:

This is a class A product. In a domestic environment this product may cause radio interference
In which case the user may be required to take adequate measures.

Notice:

The information in this manual was current when published.
The manufacturer reserves the right to revise and improve its products.
All specifications are therefore subject to change without notice.

Safety Precautions

- Refer all work related to the installation of this product to qualified service personnel or system installers.
- Do not block the ventilation opening or slots on the cover.
- Do not drop metallic parts through slots. This could permanently damage the appliance? Turn the power off immediately and contact qualified service personnel for service.
- Do not attempt to disassemble the appliance. To prevent electric shock, do not remove screws or covers. There are no user-serviceable parts inside. Contact qualified service personnel for maintenance. Handle the appliance with care. Do not strike or shake, as this may damage the appliance.
- Do not expose the appliance to water or moisture, not try to operate it in wet areas. Do take immediate action if the appliance becomes wet. Turn the power off and refer servicing to qualified service personnel. Moisture may damage the appliance and also cause electric shock.
- Do not use strong or abrasive detergents when cleaning the appliance body. Use a dry cloth to clean the appliance when it is dirty. When the dirt is hard to remove, use a mild detergent and wipe gently.
- Do not overload outlets and extension cords as this may result in a risk of fire or electric shock.
- Do not operate the appliance beyond its specified temperature, humidity or power source ratings. Do not use the appliance in an extreme environment where high temperature or high humidity exists. Use the appliance at temperature within indoor type DVR for 32°F ~ +104°F and a humidity below 90%. The input power source for this appliance is AC100~240V.

Safety Precautions

- **Read Instruction**
All the safety and operating instructions should be read before the unit is operated.
- **Retain Instructions**
The safety and operating instructions should be retained for future reference.
- **Heed Warnings**
All warnings on the unit and in the operating instructions should be adhered to.
- **Follow Instructions**
All operating and use instructions should be followed.
- **Cleaning**
Unplug the unit from the outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning
- **Attachments**
Do not use attachment not recommended by the product manufacturer as they may cause hazards.
- **Water and Moisture**
Do not use this unit near water-for example, near a bath tub, wash bowl, kitchen sink, or laundry tub, in a wet basement, near a swimming pool, in an unprotected outdoor installation, or any area which is classified as a wet location.
- **Servicing**
Do not attempt to service this unit by yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.
- **Power Cord Protection**
Power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, playing particular attention to cords and plugs, convenience receptacles, and the point where they exit from the appliance.
- **Object and Liquid Entry**
Never push objects of any kind into this unit through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Never spill liquid of any kind on the unit.

1. Product Overview

The latest EverFocus digital video recorder generation is based on MPEG-4 compression technology, resulting in enhanced recording capacity and improved network image transmission speed with high image quality. Comprehensive features and extended event recording settings enable the almost universal application of this DVR series.

1.1 Features

- Pentaplex Operation (Live, Recording, Playback, Archiving, Remote Viewing)
- Built-in MPEG4 Codec with Configurable Quality
- Composite and VGA main outputs
- EDVR16D1/F1, EDVR9D1/F1, EDVR4D1/F1: Variable Recording Speeds Up to 120/100(CIF) Pictures per second for NTSC/PAL
- EDVR16D2/F2: Variable Recording Speeds Up to 240/200(CIF) Pictures per second for NTSC/PAL
- EDVR16D3: Variable Recording Speeds Up to 480/400 (CIF) Pictures per second for NTSC/PAL
- Audio Recording capabilities
- 2 way audio supported
- Multiple Motion Detection Capabilities for each camera (28*22)
- Support RS485 for PTZ and/or control keyboard
- Built-in real time clock and Auto Time Synchronization with global NTP server through Internet
- F Serial (without DVD): Built-in up to Four 3.5" IDE Hard Disks can be added
- D Serial (with DVD RW): Built-in up to Two 3.5" IDE Hard Disks can be added
- Ethernet Interface for Remote Network Viewing and Controlling
- Shuttle/Jog Dial for Picture-by-Picture or Fast/Slow Viewing
- Easy-to-use User Friendly Control via Front panel keypad, Shuttle/Jog, IR remote controller (optional), and Control Keyboard (optional)
- On-Screen Menus Operations with Multi-Language Support
- Real-Time Live Display for all Cameras
- 2 USB 2.0 Interface, one for archiving and the other one for mouse usage
- Support external DVD+RW for archiving
- D Serial (with DVD RW): built-in DVD+RW for video clip exporting
- Water Mark Capabilities helps to identify purposely modification of recorded data
- USB2.0 port for video clip exporting, supports USB thumb drive
- Free DDNS server for use with dynamic IP addresses
- Remote configuration function

- Remote Firmware Upgrade function
- System diagnostic feature alerts users of HDD or system problems via Email or alarm output

1.2 Specifications

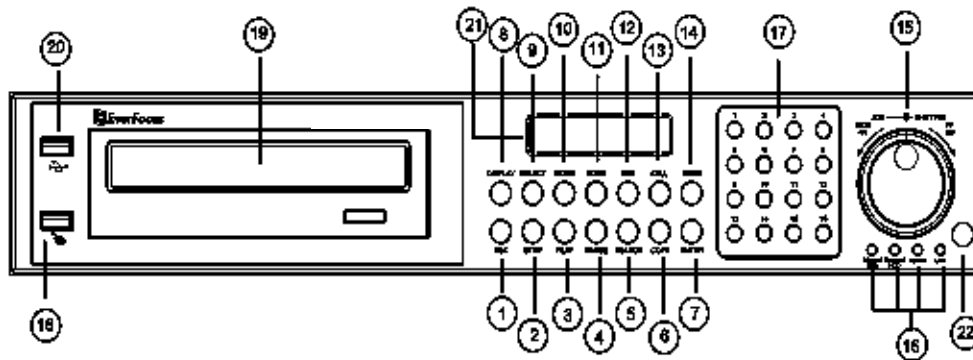
Video Format	NTSC/PAL
Video Input	16/9/4 camera inputs (BNC), 1Vp-p/75ohm
Video Output	1 BNC composite video out (1Vp-p/75ohm) for Main Monitor 1 BNC composite video out (1Vp-p/75ohm) for Call Monitor
Video Compression	MPEG4
Recording Resolution	Full-D1: 720x480 (NTSC) / 720x576 (PAL) Half-D1: 720x240 (NTSC) / 720x288 (PAL) CIF: 360x240 (NTSC) / 360x288 (PAL)
Video Display	Full, 4,7, 9,10,13,16, PictureInPicture (Live only) and 2x2 Zoom for Live and Playback
Video Pause	Yes
Video Loss Detection	Yes
Alarm Inputs	16 Alarm Inputs
Alarm Outputs	1 set of alarm output
Hard Disk Storage	F series: up to 4 internal 3.5" IDE Hard Disks D series: up to 2 internal 3.5" IDE Hard Disks
External Storage	SCSI connector for use with EDA800 External Hard Drive Array (<i>D3 series only</i>)
Recording Rate	Please refer to **Note** at the following page
Recording Mode	Normal, Schedule or Event recording (Motion, Video Loss, Alarm)
Playback Rate	Up to 60/50 Images per second for NTSC/PAL
Playback Search	By Date/Time or Event (Alarm, Video Loss, Motion)
Playback	Play, pause, stop, fast forward (x2, x4, x8, x16, x32, x600), step forward, fast backward (x2, x4, x8, x16, x32, x600), step backward
Motion Detection	Yes, with multiple configurable detection area (28x22) & different sensitivities for each camera
Event Log	Yes
User Interface	User friendly OSD Menu Driven
Setup	On screen display setup
User Input Device	Front panel keypad, Shuttle/Jog, Control Keyboard (optional), Remote Control (optional), USB mouse (optional)

Timer	Built-in real time clock and Auto Time Synchronization with global NTP server through Internet
Watch Dog Timer	Yes
Title	12-characters title for each camera
VGA	Yes
USB	Yes, 2 x USB2.0 interface device. 1 for archiving & 1 for mouse.
Ethernet	Yes, RJ45 connectors for network communication
Archive	USB 2.0 port for archiving to memory stick or external DVD burner (EPR200) D series: built-in 3.5" DVD+RW drive
RS-485	for PTZ and/or control keyboard
Power Source	AC 100~240V
Power consumption	D series:50W; F series: 70W
Dimension	17in (W) x 15.8in (D) x 2.8in (H)
Weight	14.15 lb
Operating Temperature	32°F ~ 104°F

**** NOTE ****

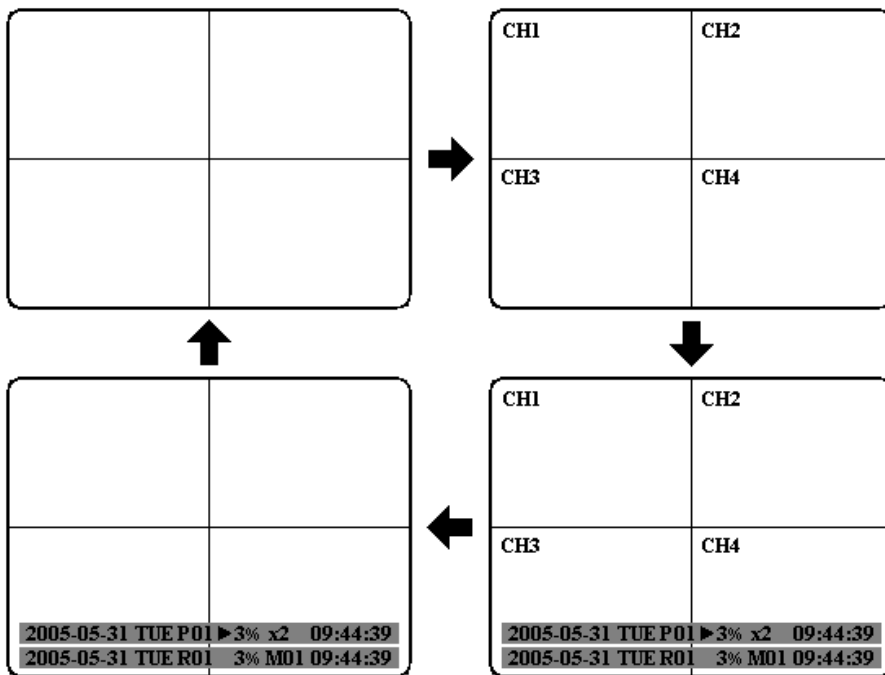
Recording Rate	NTSC	PAL
Model		
EDVR16D1/F1	D1 720x480 : 30 IPS	D1 720x576 : 25 IPS
EDVR9D1/F1	Half D1 720x240 : 60 IPS	Half D1 720x288 : 50 IPS
EDVR4D1/F1	CIF 360x240 : 120 IPS	CIF 360x288 : 100 IPS
EDVR16D2	D1 720x480 : 60 IPS	D1 720x576 : 50 IPS
EDVR16F2	Half D1 720x240 : 120 IPS CIF 360x240: 240 IPS	Half D1 720x288 : 100 IPS CIF 360x288 : 200 IPS
EDVR16D3	D1 720x480 : 120 IPS Half D1 720x240 : 240 IPS CIF 360x240 : 480 IPS	D1 720x576 : 100 IPS Half D1 720x288 : 200 IPS CIF 360x288 : 400 IPS

1.3 Front Panel Keypads



Keys:

- 1 **REC**
Press this key to start instant recording.
- 2 **STOP**
Press this key to stop recording and playing back.
- 3 **PLAY**
Play Back.
- 4 **PAUSE**
Press this key to pause the playback picture.
- 5 **SEARCH**
Press this key to enter the **SEARCH MENU**.
- 6 **COPY**
Opens image export menu. In playback mode, the current playback position is stored as image export start position.
- 7 **ENTER**
Press this key to enter items, or jump to next subentry in the menu setting.
- 8 **DISPLAY**
Press this key to switch display of channels, display color of channels (Black, Red, Yellow, Pink, Blue and White are available as choices) and/or status bar.



9 **SELECT**

On live view, press this key to assign a camera to a multi-screen or to adjust single screen display properties. In menus, press this key to select certain features.

10 **MODE**

Switch PIP, 4, 7, 9, 10, 13 and 16 displays in **Live** and **Playback** modes.

11 **ZOOM**

In full screen mode, 2x electronic zoom. Zoom screen can be moved through **JOG**. **Enter** key changes the direction. Pressing the zoom key again switches the electronic zoom off.

In multiscreen mode: Image orientation adjustment. Use the **JOG** to adjust the image to the respective monitor type. **ENTER** switches between horizontal and vertical adjustment. Press the zoom key again to exit screen adjustment.

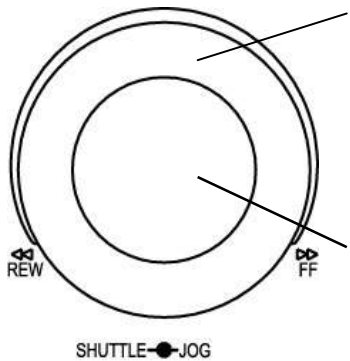
12 **SEQ**

Press this key to enter the auto sequential switching mode.

- 13 **CALL**
Press this key to enter and set up **CALL MENU**.

- 14 **Menu**
Press this key to enter **MAIN SETUP MENU** or to exit from any submenu.

- 15 **Shuttle and Jog Dial**



Shuttle:

In the **Playback** mode, turn the **Shuttle** dial to fast forward/rewind the video.

In the **Pause** mode, turn the **Shuttle** dial to slow forward/rewind the video.

In the event list, turn the **Shuttle** to change pages.

Jog Dial:

In the **Pause** mode, turn the **Jog** dial to forward/rewind the video frame by frame. In the **Menu** mode, turn the **Jog** dial to change settings and values in subentries.

- 16 **System LEDs**
LEDs for system active **HDD**, **ALARM** and **LAN** display.

Note: External HDD LED will only be light on for EDVR16D3 model.

- 17 **Channel Key (1~16)**
Press channel key (**CH1~CH16**) to display that channel in full screen view.

- 18 **Mouse**
For connecting the mouse.

- 19 **DVD+RW Burner**
DVD+RW burner (only available for D series).

- 20 **USB Slot**
USB port allows you to archive files into your storages.

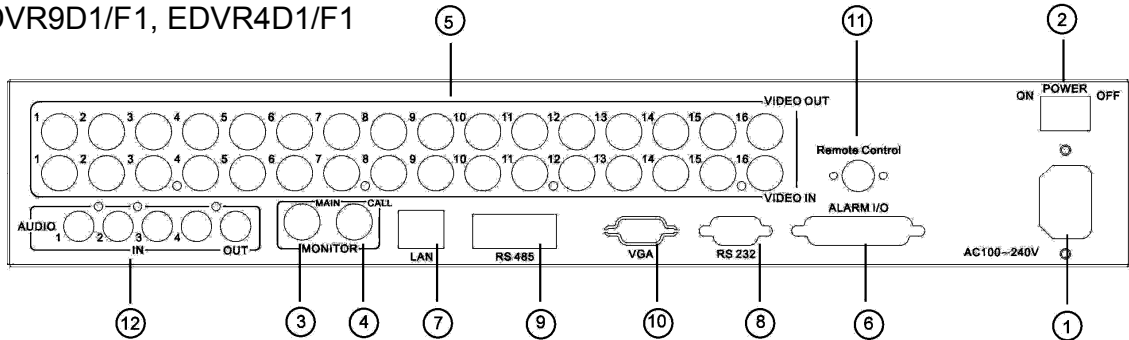
- 21 **LCD Panel**
To display Date and Time, and other system information.

- 22 **IR receiver**
Receiver for optional infrared remote control.

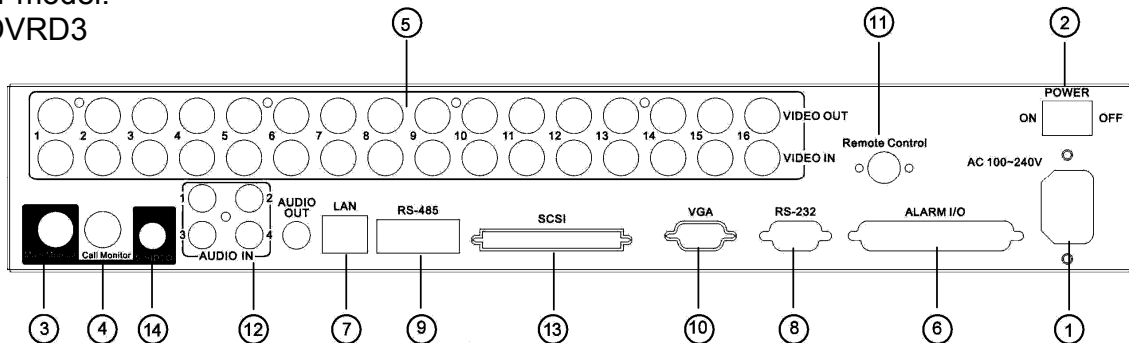
1.4 Back Panel Connections

For models:

EDVR16D1/F1, EDVR16D2/F2,
EDVR9D1/F1, EDVR4D1/F1



For model:
EDVRD3



POWER

- 1 **Main Power plug**
Connect power jack (AC 100~240V).
- 2 **Power Switch**
Switch DVR on or off.

MONITOR

- 3 **MAIN MONITOR**
This connector is used for the main monitor display, a number of different display modes may be selected for viewing.
- 4 **CALL MONITOR**
This connector is used for the call monitor. This monitor can only display a full screen, but not able to enter Setup Menu.

VIDEO IN

5 16 CH:

VIDEO OUT (1~16): BNC connectors for video looping out 1~16.

VIDEO IN (1~16): BNC connectors for video input 1~16.

9 CH:

VIDEO OUT (1~9): BNC connectors for video looping out 1~9.

VIDEO IN (1~9): BNC connectors for video input 1~9.

4 CH:

VIDEO OUT (1~4): BNC connectors for video looping out 1~4.

VIDEO IN (1~4): BNC connectors for video input 1~4.

ALARM INPUT/OUTPUT

6 ALM-INPUT

Normal open or normal close type alarm signal inputs.

The Alarm Input can be selected as normal open (**N.O.**) or normal close (**N.C.**) input in the **ALARM SETUP MENU**. When an alarm occurs, alarm recording will automatically start.

ALM-OUTPUT: A built-in relay offers 3 nodes which are **ALM-COM** (common), **ALM-NO** (normal open) and **ALM-NC** (normal close) for external use.

Note: Please check **APPENDIX B** to see other available alarm input/output functions.

LAN

7 LAN Connector

The RJ-45 LAN connector.

RS232

8 RS232 connector

9-pin Sub-D control input/output for service purpose.

RS485

9 RS485 connector

RJ 45 Connector to cascade/control multiple Digital Video Recorders.

VGA

10 **VGA**

Connect to the monitor that has VGA input.

REMOTE CONTROL (extension cable is optional)

11 **Remote Control**

Connector for IR extension cable that has an IR remote control receiver.

AUDIO

12 **Audio IN**

Audio inputs 1~4 for recording, and it can be enabled by setting to “**YES**” or “**NO**” in the **RECORD SETUP MENU**.

Audio OUT

Connect an audio output to a monitor or other device. Audio 1 corresponds to CH 1, audio 2 corresponds to CH 2, audio 3 corresponds to CH 3 and audio 4 corresponds to CH 4.

SCSI (Only available for EDVR16D3)

13 **SCSI Connector**

For connecting the optional external hard drive array (EDA800).

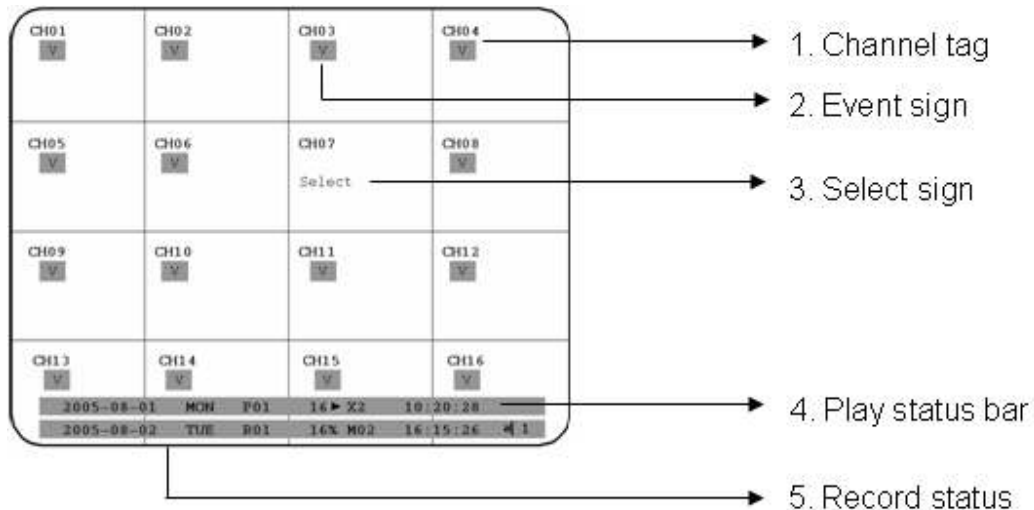
S-VIDEO (Only available for EDVR16D3)

14 **S-Video**

Provides S-Video connector.

1.5 Monitor Display

The status information of the cameras or machine will show up, and be located at different places on the screen.



1. Channel tag

A channel tag indicates the channel name of the screen.

2. Event sign

Event signals which are small icons with a capital letter and red background show the events on each screen. There are a total of 6 different signals:

A Alarm event.

Alarm event shows on a channel if an **ALARM** is enabled for that camera in the **ALARM SETUP MENU** and an alarm is triggered.

M Motion event.

Motion event only shows up when the camera's **MOTION** is enabled in **MOTION SETUP MENU** and the camera detects movement.

V Video loss event.

Video loss event only shows when the camera's **VIDEOLOSS** is enabled in **VIDEOLOSS SETUP MENU** and the camera signal is lost.

S Sequence sign.

Sequence sign shows up when the display is in sequence mode.

The last display on the screen has a “*” sign in the top-middle. The **S** sign will replace the “*” in the display when sequence occurs.

Note: Sequence is invalid when the multi-screen display is showing all cameras.

T Temperature indication.

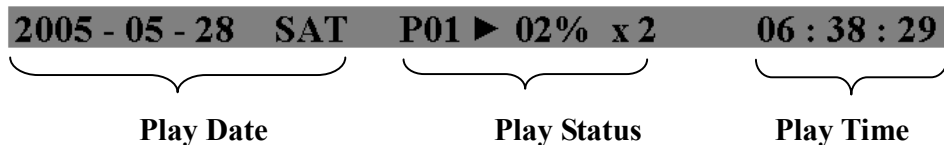
This shows if the hard drive’s temperature is overheated. Overheat temperature is determined in **HDD TEMPERATURE** of **WARNING SETUP MENU**.

F Fan fail indication.

This shows when the fan fails to work normally. If you get this warning, contact technical support for assistance.

3. **Select sign:** You can assign a camera to a display by pressing **SELECT** key in live mode. Dial **Jog** to move the select sign to the display you would like to change camera, and then press channel key on the front panel to choose that channel. Press **SELECT** again to exit from this mode.

4. **Play status bar:** The play status bar appears in play back mode if you enable a status bar on the screen (Please see **DISPLAY**, 8th item of **Front Panel Keypads**). There are three parts that will be shown: **play date**, **play status**, and **play time**.



1. **Play date**

The date on which the video was recorded.

2. **Play status**

“**PAUSE**”, when the video playback is paused.

“**P## >**” means normal play speed on the displayed disk number;

“**P## <**” means normal reverse play speed on the displayed disk number;

“**>> x N**” means N time fast play speed;

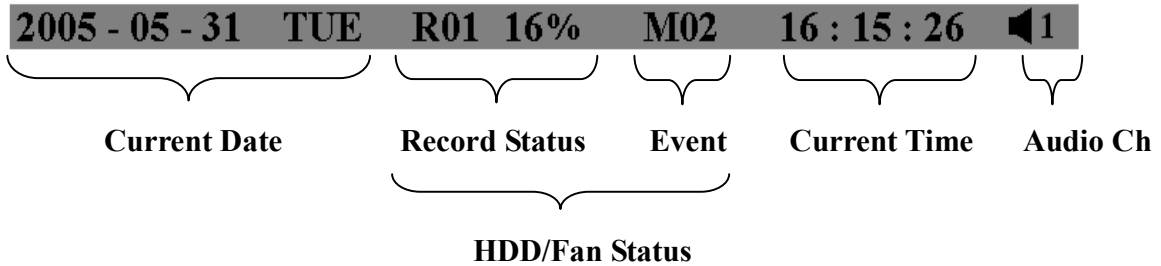
“**<< x N**” means N time fast reverse play speed.

3. **Play time**

The play time at which the video is recorded. The time format depends on the time format setting in the **TIME/DATE SETUP MENU**.

4. Record status bar

The record status bar appears when you enable a status bar on the screen. There are four parts: current date, record status, event, and current time.



1. **Current date**

The current date which is set in the **TIME/DATE SETUP MENU**.

2. **Record status**

While the unit is recording, current HDD and percentage is displayed. e.g: “**R01 16%**”: currently recording on HDD 1, 16% full.

3. **Event**

The current/last event that occurred.

4. **Current time**

The current time which is set in the **TIME/DATE SETUP MENU**.

5. **Audio Ch**

Displays which audio channel is currently active. This can be changed by turning the Jog wheel in the live camera mode.

6. **HDD/Fan status**

“**No Disk**”: only shows when no disk is installed or detected.

“**No Fan**”: only shows when internal fan stops working.

“**HDD OT**”: only shows if hard drive is over temperature.

2. Installation

The installations described below should be done by qualified service personnel or system installers.

2.1 Packing

Please check accessories in the packing before installation.

2.2 System Floorplan

Please refer to the following diagrams for the system connections.

Note: Monitor and Camera must be purchased separately.

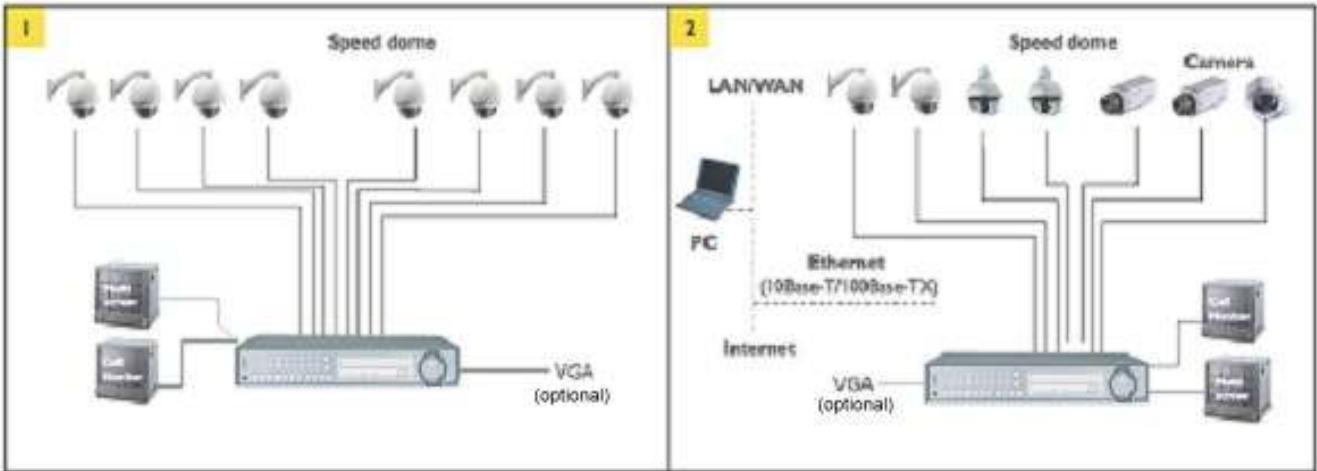


Diagram 2.1

2.3 Basic Wiring Instructions

1. **Power**

Connect the power source or adapter into the power socket.

2. **Cameras**

Connect each cameras video output to the video input on the digital video recorder shown in diagram 2.1.

Note: At least one camera (CH 1) must be connected before the system is running for the auto detection of video standard to take effect.

3. **Audio Input**

The camera audio output or Microphone is connected to the audio input terminal at the rear panel.

4. **Audio Output**

Connect the speaker or other audio listening devices to the audio output terminal on the back of the digital video recorder.

5. **Ethernet**

The digital video recorder may be viewed from a PC via the LAN connector using a RJ45 Ethernet cable.

6. **RS232**

9-pin Sub-D control input/output for service purpose.

7. **RS485**

The digital video recorder can be controlled from a keyboard or a speed dome via RS485.

Note: This can be done using a serial cable.

8. **Main Monitor**

Connect the main monitor output connector to a main monitor. The main monitor displays selected live or recorded cameras in any available format.

Note: The main monitor must be connected in order to make configuration changes, enter the main menu, or do a playback at the machine.

9. Call Monitors

Connect the call monitor output connectors to a call monitor. The call monitor display selected live cameras in full screen format.

Note: The call monitor will only display one full screen camera at a time.

2.4 Final Install Process

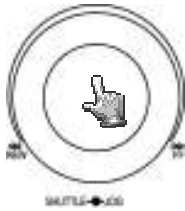
Once you have completed the basic wiring installation and the hard disk drive installation you are ready to turn on the DVR. Simply plug the power source you installed earlier. The POWER LED lights will light up if power is normal. The next step is to set up the menu options for the DVR.

3. DVR Menu Setup

Assuming you have completed the first two chapters of this manual. You are now ready to begin setting up the digital video recorder. The following chapter will walk you through the detailed DVR Menu step by step and how to set the DVR for your specific application. To begin this process, press the **MENU** key. Once inside the main menu you will find there are 12 setup option pages as follows.



MENU



Press the **MENU** key to enter or exit the **MAIN SETUP MENU**.
Press the **MENU** key in any sub-menu to go back to previous screen.

Dial the **Jog** clockwise or counterclockwise to scroll through the **MAIN MENU** options or to change subentry values.

Press the **ENTER** key to go to the next subentry in a menu setting.

Press the **CALL** key to go to the previous subentry in a menu setting.

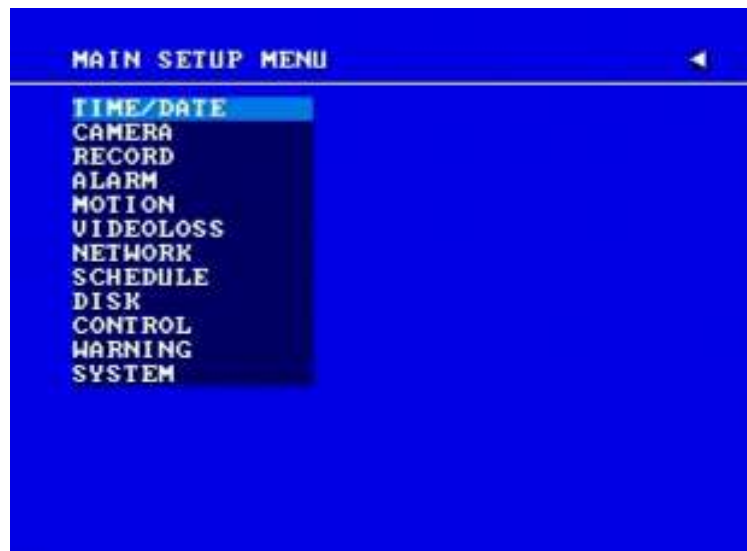


Diagram 3.1

3.1 Time/Date Setup Menu



Diagram 3.2

Diagram 3.2 is a screen shot of the **TIME/DATE SETUP MENU**. This menu is used to set up the correct time and date for your region of the world. You are able to setup daylight savings as well as synch it with an internet based time server.

In the **TIME/DATE SETUP MENU** the following fields are defined as follows:

1. TIME FORMAT

This field represents the time format on the DVR. You can select between **12 HOUR** and **24 HOUR** format.

2. TIME

This field represents the current time on the DVR. To change this, simply use the Jog Dial on the DVR.

The Time is represented as follows:

Hour: 00~23 (1 ~ 12 if TIME FORMAT is 12 HOUR); Minute: 00~59; Second: 00~59

3. DATE FORMAT

This field represents the date format on the DVR. To change this, simply use the Jog Dial on the DVR. There are three date formats to select from: **YYYY-MM-DD**, **MM-DD-YYYY** and **DD-MM-YYYY**.

4. DATE

This field represents the date on the DVR. To change this, simply use the Jog Dial on the DVR.

The date is represented as follows:

Year: 2000~2037 / Month: 01~12 / Date: 01~31 (Day of Week)

5. DAYLIGHT SAVING

This field represents the daylight savings on the DVR. To change this, simply use the Jog Dial on the DVR. Select "**ON**" or "**OFF**" to enable or disable daylight saving time function. In order to set a daylight saving time zone, you need to disable daylight saving first. Enable the daylight saving after finish setting the time zone.

Note: Please double-check your current Time on DVR again after setting Daylight Saving ON. If you are currently in daylight saving time period, then Daylight saving time may be over-adjusted, as DVR will adjust daylight saving time even though you have already set the current time which is daylight saving time.

6. START TIME

To set the start time of daylight saving time.

To set the start month of daylight saving time: Dial the jog to set the start month.



To set the start week of daylight saving time: Dial the jog to set the start week.



To set the start date of daylight saving time: Dial the jog to set the start date.

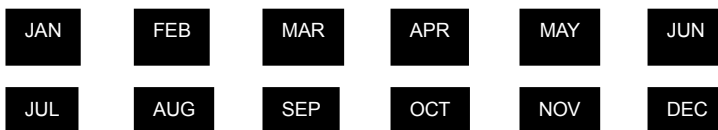


To set the starting time change of daylight saving time: Choose the “**FROM**” time and “**TO**” time when daylight savings starts.

7. END TIME

To set the end time of daylight saving time.

To set the end month of daylight saving time: Dial the jog to set the end month.



To set the end week of daylight saving time: Dial the jog to set the end week.



To set the end date of daylight saving time: Dial the jog to set the end date.



To set the ending time change of daylight saving time: Choose the “**FROM**” time and “**TO**” time when daylight savings ends.

8. TIME SYNCHRONIZE

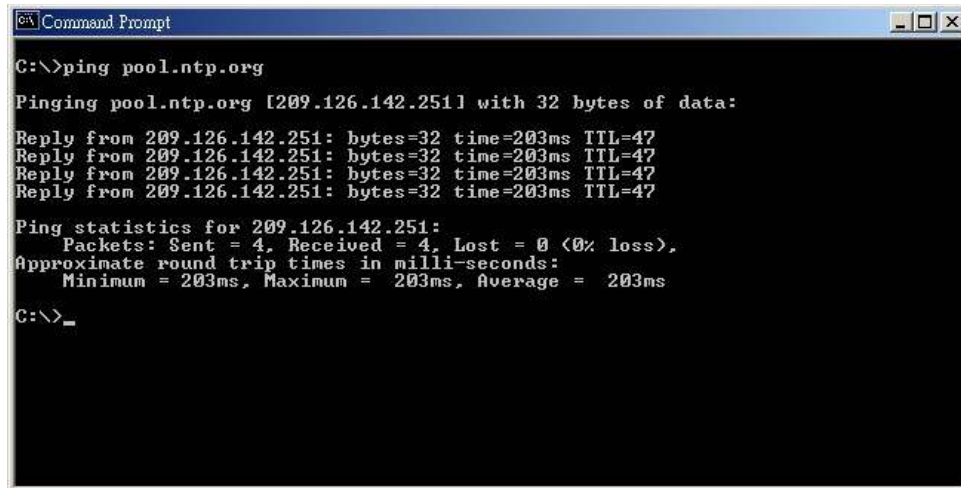
Select “**ON**” or “**OFF**” to enable or disable time synchronize, which will update the correct time automatically when network is connected. To change this, simply use the Jog Dial on the DVR.

9. TIME SERVER

You can set the time server address that the DVR connects to for time synchronize. To find the IP address of NTP Server, please follow these steps:

- a) Go to a PC that is connected to the internet.
- b) Click on “START” -> “RUN” -> type “cmd” and press “OK”.

c) In the Dos Prompt, type “ping pool.ntp.org” to find out the IP address of an NTP Server.



```
Command Prompt
C:\>ping pool.ntp.org
Pinging pool.ntp.org [209.126.142.251] with 32 bytes of data:
Reply from 209.126.142.251: bytes=32 time=203ms TTL=47
Reply from 209.126.142.251: bytes=32 time=203ms TTL=47
Reply from 209.126.142.251: bytes=32 time=203ms TTL=47
Reply from 209.126.142.251: bytes=32 time=203ms TTL=47
Ping statistics for 209.126.142.251:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 203ms, Maximum = 203ms, Average = 203ms
C:\>_
```

Diagram 3.3

10. TIME ZONE

You can set the time zone that the DVR adjusts to when updating from the time server.

Atlantic Daylight Time subtract 3 hours from GMT
Atlantic Standard Time subtract 4 hours from GMT
Eastern Daylight Time subtract 4 hours from GMT
Eastern Standard Time subtract 5 hours from GMT
Central Daylight Time subtract 5 hours from GMT
Central Standard Time subtract 6 hours from GMT
Mountain Daylight Time subtract 6 hours from GMT
Mountain Standard Time subtract 7 hours from GMT
Pacific Daylight Time subtract 7 hours from GMT
Pacific Standard Time subtract 8 hours from GMT
Alaska Daylight Time subtract 8 hours from GMT
Alaska Standard Time subtract 9 hours from GMT
Hawaii-Aleutian Daylight Time subtract 9 hours from GMT
Hawaii-Aleutian Standard Time subtract 10 hours from GMT

11. TIME UPDATE BY

Once you enable the **TIME SYNCHRONIZE**, you can select the synchronization frequency by:

DAY

WEEK

MONTH

3.2 Camera Setup Menu

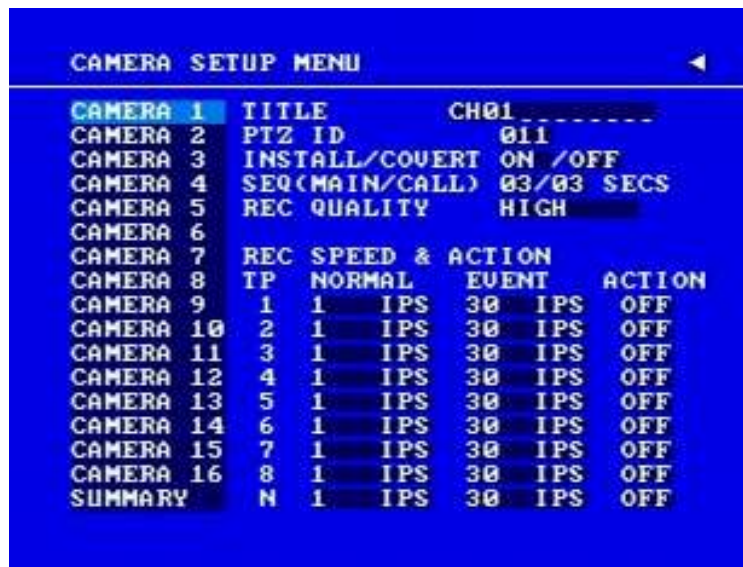


Diagram 3.4

Diagram 3.4 is a screen shot of the **CAMERA SETUP MENU**. This menu will walk you through setting up the Camera Recording Speeds, Camera titles, PTZ ID, covert modes, and recording quality.

In the **CAMERA SETUP MENU** the following fields are defined as:

1. TITLE

The title setting allows you to assign a title to each camera input. Each channel supports a title with up to 12 characters. Press Enter to move to each character and use the Jog Dial to change the value. The available alphanumeric characters are:

0,1,2,3,4,5,6,7,8,9,
A,B,C,D,E,F,G,H,I,J,K,L,M,N,O,P,Q,R,S,T,U,V,W,X,Y,Z,
() . , + - / and an empty space.

2. PTZ ID

Select PTZ ID/Address from 001~255 or OFF. OFF is the same as 000. The default value is 10+N where N is camera's number. This ID must be the same as the ID used in PTZ Dip Switch. To change this, simply use the Jog Dial on the DVR.

3. INSTALL/COVERT

For installation of camera; select “ON” to enable a camera, and “OFF” to disable it. Please make sure to stop recording before making a change to **INSTALL**. To take full advantage of the record abilities, switch any unused camera ports to OFF in this section. For **COVERT**, select “ON” to disable a channel screen in live mode. However, the image will still be recorded, and can be played back by user who has playback rights. Covert channels will not show up in the sequence mode. To change these, simply use the Jog Dial on the DVR.

4. SEQ (MAIN/CALL)

Setup the camera’s dwell time for either the Main or Call Monitor sequence. You can set any time from 01-99 on Main or 00-99 on Call. To change this, simply use the Jog Dial on the DVR.

5. REC QUALITY

Select an image quality for recording. There are six different qualities available. A higher image quality needs more HDD space. To change this, simply use the Jog Dial on the DVR. The approximate space needed per image is listed below:

720x480		Video Source	
		Simple:	Complex:
Average size per image	Lower:	8.04KB	12.33KB
	Low:	8.42KB	13.7KB
	Basic:	10.15KB	16.72KB
	Standard:	11.86KB	19.56KB
	High:	14.72KB	24.63KB
	Superior:	18.60KB	30.05KB

720x240		Video Source	
		Simple:	Complex:
Average size per image	Lower:	3.53KB	7.82KB
	Low:	3.87KB	8.36KB
	Basic:	4.21KB	8.9KB
	Standard:	4.92KB	9.54KB
	High:	5.62KB	10.17KB
	Superior:	6.41KB	12.89KB

360x240		Video Source	
		Simple:	Complex:
Average size per image	Lower:	1.76KB	4.56KB
	Low:	1.87KB	4.87KB
	Basic:	1.97KB	5.46KB
	Standard:	2.38KB	6.51KB
	High:	2.67KB	7.08KB
	Superior:	3.63KB	9.02KB

Note: Since the compression ratio of MPEG4 fully depends on the variation and complexity of the recorded video, the tables above are for reference only.

6. REC SPEED & ACTION:

TP

Scheduled recording time 1~8 which can be set in the **SCHEDULE SETUP MENU**. “N” is the normal recording time, which is activated by pressing the Record button. If you have set Time Period in Schedule Setup Menu, then there will be a star sign (*) beside that TP in Camera Setup Menu.

NORMAL

IPS recording rate for manual or scheduled recording and recording triggered through “REC IN” input contact. The maximum image rate is limited to the maximum recording rate divided by the number of installed cameras.

Max. DVR recording rate depends on recording resolution:

Model	Resolution (N/P)	IPS (N/P)
D1/F1	360 x 240 / 360 x 288	120/100
	720 x 240 / 720 x 288	60/50
	720 x 480 / 720 x 576	30/25
D2/F2	360 x 240 / 360 x 288	240/200
	720 x 240 / 720 x 288	120/100
	720 x 480 / 720 x 576	60/50
D3	360 x 240 / 360 x 288	480/400
	720 x 240 / 720 x 288	240/200
	720 x 480 / 720 x 576	120/100

Example:

EDVR9F1/D1 with 12 installed cameras, at 720 x 240 resolution:

60 IPS / 12 cameras = 5 IPS

Therefore the maximum adjustable recording rate per camera is 5 IPS.

EVENT

IPS recording rate for motion or alarm events. Event record speed can be set from 1 to 30 IPS (25 for PAL) or "OFF".

Note: In order to activate a new record speed, you need to disable all current record actions and then turn them back on.

ACTION

Set "**ON**" to activate TP of motion action.

Set "**OFF**" to disable TP of motion action.

This setting correlates closely with Motion Setup. If motion setting is disabled, motion detection will not function regardless if TP (Time Period) Action in Camera Setup Menu is ON or OFF.

However, if Motion setting is **enabled**, then motion detection function works depending on **Action** setting in Camera Setup Menu. All motion actions (including buzzer, relay, network alarm, e-mail and log) will be triggered if they are enabled in Motion Setup Menu as long as Action is "**ON**" for the TP (Time Period) you have set. If you do not wish to have motion detected for a specific time, set Action "**OFF**" for that Time Period. This function gives you flexibility to set motion detection function ON or OFF for different Time Periods.

7. SUMMARY



CAMERA	ITEM	TITLE
CAMERA 1	1	CH01
CAMERA 2	2	CH02
CAMERA 3	3	CH03
CAMERA 4	4	CH04
CAMERA 5	5	CH05
CAMERA 6	6	CH06
CAMERA 7	7	CH07
CAMERA 8	8	CH08
CAMERA 9	9	CH09
CAMERA 10	10	CH10
CAMERA 11	11	CH11
CAMERA 12	12	CH12
CAMERA 13	13	CH13
CAMERA 14	14	CH14
CAMERA 15	15	CH15
SUMMARY	16	CH16

Diagram 3.5

All cameras' statuses are shown in the **SUMMARY** table. The table is only to check camera overall statuses, not for changing them. Use the **Jog** to change which option you wish to check.

Note: The SUMMARY table also exists in ALARM, MOTION and VIDEOLOSS SETUP MENU. All of these SUMMARY tables are also for checking particular overall statuses, not for setting.

8. Copy camera's setting from a camera to other cameras

In order to quickly copy the setting from one camera to other cameras, we provide a copy function for camera settings. Highlight the desired camera from the list on the left, and then press **COPY**. COPIED will show up in the top right corner of the screen. Dial the **Jog** to the camera you would like to copy to, and then press **SEARCH** to paste. The previous settings of the camera will be overwritten, and PASTED will be displayed in the top right corner.

Note: TITLE, PTZ ID, and INSTALL/COVERT cannot be copied. These 3 options need to be set independently.

3.3 Record Setup Menu



Diagram 3.6

Diagram 3.6 is a screen shot of the **RECORD SETUP MENU**. This menu is for setting up the options for recording.

In the **RECORD SETUP MENU** the following fields are defined:

1. **RECORD AUDIO**

YES: Audio will be recorded when machine is recording and a microphone is present.
NO: Audio will not be recorded when machine is recording.

2. **TIME STAMP**

ON: The time stamp will be recorded on the video and picture when recording.
OFF: The time stamp will not be recorded on the video and picture when recording.

3. **TIME STAMP POSITION**

BOTTOM: The time stamp will be recorded on the bottom.
TOP: The time stamp will be recorded on the top.

4. **WATER MARK**

ON: Recording is overlaid by a visible watermark ("W").
OFF: No watermark.

5. **RESOLUTION**

The resolutions for NTSC are 720x480, 720x240 (default) and 360x240.
The resolutions for PAL are 720x288, 720x576 (default) and 360x288.

NOTE: Changing the resolution will determine the amount of IPS the DVR will support.

Model	Resolution (N/P)	IPS (N/P)
D1/F1	360 x 240 / 360 x 288	120/100
	720 x 240 / 720 x 288	60/50
	720 x 480 / 720 x 576	30/25
D2/F2	360 x 240 / 360 x 288	240/200
	720 x 240 / 720 x 288	120/100
	720 x 480 / 720 x 576	60/50
D3	360 x 240 / 360 x 288	480/400
	720 x 240 / 720 x 288	240/200
	720 x 480 / 720 x 576	120/100

6. **RECORD MODE**

REWRITE: Continuous recording. Disk will be overwritten if it is full.

STOP: Stop recording when disk is full.

7. **AUTOWRITE WITHIN**

You can set DVR to automatically overwrite after the selected number of days. If you do not wish to use this function, simply select "0".

8. **PRE-ALARM RECORDING**

Select "YES" to enable pre-alarm recording function. Select "NO" to disable pre-alarm recording function.

9. **RELAY OUT**

By selecting "1", user can easily identify whether DVR is recording or not if relay output is connected to a signaling device. Select "NONE" if you do not wish to identify recording status.

Note: For EDVRD3 model, 1/2/3/4 relay output is selectable.

3.4 Alarm Setup Menu

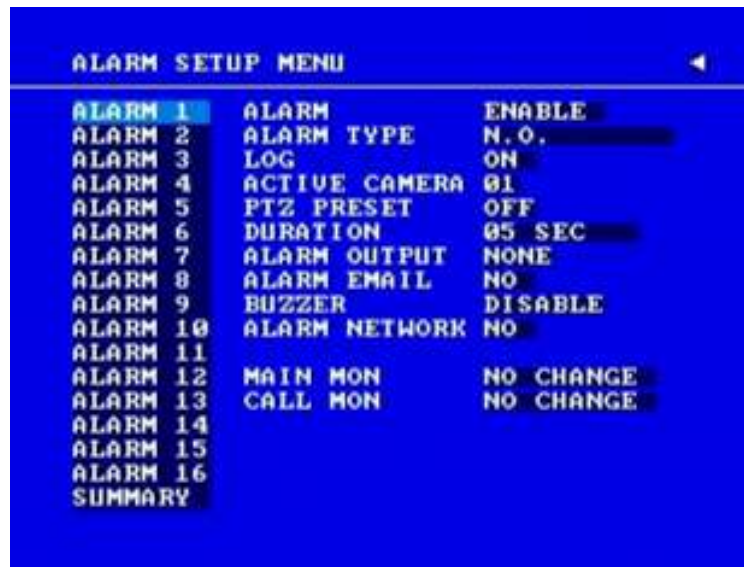


Diagram 3.7

Diagram 3.7 is a screen shot of the **ALARM SETUP MENU**. An alarm is defined as an electronic or mechanical device that sends a warning signal under specific circumstances. In this case the signal triggers the recorder to start recording the alarmed event. This menu contains all the alarm operations and options needed to successfully complete an alarm recording. In the **ALARM SETUP MENU** the following fields are defined:

1. **ALARM**

This field is to turn alarm detection ON or OFF. The default value is ENABLE. To change this, simply use the Jog Dial on the DVR.

ENABLE: Enable alarm detection.

DISABLE: Disable alarm detection.

2. **ALARM TYPE**

This field is to change the type of alarm recording. The default value is N.O. To change this, simply use the Jog Dial on the DVR.

N. O.: Normal Open alarm.

N. C.: Normal Close alarm.

N.O. Trans.: When the alarm is triggered, buzzer, alarm output and alarm recording remain active until alarm is set back to N.O.

N.C. Trans.: When the alarm is triggered, buzzer, alarm output and alarm recording remain active until alarm is set back to N.C.

3. **LOG**

YES: Select **YES** if you wish to record Alarm Events in the Log.

NO: Select **NO** if you do not wish to record Alarm Events in the Log.

4. **ACTIVE CAMERA**

This field is to activate camera you want to have the alarm enabled too. For example if you had an external motion detector on camera one you would set this option to camera one. The Default setting is the same camera number as the current alarm. To change this, simply use the Jog Dial on the DVR.

5. **PTZ PRESET**

Select **PTZ PRESET** from “**001**” to “**255**”, so that when Alarm occurs, speed dome will turn to this preset position for event recording. This function improves surveillance quality of an alarm event. If you wish to disable this function, simply select “**OFF**”.

6. **DURATION**

1~99 SEC: The amount of time alarm recording, screen change, buzzer and output contact will last. Adjustable from 1 ~ 99 seconds.

TRANSPARENT: Continuous recording, screen change, buzzer, and output contact for an alarm event.

7. **ALARM OUTPUT**

This will transmit a signal to another device. The setting of alarms are **NONE = not activated, 1 = output signal 1 transmits, 2 = output signal 2 transmits, 3 = output signal 3 transmits and 4 = output signal 4 transmits.**

<p>Note: For D1 and D2 series, only 1 alarm output is available. For D3 series, there are 4 alarm outputs total.</p>

8. **ALARM EMAIL**

Select “**YES**” for sending an email when alarm occurs or “**NO**” to disable alarm email. The email address can be set in the **NETWORK SETUP MENU**.

9. **BUZZER:** Audible alarm buzzer.

ENABLE: To enable the alarm buzzer.

DISABLE: To disable the alarm buzzer.

10. **ALARM NETWORK**

YES: Enable alarm network.

NO: Disable alarm network.

11. **MAIN MON:** Display on main monitor when an alarm occurs.
NO CHANGE: No change on the main monitor display when an alarm occurs.
FULLSCREEN: A full screen of the active camera will display when an alarm occurs.
12. **CALL MON:** Display on a call monitor when an alarm occurs.

NO CHANGE: No change on the call monitor display when an alarm occurs.
SEQUENCE: Display in sequence mode on call monitor when an alarm occurs, according to sequence duration set in Camera Setup Menu.
ACTIVE CAMERA: Display the active camera in full screen mode to the call monitor when an alarm occurs.
13. **SUMMARY**
Dial **Jog** to change items in the **SUMMARY** table. All alarm's statuses are shown in **SUMMARY** tables. These tables are for checking alarm overall statuses, not for changing them.

Note: Please check APPENDIX B to see other available alarm input / output functions.

3.5 Motion Setup Menu



Diagram 3.8

Diagram 3.8 is a screen shot of the **MOTION SETUP MENU**. We define motion as a change of pixilation in the field of view, which is detected by the digital video recorder and triggers the recorder to start recording. This menu is for setting up the digital recorder for motion recording on a per camera basis.

In the **MOTION SETUP MENU** the following fields are defined as follows:

1. **MOTION**

This field is to turn motion detection on or off. The default value is DISABLE. To change this, simply use the Jog Dial on the DVR.

ENABLE: Enable motion detection.

DISABLE: Disable motion detection.

Note: Motion only works in live and playback modes. It is invalid while in menus.

2. **SENSITIVITY**

The sensitivity allows users to adjust to a suitable motion detection sensitivity. There are 10 sensitivities available; level 1 is the lowest, and level 10 is the highest sensitivity. To change this, simply use the Jog Dial on the DVR.

3. **LOG**

YES: Select **YES** if you wish to record Motion Events log to the HDD.

NO: Select **NO** if you do not wish to record Motion Events log to the HDD.

4. **DURATION**

The amount of time a motion event will record - from 1 sec to 99 seconds. The default value is 5 seconds. To change this, simply use the Jog Dial on the DVR.

5. **ALARM OUTPUT**

This will transmit a signal to another device. The setting of alarms are **NONE = not activated, 1 = output signal 1 transmits, 2 = output signal 2 transmits, 3 = output signal 3 transmits** and **4 = output signal 4 transmits**. To change this, simply use the Jog Dial on the DVR.

(Only EDVR16D3 model has 4 alarm outputs, all others have only 1 alarm output)

6. **ALARM EMAIL**

YES: Send an email when an alarm occurs.

NO: Do not send an email when an alarm occurs.

The email address and email server can be set in the **NETWORK SETUP MENU**.

7. **ALARM NETWORK**

YES: Enable alarm network when an alarm occurs.

NO: Disable alarm network when an alarm occurs.

8. **BUZZER:** Audible buzzer when motion is detected.

ENABLE: To enable a motion buzzer.

DISABLE: To disable a motion buzzer.

9. **MOTION DELAY:**

Select motion delay time from 0~7 level.

10. **MAIN MON:** Display on main monitor when motion occurs.

NO CHANGE: No change on the main monitor display when a motion occurs.

FULLSCREEN: A full screen of the active camera will display when motion occurs.

11. **CALL MON:** Display on a call monitor when motion occurs.

NO CHANGE: No change on the call monitor display when motion occurs.

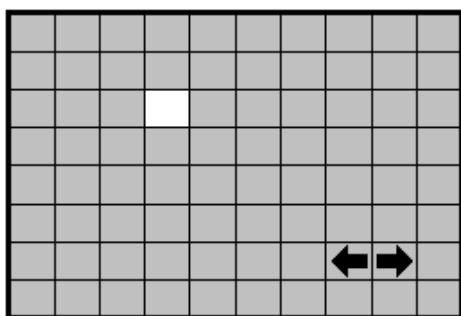
ACTIVE CAMERA: Display the active camera that is set for **Motion** in full screen mode to the call monitor.

12. SUMMARY

Dial **Jog** to change items in the **SUMMARY** table. All alarm's statuses are shown in **SUMMARY** tables. These tables are for checking alarm overall statuses, not for changing them.

13. MOTION AREA



Enter a desired channel and press **SELECT** or middle mouse button to edit a motion area. MOTION must be set as **"Enable"** before entering the motion detection area.

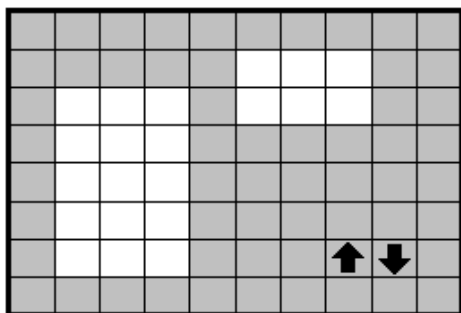


In the motion edit mode:

The default motion area of each camera is entire screen which displays in light green.

Press **COPY** or left-click the mouse to start setting an area.

Use the **JOG** Dial to move the cursor. Press **ENTER** to switch between vertical  and horizontal  movement.



Press **SEARCH** to end and enable the area, or press **PAUSE** to end and disable the area.

Alternatively, right-click the mouse to obtain a selection menu, then use the "+" or "-" signs to either select "ON" to enable the area or "OFF" to disable the area, then click "OK".

To quit the motion area edit, press **MENU** or right-click the mouse to obtain a selection menu, select "EXIT" by clicking the "+" or "-" sign. Then press "OK".

- **To test a motion area:** Grids will turn from green to red when motion is detected.
- **To clear the motion entire area:** Press **PLAY** to clear the entire motion area.
- **If you forget the motion grid commands:** Press **CALL** to display a hint window (shown below).

MENU	- EXIT
COPY	- SELECT AREA
ENTER	- CHANGE DIR
SEARCH	- ON AREA
PAUSE	- OFF AREA

3.6 VIDEOLOSS Setup Menu

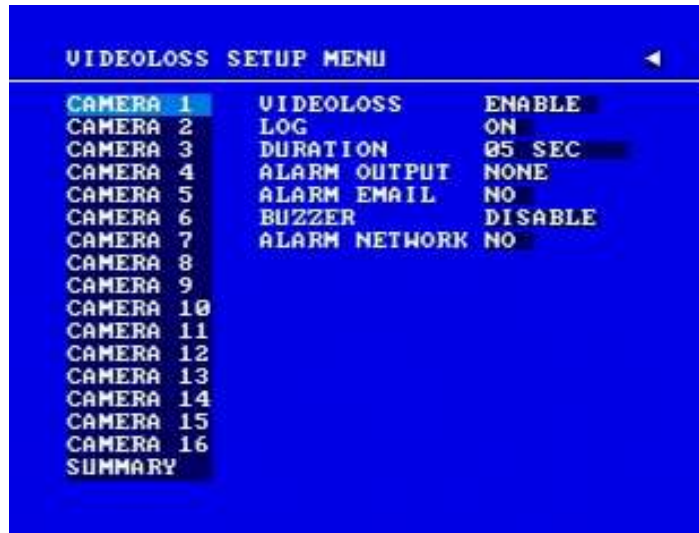


Diagram 3.9

Diagram 3.9 is a screen shot of the **VIDEOLOSS (Video Loss) SETUP MENU**. VIDEOLOSS event is caused by no video signal input for the channel. Usually it happens when no power supply for the camera or the camera fails. How to set up system response for VIDEOLOSS case is introduced in this section.

In the **VIDEOLOSS SETUP MENU** the following fields are defined as follows:

1. **VIDEOLOSS:**

ENABLE: Enable video loss detection.

DISABLE: Disable video loss detection.

2. **LOG:**

YES: Select **YES** if you wish to record Video Loss Events in the Log.

NO: Select **NO** if you do not wish to record Video Loss Events in the Log.

3. **DURATION:**

Duration of VIDEOLOSS buzzer ranges from 1 sec to 99 seconds. The default value is 5 seconds. To change this, simply use the Jog Dial on the DVR.

4. **ALARM OUTPUT:**

This will transmit a signal to another device. The setting of alarms are **NONE = not activated, 1 = output signal 1 transmits, 2 = output signal 2 transmits, 3 = output**

signal 3 transmits and 4 = output signal 4 transmits. To change this, simply use the Jog Dial on the DVR.

(Only EDVR16D3 model has 4 alarm outputs, all others have only 1 alarm output).

5. **ALARM EMAIL:**

Select “**YES**” for sending an email when Video Loss event occurs. The email address can be set in the **NETWORK SETUP MENU**.

6. **BUZZER:** Audible alarm buzzer.

ENABLE: To enable a VIDEOLOSS buzzer.

DISABLE: To disable a VIDEOLOSS buzzer.

7. **ALARM NETWORK:**

YES: Enable alarm network.

NO: Disable alarm network.

8. **SUMMARY**

All video loss's statuses are shown in SUMMARY tables. These tables are for checking video loss overall statuses, but not for changing them.

3.7 Network Setup Menu

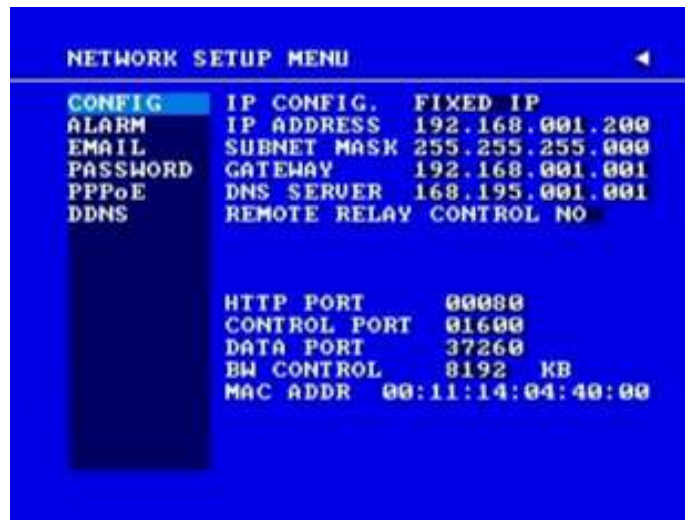


Diagram 3.10

Diagram 3.10 is a screen shot of the **NETWORK SETUP MENU**. This menu is for setting up the configurations for networking to the DVR. There are 6 subentries: **CONFIG**, **ALARM**, **EMAIL**, **PASSWORD**, **PPPoE** and **DDNS**. Each of them should be set up connecting the DVR to the network.

For more detail about network setup, please refer to Chapters 10~13 of this manual to fully understand how to setup your network for this DVR.

In the **NETWORK SETUP MENU** the following fields are defined as follows:

Note: Since every Network Configuration is different, please contact your Network Administrator or ISP for details on assigning IP addresses and port numbers.

3.7.1 CONFIG

In the **CONFIG** of the **NETWORK SETUP MENU**, we define:

1. **IP CONFIG:**

FIXED IP: User can set the fixed IP for network connection.

DHCP: DHCP server in LAN will provide the dynamic IP for network connection

PPPoE: This is a DSL connection application, ISP will ask user to input user name and password. When you choose this option, please go to PPPoE configuration menu for setting PPPoE configuration.

2. **IP Address**

This field shows the current IP Address for the DVR. A Fixed IP address does not change and must be set manually. To change this, simply use the Jog Dial on the DVR. When DHCP is selected, the DHCP server will assign this value automatically.

Note: The addresses in the machine are for our own testing you must apply your own addresses to comply with your network. Refer to Networking Chapter for more details.

3. **SUBNET MASK**

This field is to set the subnet mask for your network so as the DVR will be recognized within the network. Example: 255.255.255.000. To change this, simply use the Jog Dial on the DVR. When DHCP is selected, the DHCP server will assign this value automatically.

4. **GATEWAY**

This field is to set the gateway for your network so the DVR will be recognized within the network. To change this, simply use the Jog Dial on the DVR. When DHCP is selected, the DHCP server will assign this value automatically.

5. **DNS SERVER**

This field is to set the DNS server for your network so the DVR will be recognized within the network. To change this, simply use the Jog Dial on the DVR. When DHCP is selected, the DHCP server will assign this value automatically.

6. **REMOTE RELAY CONTROL:**

YES: By selecting **YES**, system will accept remote command of relay control.

NO: By selecting **NO**, system will refuse remote command of relay control.

7. **HTTP PORT**

The default port number is 80. User can change it to different port number for HTTP/WEB communication between DVR and client PC.

8. **CONTROL PORT**

The default port number is 1600. User can change it to different port number for controlling comment between DVR and client PC.

9. **DATA PORT**

The default data transmitting port number is 37260. User can change it to different port number for data transfer between DVR and client PC.

Note: If you wish to have multiple users log into the DVR, please open a range of ports on your router. For example if you want to allow 4 clients to login through the default port 37260, you should open the port range 37260-37263 on your router.

10. **BW CONTROL**

This configuration allows user to control the bandwidth of DVR.

11. **MAC ADDR**

This field is for those Internet service providers or Network administrators who require a MAC address of the network card of the DVR. This option cannot be changed.

3.7.2 ALARM (NETWORK)

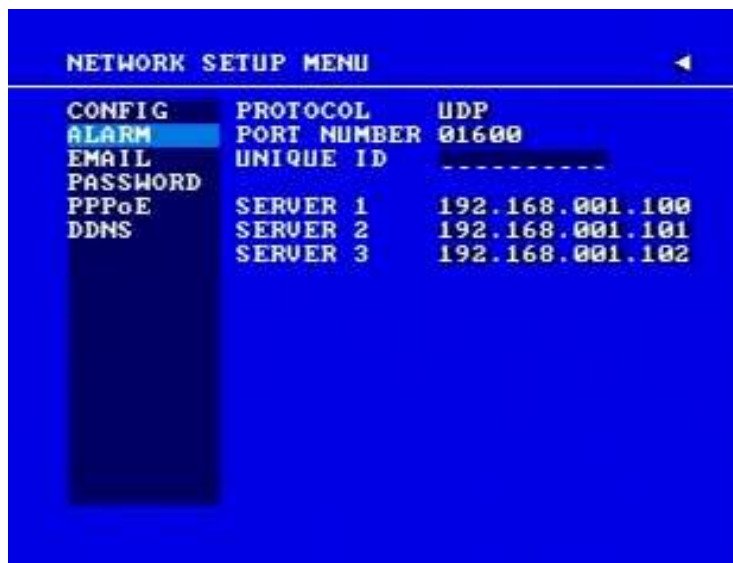


Diagram 3.11

Note: Since every Network Configuration is different, please contact your Network Administrator or ISP for how to assign those IP addresses and port numbers.

DVR can send out Alarm message to an Alarm Server (PowerCon4). In the **ALARM** of the **NETWORK SETUP MENU**, we define:

1. **PROTOCOL:** Select which communication protocol to use with Alarm servers or Alarm receiving clients.

TCP: communicate with client via TCP protocol.

UDP: communicate with client via UDP protocol

2. **PORT NUMBER**
Set the communication port with Alarm server.
3. **UNIQUE ID**
Set the ID number of your DVR to Alarm server.
4. **SERVER 1**
Assign the IP address of Alarm server 1.
5. **SERVER 2**
Assign the IP address of Alarm server 2.
6. **SERVER 3**
Assign the IP address of Alarm server 3.

3.7.3 EMAIL



Diagram 3.12

In the **EMAIL** of the **NETWORK SETUP MENU**, we define:

1. **SMTP SERVER**

Assign the SMTP (e-mail) server's name.

Note: For more reliable email service, use the server's IP address.

2. **PORT NUMBER**

Assign the port number for SMTP server. The default port is 25.

3. **AUTHENTICATION**

Select "YES", if the SMTP server requires Authentication (user name / password)

4. **USER**

Input the login user ID if the SMTP server requires Authentication.

5. **PASSWD**

Input the password if the SMTP server requires Authentication.

6. **RECEIV. EMAIL ADDR**

Input the e-mail address for receiving e-mail messages when the EVENT is enabled and triggered.

Example: In Motion Setup Menu, if the "EMAIL/NETWORK" is set to "YES", this e-mail address will receive a message and a still image (in "ARV" format) from the DVR when Motion is triggered. This "ARV" file can be played back by opening "DVRViewer.exe" which can be downloaded from the DVR's Network Viewer or from the Copy Menu.

7. **SENDER EMAIL ADDR**

Input sender's e-mail address, so that receiver can recognize the sender when an event message is sent out.

3.7.4 PASSWORD



Diagram 3.13

In the **PASSWORD** of the **NETWORK SETUP MENU**, we define:

Name/Password/Level: This category is to set up the users that will log into the network. Please remember that this portion of the Network setting menu is set up in column format.

The default User Name = ADMIN

The default Password = 11111111 (numeric only)

To change this, press Enter to move to each character and use the Jog Dial on the DVR to change each character.

There are 3 level types:

1. **Admin:** User has all the rights including viewing live video, performing a search, playback and controlling the PTZ camera (if one is connected)
2. **Play:** User has the same rights as Admin user. Except PTZ programming and Remote configuration are not authorized to **Play** level users.
3. **Live:** Allows user only to view live video

3.7.5 PPPoE



Diagram 3.14

In the **PPPoE** of the **NETWORK SETUP MENU**, we define:

1. **USER**
User name that is provided by ISP for PPPoE Connection
2. **PASSWD**
Password that is provided by ISP for PPPoE connection
3. **PRIMARY DNS**
IP address of DNS server that is provided by ISP.
4. **SECONDARY DNS**
If your ISP provides you with a secondary DNS address, please set it in here.

NOTE:

Please complete all settings in the **PPPoE** Setup Menu before changing IP CONFIG to PPPoE in the **CONFIG** options. If you make this change before completing **PPPoE** settings, then the PPPoE function will not work.

3.7.6 DDNS



Diagram 3.15

In **DDNS** of the **NETWORK SETUP MENU**, we define :

1. **SERVER**
DDNS provider (example: www.dyndns.com)
2. **USER**
User name of the account.
3. **PASSWD**
Password of the account.
4. **RECORD ID**
Identity tag used by certain DDNS providers
5. **FQDN**
The domain name of this account.

EXAMPLE: A user applied for a DDNS account from <http://www.dyndns.com>

User name: TEST

Password: TEST

Domain name ethin.dyndns.org.



Users can connect to DVR that uses dynamic IP address by entering the domain name "ethin.dyndns.org" in IE browser. They do not have to know the IP address.

NOTE: This domain name is only an example. The DDNS account that the user applies will likely differ from this example. See Chapter 13 for more details

3.8 Schedule Setup Menu

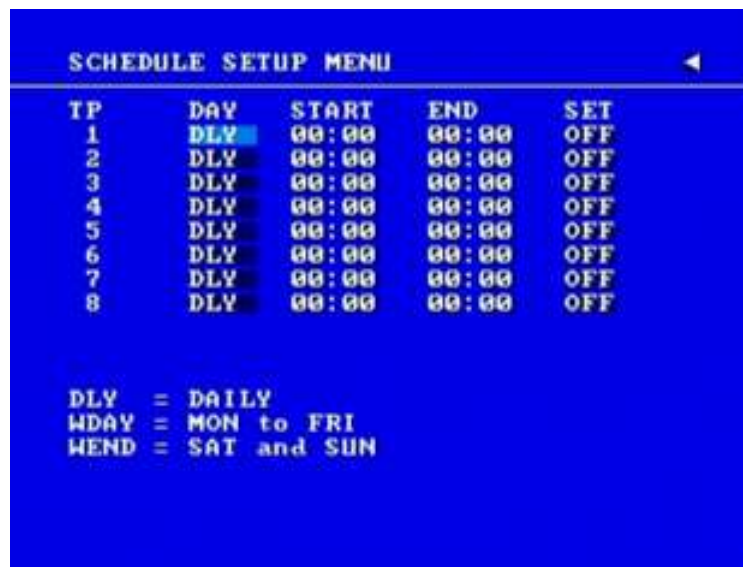


Diagram 3.16

Diagram 3.16 is a screen shot of the **SCHEDULE SETUP MENU**. In this menu you can set a unique timer any day of the week to start recording from a specified start time to an end time. This menu works together with the camera menu, you will notice 1~8 TP (time period), which is also seen in the camera menu.

In the **SCHEDULE SETUP MENU** the following fields are defined as:

1. DAY

This field represents the day of the week you wish to set the timer record for. Initially it is set to DLY as default. You may choose from MON-SUN as well as WDAY, WEND, and DLY. To change this, simply use the Jog Dial on the DVR.

MON (Monday), **TUE** (Tuesday), **WED** (Wednesday), **THU** (Thursday), **FRI** (Friday), **SAT** (Saturday), **SUN** (Sunday).

WDAY: Weekday, from Monday to Friday.

WEND: Weekend, Saturday and Sunday.

DLY: Daily, everyday of the week.

2. START

This field is used to set the time you wish to start the timer recording. To change this, simply use the Jog Dial on the DVR.

Hour: 0 ~ 23 in 24 hour time format; **1~12** in 12 hour time format.

Minutes: 00 ~ 59

3. END

This field is used to set the time you wish to stop the timer recording. To change this, simply use the Jog Dial on the DVR.

Hour: 0 ~ 23 in 24 hour time format; **1~12** in 12 hour time format.

Minutes: 00 ~ 59

Note: To record all day long: set 12:00am~12:00 am for 12-hour-format; 00:00~00:00 for 24-hour-format.

4. SET

This field is used to turn the timer recording on or off. To change this, simply use the Jog Dial on the DVR.

ON: Enable a scheduled record time period.

OFF: Disable a scheduled record time period.

3.9 Disk Setup Menu

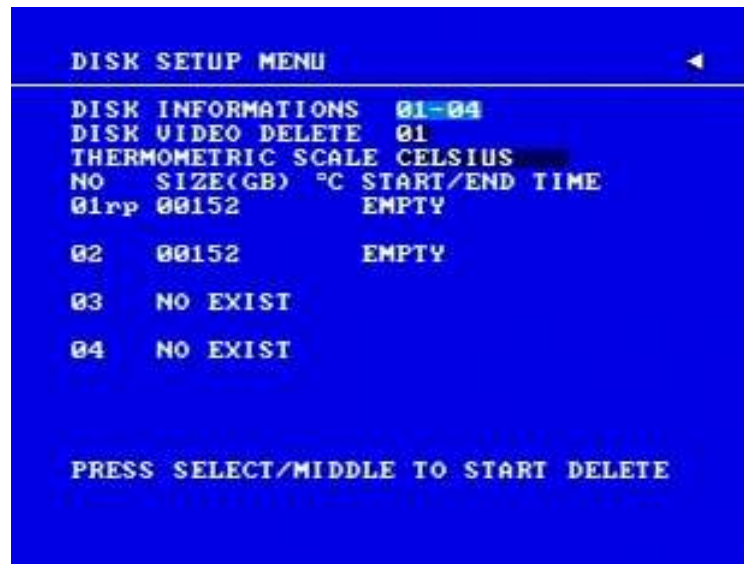


Diagram 3.17

Diagram 3.17 is a screen shot of the **DISK SETUP MENU**. This menu is for viewing Disk information and formatting the disks. For initial setup or major setup changes we recommend formatting the Hard Disk.

In the **DISK SETUP MENU** the following fields are defined as follows:

1. **DISK INFORMATION**

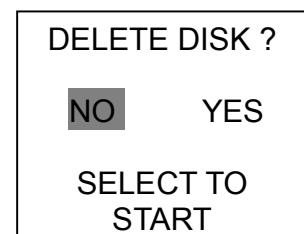
Select disk information, it is selectable from 1 up to 50 disks, in intervals of 4. The total number of hard drives varies by model.

2. **DISK VIDEO DELETE**

Press **SELECT** to start delete. A delete disk confirmation window will show up after pressing **SELECT** button.

Dial the Jog to move highlighter to **YES**, and then press **SELECT** button; a deleting indicator **DELETE.....** will show up. An indicator of success **SUCCESS.....** will show up when delete is completed.

If you do not want to delete the disk after the delete disk confirmation window shows up, you can move highlighter to **NO**, and then press **SELECT** to quit.



Note: System will ask you to stop recording if you try to delete the disk while still in the record mode.

3. **THERMOMETRIC SCALE**

Select **CELSIUS** or **FAHRENHEIT** for thermometric scale of the disk.

4. **NO**

Shows the hard drive number. The number of disks displayed may vary depending on the model.

Note: For EDVR16D3 model, up to 50 hard drives can be added through SCSI port.

5. **SIZE**

Storage capacity of the hard drive.

6. **°C (or °F)**

Current temperature of the hard drive in Celsius or Fahrenheit degrees.

7. **START/END TIME**

Shows the date and time range stored on the hard drives.

3.10 Control Setup Menu



Diagram 3.18

Diagram 3.18 is a screen shot of the Control Setting Menu. This menu is to define the settings for DVR remote control through serial interface in the RS232/RS485 menu. The following fields are defined in the **Control Setting Menu**:

RS232:

1. RS232 Baud Rate

This field is to set the speed at which is used to transmit instruction or information through the RS232 port on the DVR. There are six different speeds, 2400 BPS, 4800 BPS, 9600 BPS, 19200 BPS, 38400 BPS and 57600 BPS. The default setting from the factory is 9600 BPS. To change this, simply use the Jog Dial on the DVR.

2. RS232 Stop Bit

This field is to set the stop bit for the RS232 connection. There are two different stop bits, 1 or 2. The default in the DVR is set to 1. To change this, simply use the Jog Dial on the DVR.

3. RS232 Parity

This field is to select the parity level at which you will be connected. You can choose between None, Odd, or Even parity levels. Default is set to none. To change this, simply use the Jog Dial on the DVR.

4. **RS232 Data Bit**

This field is the data bit at which you will be transferring. There are two settings for this option: 8 or 7. The default is set to 8. To change this, simply use the Jog Dial on the DVR.

RS485:

5. **RS485 Baud Rate**

This field is to set the speed at which is used to transmit instruction or information through the RS485 port on the DVR. There are six different speeds, **2400, 4800, 9600, 19200, 38400** and **57600** BPS. The default setting from the factory is 9600 BPS. To change this, simply use the Jog Dial on the DVR.

6. **RS485 Stop Bit**

This field is to set the stop bit for the RS485 connection. There are two different stop bits, 1 or 2. The default in the DVR is set to 1. To change this, simply use the Jog Dial on the DVR.

7. **RS485 Parity**

This field is to select the parity level at which you will be connected. You can choose between None, Odd, or Even parity levels. Default is set to none. To change this, simply use the Jog Dial on the DVR.

8. **RS485 Data Bit**

This field is the data bit at which you will be transferring. There are two settings for this option: 8 or 7. The default is set to 8. To change this, simply use the Jog Dial on the DVR.

9. **RS232/RS485 ID**

This entry is used to assign each device its own ID code if more than one DVR is used through the RS232/RS485 connection. The default is set to 001. To change this, simply use the Jog Dial on the DVR.

10. **PTZ PROTOCOL**

Select PTZ protocol from **EVERFOCUS, PELCO-D, PELCO-P, ED2200/2250** and **ELMO**.

3.11 Warning Setup Menu



Diagram 3.19

Diagram 3.19 is a screen shot of the **Warning Setup Menu**. This menu is to set the warning system settings. If any critical errors occur, this portion of the menu directs how to handle them. In the **Warning Setup Menu**, the following fields are defined:

3.11.1 FAN FAULT

In **FAN FAULT**, we define:

1. **BUZZER**: Fan buzzer. To change this, simply use the Jog Dial on the DVR.
ENABLE: To enable a buzzer when the fan does not work.
DISABLE: To disable fan buzzer.
2. **ALARM OUTPUT**
This will transmit a signal to another device. The setting of alarms are **NONE = not activated, 1 = output signal 1 transmits, 2 = output signal 2 transmits, 3 = output signal 3 transmits and 4 = output signal 4 transmits**. To change this, simply use the Jog Dial on the DVR.
(Only EDVR16D3 model has 4 alarm outputs. All others have only 1 alarm output).
3. **ALARM DURATION**
Permanent. This setting cannot be changed.
4. **NETWORK ALARM**

YES: To enable network alarm.
NO: To disable network alarm.

5. **SEND EMAIL:**

YES: Send an email when the fan does not work.
NO: Do not send an email when the fan does not work.

The email settings can be set in the **NETWORK SETUP MENU**.

3.11.2 HDD TEMP



Diagram 3.20

In **HDD TEMP**, we define:

1. **BUZZER:** HDD TEMPERATURE buzzer.
ENABLE: To enable a buzzer when HDD's temperature is higher than the temperature set in "SET TEMPERATURE".
DISABLE: To disable HDD TEMP Buzzer.

2. **ALARM OUTPUT**

This will transmit a signal to another device. The setting of alarms are **NONE = not activated, 1 = output signal 1 transmits, 2 = output signal 2 transmits, 3 = output signal 3 transmits and 4 = output signal 4 transmits**. To change this, simply use the Jog Dial on the DVR.

(Only EDVR16D3 model has 4 alarm outputs. All others have only 1 alarm output).

3. **ALARM DURATION**

Permanent. This setting cannot be changed.

4. **NETWORK ALARM**

YES: To enable network alarm.

NO: To disable network alarm.

5. **SEND EMAIL**

YES: Send an email when HDD's temperature is overheated.

NO: Will not send an email when HDD's temperature is overheated.

The email settings can be set in the **NETWORK SETUP MENU**.

6. **STOP RECORD**

YES: Stop recording when HDD's temperature is overheated.

NO: Will not stop recording even when HDD's temperature is overheated.

7. **SET TEMPERATURE:**

When HDD's temperature is higher than the temperature set here, all other active settings in HDD TEMP will take effect (BUZZER, ALARM OUTPUT, ALARM DURATION, NETWORK ALARM, SEND EMAIL, STOP RECORD). The default value is 60°C (140°F).

3.11.3 NO HDD



Diagram 3.21

In **NO HDD**, we define:

- BUZZER:** NO HDD buzzer.
ENABLE: To enable a buzzer when no HDD is detected.
DISABLE: To disable NO HDD buzzer.
- ALARM OUTPUT**
This will transmit a signal to another device. The setting of alarms are **NONE = not activated, 1 = output signal 1 transmits, 2 = output signal 2 transmits, 3 = output signal 3 transmits and 4 = output signal 4 transmits**. To change this, simply use the Jog Dial on the DVR.
(Only EDVR16D3 model has 4 alarm outputs. All others have only 1 alarm output).
- ALARM DURATION**
The length of time the buzzer remains active. This can be set from 1 sec to 99 seconds or permanent. The default value is 5 seconds.
- NETWORK ALARM**
YES: To enable network alarm.
NO: To disable network alarm.

5. SEND EMAIL:

YES: Send an email when no HDD has been found.

NO: Will not send an email when no HDD has been found.

The email settings can be set in the **NETWORK SETUP MENU**.

3.11.4 HDD FULL



Diagram 3.22

In **HDD FULL**, we define:

1. **BUZZER:** HDD FULL buzzer.

ENABLE: To enable a buzzer when HDD is full.

DISABLE: To disable HDD Full buzzer.

2. **ALARM OUTPUT**

This will transmit a signal to another device. The setting of alarms are **NONE = not activated**, **1 = output signal 1 transmits**, **2 = output signal 2 transmits**, **3 = output signal 3 transmits** and **4 = output signal 4 transmits**. To change this, simply use the Jog Dial on the DVR.

(Only EDVR16D3 model has 4 alarm outputs. All others have only 1 alarm output).

3. ALARM DURATION

The length of time the buzzer remains active. This can be set from 1 sec to 99 seconds or permanent. The default value is 5 seconds.

4. NETWORK ALARM:

YES: To enable network alarm.

NO: To disable network alarm.

5. SEND EMAIL:

YES: Send an email when HDD is full.

NO: Will not send an email when HDD is full.

The email settings can be set in the **NETWORK SETUP MENU**.

3.12 System Setup Menu



Diagram 3.23

Diagram 3.23 is a screen shot of the **SYSTEM SETUP MENU**. This menu is for setting up any additional options and restoring defaults to the digital recorder.

In the **SYSTEM SETUP MENU** the following fields are defined:

1. **SYSTEM VERSION:** Current system firmware version.

2. **SYSTEM VIDEO FORMAT:** NTSC or PAL. System can automatically detect the input signal type from camera 1 while system is booting up. Users do not need to set it up.

Note: Camera 1 input must be connected for the system to properly detect the video format.

3. **LOAD/SAVE CONFIGURATION:**

YES: Turn the Jog to enter the selection window. There are 4 options available: **CANCEL**, **DEFAULT**, **LOAD**, and **SAVE**. Use the Jog Wheel to scroll through these options and press **SELECT** to confirm your choice.

“CANCEL”: exits from selection window.

“DEFAULT”: restores the factory default values.

“LOAD”: used to upload saved DVR configuration settings from USB.

“SAVE”: saves the current DVR configuration settings to USB device.

Note that a USB device must be inserted properly before choosing the “LOAD” or “SAVE” options. System will ask you to stop recording if you try to access any of these options while the system is recording.

NO: Press “ENTER” key to move to next option.

4. **UPDATE SYSTEM SOFTWARE:** Turn the jog to enter the selection window.

YES: Press **SELECT** on **YES** to update system software from USB.

NO: Press **SELECT** on **NO** to cancel updating.

Note:

System will ask you to stop recording if you try to update while system is recording.

USB device must be inserted properly before updating system software.

Do not remove USB device when you are updating system software, it may cause crash to the machine.

Power failure or machine being turn off during updating process may result an abnormal start of the machine.

After upgrading system software, please do the following actions before recording:

- 1) Load System Default in **System Setup Menu**.
- 2) Delete disk in **Disk Setup Menu**.

5. LANGUAGE

System can be set in different languages. The available languages depend on the country or area, subject to change. Please consult your sales representative for the most updated information.

6. QUICK PLAY

Allows the user to automatically play back the most recent video after pressing the **PLAY** button.

ON: Enable quick play. The video played is the quick play time from the current recording point.

OFF: Disable quick play. Video will start playing from the last playback point.

TIME: Quick play time, from 1 ~ 59 min. The default value is 10 minutes.

Note: The recommended quick play time is at least 10 minutes. If you set a quick play time shorter than this, the video will not be played because the video files are not yet stored to HDD.

7. SYSTEM PASSWORD ENABLE

YES: Select **YES** to enable the password function.

NO: Select **NO** to disable the password function.

8. **PASSWORD** and **RIGHTS:** The different login passwords indicate the different level of users, and no login name is necessary. Each number will appear instead of a "*" sign when the digit is highlighted. Turn the Jog to change the selected digit of the password; press **ENTER** to go to next digit and **CALL** to go to the previous. The available digits are **1, 2, 3, 4, 5, 6, 7, 8** and **9** for the 9 and 16 CH model, whereas the 4 CH model uses only **1, 2, 3** and **4**. The system password is used to set up the machine locally only. The password for network connection can be found and set in the **NETWORK SETUP MENU**.

There are three system access levels and the default “none” access level. The following chart shows the rights of each level.

User Level and Right				
LEVEL	LEVEL-3	LEVEL-2	LEVEL-1	NONE ACCESS
RIGHT	ADMINISTRATOR	OPERATOR	GENERAL	---
DISPLAY	OK	OK	OK	OK
MODE	OK	OK	OK	OK
ZOOM	OK	OK	OK	OK
SELECT	OK	OK	OK	NO
SEQ	OK	OK	OK	NO
CALL	OK	OK	NO	NO
MENU	OK	NO	NO	NO
COPY	OK	NO	NO	NO
SEARCH	OK	NO	NO	NO
PLAY	OK	NO	NO	NO
STOP	OK	NO	NO	NO
REC	OK	NO	NO	NO
PAUSE	OK	NO	NO	NO
ALARM RESET	OK	OK	NO	NO

Note:

- ① If the passwords of different levels are set the same, you will enter a higher level when you login. For example, you will login to ADMINISTRATOR level if the password of ADMINISTRATOR and GENERAL levels are the same.
- ② After exiting to the live camera view and waiting 60 seconds, the system will automatically log out to the None Access level.
- ③ After upgrading system software, please do the following actions before recording:
 - 1) Load System Default in **System Setup Menu**.
 - 2) Delete disk in **Disk Setup Menu**.

4. Recording Overview

Before continuing with the Recording Overview please be sure to have reviewed Chapter 3, specifically the Camera & Schedule menus. You are now ready to begin setting up the machine for recording. This chapter will show you how to setup the recorder for three basic types of recording: Instant recording, scheduled recording, and event recording. **Instant recording (N)** is simple as it only requires pressing the Record button for recording, much like pressing the record button on a VCR. **Scheduled recording (1~8)** is based upon a set time period of when to begin & end the recording. **Event recording** consists of an alarm or motion event triggering the DVR to record on that event.

4.1 Instant (N) Recording Setup

Press the Record key to start recording immediately.



When **REC** is pressed, the pictures being monitored will be recorded in the HDD.

REC

The recording quality and recording speed can be set in the **CAMERA SETUP MENU**. To set the target camera for a particular recording speed (IPS) when using the instant record method, apply the changes to the last Time Period (TP) row labeled **N**.

A “R01” sign appears in the record status bar. The number following R signifies HDD number.



Press **STOP** key to stop instant recording.

STOP

The **STOP** key can only be used for instant recording mode. Schedule or event recording mode must be turned off in their respective menus.


When the HDD is full, the machine will stop recording automatically or overwrite from the beginning of the HDD, depending on the setting in the **RECORD SETUP MENU**.

Note:

If STOP key is pressed while machine is recording and playing video, the Play function will be disabled first. If STOP key is pressed twice, the DVR will stop recording completely.

4.2 Schedule Recording Setup

Set up the **DAY**, **START** time, **END** time and then turn **SET** to “ON” in the **SCHEDULE SETUP MENU**.



TP	DAY	START	END	SET
1	DLY	00:00	00:00	OFF
2	DLY	00:00	00:00	OFF
3	DLY	00:00	00:00	OFF
4	DLY	00:00	00:00	OFF
5	DLY	00:00	00:00	OFF
6	DLY	00:00	00:00	OFF
7	DLY	00:00	00:00	OFF
8	DLY	00:00	00:00	OFF

DLY = DAILY
WDAY = MON to FRI
WEND = SAT and SUN

Diagram 4.1

Please refer to **SCHEDULE SETUP MENU** for setting procedure and more details.

4.3 Event Recording Setup

We will now define two event recording types **ALARM** and **MOTION**. After the event recording is enabled, the DVR will start an event recording when an event occurs. For instance, when motion activity or alarm action is detected by the DVR it will begin recording at the specific IPS set in the Event column.

In order to start an event recording, you **MUST** perform the following:

1. First enable each event (alarm or motion) in its respective menu. For example, you can enable motion on Camera 2 in the **MOTION SETUP MENU** as shown below. You can enable multiple alarm or motion triggers.



Diagram 4.2

2. When the event is set, enter the **CAMERA SETUP MENU** to set the event recording speed (PS) of the camera in the time period (TP) section.

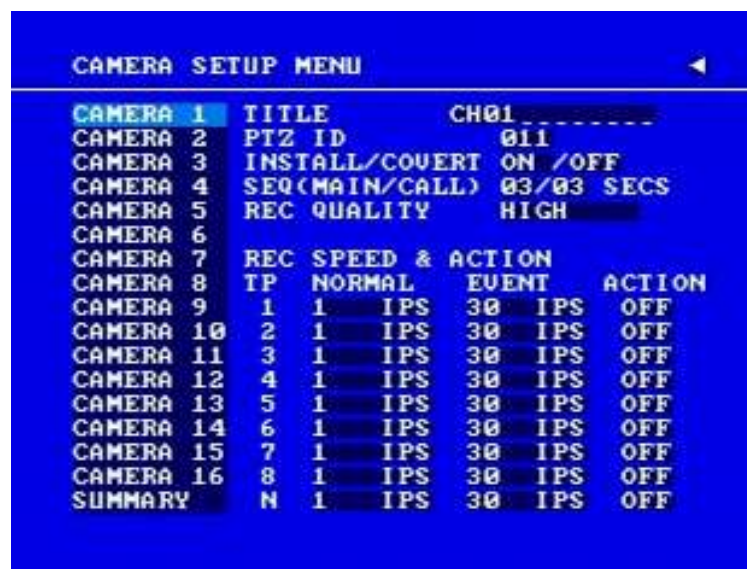


Diagram 4.3

3. Once the event and record and speed are set, you need to activate Instant Recording or set a time period (TP) in the **SCHEDULE SETUP MENU**. You can refer to the **SCHEDULE SETUP MENU** for time period configurations (Chapter 3.8).

Note:

- ① If you only want to record event activity (motion or alarm) ONLY, set the normal record speed as 0 IPS in the **CAMERA SETUP MENU**.
- ② If the recording speed is changed while the machine is recording, the new recording speed will not take effect until recording is stopped completely.

DVR provides a record function which is triggered by external signal via the 19th pin of the **ALARM INPUT / OUTPUT** port. When the record input signal is triggered constantly, DVR will start to record according to the speeds set on Time Period (TP) N. The system will stop recording when the record input signal is no longer triggered.

Note: Please check APPENDIX B to see other available alarm input/output details.

5. Playback Overview

Before continuing please be sure to have reviewed DVR Menu Setup (Chapter 3). You are now ready to begin setting up the DVR for playback. This chapter will show you how to setup the recorder for basic playback.

5.1 Basic Playback

(1) Playback



Press the **PLAY** key to start playing back the stored image/audio. The video start time depends on the quick play setting in the **SYSTEM SETUP MENU**. The DVR is duplex, which means you can record and playback the same time.

(2) Stop



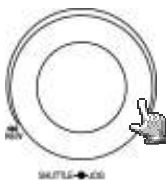
Press the **STOP** key to stop playing back.

(3) Fast Forward/Reverse Playback



While in playback, turn the **Shuttle** dial clockwise to begin fast forward playback.

Turn the **Shuttle** dial counterclockwise to begin fast reverse playback.



The speed will be shown on the status bar of the bottom screen.

The available speeds are **2, 4, 6, 8, 16, 32, and 600**. You can either manually hold the shuttle dial in the position or press **ENTER** while holding the dial to lock the speed that is desired.

Press **PLAY** again to return normal play speed.

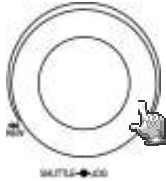
(4) Slow Forward/Reverse Playback



PAUSE

During playback mode, press **PAUSE** key to freeze the playing back picture.

Turn the **Shuttle** dial clockwise to begin slow forward playback.



Turn the **Shuttle** dial counterclockwise to begin slow reverse playback.

The speed will show on the status bar of the bottom screen.

The available speeds are **1/2**, **1/4**, **1/8**, **1/16**, and **1/32**. You can either manually hold the shuttle dial in the position or press **ENTER** while holding the dial to lock the speed that is desired.

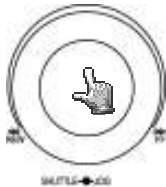
(5) Image advance Forward/Reverse



PAUSE

Press **PAUSE** key to freeze the picture.

Turn the **Jog** dial clockwise to advance the still video image by image.



Turn the **Jog** dial counterclockwise to rewind the still video image by image.

The field feed speed will increase if the **Jog** dial is turned quickly.

5.2 Search Playback



Press **SEARCH** key to enter the **SEARCH MENU**.

In the **SEARCH MENU**, Dial the **Jog** clockwise or counterclockwise to change subentry values.

Press **ENTER** key to go to next subentry in search menu setting, and press the **CALL** key to go to previous subentry in search menu setting.

Press **MENU** to exit.

Press **SELECT** or the tilt wheel of the mouse to start search.

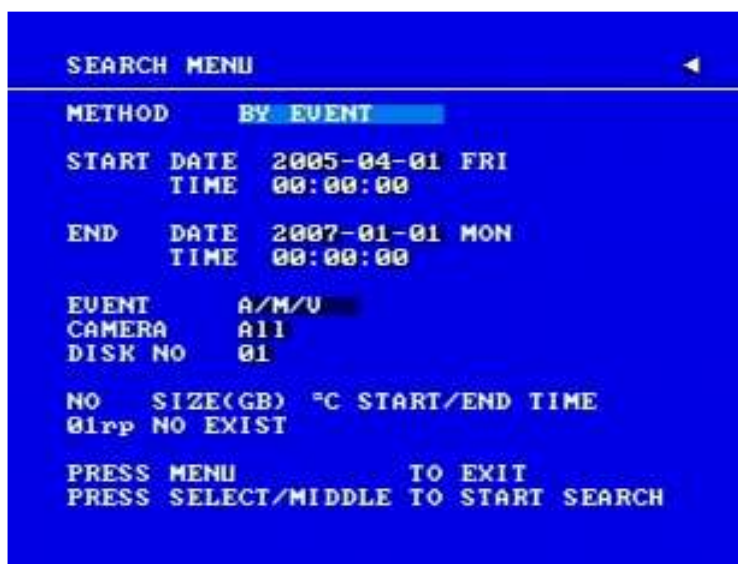


Diagram 5.1

(1) TIME / DATE Search Playback

A **SEARCH MENU** will show up after pressing **SEARCH** key. Select “**BY TIME / DATE**”, and then select the start date/time you want to search. Then, select the camera number and Disk Number to be searched. Lastly, press **SELECT** or the tilt wheel of mouse to start search.

Note:

If there is no video stored in the date/time specified, then the image will keep at the end of the last play, and the display time on the status bar shows “?:?”.

(2) EVENT Search Playback

To search by “EVENT”, select “**BY EVENT**” for Method. Set the Start and End Date/Time limits for the events to be searched.

7 filters (**ALARM, MOTION, VLOSS, A/M, A/V, M/V** and **A/M/V**) can be selected. The indications of events show as below.

EVENT	Indication
ALARM	Search ALARM events only
MOTION	Search MOTION events only
VLOSS	Search video loss events only
A / M	Search ALARM and MOTION events
A / V	Search ALARM and video loss events
M / V	Search MOTION and video loss events
A / M / V	Search all events (ALARM, MOTION and video loss)

Then, select Camera number and Disk number for the events to be searched.

Lastly, press **SELECT** or tilt wheel of mouse to start search.

- (3)** The search list shows up when **SELECT** is pressed. There are 16 events in one page, and “current page / total pages” shows in the top-right corner. Dial **Shuttle** clockwise or press **COPY** for moving to next page; dial **Shuttle** counterclockwise or press **CALL** for moving to previous page. If you would like to jump to a specific page directly, you can press **Search**, then dial **Jog** to the page, and press **Enter**. Dial the **Jog** to scroll through events on the list. When the desired item is highlighted, press **ENTER** to play the selected event.

The event types and number show on the second column of the search list.

SEARCH LIST OF DISK 01 P.001/002			
00001	RU1	01-07-2008	09:51:23
00002	TN	01-07-2008	09:52:10
00003	U02	01-07-2008	14:48:29
00004	TN	01-07-2008	14:50:56
00005	TN	01-07-2008	14:51:21
00006	TN	01-07-2008	14:52:16
00007	TN	01-07-2008	14:54:34
00008	TN	01-07-2008	14:54:41
00009	RU1	01-07-2008	14:55:38
00010	TN	01-07-2008	14:56:29
00011	RU1	01-07-2008	14:56:45
00012	TN	01-08-2008	10:14:23
00013	RU1	01-08-2008	10:21:16
00014	TN	01-09-2008	08:52:25
00015	U01	01-09-2008	08:52:32
00016	TN	01-09-2008	08:53:25

An: an Alarm event. n = Alarm input number.

Dn: HDD overheated. Overheat temperature is based on HDD temperature set in Warning Setup Menu. "n" is HDD number

Fn: Fan fail, n = fan number 1~3.

LH: (Logical Head): Earliest recorded date & time on HDD.

LUn: Local User login record, n = access level 1~3; where 1 is Administrator, 2 is Operator and 3 is General.

Mn: a Motion event. n = Channel number.

PH: (Physical Head): Physical starting point of HDD's disk space.

PL: a Power Loss event.

RTn: a power return event in a schedule recording mode, n = Time Period 1~8.

RTN: a power return event in Normal/Instant recording mode.

RUn: record of Remote User login through Internet Explorer, n = user 1~6.

Tn: a scheduled Time Period recording event, n = Time Period 1~8.

TN: a Normal/Instant recording event.

Vn: a Video loss event. n = channel number.

DLB: Begin DayLight saving time.

DLE: End DayLight saving time.

S1: Switch to HDD1.

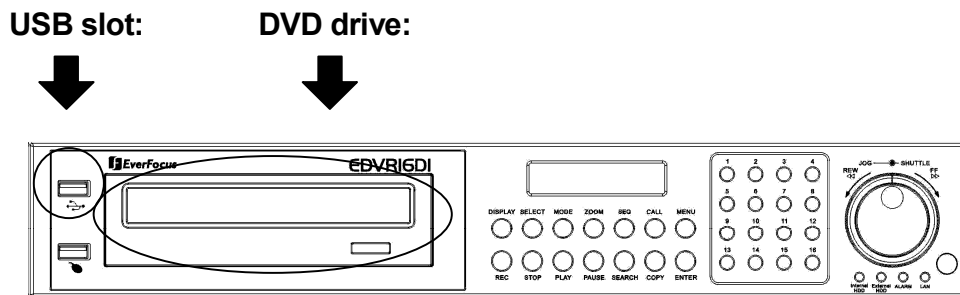
S2: Switch to HDD2.

The last two columns are the date and time of event.

6. Copying Video

Before continuing please be sure to have reviewed the preceding chapters. You are now ready to copy an image or video from the DVR. This chapter will show you how to copy a still image or movie from the recorder.

Insert the USB pocket driver into the USB slot on the front panel or a formatted DVD+RW disc into the DVD drive.



Digital Video Recorder allows users to select the camera for copying image (video) to movie file or copying DVRViewer, which is the image (video) player. The camera title will be displaying at the top of the screen.



COPY

Press **COPY** key in live mode and then the copy menu appears.



Diagram 6.1

In the **COPY MENU**, we define:

1. **COPY**

Select **Image (video)** for copying images/video to movie file.

Select **Viewer** for copying DVRViewer player.

2. **DISK NO**

Disk number you wish to copy from.

3. **CAMERA NO**

Camera channel number. You can select individual cameras or ALL cameras.

If you select ALL cameras while you are recording, DVR will stop recording temporarily, until copy process is terminated.

4. **START DATE & TIME:** The start time of video you want to copy.

END DATE & TIME: The end time of video you want to copy.

5. **SIZE OF SELECTED IMAGE: __ MB (PRESS PLAY TO ESTIMATE)**

The system can estimate the file size of the selected image you wish to copy. Simply press PLAY key after you have selected start date/time and end date/time. If file size is large, estimate time may take a while.

6. DEVICE

The media you want to store the file to. For D series, USB and DVD devices are available. For F series, only USB is available.

After choosing copy settings, press **SELECT** or the tilt wheel of the mouse to begin copy.

① Every 30-minutes' data will be saved as one file. However, if this file size exceeds 2G, DVR will automatically split it into smaller video clips that will be copied individually. The current segment and completion percentage are displayed at the bottom of the screen.

② While in playback, pressing **COPY** button will set a start and end time in the Copy Menu for span of 1 minute. (For example, Start copy point is 10-10-2005 10:00:00 and end copy point will be 10-10-2005 10:01:00) You can change either value in the Copy Menu to suit your needs.

6.1 Viewing a Copied File

1. In order to view video copied from the DVR, you will also need to download the DVR Viewer file. Insert a USB pocket drive or DVD+RW disc into the DVR. Press **COPY** button to enter the Copy Menu. In the Copy Menu choose "Viewer" at the top of the screen. Then press **SELECT** button to copy the viewer to the USB or DVD.
2. Remove the USB or DVD and insert it into your computer.
3. Open up My Computer in Windows. If you are using a DVD, open the DVD drive (usually D: or E:). If you are using a USB pocket drive, open the Removable Drive. You will see the files you archived as well as the DVR Viewer you just downloaded.
4. Open the DVRViewer.exe and click on "Load File."
5. Choose from one of the archived video files (.arv) that you copied from the DVR and click Open.
6. The video will begin playing back. To save it as a Windows compatible video file, click on "Save to Avi...", choose the location you want to save it in, and click Save.

Please note that if you choose ALL CAMERAS to copy, you will need to download the HDD Reader program (http://www.everfocus.com/support_download.asp) in order to playback the file copied. DVR viewer is only capable of reading one single camera, not all cameras.

7. Call Overview

This chapter will try to give you details on how to setup the **CALL MENU** on the DVR. Press the **CALL** key and the **CALL MENU** will pop up as below.

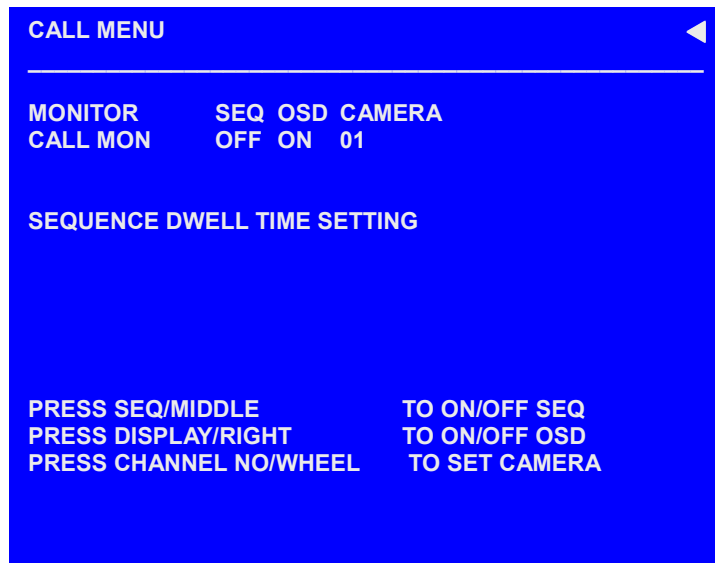


Diagram 7.1

In **CALL MENU**, you can do the following settings for the selected monitor:

1. **SEQ**: Sequence display on the call monitor. Press **SEQ** key or Middle wheel of mouse to switch the sequence status “**ON**” or “**OFF**”.
2. **OSD**: Channel name display on the call monitor. Press **DISPLAY** key or right click the mouse to switch the **OSD** status “**ON**” or “**OFF**”.
3. **CAMERA**: The current display camera in the call monitor. Press **Channel NO** or slide wheel of mouse to set display camera.
4. **Sequence dwell time setting**
Turn the jog dial to enter **SEQUENCE DWELL TIME MENU**.

SEQUENCE DWELL TIME MENU				
CAMERA	MON1	MON2	MON3	MON4
1	03	03	03	03
2	03	03	03	03
3	03	03	03	03
4	03	03	03	03
5	03	03	03	03
6	03	03	03	03
7	03	03	03	03
8	03	03	03	03
9	03	03	03	03
10	03	03	03	03
11	03	03	03	03
12	03	03	03	03
13	03	03	03	03
14	03	03	03	03
15	03	03	03	03
16	03	03	03	03

UNIT: SECOND(S)

Dial jog to set sequence dwell time for monitor (1~4) of each camera. Sequence dwell time can be set from 00 to 99 seconds. Press **Enter/Call** key to go next/previous selection.

8. Screen Display Setting & Mode

In a full screen display, press **SELECT** key to pop up the display adjustment window as below:



Diagram 8.1

In the screen display setting menu, we define:

1. **CAMERA:** The current camera. (cannot be changed)
2. **BRIGHTNESS:** The brightness percentage of the current camera; from 0% to 100%.
3. **CONTRAST:** The contrast percentage of the current camera; from 0% to 100%.
4. **COLOR:** The color percentage of the current camera; from 0% to 100%.
5. **SHARPNESS:**

By turning SHARPNESS **ON**, the image will become sharper and clearer in live mode. This option is suitable for indoor use.

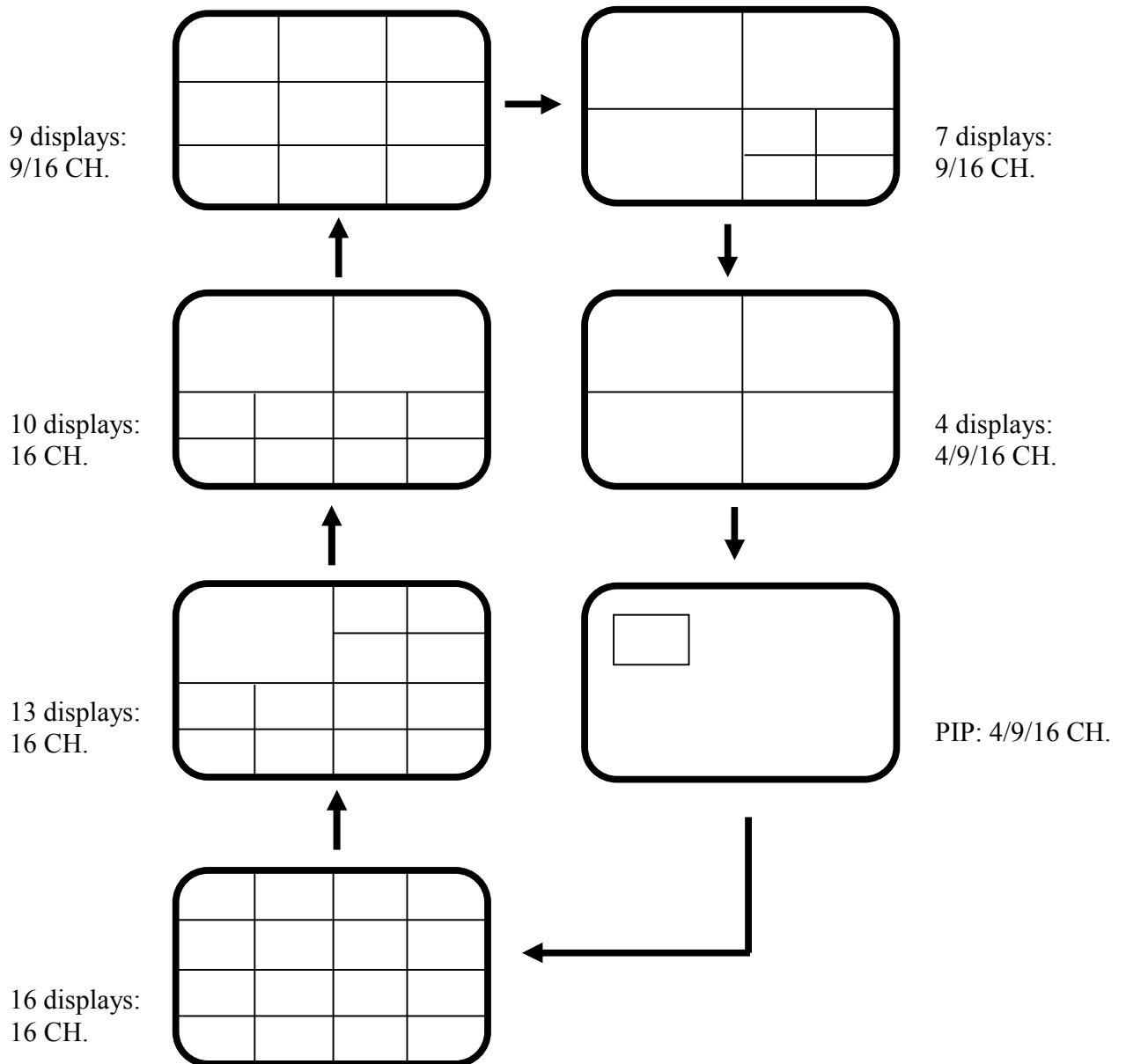
When SHARPNESS is **OFF**, the image becomes blurred in an indoor environment. However, this setting is suitable for outdoor use. If image flickers from a bright, outdoor environment, this can be reduced by turning SHARPNESS **OFF**.

The selected item will show in red color bar. Use **Jog** to increase or decrease the value. Press **ENTER** to confirm the setting value and move to next item. After finished setting, press **SELECT** or **MENU** key to save and exit the screen.

- In a full screen display, pressing **ZOOM** button from front panel will allow you to zoom in the image. Dial Jog to move upward, downward, leftward or rightward of the zoomed in image. Press ENTER key to change direction between ↑ ↓ or ← → . Press **ZOOM** button again to exit.
- In a multi screen display, pressing **ZOOM** button from front panel will enable you to adjust the screen position. Dial Jog to move up and down or left and right. Press ENTER key to change direction between ↑ ↓ or ← →. Press **ZOOM** button again to exit.

8.1 Mode Button

Press **MODE** to switch between 4, 7, 9, 10, 13, 16 and PIP (picture in picture) displays for Live and Playback mode. (Note: PIP display is not available in Playback mode).



9. Upgrade Firmware

This chapter will try to give you a detailed instruction on how to upgrade the DVR. This will be helpful in completing the upgrading process.

1. Copy the .ETW file to your USB pocket drive from your computer.
2. Insert the USB pocket drive in to the top USB slot on the front panel of the DVR. When inserting the USB, make sure the direction of insertion is correct.
3. If you are in Record mode hit the STOP button to stop recording first (before entering the Menu).
4. If it cannot stop recording after pressing STOP button, please enter Schedule Setup Menu and turn all schedules off, then exit completely from Menu.
5. Once you have stopped any type of recording on the DVR you are ready to upgrade.
6. Press the MENU button and use the Jog Dial to go to "System" menu.
7. Press ENTER until "System Upgrade" is highlighted, then change NO to YES using the Jog wheel.
8. Choose "YES" again and press SELECT to confirm.
9. You will see "Updating 1/3" at the bottom-left of the screen. Status will progress from 1/3 -> 2/3 -> 3/3.
10. Once the message "Success, Please Reboot" pops up, highlight "Load/Save Configuration and change it from NO to YES.
11. Select DEFAULT and press SELECT.
12. When you see "Success" at the bottom of the screen, press the menu button twice to log out of the menu and remove USB pocket drive. Then turn the DVR's power off, wait 3 seconds, and turn it back on.
13. After the system reboots, you can check the current version by going back to "System" menu.

10. Networking Overview

This chapter will try to give you a detailed instruction on how to network the DVR. Before we begin the process of networking your digital recorder we should have a working knowledge of what a network is and how it works. This will be a helpful in completing the networking process.

10.1 Introduction to TCP/IP

TCP/IP is the suite of protocols used by the Internet and most LANs (Local Area Networks) throughout the world. In TCP/IP, every host (computer or other communications device) that is connected to the network has a unique IP address. By doing this you are giving your device a unique address similar to the address of your house. An IP address is composed of four octets (numbers in the range of 0 to 255) separated by decimal points. The IP address is used to uniquely identify a host or computer on the LAN. For example, one computer on a network could have an IP address of 192.168.1.127.

You should avoid giving two or more computers the same IP address by using the range of addresses that are reserved for private, local area networks; this range of IP addresses usually begins with 192.168. The first three octets of an IP address should be the same for all computers in the local area network. For example, if a total of 253 computers exist in a single LAN, the IP addresses could be assigned starting with 192.168.1.x, where x represents a number in the range of 2 to 254.

10.2 Subnet Masks

Each host in a LAN has a subnet mask. The *subnet mask* is an octet that uses the number 255 to represent the network address portion of the IP address and a zero to identify the host portion of the address. For example, the subnet mask 255.255.255.0 is used by each host to determine which LAN or class it belongs to. The zero at the end of the subnet mask represents a unique host within that network. Basically the subnet mask represents the city you live in for your home address, but in this case you are stating the network you belong too.

10.3 Gateway Address

Each host in a LAN has a gateway. A gateway address is composed of four octets (numbers in the range of 0 to 255) separated by decimal points. The gateway address is used to uniquely identify a host or computer on the LAN which assigns the IP addresses to your network. For example, a Linksys router has an IP address of 192.168.1.1. If you were using this type of router within your LAN, then your gateway would be the IP address of the Linksys router. The reason for this is because the Linksys is responsible for assigning the IP addresses for your network. This is similar to the zip code of your address.

10.4 Virtual Ports

A **port number** represents an endpoint or "channel" for network communications. Port numbers allow different applications on the same computer to utilize network resources without interfering with each other. Port numbers most commonly appear in network programming, particularly socket programming. Sometimes, though, port numbers are made visible to the casual user. For example, some Web sites a person visits on the Internet use a URL like the following:

`http://www.company.com:8100/`

In this example, the number 8100 refers to the port number used by the Web browser to connect to the Web server. Normally, a Web site uses port number 80 and this number need not be included with the URL (although it can be). In IP networking, port numbers can theoretically range from 0 to 65535. Most popular network applications, though, use port numbers at the low end of the range (such as 80 for HTTP). This could be similar to the front door of your house. Without the door to the house being open you could not enter it. This is the same case with ports on a network. If the ports for a specific IP address are not open then you could not gain access to that IP address or what it is addressing.

Note: The term port also refers to several other aspects of network technology. A port can refer to a physical connection point for peripheral devices such as serial, parallel, and USB ports. The term port also refers to certain Ethernet connection points, such as those on a hub, switch, or router.

10.5 Pre-Installation

Before we begin with the installation we must ask ourselves a few questions in order to figure out where to begin with networking our DVR's.

Do you have Hi-speed Internet? _____

There are many types of high speed Internet available. Three commonly used ones are T1, Cable, and DSL (in order of speed).

- **Note:** It is suggested to have a minimum upload speed of 256KBps. This can be addressed by your Internet Service Provider (ISP).

Who is your Internet provider? _____

- Please confirm that your internet service provider that your upload speed is at least 256KBps.

What type of modem/router do you have? _____
Modem/router model name/ #

The modem/router was either installed by your Internet service provider or purchased by you to establish a connection to the Internet. A router is installed to allow multiple computers to access the Internet through the same external IP address. It in turn assigns different internal IP addresses to local computers for this specific purpose.

Do you have a static IP address? _____

A Static IP address means you use the same IP address every time you log on to the Internet. With a static IP address, other Internet users always know the identity of your computer and can easily connect with it. Using a static IP address is highly recommended for DVR networking. If your Internet provider does not offer a static IP address you also have the option to use a dynamic IP address. This will be explained in more detail later on in the chapter.

Do you have a dynamic IP address? _____

A Dynamic IP address means your IP address changes each time you make a connection to the Internet. It is recommended to ask your Internet service provider for a Static IP address. If this is not a possibility, you may purchase a router (we suggest a Linksys or D-link router) which supports DDNS (Dynamic Domain Name Server). This is a service that provides a central public database where DNS information can be stored and retrieved. It allows those using a dynamic IP address to be registered centrally so users can connect to it by name rather than number.

What type of DVR are you installing? _____

Everfocus EDR series: EDR410, 810, 920, 1620 or 1640

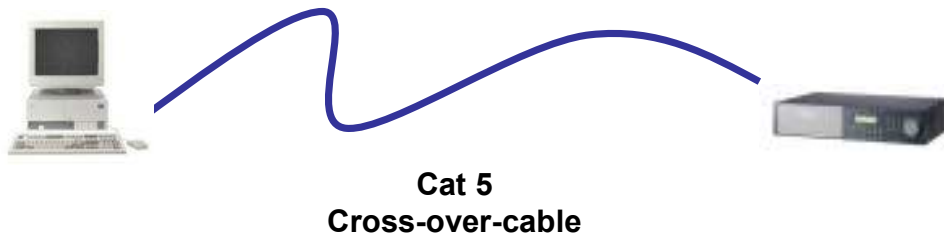
Everfocus EDVR series: EDVR4F1, EDVR4D1, EDVR9F1, EDVR9D1, EDVR16F1, EDVR16D1, EDVR16F2, EDVR16D2, or EDVR16D3.

10.6 What Type of Network Connection do you have?

DVR's can operate using three distinct types of networking connections.

1. Simple One to One Connection: A simple one to one connection is the most simple network connection. Basically it is a direct connection between one computer and another computer (or in this case a DVR) using a cross-over cable.
2. Direct High Speed Modem Connection: A direct high speed modem connection is a network connection from the modem directly to a computer or DVR.
3. Router or LAN Connection – A local area network connection either requires a router or a pre-existing LAN connection. This is the most common type of connection. A router allows multiple computers and DVRs to access each other as well as the Internet. It assigns different internal IP addresses to each computer.

10.7 Simple One to One Connection



Crossover Ethernet Cable Pin outs:

The Diagram below shows the pin configurations for a cross over cable.

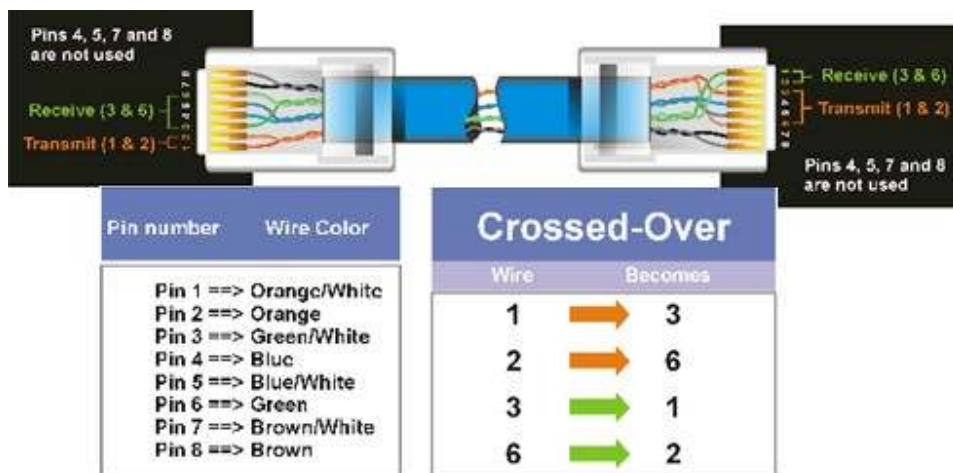


Diagram 10.1

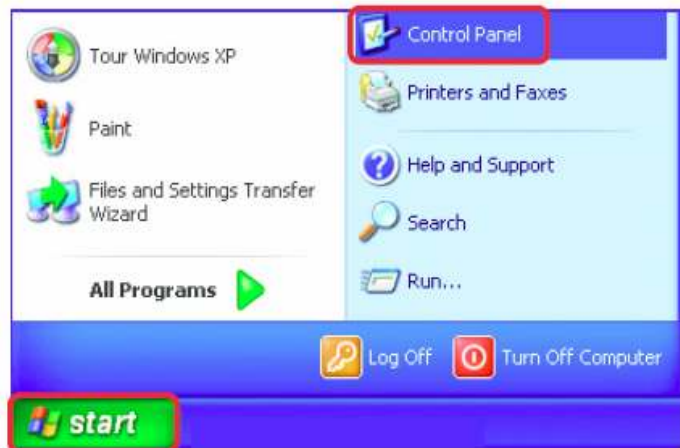
Connection Procedure:

1. The First step is to purchase or make a cross-over cable. We recommend purchasing one if you have never made a cross-over cable. Please remember you can not use a straight through network cable for this application
2. Once you have a cross-over cable plug one end into the LAN port on the back of the recorder and the other into the network card on the back of the computer.
3. Now Log into the DVR menu and using the jog dial from the previous chapter go to the Network Setting Menu. (Please see **Network Setting Menu** for more instructions)
4. Assign an IP address of 192.168.001.003 to the DVR, a Subnet mask of

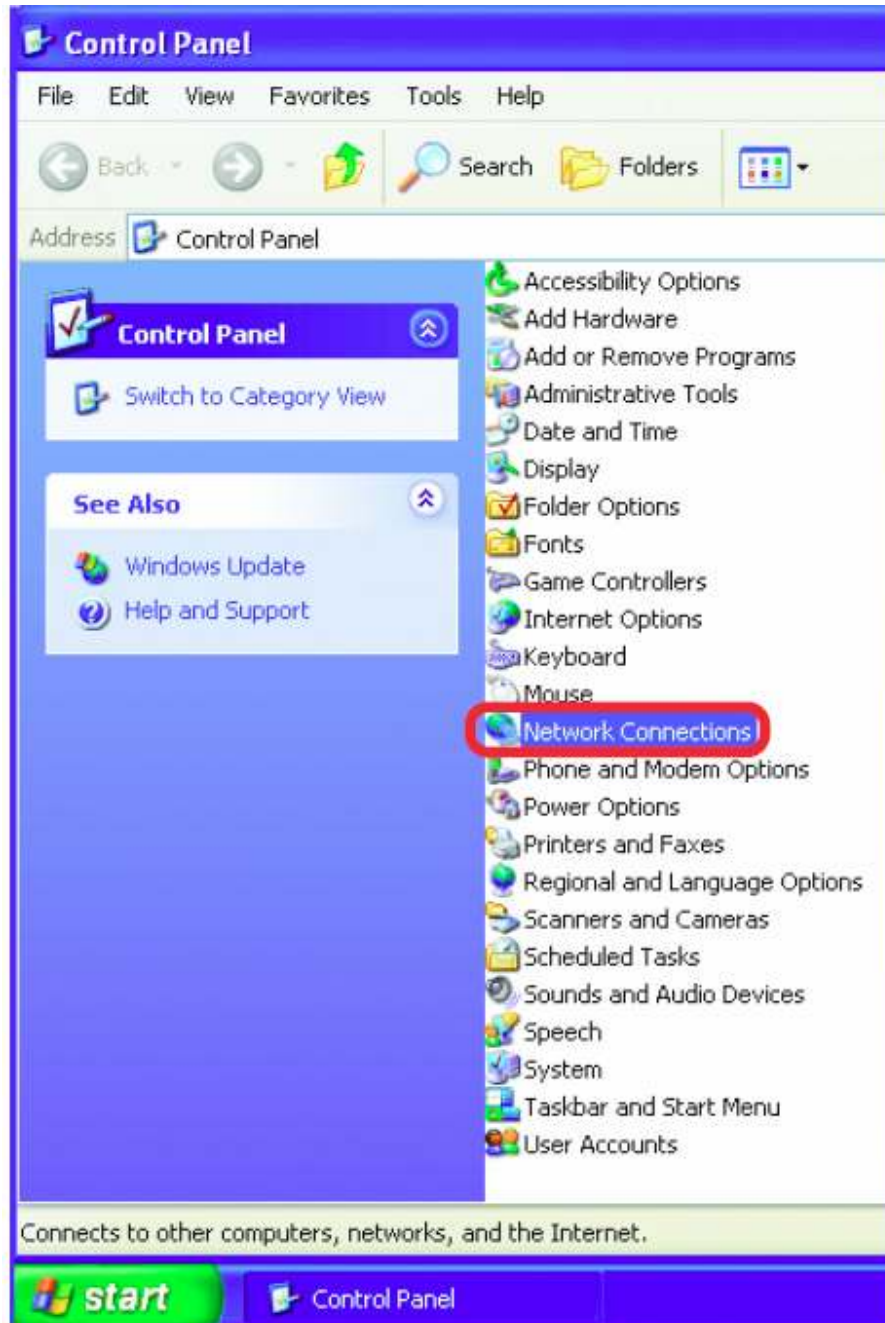
255.255.255.000, and a default gateway of 192.168.001.001.

5. The next step is to get the computer onto the same network to do this you will need administrator access to your windows machine.
6. To assign a static IP address in windows 2000/XP.

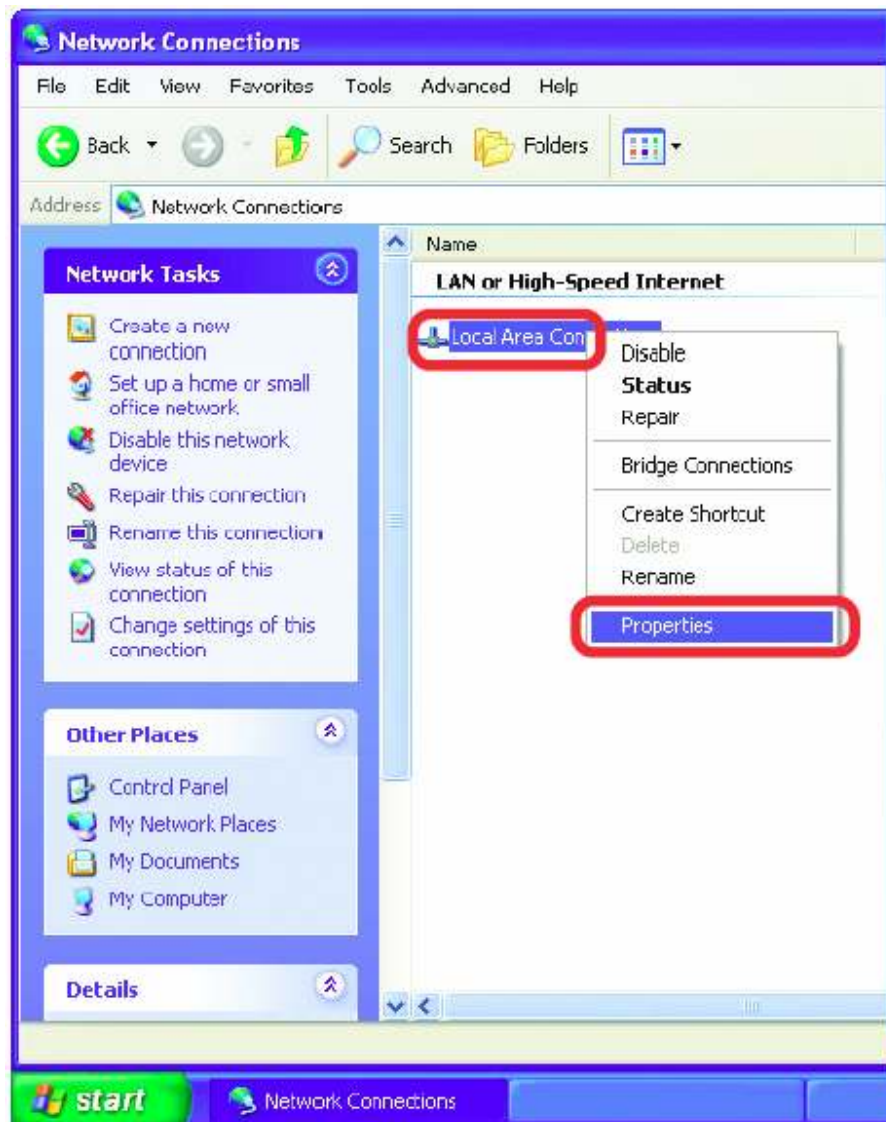
- Go to **Start**
- Double-click on **Control Panel**



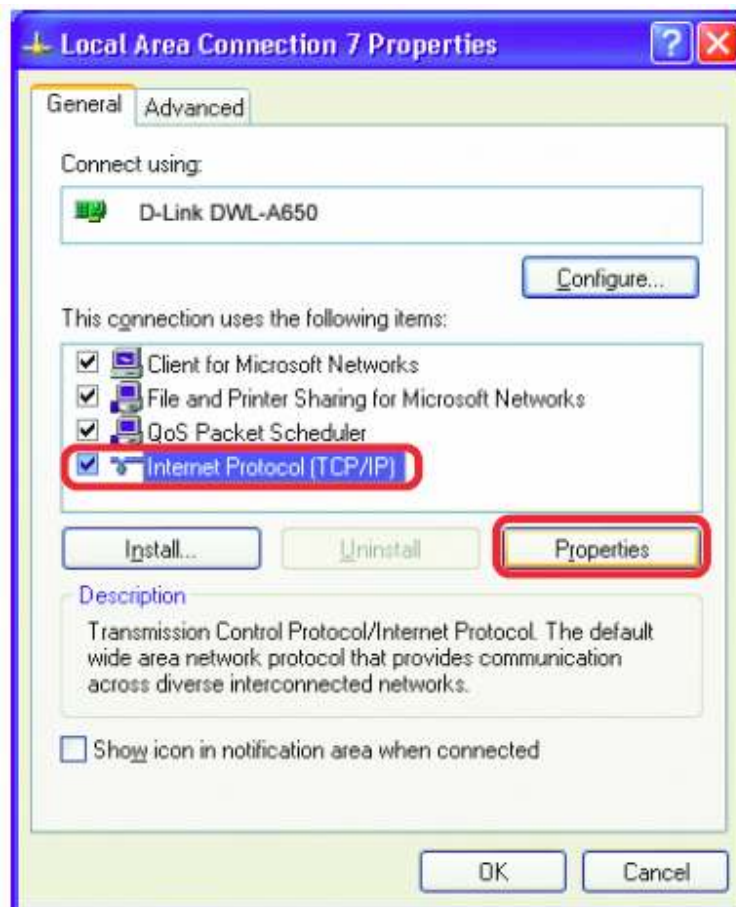
- Double-click on **Network Connections**



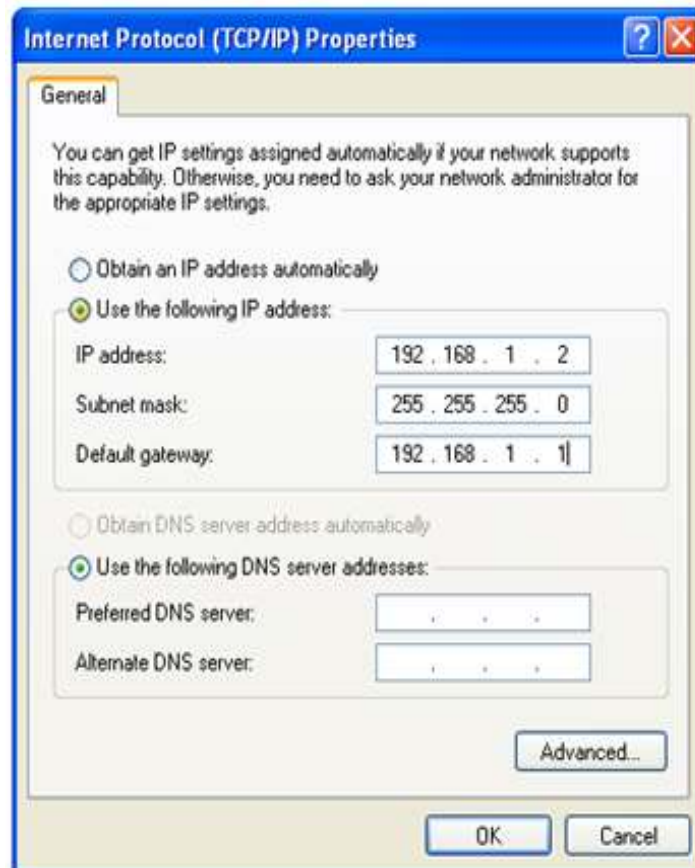
- Right-click on **Local Area Connections**



- Click on **Internet Protocol (TCP/IP)**
- Click **Properties**

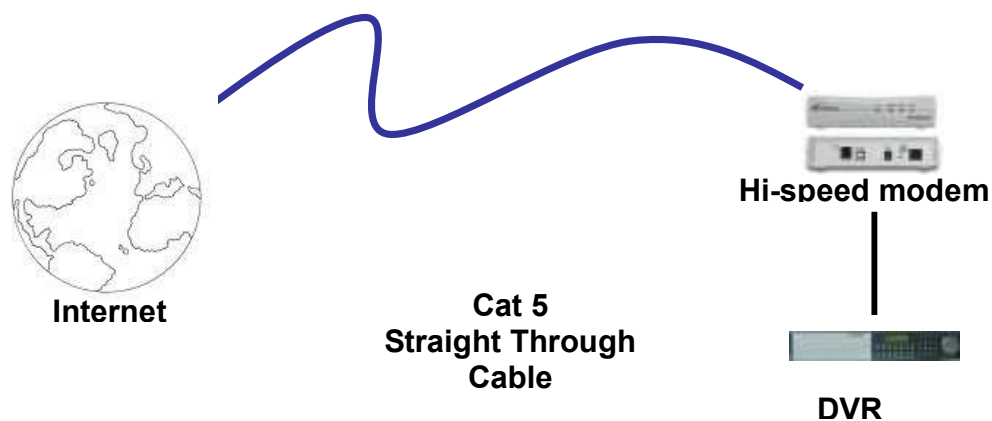


- Input your **IP address and subnet mask**. (The IP Addresses on your network must be within the same range.



7. Once you have reached this point click ok and restart both the computer and the digital recorder.
8. To access the DVR from the computer simply open Internet Explorer and in the address bar type:
http://192.168.1.3

10.8 Direct High Speed Modem Connection



Straight Through Ethernet Cable Pin outs:

The Diagram below shows the pin configurations for a straight cable.

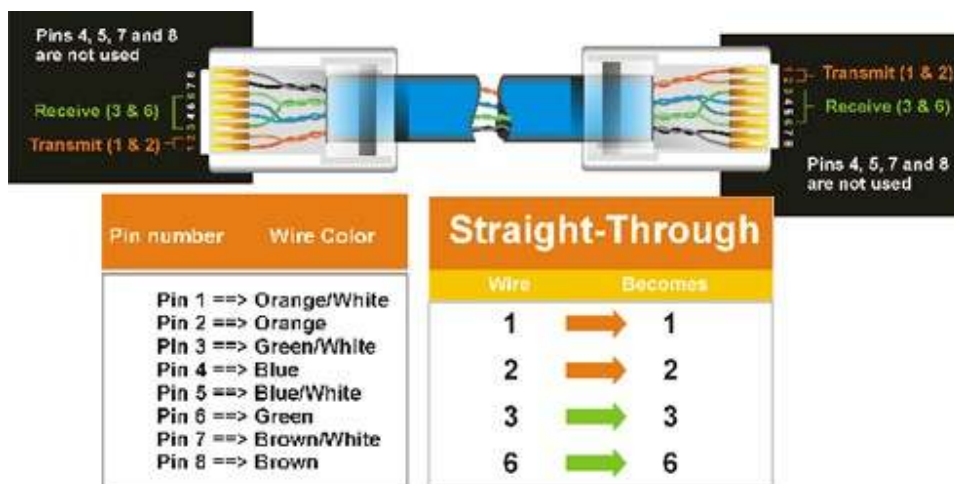


Diagram 10.2

Connection Procedure:

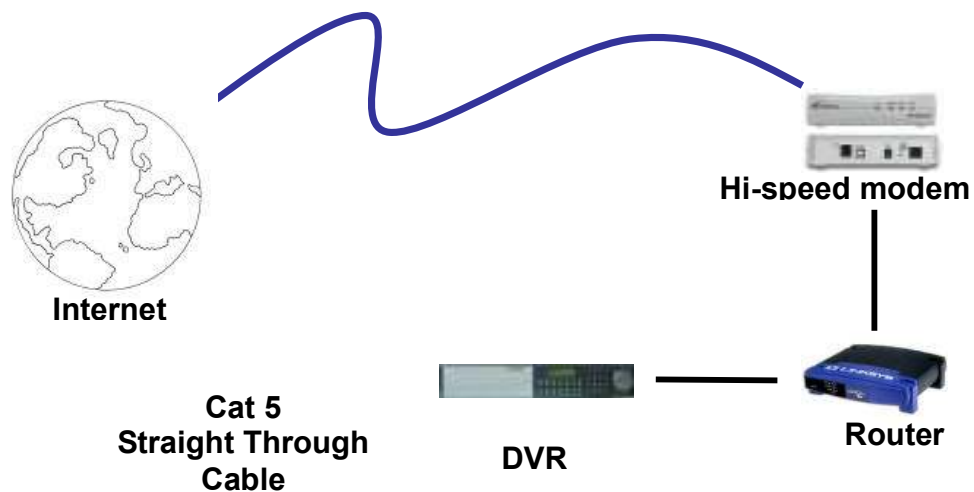
1. The First step is to purchase or make a straight through cable. We recommend purchasing one if you have never made a straight through cable. Please remember you can not use a cross-over network cable for this application
2. Once you have a straight through cable plug one end into the LAN port on the back of the recorder and the other into the high speed modem.

3. Now Log into the DVR menu and using the jog dial from the previous chapter go to the Network Setting Menu.
4. Assign the Static IP address which you obtained from the internet service provider to the DVR, the Subnet mask from the internet service provider to the DVR, and the default gateway of the internet service provider.

Note: If you have a dynamic IP address, you will need to enable and configure DDNS in the DVR's Network Menu. Please refer to Chapter 3.7.6 and Chapter 13 for more information.

5. Once you have reached this point click ok and restart both the computer and the digital recorder.
6. To access the DVR from a computer simply open Internet Explorer and in the address bar type:
http:// the IP address from your internet service provider.

10.9 Router or LAN Connection



Straight Through Ethernet Cable Pin outs:

The Diagram below shows the pin configurations for a straight cable.

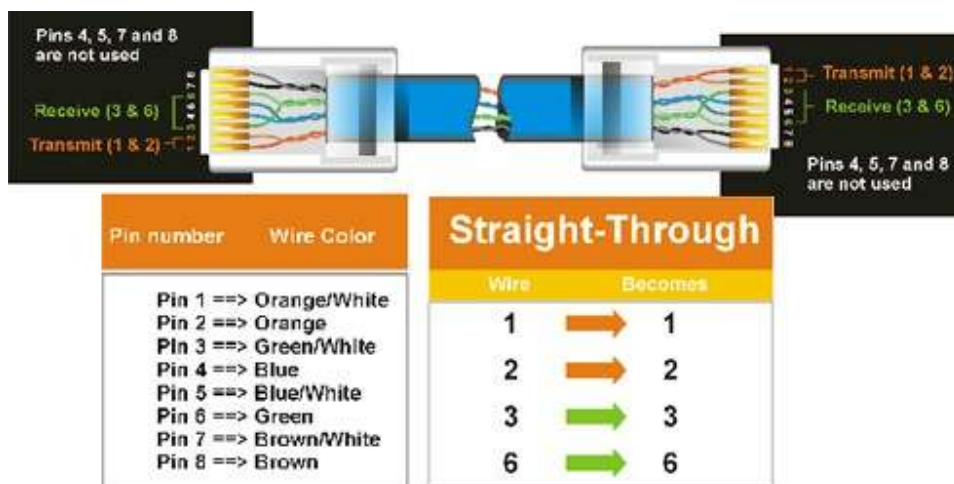


Diagram 10.3

Connection Procedure:

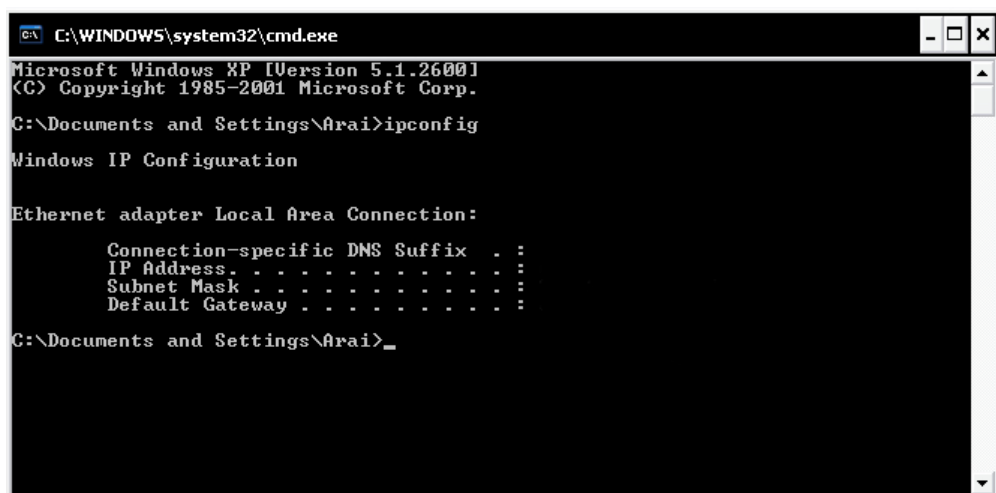
1. The First step is to purchase or make a straight through cable. We recommend purchasing one if you have never made a straight through cable. Please remember you can not use a cross-over network cable for this application
2. Once you have a straight through cable plug one end into the LAN port on the back of the recorder and the other into the router.
3. Now Log into the DVR menu and using the jog dial from the previous chapter go to the Network Setting Menu.
4. If you have a Linksys Router:
 - Assign an IP address of 192.168.001.050 to the DVR, a Subnet mask of 255.255.255.000, and a default gateway of 192.168.001.001.

If you have a D-Link Router:

- Assign an IP address of 192.168.000.050 to the DVR, a Subnet mask of 255.255.255.000, and a default gateway of 192.168.000.001.

If you have a pre-existing LAN:

- Go to a Computer on the pre-existing network and do the following:
 - Go to Start, then Run and type cmd and click on OK.
- Then hit enter, type ipconfig and press enter this will give you the information you will need.



```
C:\WINDOWS\system32\cmd.exe
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\Documents and Settings\Arai>ipconfig

Windows IP Configuration

Ethernet adapter Local Area Connection:

    Connection-specific DNS Suffix  . :
    IP Address. . . . .                :
    Subnet Mask . . . . .              :
    Default Gateway . . . . .         :
```

- Use the prior step to assign an IP address. For example, if you got the IP address from the computer of 192.168.002.101. Assign the DVR's IP address as 192.168.002.050. Now Copy the subnet mask and default gateway information you got from the prior step off the computer to the DVR.

Note: Make sure the modem is in bridge mode. If your Internet Service Provider provides a modem that includes a built-in router, you will need to disable the router functionality.

5. The next step is to open ports within your router. Open virtual ports in the router (Log into the router using a PC)

- EDVR Ports to open: 80, 1600, 37260

- **Note:** If your Internet service provider blocks port 80 you may use a different port to access the DVR through the DVR's Network Menu Setup. (page 36)

- **Note:** If you wish to have multiple users log into the DVR please open a range for the control and data ports on your router. For example if you would only like 4 clients to connect to the DVR open 1600 ~1603 and 37260 ~ 37263.

- If you have a Dynamic IP address and have opened the ports, go to Chapter 13 to Configure DDNS.

6. To access the DVR from a computer simply open Internet Explorer and in the address bar type:

http:// the IP address of your internet service provider.

- **Note:** If your Internet service provider blocks port 80 you may use a different port to access the DVR through the DVR's Network Menu Setup. If you do this, you will connect by going to the address bar and typing:

http:// the IP address of your service provider : the new port number

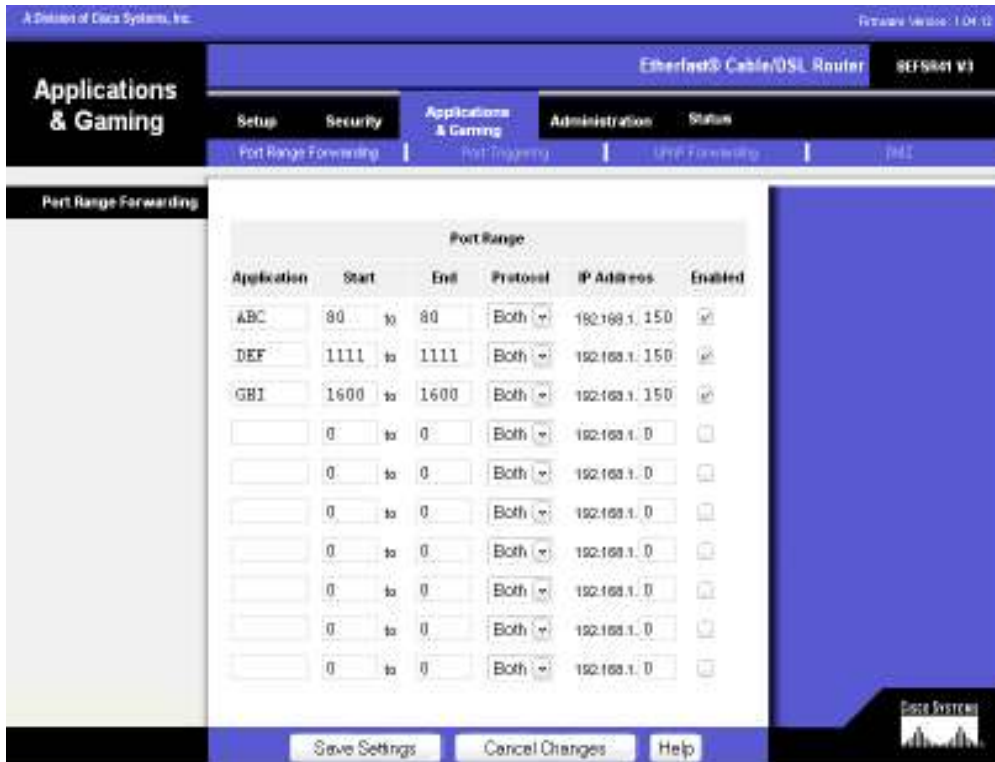
11. Linksys Port Forwarding

This chapter will cover a few simple configurations for the Linksys router. Based on what model you are using, some screens may look slightly different. Please understand we do not support this product and will not give tech support on it. If you need technical support on this router you must call Linksys. This chapter is only meant to offer basic assistance to the installer and end user.

To access the Web-based Utility, launch Internet Explorer or Netscape Navigator, and enter the Router's default IP address, **192.168.1.1**, in the Address Bar. Then, press **Enter**. A password request page will appear. (Non-Windows XP users will see a similar screen.) Leave the *User Name* field blank. The first time you open the Web-based Utility, use the default password **admin**. (You can set a new password from the Administration tab's *Management* screen.) Click the **OK** button to continue.

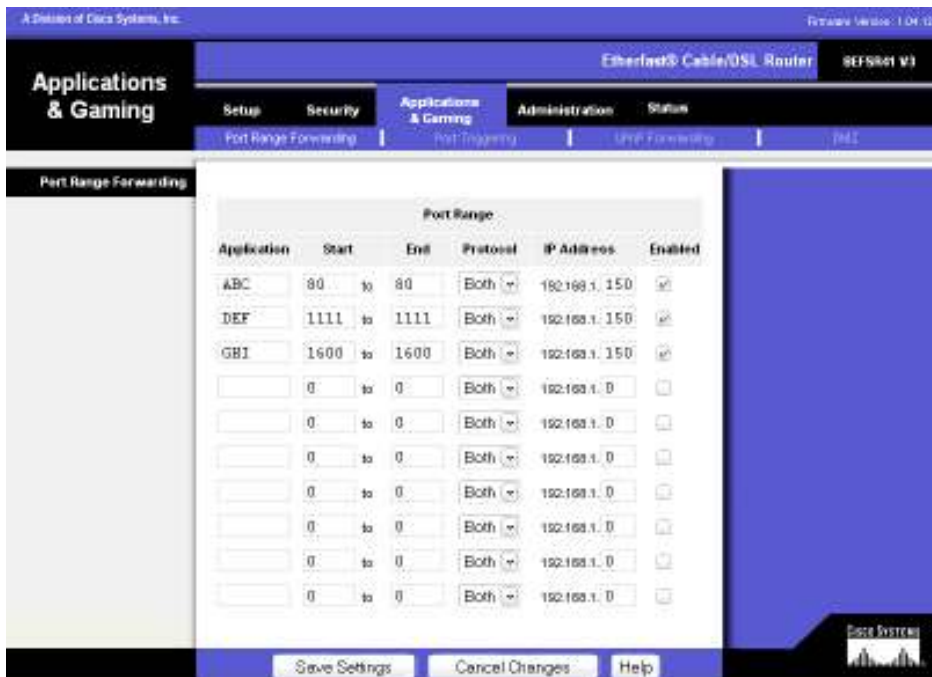


The first screen that appears displays the Setup tab. This allows you to change the Router's general settings. Change these settings as described here and click the **Save Settings** button to apply your changes or **Cancel Changes** to cancel your changes.



The Applications and Gaming Tab allows you to set up public services on your network, such as web servers, ftp servers, e-mail servers, or other specialized Internet applications. (Specialized Internet applications are any applications that use Internet access to perform functions such as videoconferencing or online gaming. Some Internet applications may not require any forwarding.)

To forward a port, enter the information on each line for the criteria required. Descriptions of each criteria are described here.



Application - In this field, enter the name you wish to give the application. Each name can be up to 12 characters.

Start/End - This is the port range. Enter the number that starts the port range under **Start** and the number that ends the range under **End**.

Protocol - Enter the protocol used for this application, either **TCP**, **UDP**, or **Both**.

IP Address - For each application, enter the IP Address of the PC (in this case the DVR) running the specific application.

Enable - Click the **Enable** checkbox to enable port forwarding for the relevant application.

Change these settings as described here and click the **Save Settings** button to apply your changes or **Cancel Changes** to cancel your changes.

Example:

DVR	80 to 80	Both	192.168.1.50	Enable
DVR	1600 to 1600	Both	192.168.1.50	Enable
DVR	37260 to 37263	Both	192.168.1.50	Enable

- **Note:** If your Internet service provider blocks port 80 and you are using a different port to access the DVR through the DVR's Network Menu Setup please open that specific port in this section of the router.

The following is the address you would type:

http:// IP address of your internet service provider: the new port number

Dynamic DNS

The Router offers a Dynamic Domain Name System (DDNS) feature. DDNS lets you assign a fixed host and domain name to a dynamic Internet IP address. It is useful when you are hosting your own website, FTP server, or other server behind the Router. Before you can use this feature, you will need to create an account with a DDNS service provider, such as www.dyndns.com.

DDNS Service - From this pull-down menu, enter the DDNS service with which you have membership.

User Name - Enter the User Name for your DDNS account.

Password - Enter the Password for your DDNS account.

Host Name - The DDNS name created through the DDNS service.

Internet IP Address - This is the Router's current IP Address as seen on the Internet. (this should fill in automatically)

Status - This displays the status of the DDNS connection.

Change these settings as described here and click the **Save Settings** button to apply your changes or **Cancel Changes** to cancel your changes.

12. D-Link Port Forwarding

This chapter will cover a few simple configurations for the D-Link router. Based on the model you are using, some screens may be slightly different. Please understand we do not support this product and will not give tech support on it. If you need Technical support on this router you must call D-Link. This chapter is to only meant to offer basic assistance to the installer and end user.

Whenever you want to configure your network or the DI-624, you can access the Configuration Menu by opening the web-browser and typing in the IP Address of the DI-624. The DI-624 default IP Address is shown at right:

- Open the web browser
- Type in the **IP Address** of the Router (<http://192.168.0.1>)

Note: if you have changed the default IP Address assigned to the DI-624, make sure to enter the correct IP Address.

- Type **admin** in the **User Name** field
- Leave the **Password** blank
- Click **OK**



1. To open ports within your router, click on Advanced, then go to Virtual Server.



Example1:

Protocol Type

The protocol used for the virtual service.

Public Port

The port number on the WAN (Wide Area Network) side that will be used to access the virtual service.

Private Port

The port number of the service used by the Private IP computer.

Schedule

The schedule of time when the virtual service will be enabled.

The schedule may be set to **Always**, which will allow the particular service to always be enabled. If it is set to **Time**, select the time frame for the service to be enabled. If the system time is outside of the scheduled time, the service will be disabled.

Virtual Server

Select **Enabled** or **Disabled**

Name

Enter the name referencing the virtual service

Private IP

The server computer in the LAN (Local Area Network) that will be providing the virtual services. If you have a Web server that you wanted Internet users to access at all times, you would need to enable it.

Example:

Name: DVR

Private IP: 192.168.0.50

Protocol Type: Both

Private Port: 80

Public Port: 80

Schedule: always

- EDR Ports to open: 80, 1600, 37260, 37261, 37262, 37263

- **Note:** If your Internet service provider blocks port 80 and you are using a different port to access the DVR through the DVR's Network Menu Setup please open those specific ports in this section of the router.

2. If your Internet Service Provider Blocks port 80. Simply do the following:

- Change the HTTP port from 80 to 8100 in the **NETWORK MENU**.

3. To access the DVR from a computer simply open Internet Explorer and in the address bar type:

http:// IP address of your internet service provider

or, if you changed the HTTP port to 8100:

http:// IP address of your internet service provider: 8100

Dynamic DNS

Dynamic Domain Name System is a method of keeping a domain name linked to a changing IP Address. This is a useful feature since many computers do not use a static IP address.

1. To setup Dynamic DNS simple go to Tools and the Misc. At the bottom of the screen you will be able to enable DynDNS.
2. Once you have enabled it enter the server address of you DDNS provider (for example, www.dyndns.com)
3. Then enter the hostname you created with the DDNS provider.
Example: `company.homeip.net`
4. Then enter the username and password you for your DDNS account.

13. DDNS

This chapter will cover a few simple configurations for setting up DDNS. Please understand we are not directly affiliated with this service and will not give tech support for it. If you need technical support on DDNS you must contact either the DDNS provider or your router manufacturer. This chapter is only meant to offer assistance to the installer and end user.

13.1 Creating a DDNS Account

1. The first step is to open Internet Explorer and in the address bar type:

<http://www.dyndns.com>

2. The next step is to register with dyndns.com by clicking on Create Account.



3. This is where you file out the information DynDNS requires. You will then receive an email to confirm your account. Once you confirm you will be able to log on to DynDNS.com.

4. After you have logged in click on the Services tab. Under DNS Services, choose Dynamic DNS, then click the Add Host link on the right.

- The next step is to create a host name with an extension.
Example: company.homeip.net



- The IP address should already be entered for you. All you have to do is click add host and you are done registering DDNS.
- You may refer to the previous two chapters to set up DDNS within your router.
- To access the DVR from a computer simply open Internet Explorer and in the address bar type:

http:// The hostname you created (example: company.homeip.net)

14. Viewing through Internet Explorer

1. To access the DVR from a computer simply open Internet Explorer and in the address bar type:

http:// (LAN or IP address of your internet service provider)



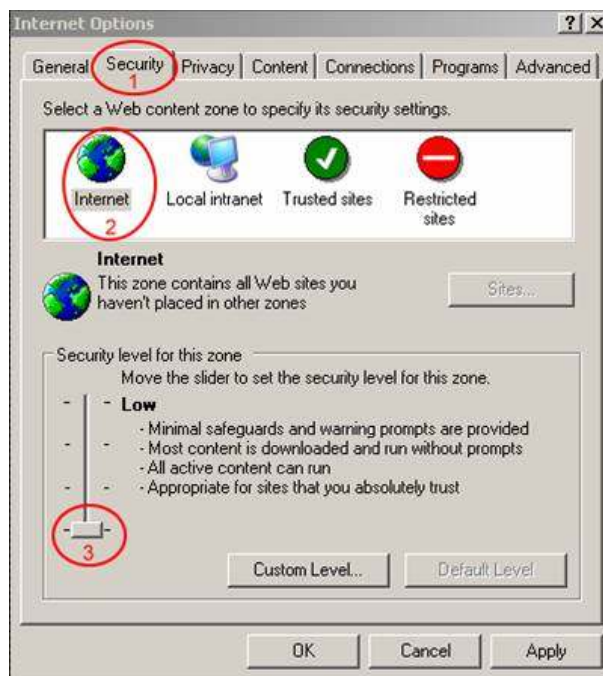
2. The digital video login page will appear on the screen similar to the one shown above.
3. The default user name is “admin” and the password is “11111111”. (Remote User ID and Password can be found and changed in the Network Menu of the DVR)
4. Click on the submit button and you will be logged into your recorder.



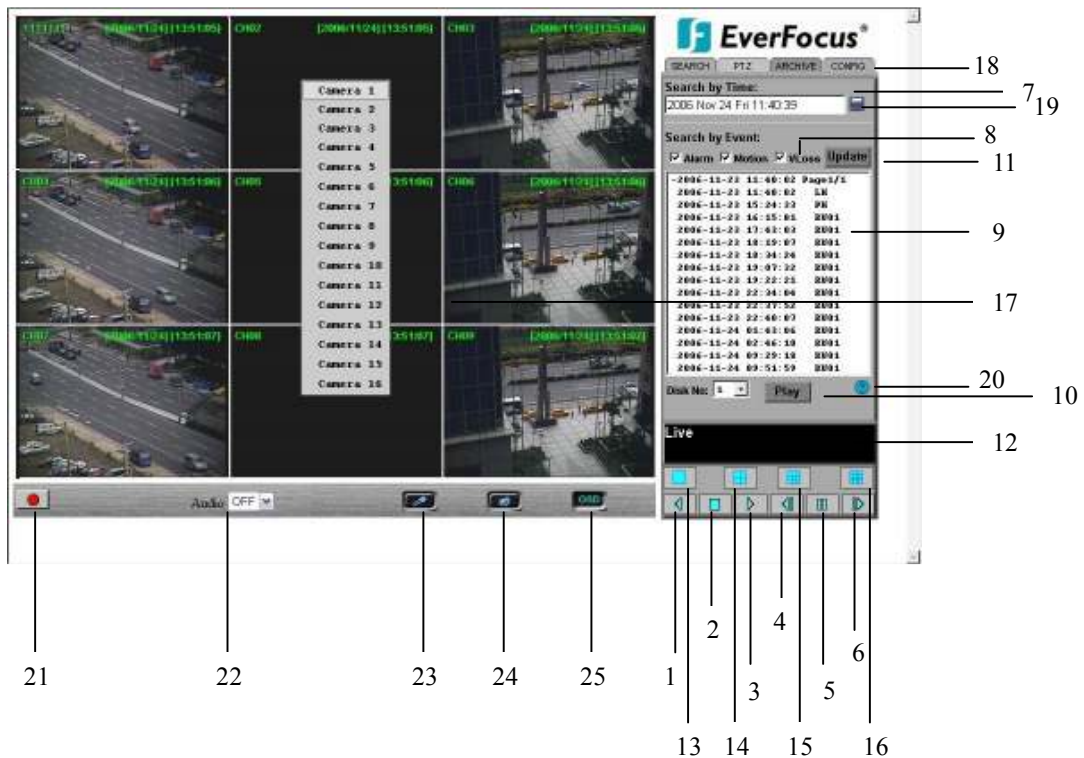
If the above error message pops up when you connect to DVR for viewing from internet, you should change Internet Option of IE (browser) to enable ActiveX controls.



Select Tools -> Internet Options...



Please refer to the above steps for changing **Security Options** to **Low**.









The above diagram is the main screen display.

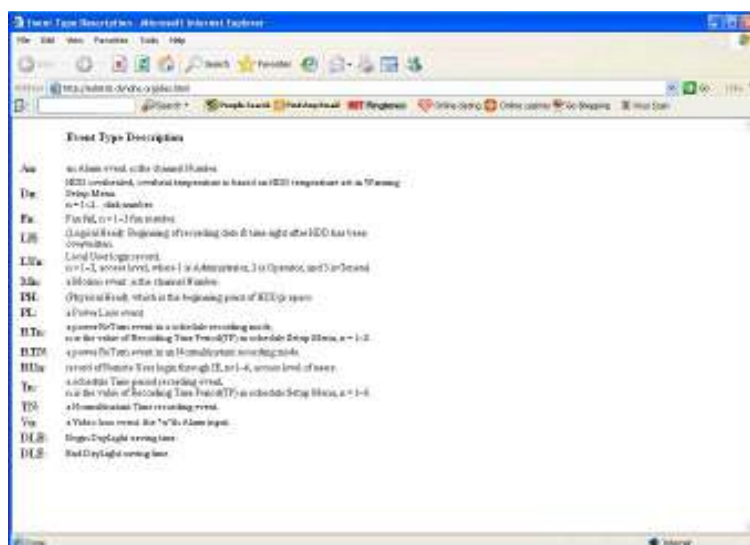
The icons on the lower corner of the screen are mainly for control and configuration; those on the right side are for status indication.

If any icon is grayed, it means that the specific function is not accessible in the current mode.

The followings are a brief description for each of the icons.

1.  **REV. PLAY:** Reverse Video Playback.
2.  **STOP:** Press this key to stop Playback and return to Live mode.
3.  **PLAY:** Normal Video Playback.
4.  **STEP BACKWARD:** Move one frame back while paused.
5.  **PAUSE:** To pause the Video Playback display.
6.  **STEP FORWARD:** Move one frame forward while paused.
7. There are two methods of searching past video: by **Event** and by **Time**.

8. Types of events to be searched: **Alarm**, **Motion** and/or **Vloss**.
9. All available events are shown in the list. Click the desired event to highlight it.
10. Click on **“Play”** to play back highlighted video event.
11. Press **“Update”** to refresh the event list.
12. Current connection and playback status are shown along with date and time.
13. Full screen view.
14. Quad screen view.
15. Nine split screen view.
16. Sixteen split screen view.
17. If you right-click on a camera screen, a drop-down list of available cameras appears. Click on the desired camera to display it in that view screen.
18. There are 4 main functions of Remote Viewer: **SEARCH**, **PTZ**, **ARCHIVE** and **CONFIG**. **SEARCH** section allows you to search by event or by time. **PTZ** section allows you to control PTZ cameras. **ARCHIVE** section allows you to archive files or download DVRViewer. **CONFIG** section allows you to make system changes remotely.
19. **Pick a date:** Click on the blue box to open the detailed time search box.
20. **Event Description:** By clicking on the ? sign, an event description list will show up as follow:



21. **Record:** Press the button to remotely activate the DVR's record function. Press again to stop recording.

22. **Audio:** This function allows you to transmit audio from DVR to your PC's remote site. Select audio source 1/2/3/4, or "OFF" to disable this function.

23. **Audio Broadcast:** This function is designed to transmit audio (through a microphone) to DVR that has speaker device installed. Keep pressing this button whenever you need to do audio broadcasting. Release this button to stop transmitting audio to DVR.


24. **Relay Output:** Press the button to trigger relay output.

25. **OSD:** Press to show OSD information, including camera name, date, time, and event type. Press again to hide them.

14.1 Search

14.1.1 Search by TIME



There are 3 ways to do search by time. Press  **Pick a date first.**

1. Press the **M** button to change the Month to be searched, **D** for day, **h** for hour, **m** for minute and **s** for second. The buttons on the left-hand side are to decrease the value,

- whereas those on the right-hand side are to increase the value.
2. Move the slide bar between the buttons to change Month, Day, Hour, Minute, and second to be searched. Move the slide bar to the left to decrease the value, or to the right to increase the value.
 3. Enter Month, Day, Hour, Minute, and second directly in display bar. Press **OK** to start searching.



14.1.2 Search by EVENT



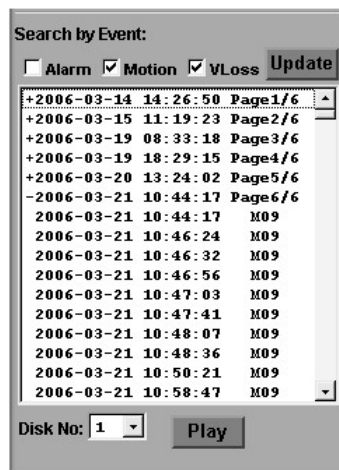
1. Select Event Type from **Alarm**, **Motion** and **Vloss**.

Note: Please keep at least one event type checked.

2. Select the **Disk No.** from which you would like to search events.
3. Press **Update** button to refresh the event list.
4. All events of the selected type will be displaying along with Date/Time, event type (represented by a capital letter), camera number (represented by a number)

For example, M02 is a motion event from camera 2.

5. When there is a “+” sign in front of the date with page number at the end, double-click to show all the events of that page.
6. Press **Play** button to playback the selected event.



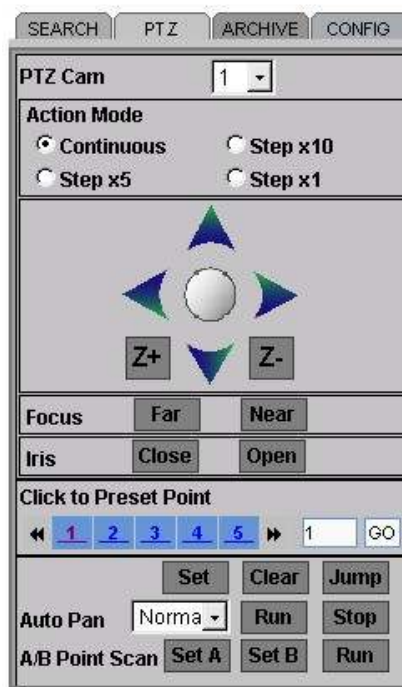
14.2 PTZ control



1. Select the PTZ camera from drop-down menu.
2. Select **Action Mode** you want to use. There are 4 options available: **Continuous**, **Step x10**, **Step x5** and **Step x1**.
3. Use Direction Arrows (up, down, left, right) to move/adjust the focus to your desired

direction and angle.

4. Press **Z+** for Zooming In or **Z-** for Zooming Out.
5. In **Focus** option, press **Near** to move the focus closer to the subject or press **Far** to move the focus farther from the subject.
6. You can turn on the **Iris** by pressing **Open** or turn it off by pressing **Close**.
7. “**Click to Preset Point**” helps you to define the preset point you want the camera to look at. Press **Set** to confirm, **Clear** to delete or **Jump** to jump to a specific point.
8. “**Auto Pan**” is to define the speed of PTZ camera when moving horizontally. Choose from **Slower, Slow, Normal, Fast** to **Faster**. Press **Run** to start or **Stop** to end.
9. “**A/B Point Scan**” allows you to set a tour between 2 points. Move to the first point by using direction arrows and press **SET A**. Then move to the second point by using direction arrows and press **SET B**. Press **RUN** to start A/B Point Scan.



14.3 Remote Archive



To Archive files:

1. **Select Disk No.:** The hard drive you want to archive from
2. **Disk Storage Time: Start Time/End Time** indicates the start and end time of the selected disk
3. **Camera:** Select the camera that you wish to archive from.
4. **Start:** Select the start time of the archived video.
5. **End:** Select the end time of the archived video.

There are 3 ways to search either **Start** or **End** time to be archived. Press



first.



- 1) Press on the **M** button to change the Month to be searched, **D** for day, **h** for hour, **m** for minute and **s** for second. The buttons on the left side are to decrease the value, whereas those on the right side are to increase the value.
- 2) Move the slide bar between the buttons to change Month, Day, Hour, Minute,

- and second to be searched. Move the slide bar to the left to decrease the value, or to the right to increase the value.
- 3) Enter Month, Day, Hour, Minute, and second directly in display bar.
 - 4) Press **OK** to select time.
6. Press **ARCHIVE** button to start archiving. An “.arv” file will be saved.
 7. Press **STOP** button if you wish to cancel archiving.
 8. Check “**Display video**”, if you wish to display what you are archiving on the screen while archiving file at same time.

SEARCH PTZ ARCHIVE CONFIG

Select Disk No: 1

Disk storage time:
Start Time: 2006/03/14 14:26:50
End Time: 2006/03/23 18:10:42

Camera: 1

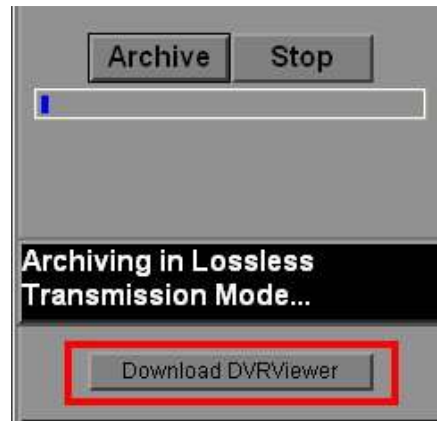
Select archive time:
Start: 2006 Mar 14 Tue 14:26:50
End: 2006 Mar 23 Thu 18:10:42

Archive Stop

Display video

In order to play the archived EDR MPEG4 Files (.arv), you will need to download viewer:

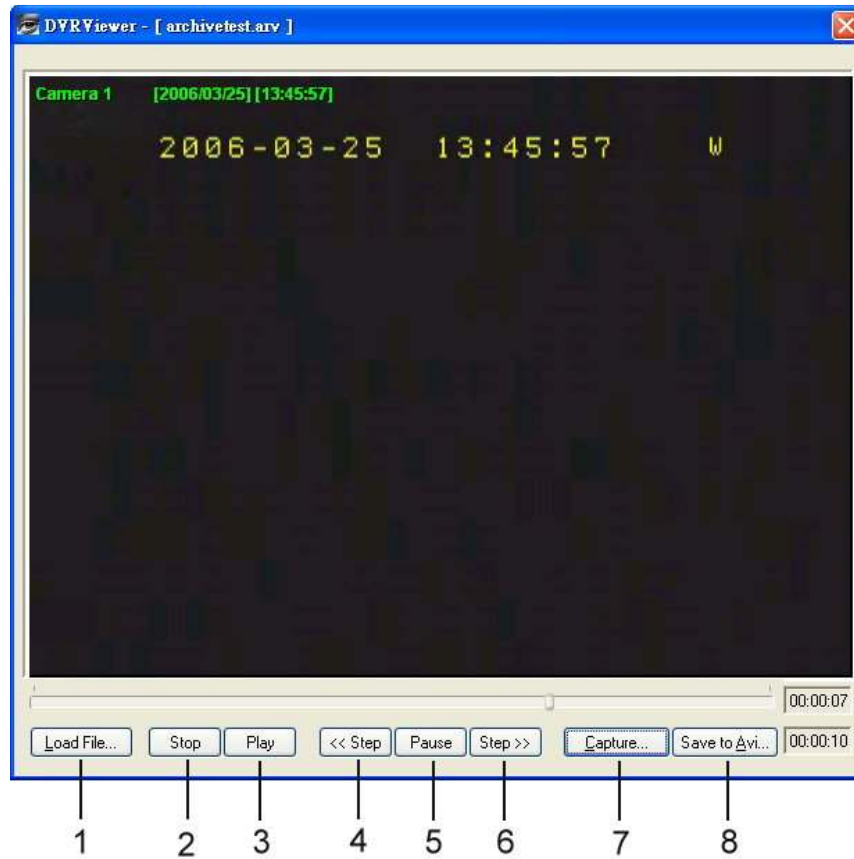
1. Press **Download DVRViewer** button.



2. Select **“Run”** or **“Save”** the file.



3. Open the DVRViewer.exe for loading the archived EDR MPEG4 Files (.arv)



Detailed explanation of DVRViewer is as follows:

- Load File:** to load the archived EDR MPEG4 Files (.arv).
- Stop:** to stop playing video.
- Play:** to play video.
- <<Step:** step backward after pausing.
- Pause:** to pause playing.
- Step>>:** step forward after pausing.
- Capture:** to capture the current image as ".jpg" file.
- Save to Avi:** to save the archived EDR MPEG4 File as ".AVI" file.

Duration Time : 00:00:04
Max Frame Rate : 31 ips
Average Frame Rate : 28 ips
Transfer to AVI file by (ips) Recording Frame Rate.
Transfer to AVI file with : Audio OFF
 Audio ON

Note:

- (1) The recording frame rate will be automatically calculated. It is suggested to use the calculated Recording Frame Rate, although it is possible to change this value.
(2) If you wish to save the audio recorded, please select **Audio ON**, so that the audio can be transferred to AVI file. Otherwise, select **Audio OFF**.

Note: If you are unable to play "AVI" file downloaded from "DVRViewer", your PC may require a video codec.

The codec can be found at the following URL: <http://www.divx.com/divx/windows/codec/>
If you continue to have problems or are unable to download this file, you can also try <http://www.cole2k.net/?display=Codec-Pack-Advanced>

14.4 Remote Configuration



Click on the “CONFIG” tab to open a page where you can remotely change the DVR’s settings. Click on each option to go to the settings for that page.

When you finish making changes on a screen, press **Apply** to save the settings. Press **Reset** to display the DVR’s current menu settings.

The settings you make remotely in this page are virtually the same as the way you set up the DVR itself, except for as noted in the following pages.

DATE/TIME setup menu

⇒ Set Date Time Information Apply Reset

Time Format 24H 12H
Date Format

⇒ Date Light Saving Apply Reset

Enable

Start On
From To
End On
From To

⇒ Set Time Synchronize Apply Reset

Time Synchronize

Server IP
Time Zone
Time Update By

⇒ Set Date Time Manually Apply Reset

Set Date/Time Manually

1. Click on the calendar button to set Date/Time manually. A calendar will show up as shown below.
2. Click “<<” to decrease Year value, “>>” to increase Year value.
3. Click “<” to decrease Month value, “>” to increase Month value.
4. Click on the selected date directly.
5. Click on the Hour, Minute, Seconds to change Time value. Up arrow for increasing and Down arrow for decreasing the value. This is also used to change between Am and Pm.
6. Finally, click **Apply** to confirm setting.

<<	<	OCT 2007	>	>>		
Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1	2	3	4	5
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

Time

Apply

CAMERA setup menu

Set Camera Information Apply Reset

Camera: 1
 Title: CH-01
 Install:
 Covert:
 Quality: High

PTZ ID: 11
 Main Monitor Seq: 3 Seconds
 Call Monitor Seq: 3 Seconds

Record Speed And Action

TP	Normal	Event	Action
1	1	30	<input checked="" type="checkbox"/>
2	1	30	<input checked="" type="checkbox"/>
3	1	30	<input checked="" type="checkbox"/>
4	1	30	<input checked="" type="checkbox"/>
5	1	30	<input checked="" type="checkbox"/>
6	1	30	<input checked="" type="checkbox"/>
7	1	30	<input checked="" type="checkbox"/>
8	1	30	<input checked="" type="checkbox"/>
Normal	1	30	<input checked="" type="checkbox"/>

RECORD setup menu

Set Record Information Apply Reset

Record Audio:
 Time Stamp:
 Time Stamp Position: Bottom
 Water Mark:
 Resolution: 720x240
 Rewrite:
 Auto Rewrite Within: 0 Days
 Pre-Alarm Recording:
 Relay Out: NONE

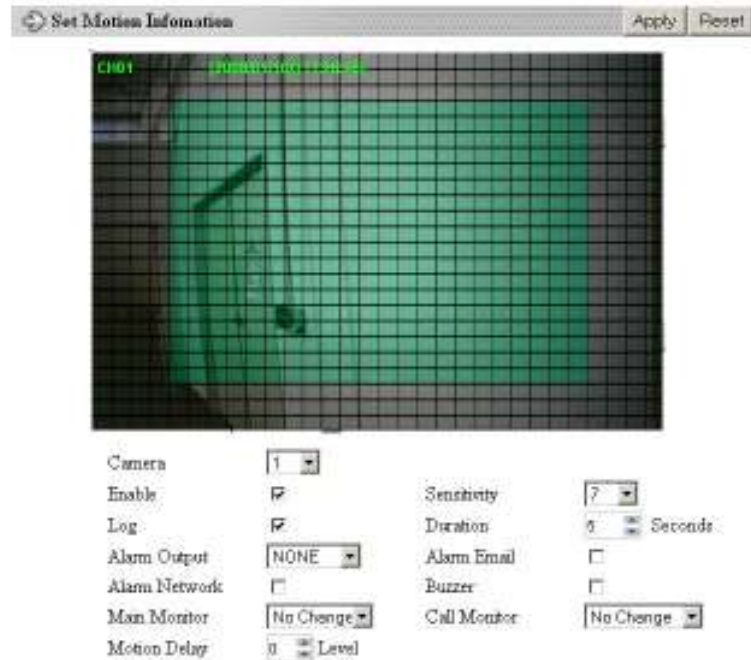
ALARM setup menu

Set Alarm Information Apply Reset

Alarm: 1
 Enable:
 Log:
 PTZ Preset: OFF
 Alarm Output: NONE
 Buzzer:
 Main Monitor: No Change

Alarm Type: N.O.
 Active Camera: 1
 Duration: 05 SEC
 Alarm Email:
 Alarm Network:
 Call Monitor: No Change

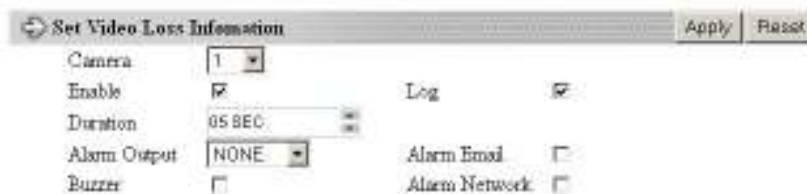
MOTION setup menu



Set Motion Grid

1. Non-green squares are disabled for motion; green squares are enabled.
2. Click and hold the mouse to begin selecting squares in the motion grid.
3. Drag the mouse to highlight the desired area.
4. The selected area will switch to the opposite color.
5. Click **Apply** to save the changes.

VIDEO LOSS setup menu



NETWORK 1 setup menu

Network Config Setting (Read Only) Reset

IP Type: DHCP
IP Address: 192.168.1.100
Gateway: 192.168.1.1
Net Mask: 255.255.255.0
DNS Server: 192.168.1.102
Remote Control:
HTTP Port: 80
Data Port: 37200
Control Port: 1800
Band width: 1152 KB

SMTP Setting Apply Reset

SMTP Server:
Port No.: 25
Authentication:
Username:
Password:
Receiver:
Sender:

PPPoE Setting Apply Reset

Username:
Password:
Primary DNS: 0.0.0.0
Secondary DNS: 0.0.0.0

The Network Configuration Settings can not be changed remotely. These must be changed in the DVR's Network Menu.

NETWORK 2 setup menu

Alarm Network Setting Apply Reset

Protocol: UDP
Port No.: 1600
Unique ID:
Server 1: 192.168.1.100
Server 2: 192.168.1.101
Server 3: 192.168.1.102

Network Password Setting Apply Reset

Account	Password	Level
ADMIN	*****	Admin
USER2	*****	Live
USER3	*****	Live
USER4	*****	Live
USER5	*****	Live
USER6	*****	Live

DDNS Setting Apply Reset

Server: www.site1utions.com
Username:
Password:
Record ID:
FQDN:

After saving changes to the account, password, or level, the changes will take effect the next time you log in to the network viewer.

SCHEDULE setup menu

Set Schedule Information					Apply	Reset
No.	Day	Start	End	Enable		
1.	Daily	00:00	00:00	<input type="checkbox"/>		
2.	Daily	00:00	00:00	<input type="checkbox"/>		
3.	Daily	00:00	00:00	<input type="checkbox"/>		
4.	Daily	00:00	00:00	<input type="checkbox"/>		
5.	Daily	00:00	00:00	<input type="checkbox"/>		
6.	Daily	00:00	00:00	<input type="checkbox"/>		
7.	Daily	00:00	00:00	<input type="checkbox"/>		
8.	Daily	00:00	00:00	<input type="checkbox"/>		

CONTROL setup menu

Control Setting				Apply	Reset
RS232 Setting					
Baud Rate	9600	Stop Bit	1		
Parity	None	Byte Size	8		
RS485 Setting					
Baud Rate	9600	Stop Bit	1		
Parity	None	Byte Size	8		
RS232/RS485 ID	1				
PTZ Protocol	Everfocus				

WARNING setup menu

Warning Fan Fault				Apply	Reset
Buzzer	<input checked="" type="checkbox"/>				
Alarm Output	1	Duration	Permanent		
Network Alarm	<input type="checkbox"/>	Send EMail	<input type="checkbox"/>		
Warning HDD Temp.				Apply	Reset
Buzzer	<input checked="" type="checkbox"/>				
Alarm Output	1	Duration	Permanent		
Network Alarm	<input type="checkbox"/>	Send EMail	<input type="checkbox"/>		
Stop Record	<input checked="" type="checkbox"/>	Temperature	80 °C		
			140 °F		
Warning No HDD				Apply	Reset
Buzzer	<input type="checkbox"/>				
Alarm Output	1	Duration	05 SEC		
Network Alarm	<input type="checkbox"/>	Send EMail	<input type="checkbox"/>		
Warning HDD Full				Apply	Reset
Buzzer	<input checked="" type="checkbox"/>				
Alarm Output	1	Duration	05 SEC		
Network Alarm	<input type="checkbox"/>	Send EMail	<input type="checkbox"/>		

SYSTEM setup menu

Update Firmware	Apply
Load Factory Default	Apply
Load/Save Configuration	Save Load

All recording should be stopped before making any changes on this menu.

Update Firmware

1. After clicking **Apply**, an "Open File" window appears.
2. Find the folder where the firmware upgrade is saved and choose Open.
3. On the DVR's monitor, you will see a notice that the firmware is being updated.
Note: DO NOT try to open the menu or make changes at the DVR while this process is happening.
4. When the update is complete, the DVR will reboot automatically.
5. Once "Load System" has finished, the system's software will be updated. You will need to refresh the network viewer for the changes to take effect.

Load/Save Configuration

1. Clicking **Save** will open a "Save File" window.
2. Select the folder you wish to save the configuration file to and then choose Save.
3. Clicking **Load** will open an "Open File" window.
4. Find the folder where your configuration file is saved and then choose Open.

Appendix A: Remote Control

The remote controller (RC-200, Figure 1) is an accessory to enhance the handy operations of the DVR. You can perform all the settings and operations by the remote controller. The effective distance is up to 10 meters without any obstacle. The keypad functions are same as the front panel key button of the DVR.

There are some replacement keys for JOG and SHUTTLE, definitions are:

JOG ► : Same as turning the JOG clockwise.

JOG ◀ : Same as turning the JOG counter-clockwise.

SHUTTLE ►►

1: fast forward 2X or slow forward 1/2X.

2: fast forward 4X or slow forward 1/4X.

3: fast forward 8X or slow forward 1/8X.

4: fast forward 16X or slow forward 1/10X.

5: fast forward 32X or slow forward 1/16X.

6: fast forward 600X or slow forward 1/32X.

SHUTTLE ◀◀

1: fast rewind 2X or slow rewind 1/2X.

2: fast rewind 4X or slow rewind 1/4X.

3: fast rewind 8X or slow rewind 1/8X.

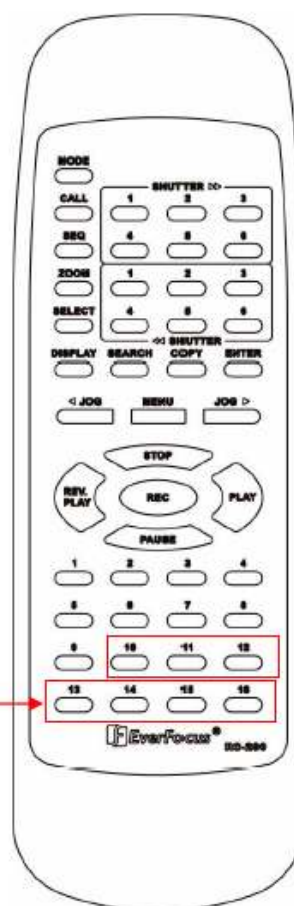
4: fast rewind 16X or slow rewind 1/10X.

5: fast rewind 32X or slow rewind 1/16X.

6: fast rewind 600X or slow rewind 1/32X.

Note: The channel keys #10~16 are not available.

Reserved only for 16 CH DVR.

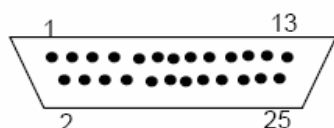


Appendix B: Alarm Board Configuration

EDVR16D1/F1, EDVR16D2/F2, EDVR9D1/F1, EDVR4D1/F1 models:

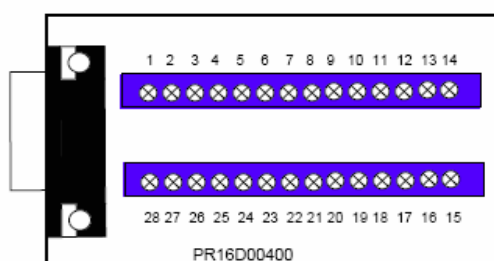
The alarm connector, Figure 1, is used to provide one sensor alarm input for each camera input. For easy operation, an alarm extension board, Figure 2, is provided to connect to the alarm connector.

Each alarm input requires two wires, one wire connects to the desired alarm input pin, the second wire connects to the ground. The alarm signal assignment is shown at the following.



<Figure 1>

D-SUB 25 pin female connector (DVR)



<Figure 2>

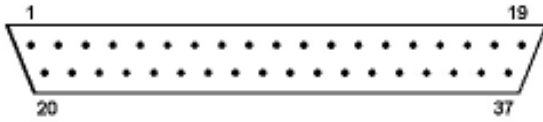
PR16D00400 Alarm extension board (HOST).

DVR	
PIN #	NAME
1	GND
2	ALM 1
3	ALM 2
4	ALM 3
5	ALM 4
6	ALM 5
7	ALM 6
8	ALM 7
9	ALM 8
10	ALM 9
11	RESERVED
12	RESERVED
13	RESERVED
14	RESERVED
15	RESERVED
16	RESERVED
17	RESERVED
18	ALMRSTO
19	REC
20	GIN10
21	DISKFULL
22	GO1
23	ALM-N.C
24	ALM-N.O
25	ALM-COM

HOST	
PIN #	NAME
1	GND
2	ALM 1
3	ALM 2
4	ALM 3
5	ALM 4
6	ALM 5
7	ALM 6
8	GND
9	ALM 7
10	ALM 8
11	ALM 9
12	ALM10
13	ALM 11
14	ALM 12
15	ALM 13
16	ALM 14
17	ALM 15
18	ALM 16
19	ALMRST
20	REC-IN
21	GND
22	SPARE-IN
23	DISKFULL
24	SPARE-OUT
25	ALM-N.C
26	ALM-N.O
27	ALM-COM
28	GND

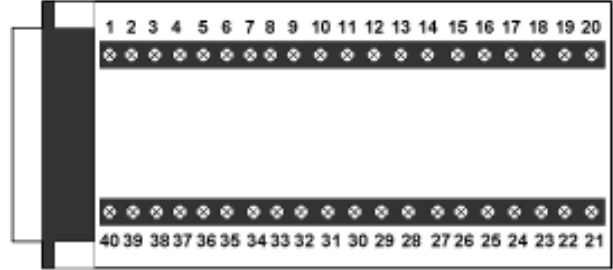
ALM10~ALM16 are reserved only for 16 CH DVR.

EDVR16D3 model:



<Figure 1>

D-SUB 37 pin female connector (DVR)



<Figure 2>

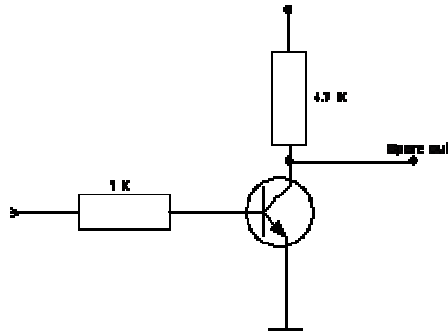
P164D00100 Alarm extension board (HOST)

DVR	
PIN #	NAME
1	GND
2	ALMIN 1
3	ALMIN 2
4	ALMIN 3
5	ALMIN 4
6	ALMIN 5
7	ALMIN 6
8	ALMIN 7
9	ALMIN 8
10	ALMIN 9
11	ALMIN 10
12	ALMIN 11
13	ALMIN 12
14	ALMIN 13
15	ALMIN 14
16	ALMIN 15
17	ALMIN 16
18	GND
19	GND
20	ALM_NC1
21	ALM_NO1
22	ALM_COM1
23	ALM_NC2
24	ALM_NO2
25	ALM_COM2
26	ALM_NC3
27	ALM_NO3
28	ALM_COM3
29	ALM_NC4
30	ALM_NO4
31	ALM_COM4
32	ALMRST
33	REC_IN
34	SPARE_IN
35	DISK_FULL
36	SPARE_OUT
37	GND

HOST	
PIN #	NAME
1	GND
2	ALMIN 1
3	ALMIN 2
4	ALMIN 3
5	ALMIN 4
6	ALMIN 5
7	GND
8	ALMIN 6
9	ALMIN 7
10	ALMIN 8
11	ALMIN 9
12	ALMIN 10
13	GND
14	ALMIN 11
15	ALMIN 12
16	ALMIN 13
17	ALMIN 14
18	ALMIN 15
19	ALMIN 16
20	GND
21	GND
22	ALM_NC1
23	ALM_NO1
24	ALM_COM1
25	ALM_NC2
26	ALM_NO2
27	ALM_COM2
28	GND
29	ALM_NC3
30	ALM_NO3
31	ALM_COM3
32	ALM_NC4
33	ALM_NO4
34	ALM_COM4
35	GND
36	ALMRST
37	REC_IN
38	SPARE_IN
39	DISK_FULL
40	SPARE_OUT

Note:

SPARE_OUT: System error output. TTL-level 5VDC indicates "System Okay" status. The contact will switch to open state, if one (ore more) of below listed events appears:



- a) HDD full (If overwrite mode in RECORD menu is set to STOP)
- b) No HDD
- c) Over-temperature HDD
- d) Power Loss
- e) Cooler fan fault
- f) Video Loss
- g) Record off

Output level:

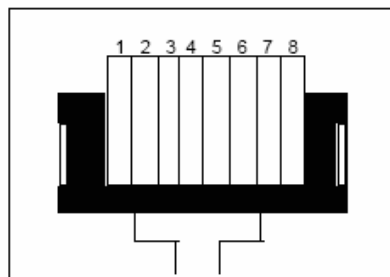
HIGH (5 V DC): System okay

Open state: System error

SPARE_IN: N.O. Control input for playback function, playback is active as long contact is closed.

Appendix C: RJ45 (RS485) Pin Assignment

There are two RJ-45 (RS-485) connectors on the back panel of the DVR. Please refer the following pin assignment for application.



PIN #	NAME
1	GND
2	NC
3	RX
4	NC
5	NC
6	TX
7	NC
8	NC

Appendix D: Lapse Mode Recording Table

Resolution: 720 x 480

System storage: 250 GB

		Video Source	
		Simple:	Complex:
Average size per image	Lower:	8.04KB	12.33KB
	Low:	8.42KB	13.7KB
	Basic:	10.15KB	16.72KB
	Standard:	11.86KB	19.56KB
	High:	14.72KB	24.63KB
	Superior:	18.60KB	30.05KB

“Simple” and “Complex”

This DVR uses MPEG4 recording, which uses the previous image as a reference for recording the next one. If there is little difference between images, the DVR uses the size for a “simple” image; however, if there is constant change between the images, it will use the size for a “complex” image. The times given in the following tables show the absolute maximum and minimum for these sizes and should only be used as a reference.

Terms of Use

The HDD size required in your DVR may vary from this calculated test result under some conditions. Total storage capacity may vary depending on complexity of video scenes, DVR specifications and features used on the actual installation sites. Test results and information obtained from these tables are furnished for informational use only. It is user's responsibility to test and allocate appropriate HDD size for his/her DVR systems.

EDVR16D1/16F1/9D1/9F1/4D1/4F1 model

NTSC		Unit: Hour											
Recording Speed (IPS)	PICTURE QUALITY												
	LOWER		LOW		BASIC		STANDARD		HIGH		SUPERIOR		
	simple	complex	simple	complex	simple	complex	simple	complex	simple	complex	simple	complex	
	8.04	12.33	8.42	13.7	10.15	16.72	11.86	19.56	14.72	24.63	18.6	30.05	
30	287.9	187.74	274.92	168.96	228.06	138.45	195.18	118.34	157.26	93.98	124.45	77.03	
15	575.8	375.48	549.84	337.93	456.12	276.89	390.36	236.69	314.51	187.97	248.90	154.06	
10	863.7	563.22	824.76	506.89	684.18	415.34	585.53	355.03	471.77	281.95	373.36	231.10	
8	1080	704.02	1030.94	633.62	855.23	519.17	731.92	443.79	589.71	352.44	466.70	288.87	
4	2159	1408.04	2061.89	1267.23	1710.45	1038.34	1463.84	887.58	1179.42	704.88	933.39	577.74	

PAL		Unit: Hour											
Recording Speed (IPS)	PICTURE QUALITY												
	LOWER		LOW		BASIC		STANDARD		HIGH		SUPERIOR		
	simple	complex	simple	complex	simple	complex	simple	complex	simple	complex	simple	complex	
	8.04	12.33	8.42	13.7	10.15	16.72	11.86	19.56	14.72	24.63	18.6	30.05	
25	345.5	225.29	329.90	202.76	273.67	166.14	234.21	142.01	188.71	112.78	149.34	92.44	
15	575.8	375.48	549.84	337.93	456.12	276.89	390.36	236.69	314.51	187.97	248.90	154.06	
10	863.7	563.22	824.76	506.89	684.18	415.34	585.53	355.03	471.77	281.95	373.36	231.10	
8	1080	704.02	1030.94	633.62	855.23	519.17	731.92	443.79	589.71	352.44	466.70	288.87	
4	2159	1408.04	2061.89	1267.23	1710.45	1038.34	1463.84	887.58	1179.42	704.88	933.39	577.74	

EDVR16D2/ 16F2 model

NTSC		Unit: Hour											
Recording Speed (IPS)	PICTURE QUALITY												
	LOWER		LOW		BASIC		STANDARD		HIGH		SUPERIOR		
	simple	complex	simple	complex	simple	complex	simple	complex	simple	complex	simple	complex	
	8.04	12.33	8.42	13.7	10.15	16.72	11.86	19.56	14.72	24.63	18.6	30.05	
60	143.96	93.87	137.46	84.48	114.03	69.22	97.59	59.17	78.63	46.99	62.23	38.52	
48	179.95	117.34	171.82	105.60	142.54	86.53	121.99	73.97	98.29	58.74	77.78	48.15	
40	215.93	140.80	206.19	126.72	171.05	103.83	146.38	88.76	117.94	70.49	93.34	57.77	
32	269.92	176.00	257.74	158.40	213.81	129.79	182.98	110.95	147.43	88.11	116.67	72.22	
24	359.89	234.67	343.65	211.21	285.08	173.06	243.97	147.93	196.57	117.48	155.57	96.29	
16	539.84	352.01	515.47	316.81	427.61	259.59	365.96	221.90	294.86	176.22	233.35	144.44	

PAL		Unit: Hour											
Recording Speed (IPS)	PICTURE QUALITY												
	LOWER		LOW		BASIC		STANDARD		HIGH		SUPERIOR		
	simple	complex	simple	complex	simple	complex	simple	complex	simple	complex	simple	complex	
	8.04	12.33	8.42	13.7	10.15	16.72	11.86	19.56	14.72	24.63	18.6	30.05	
50	172.75	112.64	164.95	101.38	136.84	83.07	117.11	71.01	94.35	56.39	74.67	46.22	
40	215.93	140.80	206.19	126.72	171.05	103.83	146.38	88.76	117.94	70.49	93.34	57.77	
32	269.92	176.00	257.74	158.40	213.81	129.79	182.98	110.95	147.43	88.11	116.67	72.22	
24	359.89	234.67	343.65	211.21	285.08	173.06	243.97	147.93	196.57	117.48	155.57	96.29	
16	539.84	352.01	515.47	316.81	427.61	259.59	365.96	221.90	294.86	176.22	233.35	144.44	

EDVR16D3 model

NTSC		Unit: Hour											
Recording Speed (IPS)	PICTURE QUALITY												
	LOWER		LOW		BASIC		STANDARD		HIGH		SUPERIOR		
	simple	complex	simple	complex	simple	complex	simple	complex	simple	complex	simple	complex	
	8.04	12.33	8.42	13.7	10.15	16.72	11.86	19.56	14.72	24.63	18.6	30.05	
120	71.978	46.93	68.73	42.24	57.02	34.61	48.79	29.59	39.31	23.50	31.11	19.26	
96	89.973	58.67	85.91	52.80	71.27	43.26	60.99	36.98	49.14	29.37	38.89	24.07	
80	107.97	70.40	103.09	63.36	85.52	51.92	73.19	44.38	58.97	35.24	46.67	28.89	
64	134.96	88.00	128.87	79.20	106.90	64.90	91.49	55.47	73.71	44.05	58.34	36.11	
48	179.95	117.34	171.82	105.60	142.54	86.53	121.99	73.97	98.29	58.74	77.78	48.15	
32	269.92	176.00	257.74	158.40	213.81	129.79	182.98	110.95	147.43	88.11	116.67	72.22	
16	539.84	352.01	515.47	316.81	427.61	259.59	365.96	221.90	294.86	176.22	233.35	144.44	

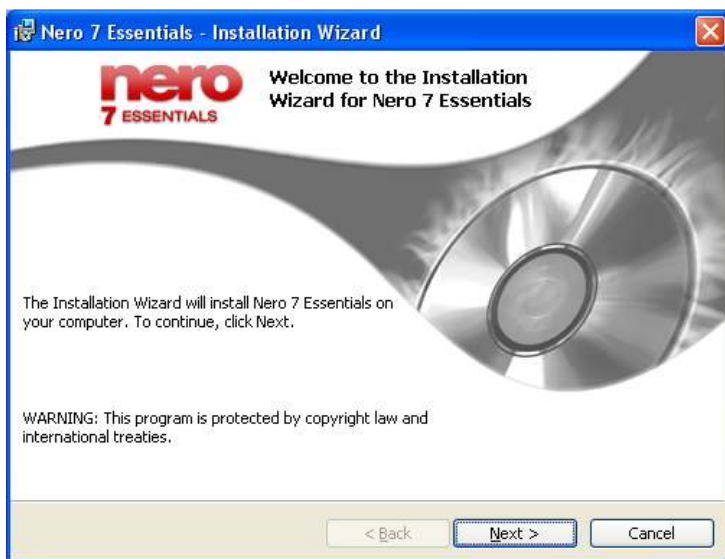
PAL		Unit: Hour											
Recording Speed (IPS)	PICTURE QUALITY												
	LOWER		LOW		BASIC		STANDARD		HIGH		SUPERIOR		
	simple	complex	simple	complex	simple	complex	simple	complex	simple	complex	simple	complex	
	8.04	12.33	8.42	13.7	10.15	16.72	11.86	19.56	14.72	24.63	18.6	30.05	
100	86.374	56.32	82.48	50.69	68.42	41.53	58.55	35.50	47.18	28.20	37.34	23.11	
80	107.97	70.40	103.09	63.36	85.52	51.92	73.19	44.38	58.97	35.24	46.67	28.89	
64	134.96	88.00	128.87	79.20	106.90	64.90	91.49	55.47	73.71	44.05	58.34	36.11	
48	179.95	117.34	171.82	105.60	142.54	86.53	121.99	73.97	98.29	58.74	77.78	48.15	
32	269.92	176.00	257.74	158.40	213.81	129.79	182.98	110.95	147.43	88.11	116.67	72.22	
16	539.84	352.01	515.47	316.81	427.61	259.59	365.96	221.90	294.86	176.22	233.35	144.44	

APPENDIX E: Installation Steps Of NERO InCD Software

1. Insert Nero InCD installation CD and select “Nero 7 Essentials”.



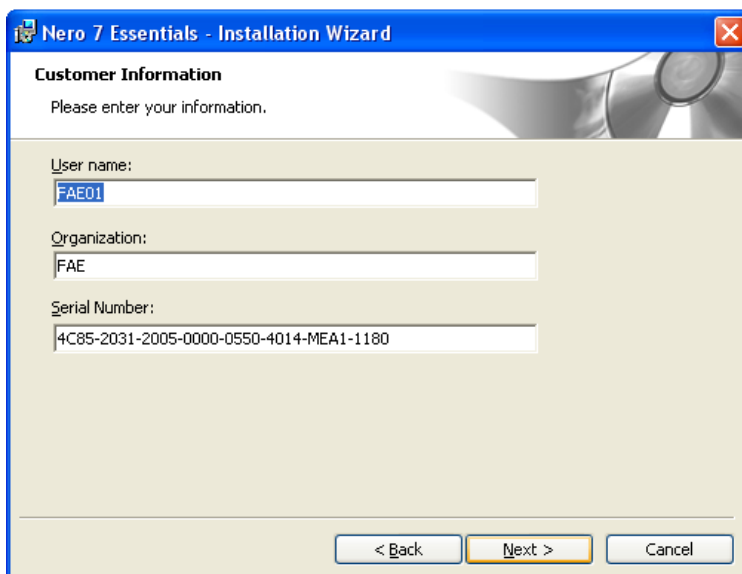
2. Click “Next” when Nero 7 Essentials installation wizard shows up.



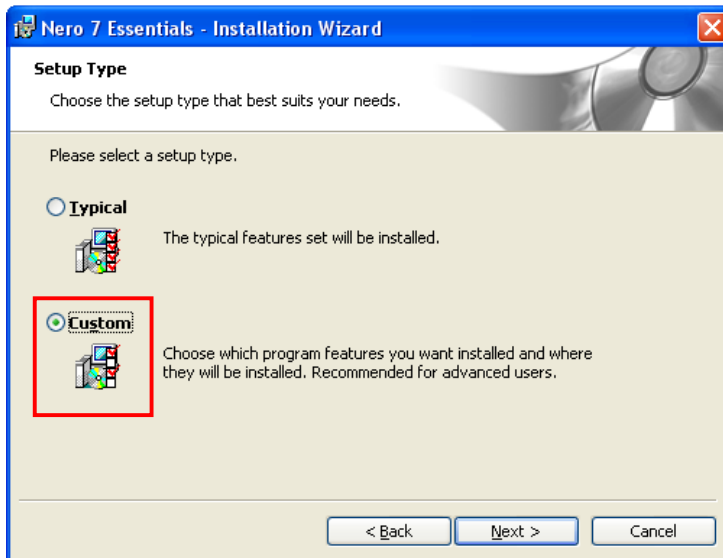
3. Please read the license agreement and press “Next”.



4. Please enter customer information and press “Next”.



5. Select “**Custom**” for Setup Type. This option will allow you to choose the program features that you want to install.



6. Select the language you want to be supported.



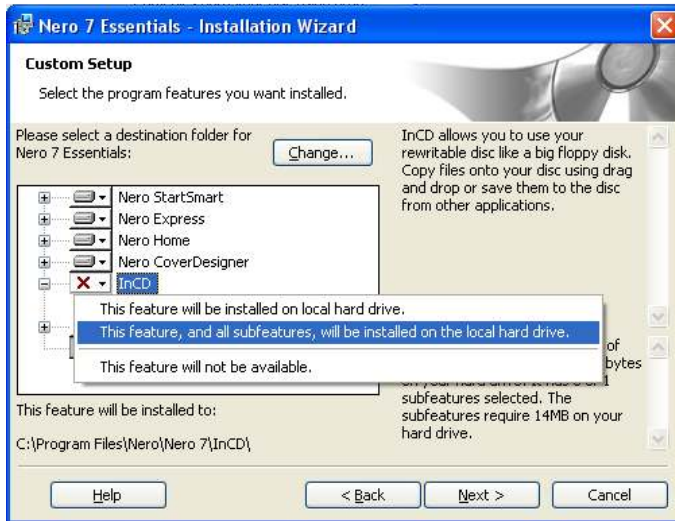
7. Select “InCD” as the destination folder for Nero 7 Essentials:



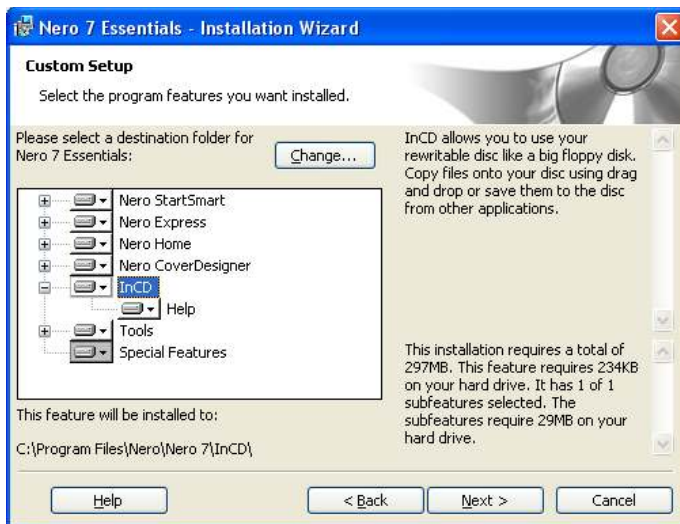
8. Select the program features you want to install.



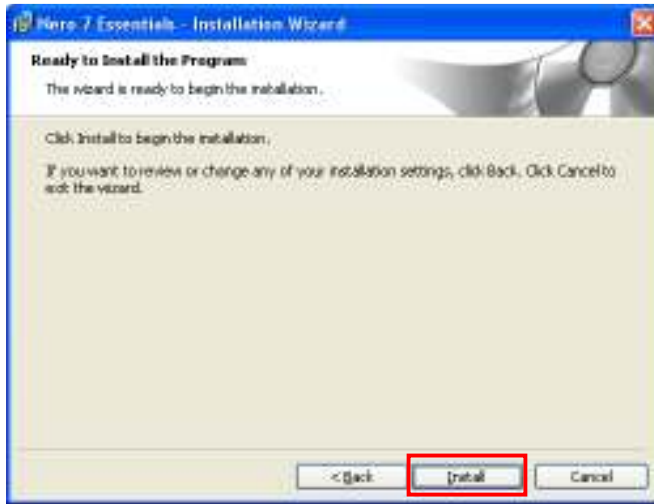
9. Right click on “InCD”, and select “This feature, and all subfeatures, will be installed on the local hard drive”.



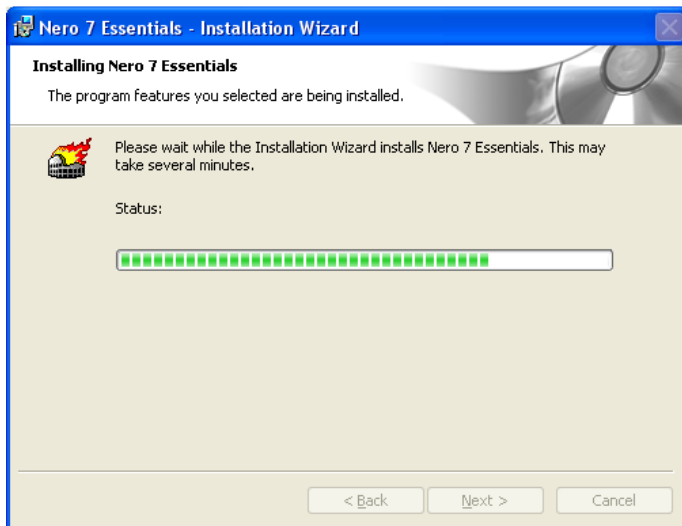
10. At the right bottom part of wizard, it indicates the information about the hard drive capacity it requires for installation and feature. As well as the number of subfeatures selected, and the hard drive capacity required for subfeatures.



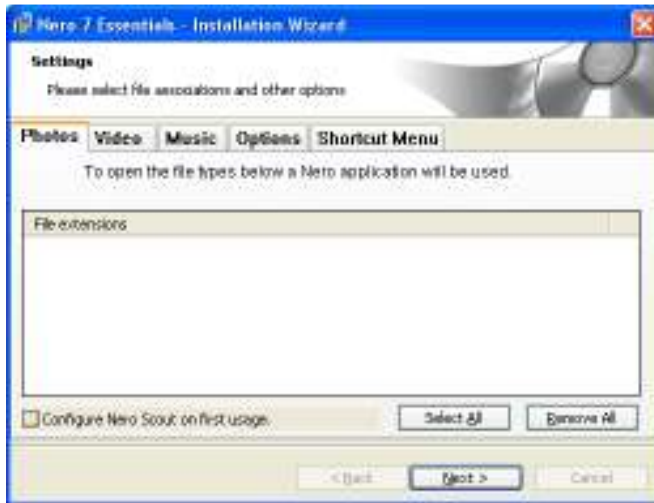
11. Click “Install” to begin the installation. If you wish to review or change any of your installation settings, click Back. Or click Cancel to exit the wizard.



12. Please wait while the installation wizard installs Nero 7 Essentials.



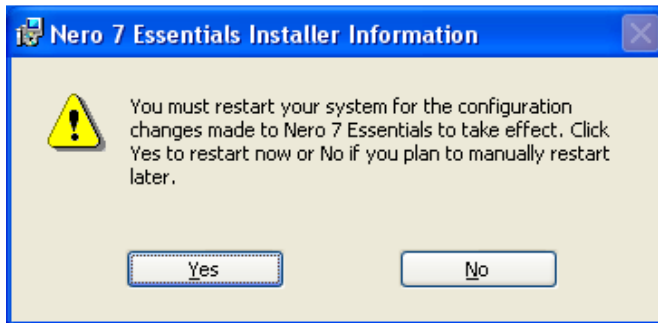
13. Please select file associations and other options.



14. Once the installation is completed, press “**Finish**” to exit the installation Wizard.



15. A message pops up asking you to restart your system for the configuration changes made to Nero 7 Essentials to take effect. Click **Yes** to restart immediately or **No** to start manually later.



16. Information about the selected drive indicates device information, device capabilities and disc status.



17. Format disc, prepare your disc for file writing.



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Troubleshooting

If you have difficulty operating your system, run through the following checklist to see if you can solve the problem.

The DVR will not go into record mode?

Make sure the HDD is locked in with the keys. Also check to make sure the hard drives are set to C.S. (Cable Select). A diagram located on the Hard Drive Label will show you how to set the drive to C.S.

The DVR displays no picture?

First question you should ask yourself is the equipment wired properly. Please see your installation manual for help.

The second question to ask yourself, do all the wires used work properly.

The next step is to verify the recorder is getting the correct amount of power.

There is no display coming from one of the channels on the DVR?

The first step is to verify is the problem coming from the recorder or the camera.

Simply take a working camera and plug it into the port that seems to not be working. If you see a picture this means the problem is coming from the camera.

I cannot connect to the recorder via the internet?

1. The first thing to check is does your internet provider block any ports.
2. Are you using the IP address from the Internet Service provider?
3. If you are using a router are the ports in your router opened?
(**NOTE:** Please be sure that HTTP port, Control port, Data port are open. Please refer to "Network Setup Menu" section for port settings. For example, HTTP port: 80; Control port: 1600; Data port: 37260, 37261, 37262 and 37263.)

If you have a Dynamic IP address from your Internet Service Provider.

Dynamic IP addresses can cause conflicts when trying to connect to DVR(s) on a high speed internet connection. With new router technology (DDNS), it allows you to overcome this problem. DDNS lets you assign a fixed host and domain name to a dynamic Internet IP address. It is useful when you are hosting your own DVR, website, FTP server, or other server behind the Router. Before using this feature, you need to sign up for DDNS service at www.dyndns.org or www.tzo.com. (Preferred routers: Linksys BEFSR41 V3 or DLINK DI624 or any router that offers DDNS.

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Ihr EverFocus Produkt wurde entwickelt und hergestellt mit qualitativ hochwertigen Materialien und Komponenten, die recycelt und wieder verwendet werden können.
Dieses Symbol bedeutet, dass elektrische und elektronische Geräte am Ende ihrer Nutzungsdauer vom Hausmüll getrennt entsorgt werden sollen.
Bitte entsorgen Sie dieses Gerät bei Ihrer örtlichen kommunalen Sammelstelle oder im Recycling Centre. Helfen Sie uns bitte, die Umwelt zu erhalten, in der wir leben!



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