WatchNET

DVR

Version 12.10 Series

High Performance Digital Video Recorders

Installation and User's Guide

(a)   The default user name is: dvr
(b)   The default password is: 1

Videon Digital Technologies Ltd.

275 Cooper Ave – Suite 105   Unit 5 - 351 Ferrier Street
Tonawanda, New York, USA   Markham, Ontario, Canada
14150   L3R 5Z2
(716) 877-7277   (416) 410-6865

www.watchnetdvr.com
1-866-843-6865 (Phone)
1-866-331-3341 (Fax)

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About Watchnet DVR

WatchNET is a high performance digital video recorder for today's intuitive security markets. With this innovative product users can record and monitor up to 32 cameras/sites at any time. Switches can be activated and deactivated on the DVR, allowing complete control over motion sensors, door contacts and numerous other inputs. Preset positioning for Pan Tilt and Zoom Cameras allow full camera mobility from any on or offsite location. Wireless IP cameras and Web Servers are completely compatible with WatchNET DVR software. POS integration allows transactions and POS text details to be attached to DVR images. Two way video conferencing and remote notification have been known to keep unwanted intruders out.

With remote client and web browser software you can now view and manipulate WatchNET DVR from any remote location via LAN, WAN or Modem.   There is also PDA software for wireless viewing on a pocket PC.   Backing up events, live remote recording and searching through pre-recorded information can all be accomplished through WatchNET.

WatchNET was developed as a complete management and security system. Feel safe and secure in your home or business with the knowledge that WatchNET DVR is always recording.   This is what makes WatchNET today's leading Digital Video Recorder

1. DVR Specifications

- **1~32 Camera Inputs / Output**
  Up to 32 camera inputs are available on screen for digital handling.
  Normal input condition: 75 Ohm, 1 Volt (p-p)

- **1~16 Sensor Inputs**
  Up to 16 sensors can be linked to the system.
  External 12 Volt DC power must be provided to the sensor's input.

- **1~4 Digital Outputs (Relay Outputs)**
  Digital Outputs can be used to activate different devices like shutters and sirens. It can be activated via sensors, motion detection and alarm.

- **Sound Recording and Two-Way Communication Capabilities**
  Sound can be recorded with video images. Two-way communication is possible between DVR main and DVR Net.

- **Display Features (w/ Multi-Viewing)**
  Multi-Viewing allows 1, 4, 6, 9, 10, or 16 different camera shots to be displayed onscreen at the same time. Other display features include enlarging all displayed cameras or just one.   32 channel viewing can be attained with specially configured cards.

- **PAN/TILT/ZOOM/FOCUS Capabilities**
  Each connected camera can be manipulated through the DVR main program as long as each camera supports such capabilities. This feature can be controlled remotely.

- **Auto Rebooting System**
  When DVR detects an error or malfunction within the system, it will automatically reboot the system in order to correct it.

- **Motion Detection and Sensor Trigger**
  Detection features make it possible to record images only when movement is detected, preserving volume space and maximizing the use of physical storage space.

- **Scheduled Recording**
  Scheduling allows the administrator to record images only during designated time periods, if so desired. Every combination of scheduling is available in the DVR program.

- **Manual and Auto Backup**
  Data can be preserved through various formats (DAT, AVI, or MPG) and various devices such as USB drives, CDs and DVDs. Data from specific cameras and/or time periods can be specifically isolated for backup. Much like scheduled recording, backup of data can be scheduled as well.

- **Digitalized Video Search**
  Recorded data features digital playback for each camera simultaneously or one at a time.   Playback features include advanced search features and image extracting, which allows portions of existing video to be extracted and saved as a separate file.

- **Network Support (PSTN, TCP/IP, LAN , Modem Protocol Support)**
  DVR supports network access, which allows administrators to login to DVR main and remotely access all the features provided locally.

▪ **Integration with Text data from External Devices**
Data from external devices (POS, Access Control, ATM, etc) can be recorded with DVR video images. Text Search allows to search data from external devices with DVR video image when event occurs. This will raise the level of integrity and security.

Feature	Specification	
	Commercial / Industrial	Hardware MPEG
Camera Input	1~32Port(NTSC/PAL)	1~32Port(NTSC/PAL)
Sound Input	1, 2, 4, 16 Port	4, 16, 32 Port
Sensor Input	1~16 Port	4, 16, 32 Port
Relay Output	1~4 Port	1~8 Port
Composite Output	1 Port (NTSC/PAL, Split or Switching)	1~2Port (NTSC/PAL, Switching)
Image Format	S/W MPEG-4	H/W MPEG-4
Recording Mode	Monitor, Normal, Motion Detection, Sensor, Scheduled Recording	
Remote Control	Full remote control PSTN, ISDN,ADSL, LAN and TCP/IP	
Back-up	DAT, CD, DVD	
PAN/TILT/ZOOM/FOCUS	RS-232/422/485 Interface	

2. Installation Notes

Important Safeguards and Warnings

1 . Electrical safety

All installation and operation here should conform to local electrical safety codes.
We assume no liability or responsibility for all the fires or electrical shock caused by improper handling or installation.

2 . Transportation security

Heavy stress, violent vibration or liquid contaminations are not allowed during transportation, storage and installation.

3 . Installation

Keep upwards. Handle with care.
Do not apply power to the DVR before completing installation.
Do not place objects on the DVR. Allow ample space in the back for Air flow

4 . Watchnet authorized service

All the examination and repair work should be done by the qualified service engineers. We are not liable for any problems caused by neither unauthorized modifications nor attempted repair.

5 . Environment

The DVR should be installed in a cool, dry place away from direct sunlight, flammable, explosive substances and etc.

6 . Accessories

Before installation, please open the package and check all the components listed below:
● One power cable
● Alarm & relay terminal blocks
● Extensional cable for audio,
● One Keyboard
● One USB mouse
● One CD (including DVR manual)
● One System Restore CD (Fixed on DVR)
● Windows License sticker in the back of the DVR
● User manual
Contact your local retailer ASAP if something is missing in the package.
Be sure to only use recommended accessories by manufacturer.
Note: Any changes made to this manual to the actual products are subject to no further notification.

3. Driver Installation
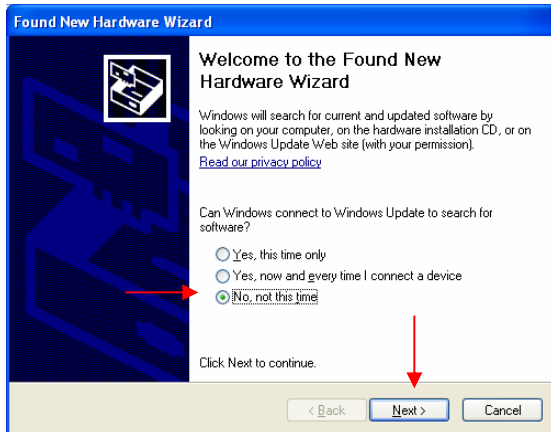
When the Windows New Hardware wizard finds the capture card and asks for drivers Choose option NO and cancel the wizard. This may happen several times depend on the card you installed.

Click on drive to where the auto install CD is located or Open Driver folder in CD-Rom and run "Installer.exe".
Driver installation wizard will automatically find the capture card in the system and will install the required drivers. DVR will restart after this process.
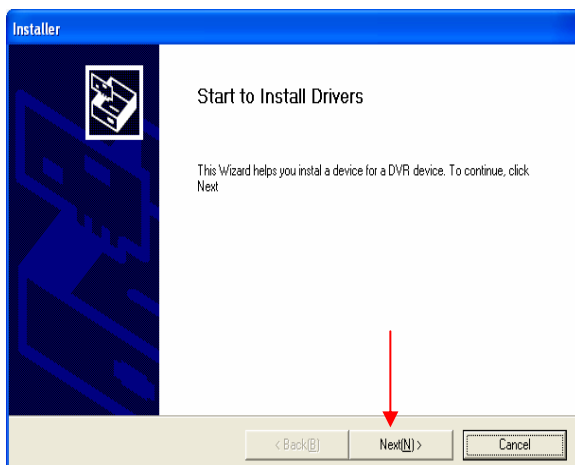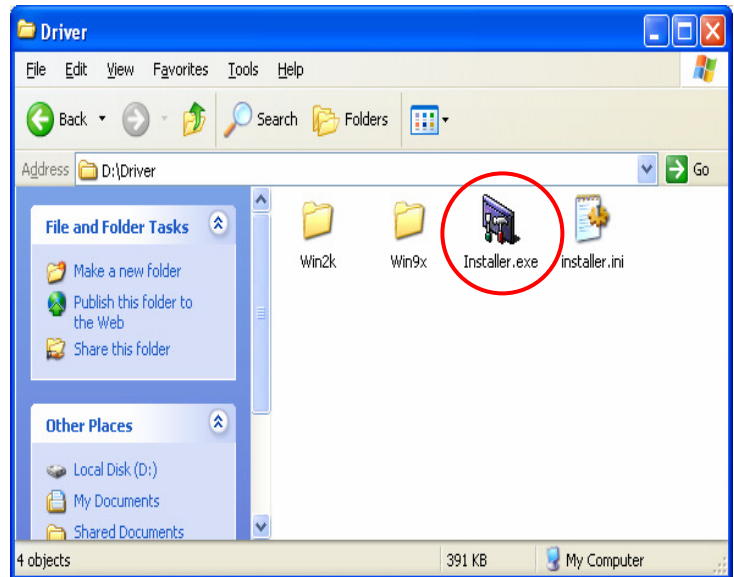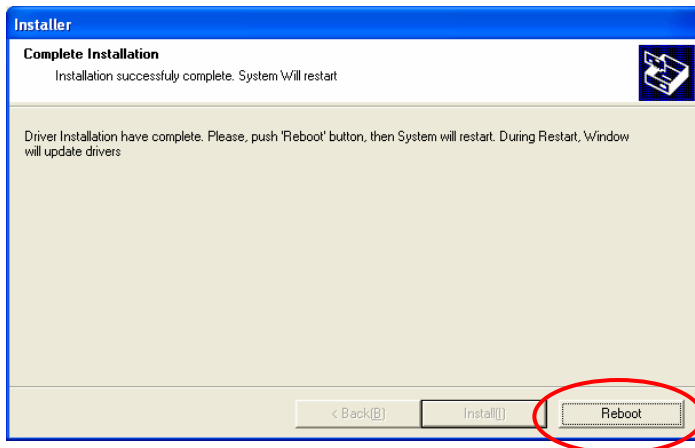

Click "Next".
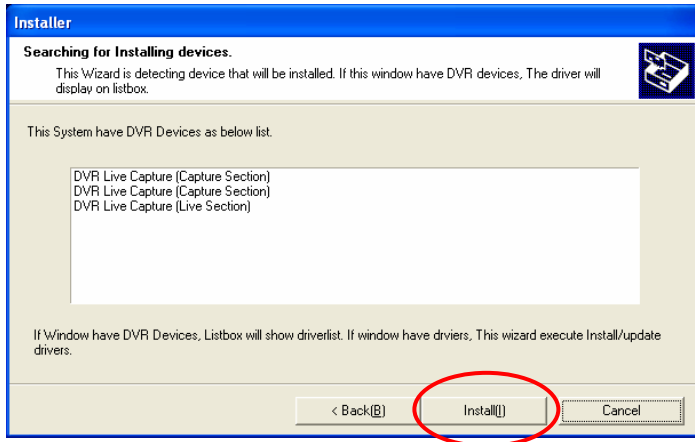
Following is a chart of device list. (Depending on model, different device(s) will be displayed)

Model	Device List
Software Compression series	Viewgate Capture
H.264 Series	Viewgate Live Capture
ACAP series	Viewgate A Capture Device
MPG series	Viewgate MPEG 4
MPEG MX series	Viewgate MPEG MX

Click "Install".

The above picture shows up when installation is completed. Click "Reboot" to restart the system. It is required to reboot the system to complete installation of drivers.

4. Program Installation

Run "Setup.exe".
(Choose the language for the software to be installed.)
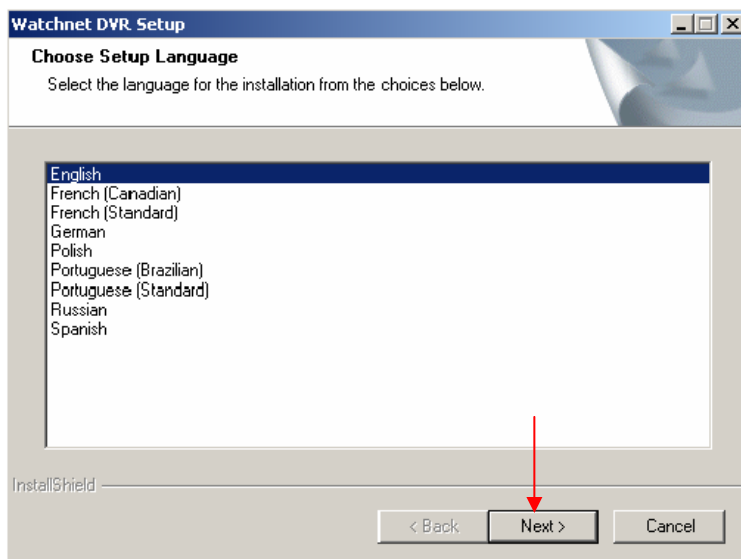
Click "Next".
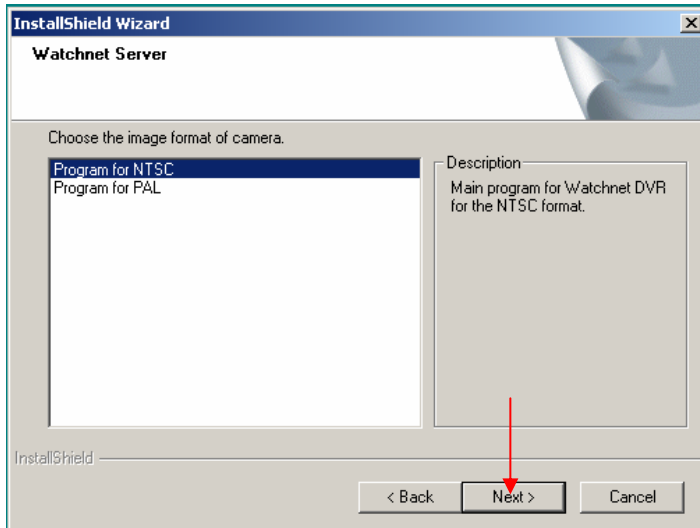
Choose the proper media format (NTSC North America or PAL Europe) and continue by clicking "Next."
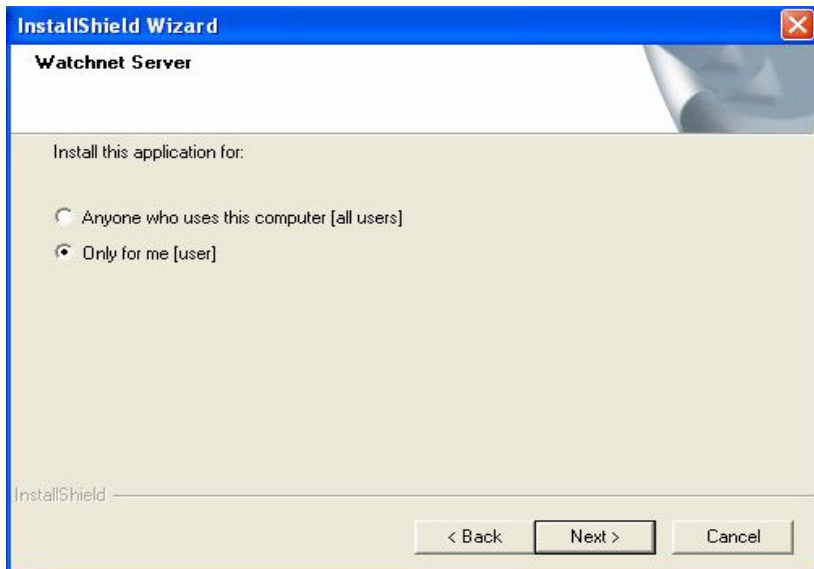
Anyone who uses this computer [all users] : Allows all administrator user accounts to use the DVR software if there are multiple user accounts available on the system – it is not accessible through limited user accounts.

Only for me[User Account Name] : Only current user account can use the DVR software.
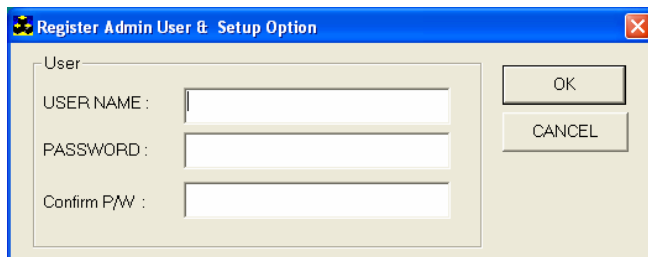
- **USER NAME**: Make Admin user name.
- **PASSWORD**: Make admin password.
- **Confirm P/W**: Confirm the password.

Note: Once the Admin user is created, it cannot be modified from User Admin Setup. To change user name or password for Admin user please refer to Appendix 1.DVR Management. Once the setup of the software has been completed, the system has to be restarted to allow the settings to take effect.

Setup will install a Program group into the Windows Start menu for easy access to the various DVR programs.
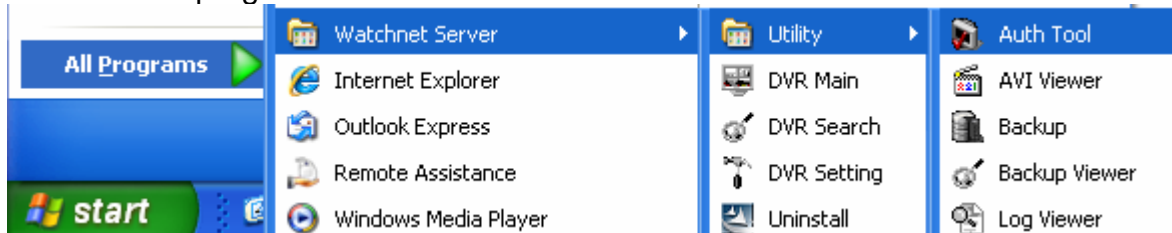
> **DVR Main:** Main Program
>
> **DVR Search:** Data Search Program
>
> **DVR Setting:** Setting Program

• **Utility**

> **Auth Tool:** Is used to verify the originality of a snapshot taken from the DVR.
>
> **AVI Viewer:** Viewer for saved video file in MP4 format.
>
> **Backup:** Data backup program.
>
> **Backup Viewer:** Allows viewing of data that has been stored as backup.
>
> **Log Viewer:** Log data viewer program.

Watchnet DVR requires to Login with the right username and password to enter SETUP, SEARCH or to Shutdown the DVR system.
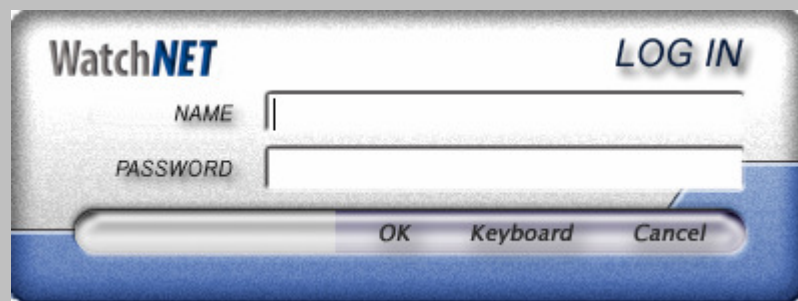
5. Configuration

DVR Setting
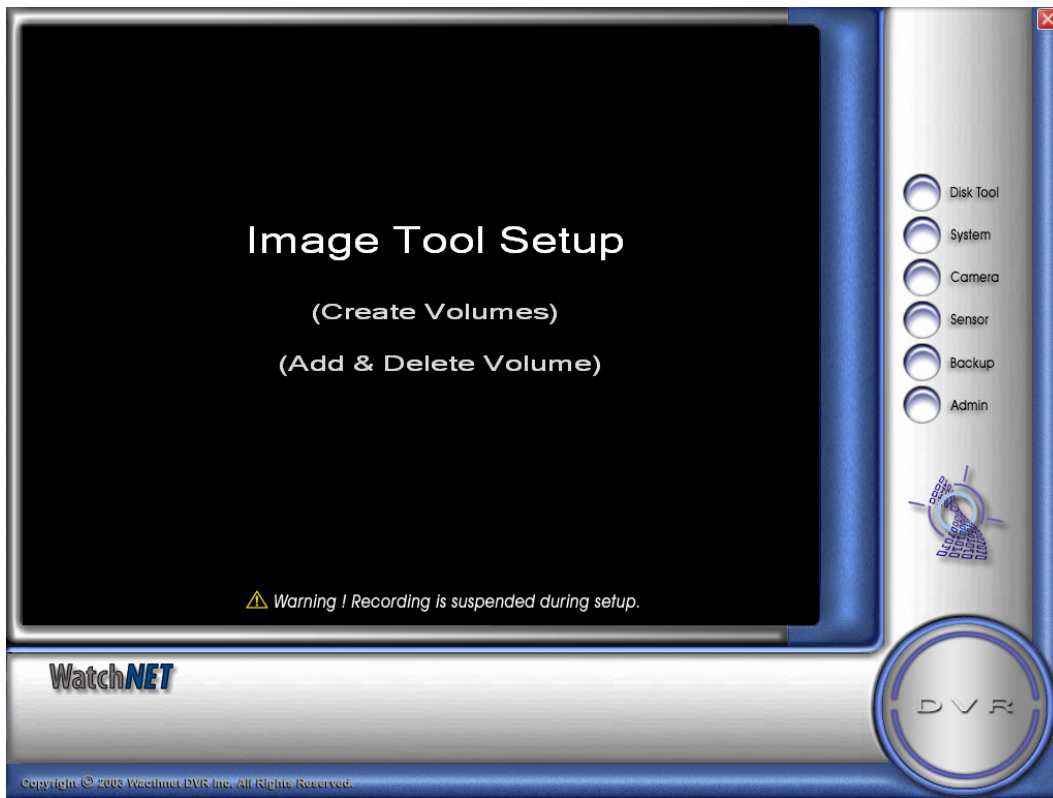
• **Disk tool:** Creates the DVR DB file system. DVR will create its own file system to store large amounts of DVR data safely in its own dedicated disk space.

        Notice: DVR Main Program must be turned off prior to any database change.

• **System:** Sets system related settings, including network connection options, initial set of screen, sounds, automatic rebooting, etc.

• **Camera:** Sets up the cameras, recording schedule, motion detection, etc.

• **Sensor:** Sets up the sensors and link options.

• **Backup:** Sets up the automatic and manual backup.

• **Admin:** Sets up and manages authorized users.

5.1. Disk Tool

- **Total volume:** Total created volume numbers (volume).
- **Current volume:** Current volume number where data is being saved.
- **Total:** Total Disk space (MB).
- **Used Disk:** Total physical space already used (MB).
- **Usable Disk:** physical space still available in the logical drive (MB).
- **Max Volume:** Number of volumes available in the selected drive (volume).
- **Used Volume:** Number of volumes dedicated to DVR recordings (volume).
- **Add Volume:** Temporarily adds more dedicated space to DVR recordings – will not be finalized until "Create Volume" is clicked (volume).
- **Delete Volume:** Deletes all the database volume in selected driver.
- **Clear Volume:** Deletes all stored data in all drivers dedicated to DVR recordings.
- **Create Volume:** Creates the number of volumes specified in "Add Volume."

Note: In order to properly add more volumes to the DVR system, be sure to check that the number of volumes to be added has been stored in the right hand column of the bottom table under "Add Volume." If so, finalize the added volume by clicking "Create Volume."

What is a Volume? Volume is the unit used by the DVR Database system.
1 volume is equivalent to 65MB of physical HD space. All image data is recorded in volume units. When assigned Volumes are full, the program will continue recording by overwriting volumes that contain the oldest previously recorded data. It is recommended that important data be backed up prior to the start of the overwriting process.

5.2. User Admin

• **Username:** User name.

• **Password:** Password.

• **Confirm password:** Confirms the password.

• **Default user:** "Default user" will be assumed by the program to be using the DVR main whenever it is loaded.

• **Security level:** Set the type of security level for each user.

• **Authority:** Adjust detail authorities for each user.

• **Use Windows Key:** enables Window key and Ctrl+Alt+Delete on the Keyboard if selected.

• **Notify Login:** Set duration of login time for a user when the user (triggered by event notification) connects to the DVR by remote-client.

- **To create** a new user, click on an empty row on the user list, assign username and password, adjust Security Level and Authority, and click "Add" button to finish the registration.

- **To modify** an existing user, select a user from the user list, change desired option(s), and click "Modify" to apply change(s).

- **To delete** a user, select the user in the list first and then click "Delete."

All changes will be finally applied only if "Apply" or "Save & Close" button is clicked.

Note: Top Admin User cannot be modified or deleted from this section. Please refer to the page 52, Appendix 1.DVR Management.

5.3. System

• **Site Information**
  - **Site Name:** System name that uniquely identifies the computer (used to send email.)
  -    **Site Location:** Name of the location where the DVR is located

• **DVR Configuration Backup and Restore**
     Backup all Settings of the DVR for records and Restore to Original settings once the program have to reinstalled.

• **Screen:** Initial setting for main program.
- **Initial screen:** Number of camera view that will be displayed when system is started.
- **Normal**, **Large, Full:** Size of the screen size displayed when system is started.
- **TV-out auto switching interval:** The amount of time each camera shot will be displayed intermittently through the Composite-Out port.
- **Normal:** Displays the current camera view of the monitor.
- **1 View:** Sequential switching of each camera.
- **4 View:** Sequential switching of 4 cameras.
    o (CAP and MPG series only support single channel switching.)
    o Watchnet MX boards do not support this feature since they output the same screen that is displayed on the monitor.
- **PC Screen auto switching interval:** It sets the time between one split screen view and the next, only when the auto switching button function is activated

• **Auxiliary Functions**
- **Sound recording:** Select to record images with sound.
   - Press "Properties" button to set sound configurations.

- Systems with MPG, MPGAMX boards do not have "Select Channel" option available, and it will be configured as 8 channel or 16 channel depending on the number of active of cameras
- If there are two sound cards available in the system, 4 Channel option will become available, and two sound devices can be selected if 4 Channel is selected. (Top Device corresponds to Audio 1 and 2, and bottom one corresponds to Audio 3 and 4.)   Select "Input Device" in case that there are multiple selections available on the device list due to the nature of the sound card.   In order to store 16 Channel Audio, a separately provided audio card is needed

- Select Channel: Select from 1, 2, 4, 16 Channels.
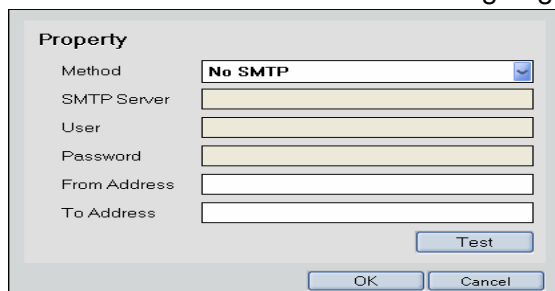- Enable Channels in the camera settings for sound recordings
Notes: 1. The system requires Direct X 8.0 or higher for sound recording.
        2. In order to have more than one channel sound recording for one installed sound card, use the included audio cable and insert it into the sound card's "Line In" port.   Must use amplified microphones in each audio cable input
        3. Sound communication with remote client is available 1 channel at a time.

• **Use e-mail:** Select this function to receive email notifications from the system
Method - No SMTP: Find outgoing mail server (SMTP) automatically.
- SMTP/No Login: Use this option if you mail server is SMTP Server without Login process.
- SMTP/Login/No RSA: Use SMTP server login without RSA encryption on ID/Password
- SMTP/Login/RSA: Use SMTP server login with RSA encryption on ID/Password
- SMTP/Login/RSA/MD5: Use SMTP server login with RSA encryption and MD5 (Message Digest 5 algorithm) on ID/Password
- SMTP Server: Enter SMTP Server address.
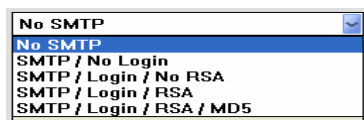
- **User:** Enter SMTP Server login User.
- **Password:** Enter SMTP Server login Password.
- **From Address**: The designated email address of the system.
- **To Address:** The email addresses of the people who will receive email notifications from the system. Multiple email address can be assigned, separated by ';', limited up to 50 characters.
- **Test:** Test the email by sending a test email.

• **Warning on disk full:** Select this feature to receive popup warnings when disk is full.

Warning at value:
- **Last volume:** Warning on the last volume of database.
- **Specify the used percent:** the system will send a warning when it reaches x percent, x being 90 ~ 99%.
Warning at disk:
- **Total disk:** Displays warning based on total disk space.
- **Current disk:** Displays warning based on current disk space.
Warning at a term: Setting up a warning at scheduled time and date.
- **Start date:** The date in which the warning countdown begins
- **Warning time:** The hour in which to issue the warning (military time)
  Saving duration (days): The duration of the countdown (in days)
Saving options on warning
- **Save on warning:** Keep recording regardless of warning message. (Once database is full, it will start to overwrite from the first volume.)
- **No save on warning:** Stop recording on warning message
- **Filled Disk:** Configure event when message shows up. (Refer to 5.7. Event setup)
- **Warning on disk fail:** Select to display a warning message if any problem occurs while writing data on disk. Press "Properties" to set up.
- **Warning message popup:** displays a message box when it cannot write data on disk.
- **Disk fail event:** triggers an event when the system cannot write data on disk. (Refer to 5-7. Event Setting)

• **Allow remote connections:** Allow users to log into the system from a remote location through the network characters. It is required to use IP Server.
- **Bandwidth Control:** Adjust bandwidth depending on the
- **Connection type:** It is recommended to reduce the bandwidth in order to increase the transmission speed. However, the image quality will be lower. This control is not available on MPG, MPGAMX series boards.
- **Remote notification of events:** Enable and assign remote client information to be notified. The system is capable of sending a warning message to the remote client when motion or sensor is detected. The remote client is notified through sound, and it will popup if running and minimized. In order to notify the remote client, make sure to configure the IP address or Code in "IP / Code".
- **Method:** Select between TCP/IP and Server (when using IP Server)
- **IP / Code:** Give IP address or Code (IP server) of remote client to send Notification.
- **Use IP Server:** In case of using IP server, check the box. Since IP Server uses Code to identify DVR system rather than its IP address, it is possible to connect DVR system with dynamic IP address. (Code name must be unique for each DVR system)

- **IP Server:** IP address of system in which IP Server program is running. (Server must have static IP)
- **Notify interval:** Update DVR system's IP address to the IP server once in every interval period.
- **Prevent IP:** Blocks IP addresses registered on the block list.
- **Add, Delete, Modify:** Add the IP address entered on "IP Add" field, delete or modify the selected IP address of the list.

• **Internal program CD burn:** Use CD Burn Program in DVR Program (Windows XP required).

• **External program CD burn:** Click **"**Browse" button to choose external CD Burn Program (CD-RW). CD burning program will start once CD Burn button is selected in Search program.

• **Setting log off timeout:** This feature allows the administrator to set the amount of time available for each logged-in session.

• **Startup**
 - **Auto Startup:** Enable automatic startup of DVR upon system start.
 - **Properties**:

Use Auto Logon: Select to login automatically with a windows user account when the system starts up – used when there are multiple user accounts available on the system.
User Account Name: Select a user account which will be logged in automatically. (Only administrators can be selected, and you cannot login with other user account if you have selected "Only User" during installation process.)
User Account Password: Enter the password of the selected user account. Leave it blank if the account does not have a password.
Delay Time: Allows users to set delay time (second) for DVR Main startup. (Program startup initialization + Delay time)

• **Enable hardware watchdog (Auto recovery):** If enabled, the watchdog will reboot the entire system if it becomes unstable or encounters errors.

• **Schedule auto reboot of DVR:** If enabled, a scheduled reboot of the entire system will automatically be set.

- Click "Properties" to set the date and time (military time). This reboot is independent from the watchdog functionality.

Note: "Auto Startup" option must be enabled in order to run DVR Main automatically once system has been rebooted.

• **Startup Event Notify:** If enabled, email notification will be sent out upon the start of the software. Using reserved parameters, it is possible to send starting time ("$$2") and assigned IP address ("$$3"). Refer to the Chapter 5.7. Event Setup for details.

• **Log Write:** Record a Log file (Log can be viewed with Log Viewer in Utility.)

• **System log:** Time information of Main, Search, Setting start / end.

• **Sensor log:** Log for sensor detection.

• **Motion log:** Log for motion detection.

• **User log:** Log information of User login.

• **Loss log:** Log for Video Loss.

• **Disk log:** Log for last recorded time and disk full warning.

5.4. Camera
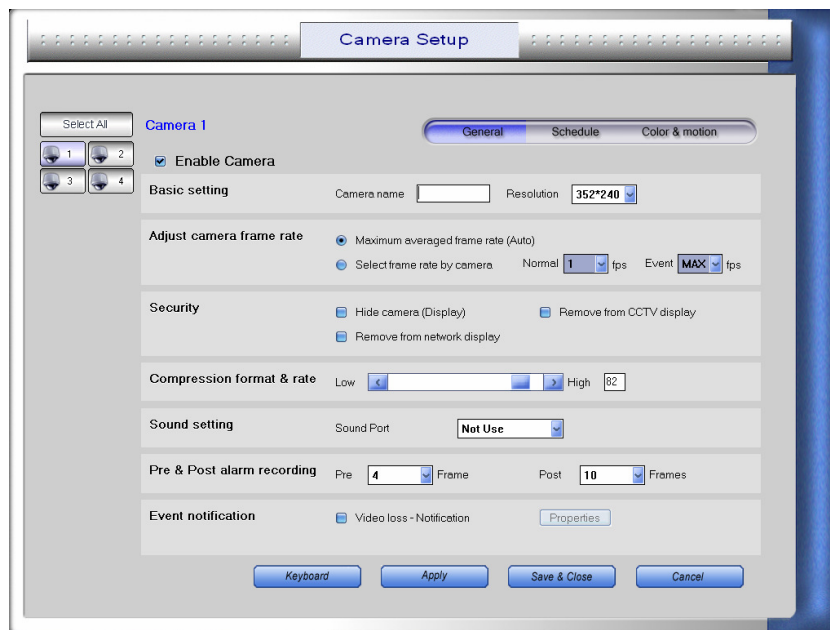
5.4.1. General

If selected, the settings selected in "General", "Schedule", "Color & Motion" will be applied to all the cameras.
If you would like to customize each camera uniquely, select a camera from the buttons on the left of the menu (1-16) FIRST, then modify the following options

• **Enable Camera:** Enables or disables camera. (Ch1 camera is always enabled.)

• **Basic setting**
  - **Camera name:** Assigns name of the camera. (Name will be displayed in Main screen.)
  - **Resolution:** Chooses the desired resolution for the camera. (Note: higher resolution size of the recording will lead to a slower frame rate.)

• **Adjust camera frame rate**
  - **Maximum averaged frame rate:** Sets the recording frame rate to the maximum available rate for each channel.
  - **Select frame rate by camera:** Allows manual setting of the frame rate per second.
    Normal: Frame rate when the camera is scheduled as normal.
    Event: Frame rate when the camera is scheduled as Motion or Sensor.
      If the camera is scheduled as Normal & Event, Normal frame rate will be applied without event, and Event frame rate will be applied when motion or sensor input is detected.

• **Security**
  - **Hide camera (Display):** The camera will not display its image on the monitor.
  - **Remove from CCTV display:** the selected camera will not be displayed on the CCTV during the auto-switch rotation. (For LIVCAP boards, this option may not take effect if "TV-out auto switching interval" is set to "Normal").
  - **Remove from network display:** Blocks from being displayed to remote connections

• **Compression format & rate:** Change compression rate. (Moving bar to the the left makes image file size smaller, but at the same time it lowers the quality of images)
  MX Boards - All camera channels will use the same Compression & Rate value.

Note: "Hide camera (Display)" also hides images from being displayed on TV-Out. "Remove from CCTV display" feature is not supported under MX Board.

• **Sound Setting:** Select the audio port to synchronize with the camera. "Sound recording" under System setup must be configured first. It is allowed to record same audio channel from multiple cameras.

• **Pre & Post alarm recording:** applies only if "Motion" or "Sensor" is selected in 'Scheduling' menu.
   Pre: Recording frame number prior to a Motion detection or Sensor trigger.
   Post: Recording frame number after a Motion detection or Sensor trigger.

• **Event notification**
   Video loss - Notification: Choose event for Video Loss. (Refer to 5.7. Event Setup)

• Click "Apply" or "Save & Close" to save and apply changed setting.

What's a Frame? Frame is One still image.

5.4.2. Scheduling

Select the desired time (**by hour and days-of-the-week)** in which to record images by the camera.

• **Recording schedule**
Normal: Records all images captured by the camera.
Sensor: Records images only when the sensor is triggered.
Motion: Records images only when a set degree of movement is detected on the camera
Display: Does not record images; only displays the images without recording.
Sensor & Motion: Records images when the sensor is triggered and/or motion is detected.
Normal & Event: Records at Event frame rate at "Select frame rate by camera" under General tab,
when an event is triggered. Otherwise records images at Normal frame rate

• **Schedule for Holidays**

- Allows users to apply different recording schedule on certain days – such as holidays.

• **Notify schedule**
   On this menu, schedule appropriate times in which the system should send remote notifications.
   - Notify: Press "Notify" and set up the desired time and day-of-the-week.

   << Example >>
   - **Recording Schedule and Notify Schedule of cameras:**
       Saturday and Sunday - 24Hrs Motion and Notify
       Mon to Friday - 9am to 5pm Normal without Notify – 5pm to 9am Motion and Notify
   - **To color the grid click on the camera number on the left, select the color coded recording mode click and drag the mouse in the grid.**
   - **Click the "Select All" buttons from the left to apply the same settings to all cameras.**

5.4.3. Color & Motion
This menu allows the user to control the color of the recorded images, modify motion detection settings and set up the relay outputs (sirens, locks, etc.) for the system.

- • **Detection area setting**
  - - **Whole area:** Detect motion at the whole area.
  - - **Partial area:** Click "Add", and select specific area(s) to detect motion. Up to 10 partial area selectable and delete them all by "Delete All".
  - - **Display detected area:** If selected, any region with motion will show a group of red grid. It may be used to test motion sensitivity.

- • **Video Mask setting**
  Press "Add" button, and select an area on the camera screen to mask on display.
  - - **Use image erase**: Select to erase masked areas on recorded images.
    (This feature is not available on MPG & MX Boards)

- • **Event notify method**
  Detective motion - Notification: Setup event of video loss. (Refer to 5.7. Event Setup)

- • **Color Control**
  - - **Brightness:** Brightness
  - - **Contrast:** Contrast
  - - **Saturation:** Saturation
  - - **Hue:** Hue
  - - **Default Value:** Set to default value.

- • **Motion setting**
  To receive desired optimal motion detection, configure the following options.
  - - **Sensitivity adjustment:** Adjusts the level of color difference detection between the foreground and background.
  - - **Rate of motion:** Adjusts the rate of motion detected by the camera – if the number is higher, the camera will be able to pick up slower moving objects better.

• Pan/Tilt Camera Method

- **Use pan/tilt camera:** Check this box when using PTZ. Click properties to get the PTZ settings
- **PTZ CAMERA SETTINGS**

PTZ Camera: Choose the make and model of the camera.
PTZ_ID: Choose ID (address) of PTZ camera.
Connect Setting: Selects the serial port that the camera uses to connect to the computer. Refer to camera manufacturer's documentation to set these values.
Speed: P/T-Pan/Tilt speed, F/Z-Focus/Zoom speed, A.P-Auto pan speed (Depending on PTZ camera Speed might not be adjustable.)

- **Test**: Test PTZ camera.

RECEIVER: Choose PTZ camera
PTZ ID: Choose ID of PTZ camera
MANUAL SETTING: Selects the serial port that the camera uses to connect to the computer. Refer to camera manufacturer's documentation to set these values.
OPEN: Open the connection to take control of PTZ camera.
ARROW, FOCUS, ZOOM, AP, SPEED: Test each function.
A1, A2, A3: Test Extra feature of the PTZ camera. (Depending on protocol it might not function.)
MENU: Bring the PTZ camera menu (Depending on protocol it might not function.)
TOUR: Tour the preset of camera.
0~9: Preset numbers (Combination of 2 digit, 1~99). Move camera to each preset position.
DELETE: Delete position of PRESET Number.

PRESET: Setup of waypoints can be done by doing the following:
1. Select a preset number to setup and click "Preset".
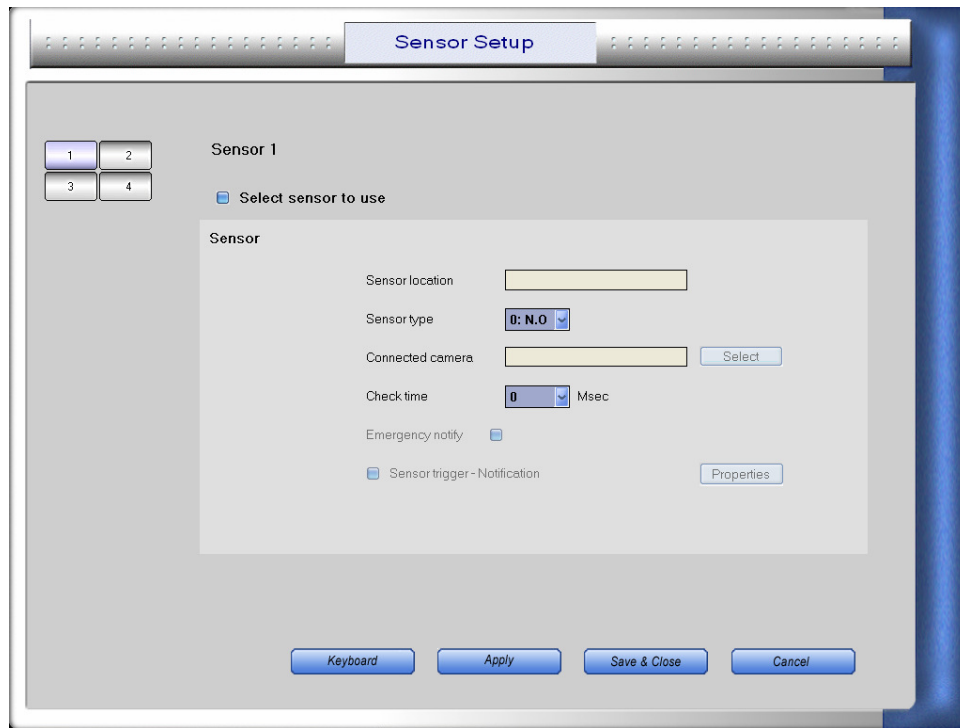2. Move the camera view to a desired location.
3. Click "Preset" again to finish.

SCAN: Only available with camera that supports Auto Pan function.
   START-Press START from the beginning position.
   STOP-Press STOP at the ending position.
SEND: Manually give Hex value and send it to the camera.

5.5. Sensor

• **Select sensors to use:** Enable or disable a selected sensor.
• **Sensor location:** Description of the place where the sensor is currently located.
• **Sensor type:** Select the type of sensor being used.
• **Connected camera:** Assigns a camera that will record when the selected sensor is triggered.
• **Check time:** Amount of recovery time allocated to a sensor if triggered.
• **Emergency notify:** If "Remote Notification of Events" was selected in "System" setup, an email notification will be sent to the designated addresses when the selected sensor is triggered.
• **Sensor trigger - Notification:** Choose event for sensor detection (Refer to 5.7. Event Setup)

5.6. Backup
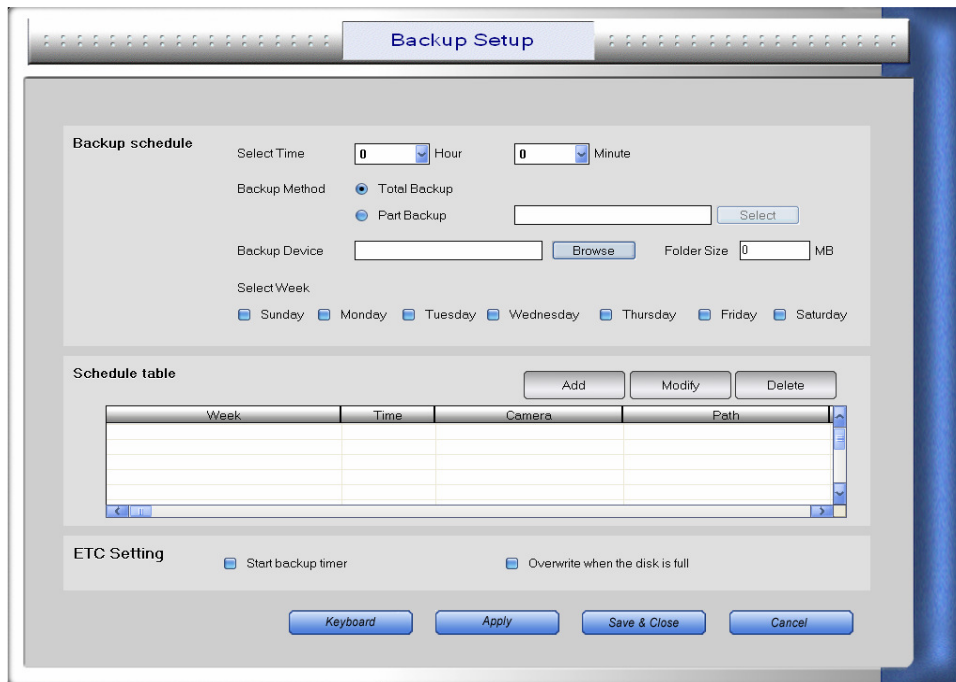
Recorded images can be backed up automatically if a backup schedule is set. After completion of automatic backup scheduling, "Backup.exe" must be initiated. The automatic backup will not take effect if "Backup.exe" is closed or processing is interrupted by user.

• **Backup Schedule**
 - **Select Week:** Select day of a week to start the backup.
 - **Select Time:** Select time of a day to start the backup.
 - **Backup Method**
   Total Backup: Backup based on Volume File (Backup all operating cameras).
   Part Backup: Backup based on data index. (Backup selected cameras).
   Select: Choose cameras to backup from Camera 1~16(32).
   Note: Total Backup is much faster than Part Backup. **(Total Backup is recommended to use)**
 - **Backup Device:** Choose the data path for backup data.
 - **Folder Size:** assign the size of each folder for backup data. Backup data will be stored into separated folder(s), which is automatically created with assigned size value.

• **Schedule table**
 - **Add:** Add new schedule in the list.
 - **Modify:** After any changes applied to existing schedule click "Modify".
 - **Delete:** Delete selected backup schedule.

• **ETC Setting**

- **Start backup timer:** Automatically initiate "backup.exe" upon the system restarts. The backup program icon will be placed at the system tray if initiated.

Note: For Automatic timer to start the DVR should be restarted.

- **Overwrite when the disk is full:** During automatic backup, assigned backup device will get overwritten if it is full. (Overwrite starts from the oldest backup data.)

Backup always starts from the end of the last backup session. (First time Backup will start from the very beginning of recorded data)

<< Example >>

1) **Backup (automatic) at 20:00 every day**
   - Data will be backed up at 20:00 each day until data for the day has been completely backed up.

2) **Backup at 20:00 every Saturday**
   - Data will be backed up at 20:00 each Saturday until data for that week has been completely backed up.

5.7. Event Setup

Depending on events, different action can be configured and take place.
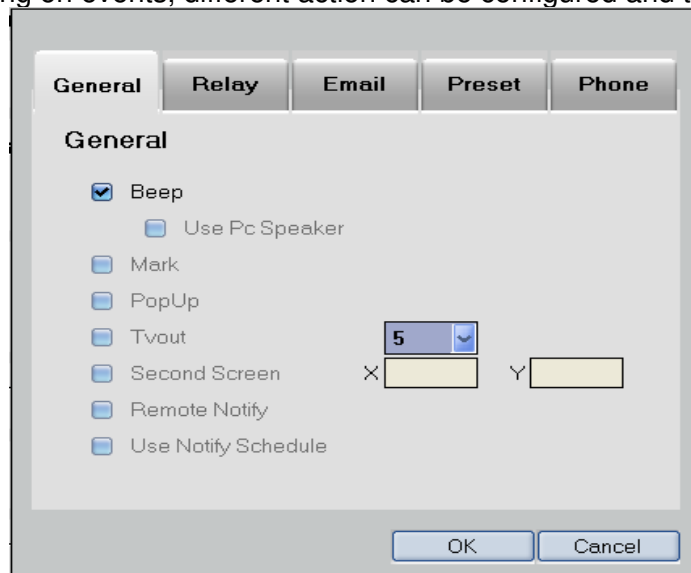
• **Beep:** Play Beep on sound card.
- Use PC Speaker: Play Beep on PC speaker (Sound card is not required)
• **Mark:** Display Red dot on camera screen.
• **Popup:** Display 1 view Popup in the Main.
• **TV-out:** Display the camera through Composite out for selected time period (in seconds)
• **Second Screen:** If system has second monitor, display popup on the selected coordinate of the second monitor.
• **Remote Notify:** Notify to the Net program (remote client).
• **Use Notify Schedule:** Use notify schedule (Camera – Schedule – Notify schedule).

• **RELAY:**
- **Relay:** Output 1~4 Relay for desired Latch time (seconds).
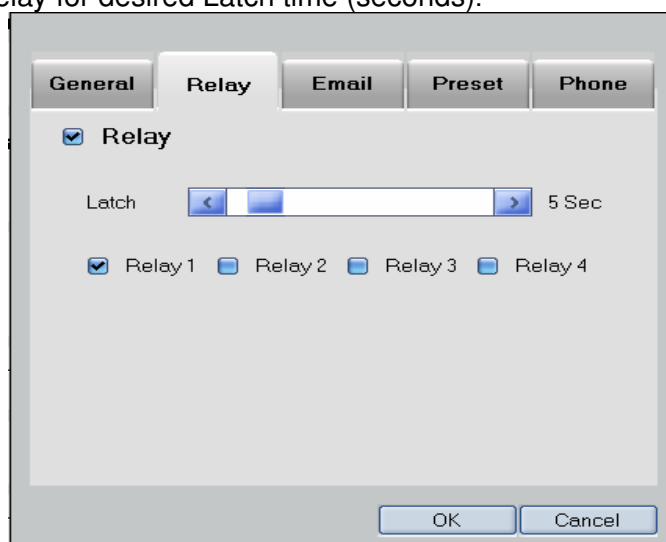
• **E-mail:**
  - **Send an E-mail:** (In System setting, "Use e-mail" must be enabled and configured.)
  - **Subject:** subject of email
  - **Content:** E-mail content
  - **Attach Image:** Attach video image.
  - **Interval:** Email will be sent once for every selected time interval.

Note: This table will help complete the Subject and Content fields.

Reserved word	Contents
$$0	Camera No.
$$1	Events
$$2	Time
$$3	IP address

<<Example>>
Subject: "At $$2, $$1 triggered at number $$0 camera.
Subject: "At 01-18-2005 19:10:12, Motion triggered at number 3 camera.

• PRESET

- **Preset:** If selected sensor is tripped, this feature allows the selected camera to focus into the selected
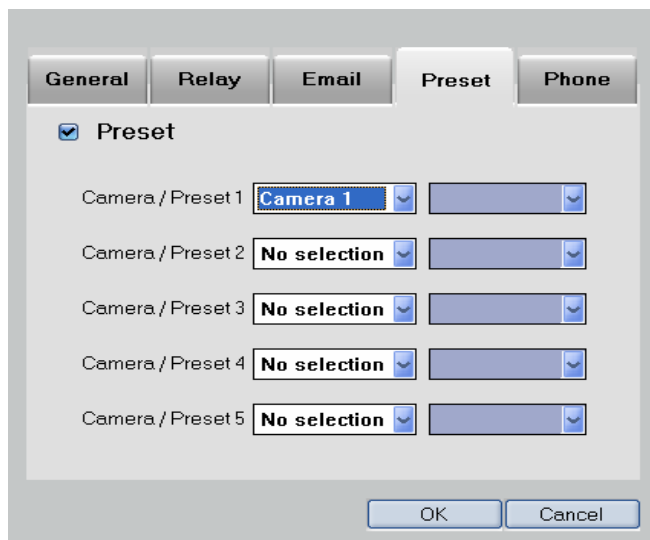
• TELEPHONE NOTIFICATION

- **Phone Call:** When event occurs makes phone call and plays sound file (.wav) (**Voice Modem required**)
- **Number 1, 2, 3:** Enter up to 3 phone numbers. If first number doesn't work it will try next phone number and retry 3rd number if that doesn't work either.
- **Wave:** Select sound file (.wav). (Browse: select file, Play: play sound file)
- **Play Time:** Play the sound file for selected time.
- **Interval:** Make call once for every selected time interval.

Note: WAV file must be in form of PCM, 16 Bit, 8 KHz, Mono.
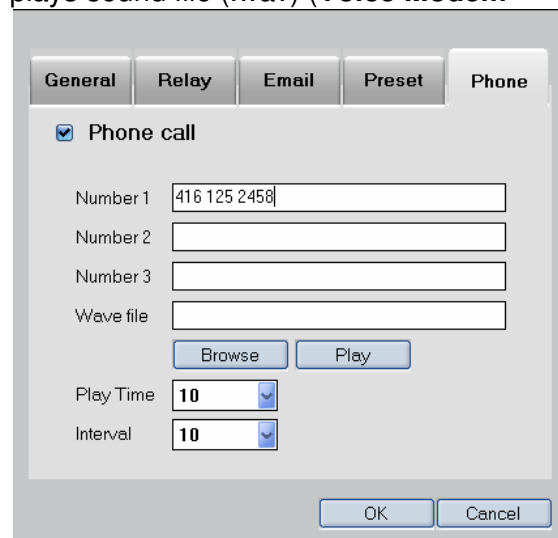
• Making Wav File for transmission
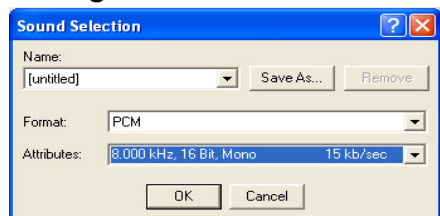
Select sound recorder from Windows: File → Properties → Convert Now → Attributes
Choose PCM, 8.000 KHz, 16 Bit, Mono and start recording.

6. Main

IMPORTANT: Image database must be setup before starting the DVR application.

    : Allows searching a recorded image instantly up to 30, 60 or 120 seconds

    : Spot Record will bypass all schedules and start record on all cameras.

    : Enter DVR settings

    : Enter DVR search for recorded images

Listen: to the sound while you are recording sound.

1 View: View only one camera on the screen.

4 View: View four cameras on the screen.

6 View: View six cameras on the screen.

9 View: View nine cameras on the screen.

10 View: View ten cameras on the screen.

16 View: View sixteen cameras on the screen.

Rotate: Put the next set of cameras on the screen.

Auto Rotate: The cameras automatically switching.

Large Screen: Put camera(s) on full screen.

NOTE:

F5 enlarges the screen, same as Enlarge screen button above.

Pressing F6 under enlarged screen will lead to full screen view, without displaying any controls.

F5

F6

• **Camera Indicator**

: The Camera Indicator blue buttons indicate the cameras are connected. And the red numbers shows the cameras currently being viewed on screen. In case of video loss on the camera the buttons will flash to red and blue. On a Single camera view, click on the desired button to select a different camera.

Relay 1 2 3 4 5 6 7 8

Each of the eight **Relay Output** will manually activate or deactivate sensors coming in to the DVR system. Note that the only card that utilizes all eight relays is the 48016ML. All other cards utilize four.

When **network connection** is made this image pops up. Move cursor over the image and IP address of net client will be displayed.

Indicates **backup** is being done.

Shows current **software version** and number of channels available.

: These indicate the total number of used volumes and the number of volumes allocated and the current drive being used. Number of days currently recorded data is displayed at the top.

Exit: This exits the DVR program.
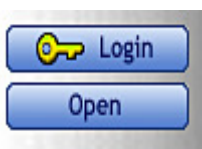
Login to DVR requires a valid username and password.

Open the PTZ control panel

Fine tune the Picture

Open the PTZ controls.

• **PTZ controls:** Moves the camera, Focus. Zoom and Control camera menu
    Power1 activates the camera menu,
    Power2 is enter/select for the camera,
    Power3 is pattern (This is set for Videon-D Protocol).
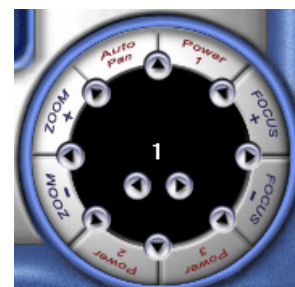
Control Preset, Tour, P/T Speed of PTZ camera.

(By clicking "Preset" button, the control box appears).

Note: Pan/Tilt controls may not be active, subject to the type of camera. If proper camera is used, "Pan/Tilt Camera Method" section, in section 5-4-3, must be configured to activate the control. Setting preset locations is also referenced in section 5-4-3.

COLOR CONTROL: This menu adjusts the various camera color display settings. Clicking the "Default" button will return the color settings to their default values.

7. Search

The current date appears on the top right corner of the screen and the dates with which has recorded data is highlighted in **RED**. Click on the date to be searched. The numbers and the bars on the lower part of the screen indicate hours and minutes of recording and the total numbers of Volumes used are shown as colored squares that corresponds to the settings in the schedule

• **Click on a square to show pictures and begin searching.**
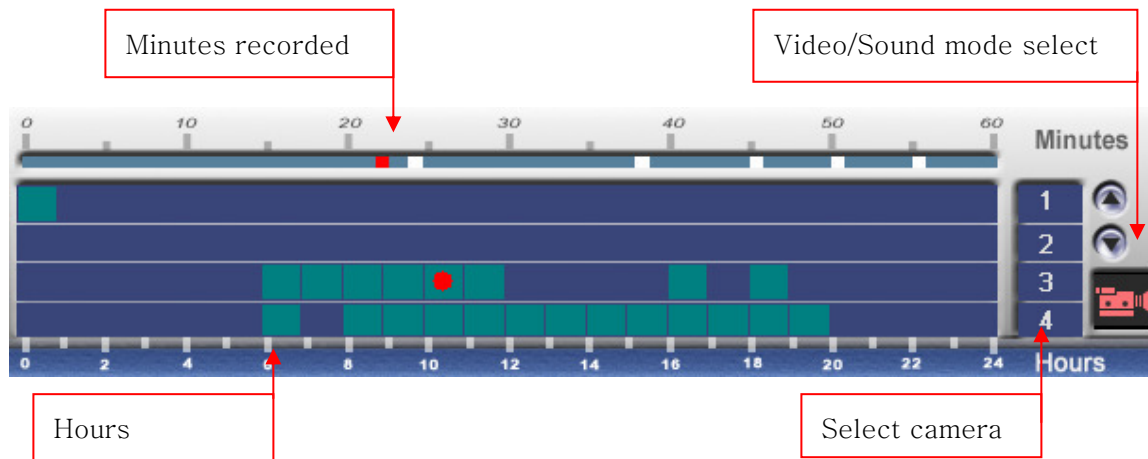
 Turns on the **Captions/time information** or hides it for the video.

• **Multi Camera Search:**

Choose the search pattern by selecting the images single or multiple

From x1 to x16. On a single search it is possible to enlarge and shrink the images and it is faster than multiple searches. For multi camera search choose X4 to X16 the search will be slower because the DVR have to search frame by frame through all pictures. To search channels 17-32 (32Ch Cards/Systems), double click on the x16 icon.

When you double click on a Camera you are in single-search mode. In this view by clicking on the following buttons, allow you to resize the screen size.

• **Select camera search**

Double-click on the x4 or x9 view you will be able to go from multi-search to single-search on desired camera image. As shown in the following pictures below, you can change the order on how you view the cameras. To bring back the default cameras click on "**Reset"**
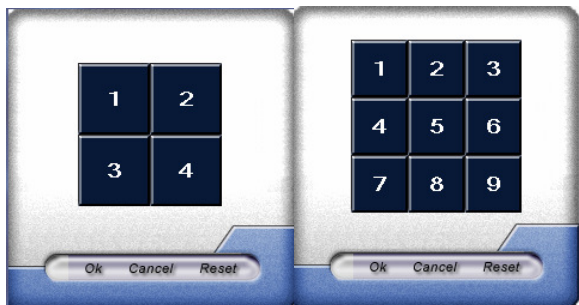
• Zoom Search

Supports up to 3X Digital zoom

Right click the mouse button to zoom in to a selected area of the picture. And left click the mouse to zoom out.

Scroll through cameras with the use of these arrows.

The camera icon indicates camera mode. Clicking the icon will toggle to sound mode searching for sound data is performed in the same way as searching for image data.

You can **Book Mark** sections of the video while searching by clicking on this button

List Opens a **list** of the entire book marked sections.

No	Camera	Date & Time

Goto   Delete   Close

• **Go To:**

Goto This feature allows to search a specific time and date of recording by the camera any time without having to go through the normal search procedure.

Year/Month/Day
2005 12 23

Hour:Minute:Second
0 8 0

Camera
1

Goto   Close

Enter the date, time and camera to view and click search button and the DVR will bring the recorded picture on screen if available for the given date and time.

The calendar allows the user to choose the specific date in which to search through. If the calendar is not displayed, click the "Date" button to activate. Days with stored recorded data will be highlighted red.

Click Search to use the Search menus. Image Tool button opens the image tool menus.

The following controls will open at the bottom right of the screen when **Search** is clicked.
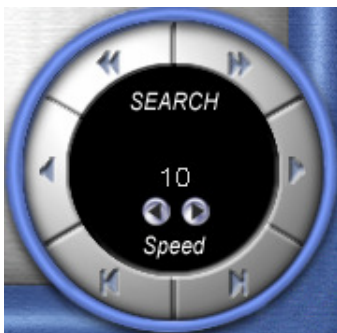
- The top two buttons shows the first image and the last image in the recorded video.
- The two buttons in the middle plays the video in reverse and in the forward direction. To stop the video click on the play button again.
- The two buttons at the bottom rewind the video and fast forward it.
- The number in the center shows the speed at which the program is looking through the video. The speed can be adjusted using the two arrows beside the number..

The following controls will open at the bottom right of the screen when **Image Tools** is clicked.

- The following tools can be used to adjust the image quality.
- **Sharpen**: Click to make the image fine.
- **Zoom I/O**: Click on button then select the area on the image And the program will zoom in to the selected area.
- **Soften**: Click to make the image dull.
- **Original**: Click to get the original image prior to editing.
- **B&W**: Click to make the image black and white.
- **Cancel**: Click to cancel the editing on the image and restore the original.

Click "Save picture" to save the current image. The image is watermarked.

Click the Print button to print image directly to a printer. The printer must be installed on the DVR and configured prior to printing.
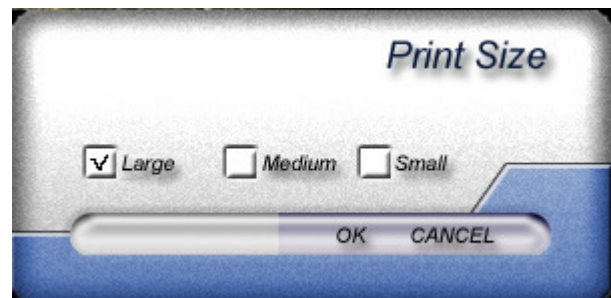
AVI Saving : **Save images as a movie clip.**
Make movie clips for desired cameras and time period.

AVI Format: Normal AVI (.avi) format file, which can be played with Windows Media Player.

MP4 Format: DVR AVI file (.mp4) format, which only can be viewed by DVR AVI Viewer.

MP4+EXE Format: Self executable DVR AVI file (.exe) format. (No Player needed)

Burning this files on the CD: If selected, executes CD Burn Program automatically after making image files. (Windows XP required)

* When saving in AVI Format, Audio data is not included.

Mode Select **Allows selection of different searching methods.**

The Methods are:

Common Search: This is regular search

Panorama Search: Divide 1 camera recording into 16 multi view mode by each frame and perform search.

Icon Search: Based on 1 camera, will show **24 hours** on all screens. Double click on the hours to get **10 minutes** screen, double click on again to get **1 minute** screens.

Smart Search

MISSING OBJECT SEARCH

Click on the Smart Search button and the following screen will appear.

.
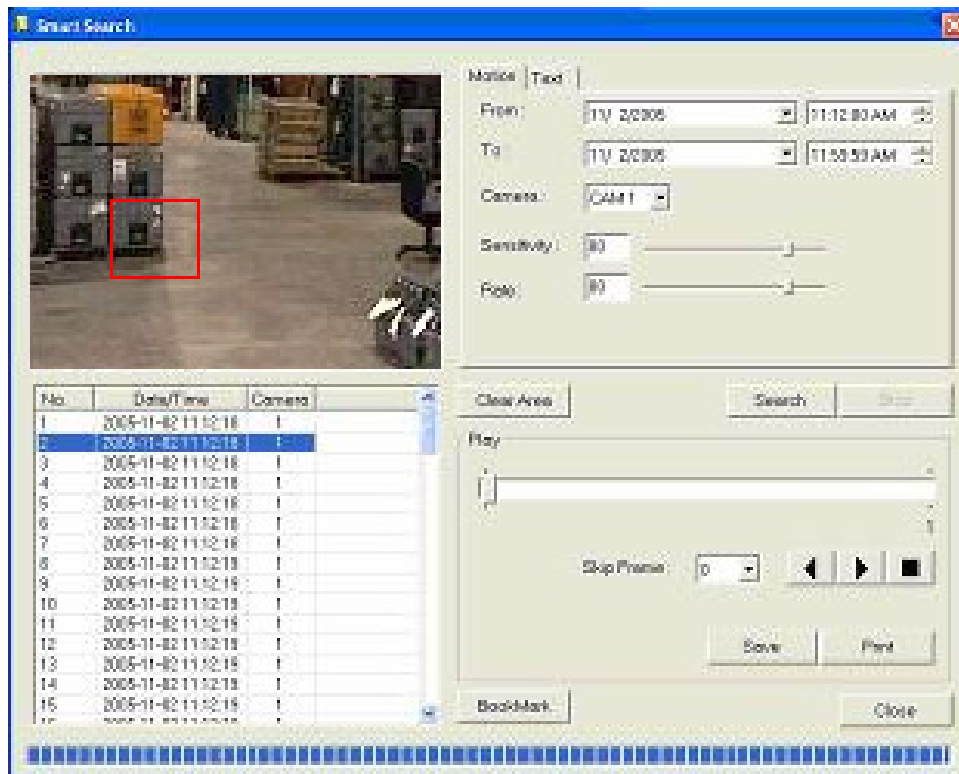
Follow these easy steps to do a "Smart Search":

1. Click on smart search button.
2. Left click the mouse button and drag on the picture to create one or more hot spots to be searched.
3. Select the time and date in the **From** and **To** fields for the search.
4. Select camera number to search.
5. Adjust both the **Sensitivity** and the **Rate** which sets the rate of motion to a desired level of movement recorded on picture to be searched. Click the search button to begin searching.
6. "Search Complete" message will appear on screen when the smart search function is completed.

This function can be done for TEXT search also.

Additional Smart Search Tools
- Stop: Stops the searching.
- Clear Area: Deletes the designated area.
- Skip Frame: Due to the inconvenience of sifting through data, compressing the file by skipping through frames is possible.
- Save: Saves selected data found by smart search function. When JPEG compression is used, the file format will be .JPG, where as if it is MPEG compression, the file format will be .BMP.
- Print: Prints the data found by smart search.
- Bookmark: enables the bookmark for wanted data. Search the data from bookmark list from Search Menu.
- Close: Close the smart searching process.

Playback and AVI savings from Smart search window.
Select on a time from the table displayed under the picture and double click for a new window pops up to search the data on the time period by double clicking the searched data (The list on the bottom left hand side).

CD Burning Watchnet DVR have CD burner program built in.

When you choose Internal CD Burn from setting program, the following CD burning program in DVR System will be executed. Otherwise, the linked CD burning program will be executed.
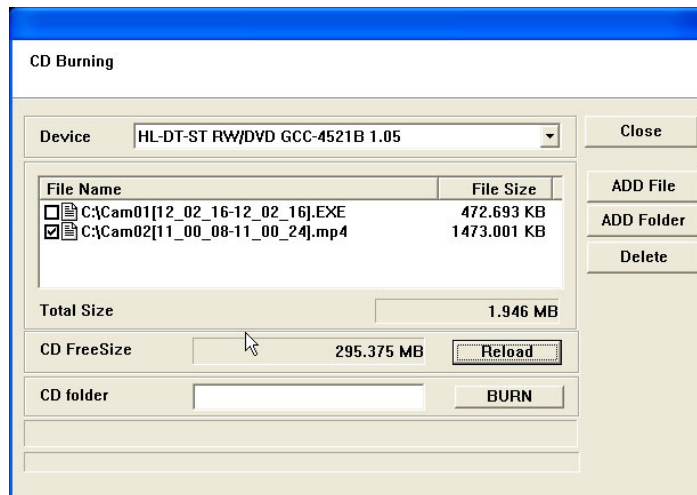
- ADD File: Select files to save on CD.

- ADD Folder: Select folder to save on CD.

- Delete: Delete the selected file from the list.

- Reload: Show free space size on CD.

- BURN: Start copy files to CD.

Note: 1. *If a folder name is assigned on "CD folder", the files on the list will be saved into the assigned folder.*

2. *Uncheck the check box if you don't want to copy files on the list.*

3. *Internal CD Burn Program dose not* ***support DVD.***

 Exit **Search**

8. Utility

8.1. Backup
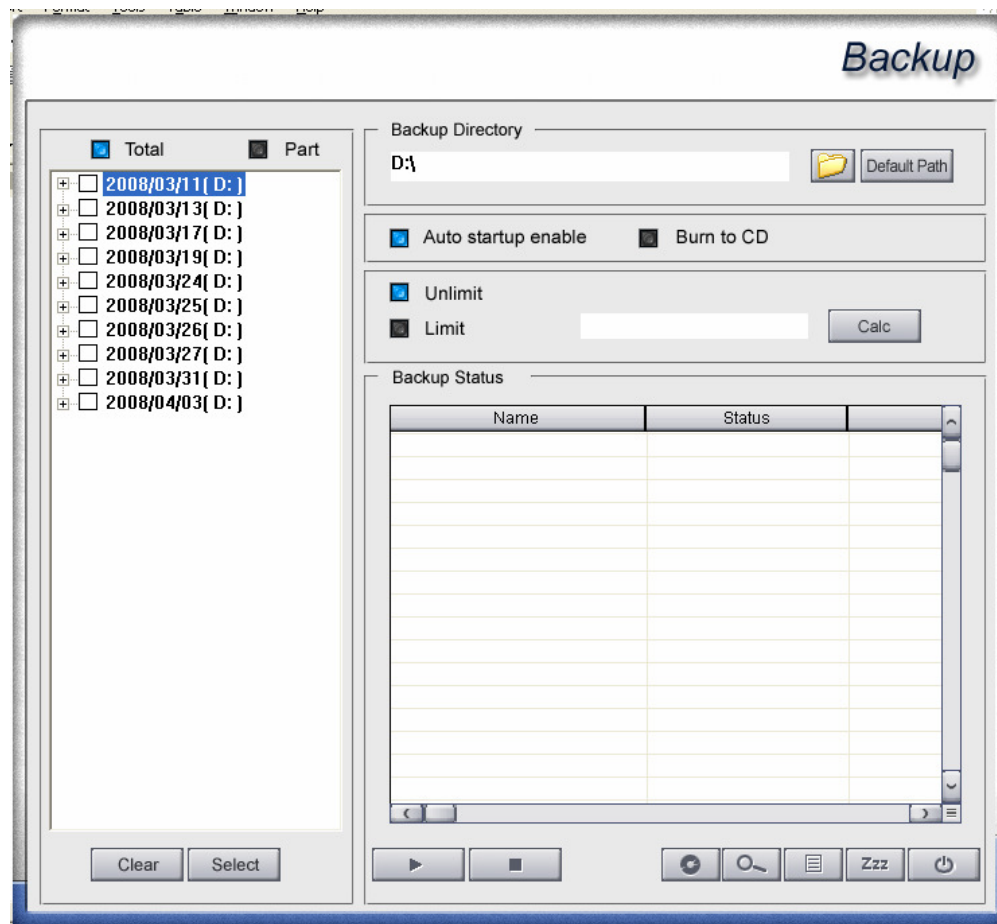
Data can be backed up manually through this program simply by selecting the desired folders and subfolders. This type of backup process allows selected data to be backed up. On the left window, choose the desired camera, date, hour, and minute to backup. The progress is monitored at the right window.

If you setup backup schedule from the DVR Configuration, it automatically executes Backup from the configured schedule.

• **Total**: Able to backup by choosing Volume Files directly from the list based on date and hour. It is very fast backup for large volume of data although it can't select the partial cameras.

• **Part**: Able to backup desired camera, date, hour, and minute from the list. Able to choose desired camera and minute, but it is much slower than Total backup for large volume of data.

• **Backup Directory**: Destination of backed up files. CD, DVD, Network drive can be used. (Some equipment needs to setup their driver or utility program to operate).

• **Default Path:** Click this to set the folder to the default back up folder. Scheduled Backup will store data into the folder assigned here.

• **Auto startup enable**: If selected, backup.exe will be automatically initiated upon the system restart. This option is also connected to the "Start Backup Timer" option under Backup setting at DVR Setting. (Chap. 5-6)

• **Burn to CD**: Executes CD Burn program automatically after backup. Unable to backup if the data size is bigger than the CD capacity.

• **Unlimit**: Backup in one folder at the assigned location.

• **limit**: Assign the size (unit:: MB) of Backup folder. Backup data will be stored into separated folder(s), which is automatically created with assigned size value. (Backup Viewer searches from each backup folder).

• **Calc**: Calculate the data size of selected items from the list (Able to use if you select Total, not Part).
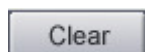
Clear : This refreshes the data available for backup and clears any selection made previously.
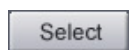
Select : This selects all the data to back up.

► : **Start Backup:** After selecting the data to backup, click on this button to start the manual backup process.

■ : **Stop Backup:** Click to Abort/Stop the back up process.

○ : Execute CD Burn program based on Setting. (Internal CD Burn or external CD Burn).

O⟍ : Run Backup Viewer.

Note: If you wish to view backed up files on a remote PC, Viewer utility must be installed.

▤ : **View Log:** Click to open log of all backed up activity.

Zzz : **Minimize:** Minimizes the backup program. This does not effect backup in progress and continues to backup

⏻ : Exit from the backup program.

> **When copying Backup data to other media** it is necessary to create folders in
>
> the exact manner as the original.   The format should follow the following example:
>
> Folder: 20031224 ------ year month date
>
> Subfolder: 12 ------ camera #
>
> Sub-sub folder :   14   ----- hour
>
> file name: 00.dat --- back-up file at 00:01 - 00:59 minute
>
>   12.dat -- back-up file at 12:01 – 12:59 minute

Note:

• The Folder name of backup data is "MB+ start backup date" ex) MB20041206_xxxx

• Setting – The folder name for Auto Backup Schedule is "**AB**xxxxxx". ex) AB20041206_xxxx

• To retrieve backup data from other PC, copy the backup folder, install Utility to the PC. Then run Backup Viewer and search the data.

8.2. Backup Viewer

In order to view backed up files on any offsite PC (other than the DVR), the backup viewer software must be installed on that PC.

• **To Install Backup Viewer software:**

- Insert WatchNET software disc into offsite PC.
- Click on "Backup Viewer" in the section called programs.
- Click on "setup".
- Follow instructions through installation process.

• **To View Backed up Images on an Offsite PC:**

- Once the Backup Viewer program is installed on the offsite PC, insert the CD of the data backed up, off the WatchNET "MAIN DVR" into the CD Drive.
- Open Backup Viewer program.
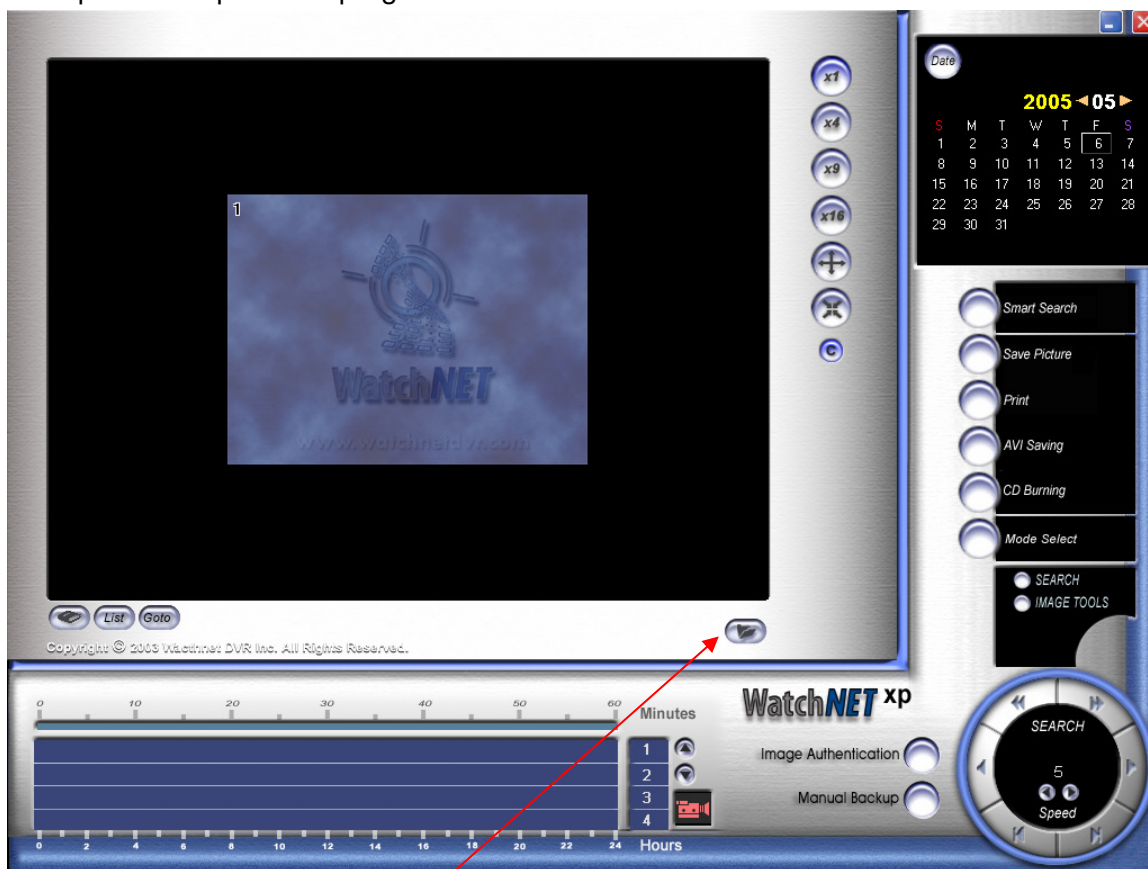
- Click on the folder icon ⬚ to open file off the CD.
- Click on the data file listed as a date of the CD Drive (see below).
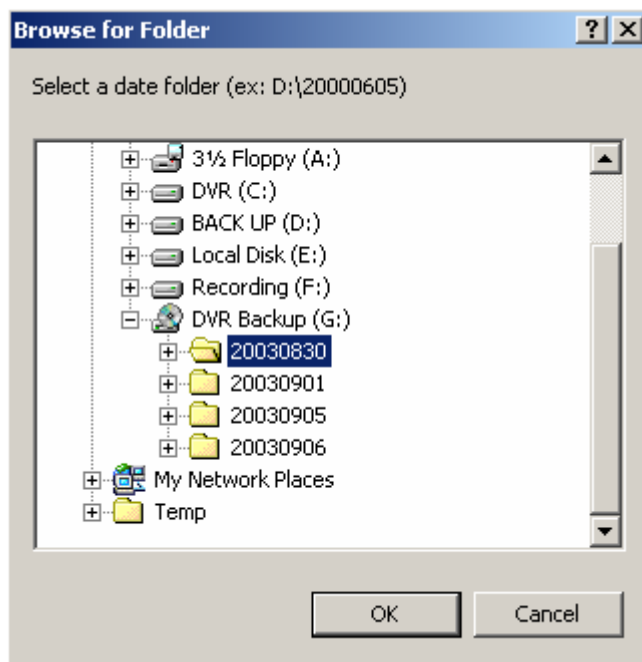
- Click O.K.
- The rest of the operations are identical to the DVR search.

Please refer to section 5-3-1. SEARCH for more details.

8.3. Image Authentications (Auth Tool).
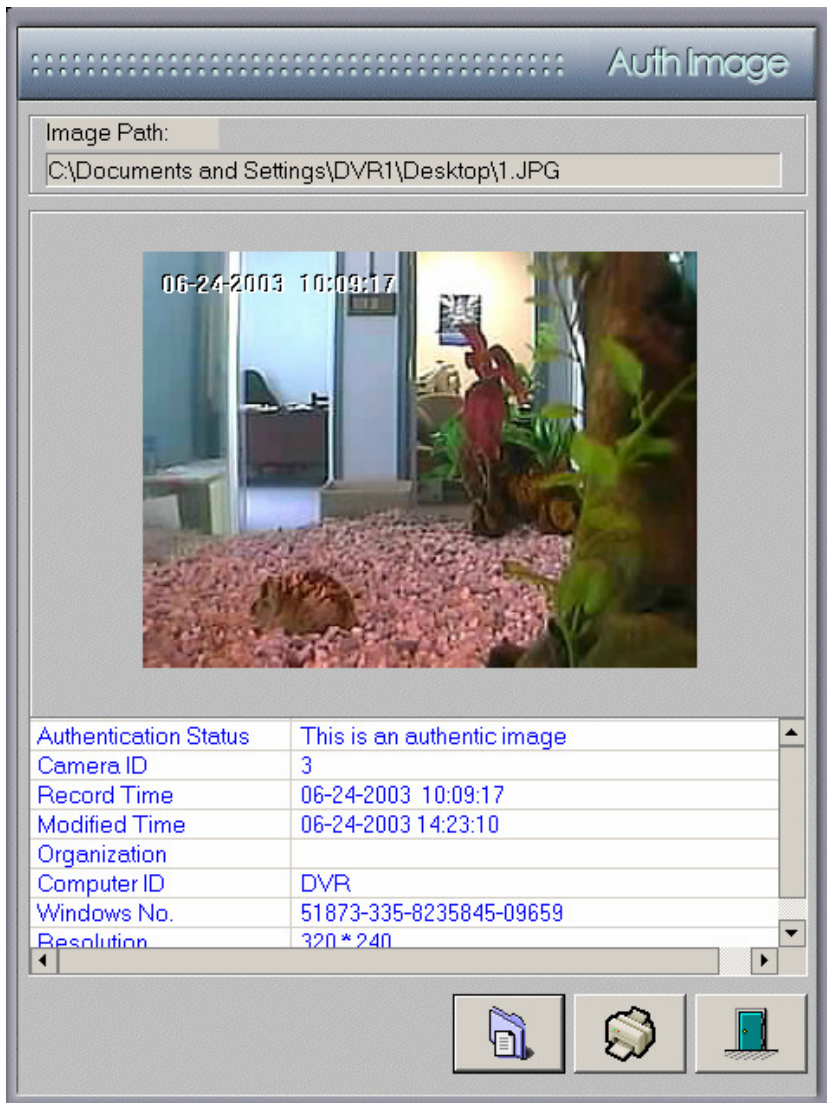
Note: If the saved image is tampered with. The information shown bellow will not be displayed.

This program can be used to check encoded information of a particular image saved by the Search mode. If the image has been tampered with the encoded information will not show up in the viewer.

Open: Click to open the image for verification. If the image is tampered with no information will appear. Other wise if it is still in its original form encoded information will appear.
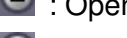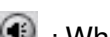
Print: Click to print the image with the authentication information.

Exit: Click to close authentication program.

8.4. AVI Viewer

⟨⟨ : Go to beginning of the clip.

⏮ : Play in reverse 1 frame at a time.

▶ : Play (with sound if exist).

⏸ : Pause.

⏭ : Play forward 1 frame at a time.

⏻ : Exit/End.

⏏ : Open file.

▤ : Display Windows type Menu and frame.

(1x) (2x) (3x) : Adjust image size. Double click on the screen for Full screen mode.

◀ : When there is sound, click this button and then click play back button

▭━━━━━▭ : Sound volume

(◀◀) (▶▶) : Click to perform faster search (Revival by frame unit.)

▭━━━━━ : Speed control

8.5. Log Viewer
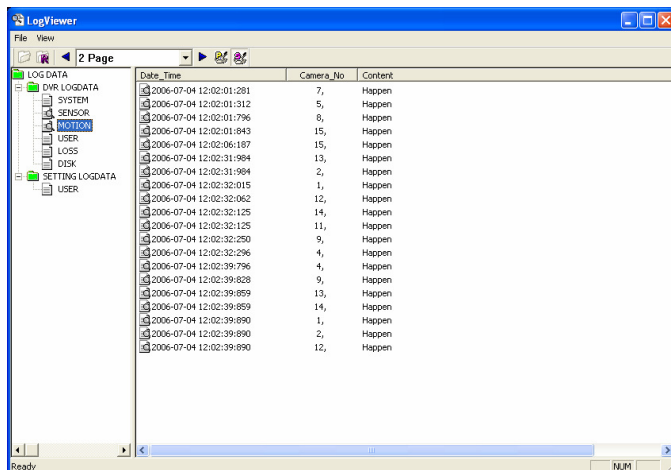
This program interprets Log file that is created during operation. The log file contains the start and the end of program (Main, Search, and setting), motion and sensor log (time and camera number), user login and logout record, disk warning message (DB overwrite warning message), and video loss log.

1) PLAY VIDEO FROM MOTION/ SENSOR LOG DATA

 : reload log data.

 : Popup Search software when double clicked on Sensor and Motion log

 : Runs Popup-search software when double clicked on Sensor and Motion log

Appendix

1. DVR Management

A system with the DVR software and hardware that upgrades to a different capture card must be reconfigured. This can be done by executing 'START.exe'. It is located either on the desktop or the directory where DVR software was installed.

- **USER NAME:** User name that was used in installation of the program (Top Admin User).
- **PASSWORD:** Password that was used in installation of the program.

Depending on board type, different window will be displayed.

1.1 User

Change user name and password for Admin. However, all the other users name and passwords will be deleted.
- **USER NAME:** Input the name of Top Admin.
- **PASSWORD:** Input the password of Top Admin.
- **Confirm P/W:** Confirm password.

1.2 General

• **Video Type:** Regional video format type. (NTSC or PAL)

• **Display Mode:** Type of video image in Main screen.

• **Select Board Channel**: The number of channels board is capable of displaying.

1. 3 Advanced

• **Network Port Setup**
- 1st port: Image transmission.
- 2nd port: Command (including PTZ) transmission.
- 3rd port: Setting information transmission.
- 4th port: Audio data transmission.
- 5th port: Network transmission speed and bandwidth control.
- Default: Restore port numbers to the default values show in the figure.

• **WatchDog Option**
- Restarted: Sets the waiting time to restart the system after Main software is turned off.
- Use Beep Sound: if "on", computer will beep when DVR Main is off.
- Restart Computer upon closing software by user: if selected, the system will be restarted when DVR Main is closed. It is recommended to use when Auto startup is enabled under system setup.

Note: Once information has been changed, make sure to enter the user login information and click OK to apply changes. Admin level user information must be entered.

2. DB Tools

1. This procedure applies to program version 5.01.00 or later.
2. This utility is required for disks (that contain a database) that are moved from one machine to another and searched through by that machine.
3. After transferring the disk, the volume data on the disk should be verified by the DBTool.
4. As an added feature, it is possible to search through data in this drive by utilizing the DBTool.
5. If 2 drives have data with the same date, the program will search through each drive alphabetically.
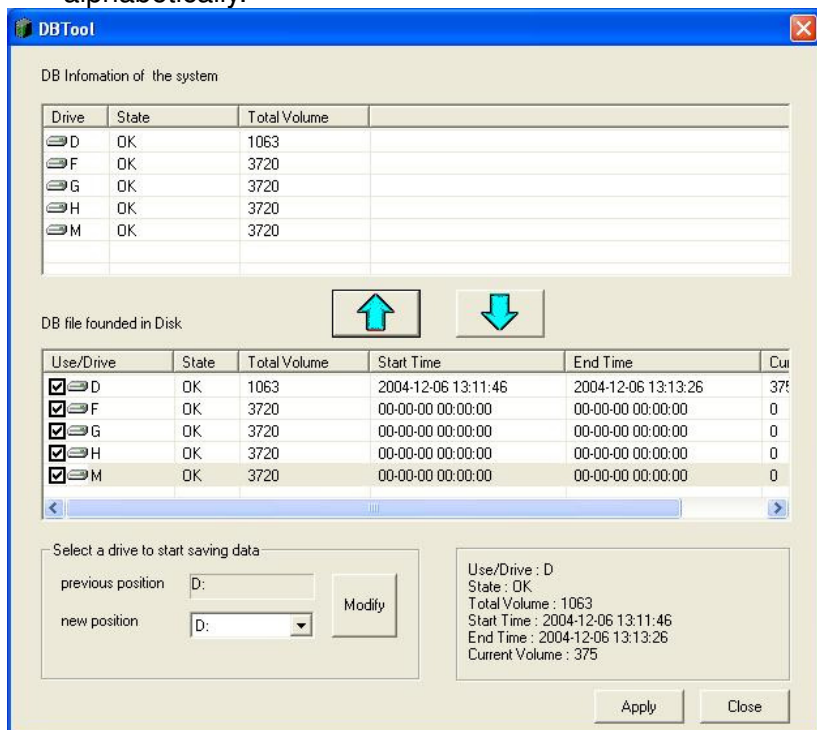
- **DB file found in Disk**
  - Lists all the drives that contain DB files.
  - Check the box next to each drive that will be used and searched.

- **DB Information of the system**
  - Press [↑] button so that the drive names checked in 'DB file found in Disk' can be added on the DB information list.
  - Press [↑] button to transfer the drives checked in 'DB file found in Disk' to 'DB Information of the system'.
    * *Disks that are checked in "DB file found in Disk" must be registered here*

- **Select a drive to start saving (recording) data**
  - Chooses drive at which to start recording data.

Example

- Data searching after transferring one hard drive to another machine

(1) Install hard drives.

(2) Install DVR software.

(3) Run DBTool.exe.

(4) Check drives to use in 'DB file found in Disk'.

(5) Press [⬆] to add the selected drive(s) to 'DB Information of the system'.

(6) Press 'Modify' after selecting a drive from 'Select a drive to start saving data'.

(7) Press 'Apply' to finalize.

    Note: Make sure that the drives checked in 'DB file founded in Disk' are shown in the list of drives listed in 'DB Information of the system' as well.

- After using this tool to reconfigure the drives, it will be possible to search through the files located on imported drives.

- By copying or transferring the 'MP4DATA' folder to another machine, it will be possible to search through the saved files immediately as long as the DVR program is installed on that machine.
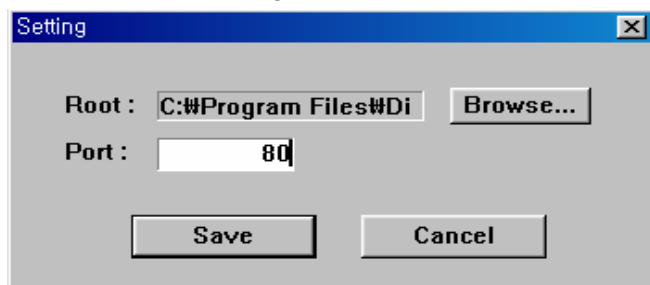
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3. Web View

3.1 Direct Web

: Once Direct Web is installed, the system tray icon shown should appear. This program was installed automatically, along with DVR main program.

As for the root setting, it is recommended to use the default.

Note: When there is a conflict of ports or the firewall is blocking with Direct Web port, right-click on the mouse on the tray bar icon of Direct Web and select 'setting'. Select which ports you would like to open to outside connections.

3.2 Client – Main

Enter the IP address of an available server in the URL bar of Internet Explorer (version 5 or higher).If this is the first time using Direct Web client, it will take several minutes to load all the necessary files.

Note: First time connection may need active X control to be downloaded and installed on your computer. Please check the internet security settings to allow active X controls to be installed and run.. **The following picture is an example of the web view after connecting to the server.**
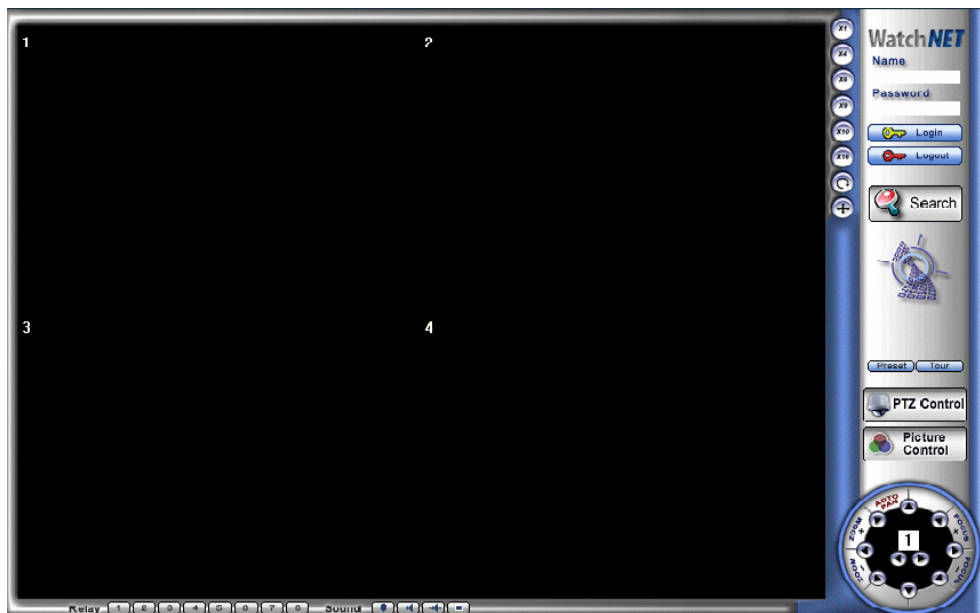
Enter the login and password of an authorized user.

Many supporting functions like. Multiplex view mode, PTZ control, image control, voice communication, relay out, etc.

3.3 Client – Search
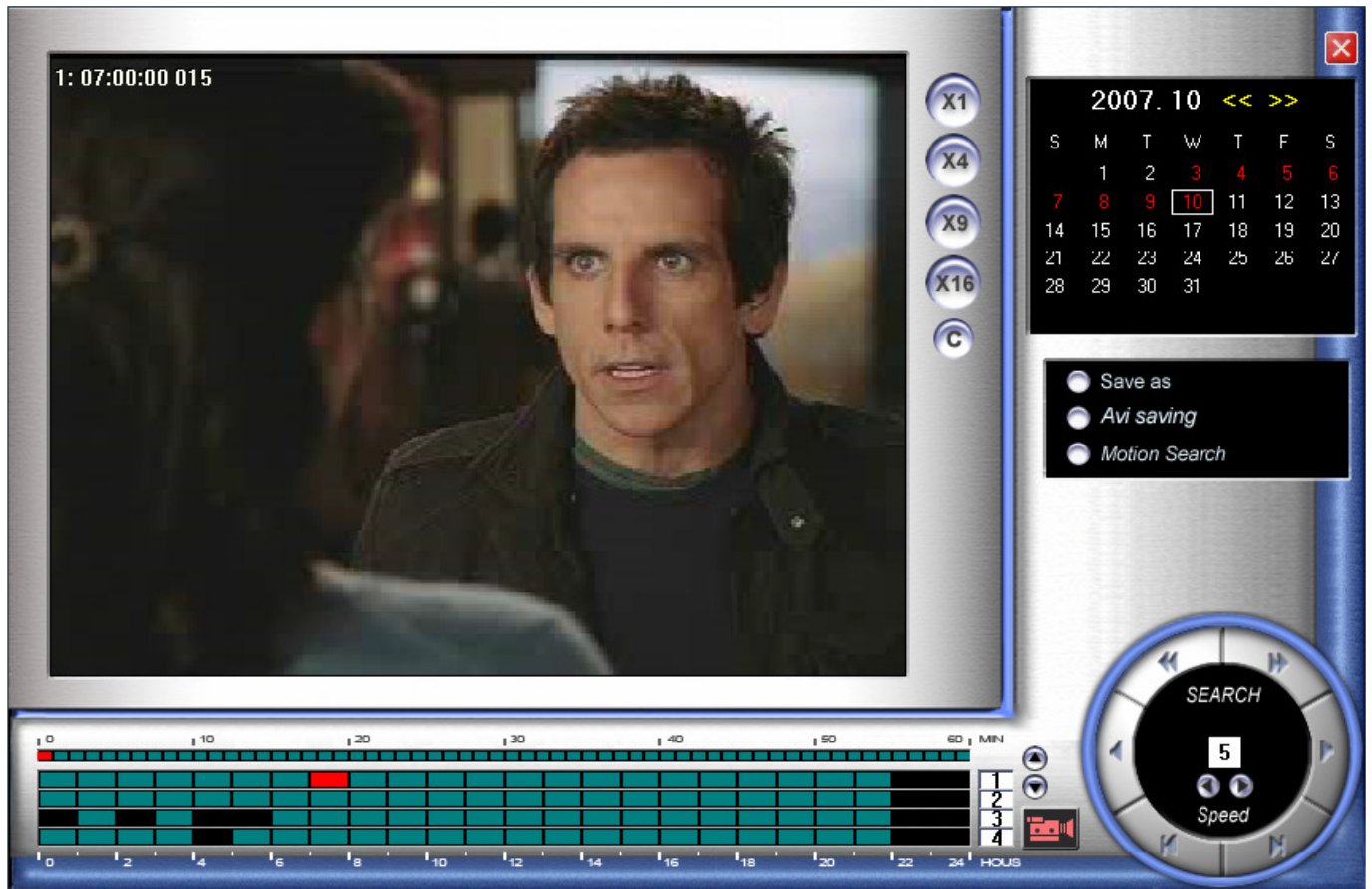
Choose desired date, camera, and time to search the video.

- **SPEED:** Changes playback speed.
- **SAVE AS:** Saves single image as image file.
- **AVI SAVING:** Click "AVI SAVING" and play through video, and the video is saved as AVI file. To stop AVI saving, click "AVI SAVING" one more time.
- **MOTION SEARCH**: Allows users to search recorded images with movements. (It might take a while on slow network connections)
- **SOUND SEARCH:** Click speaker icon and the timeline will display sound recording (if sound recording exists) with blue bar as shown in above. Select blue section of timeline to search sound recording. Adjust playback speed and buffering size for better synchronization.

4. MC (Media Control) Setup

This section only corresponds to CAP, LIVCAP, and ACAP series – that is the systems configured for two or four sound input channels.

- The configuration of the sound controller installed in the system might differ depending on the motherboard.
- Make sure that the speaker and Line-in/Microphone are connected properly and verify the connection using the Sound Utility, provided with the motherboard driver (refer to the audio installation guide on the motherboard manual.)

NOTE- The color set of the audio ports might differ depending on the motherboard. Howerver, most motherboards generally use blue for Line In, red for Microphone, and green for Speaker.

. Run **MCSetup.exe** which is located on the folder where DVR software is installed.
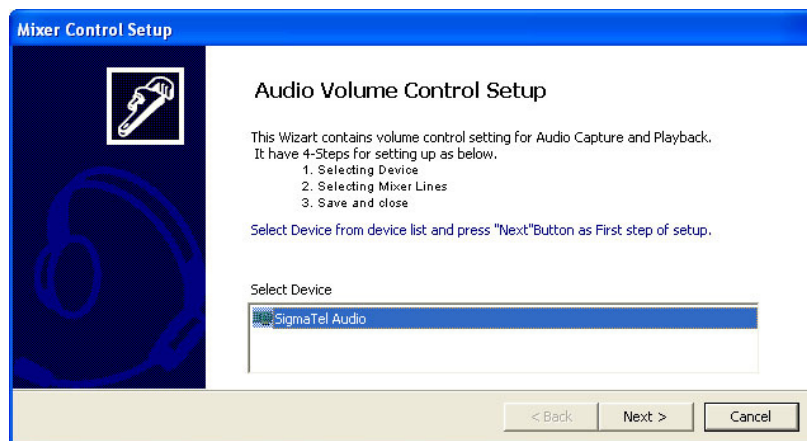
Select a device from the Device List and click on "**Next**" button.
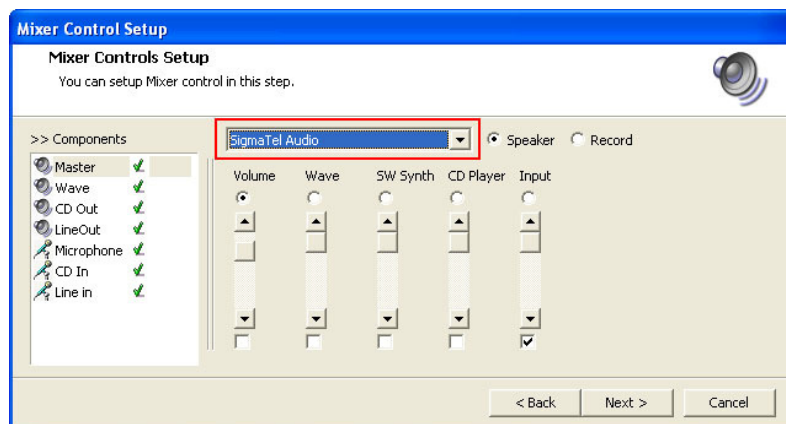

Select a Sound Device Type (Multiple Device Type might appear depending on the type of the sound controller.)

The appearance of the Volume control differs for each Device Types.
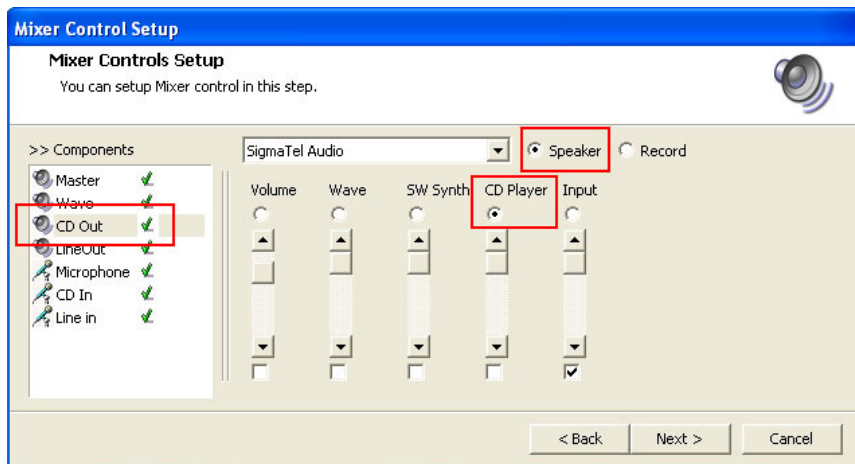
Before selecting a component, select either **Speaker Type** or **Record Type** (this option might not be available depending on the sound controller.)
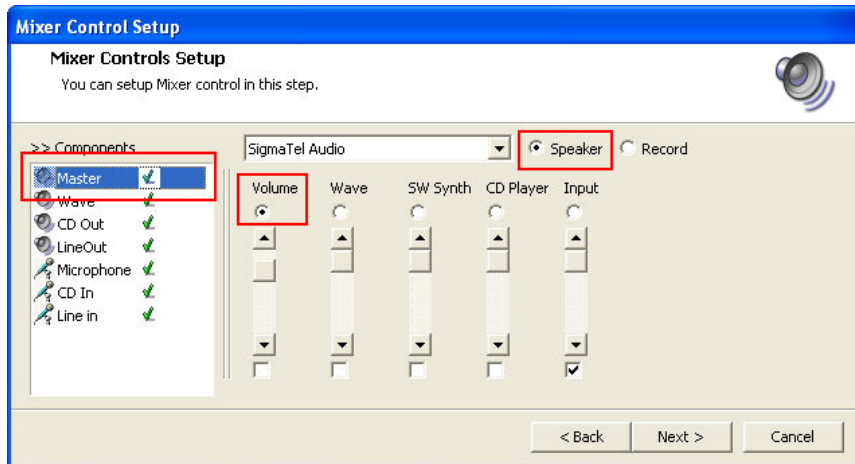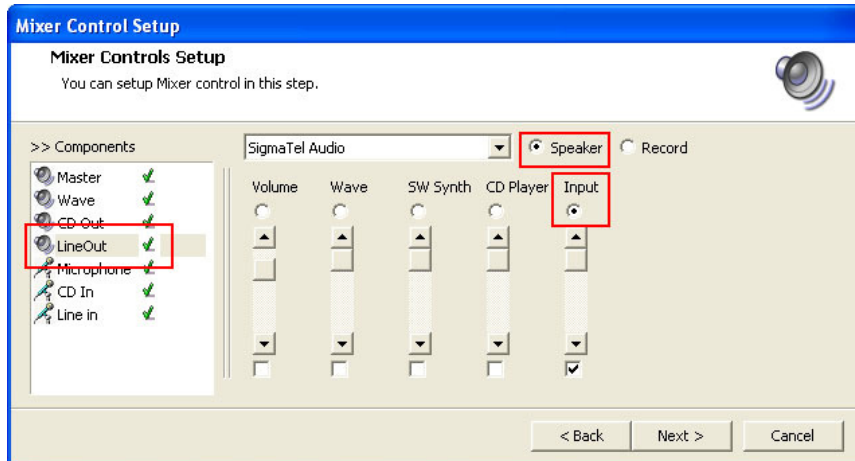

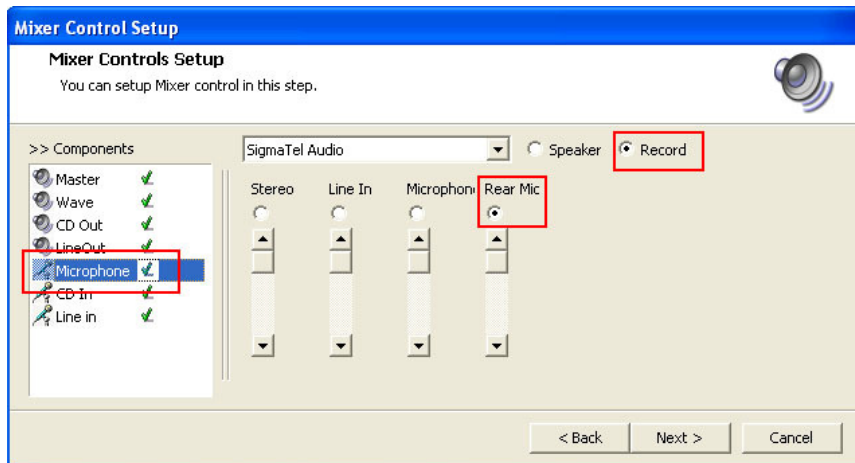Select Master from the List of Components and choose an appropriate controller.
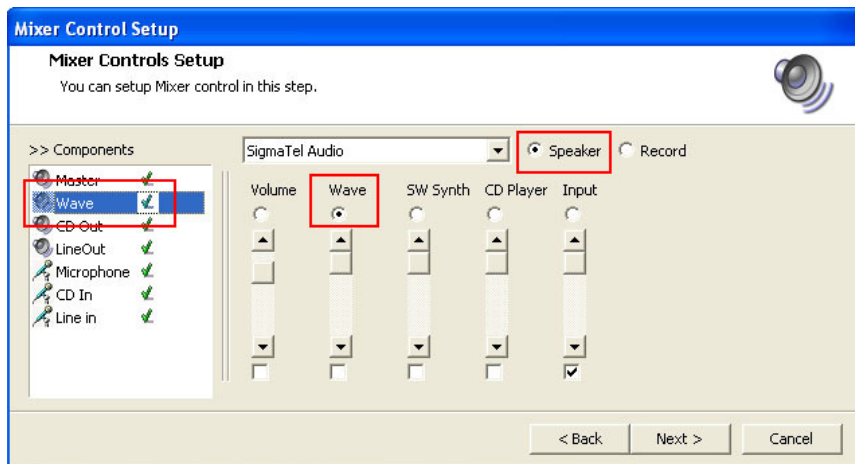
Select Wave from the List of Components and choose an appropriate controller.
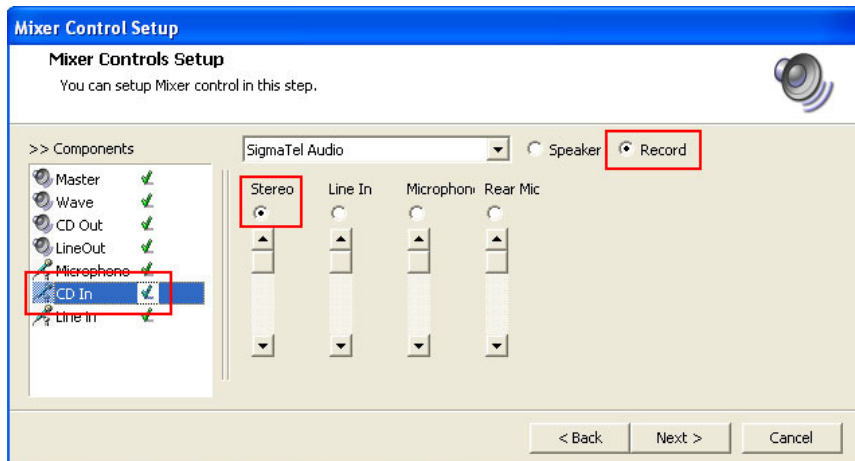

Select CD Out from the List of Components and choose an appropriate controller.
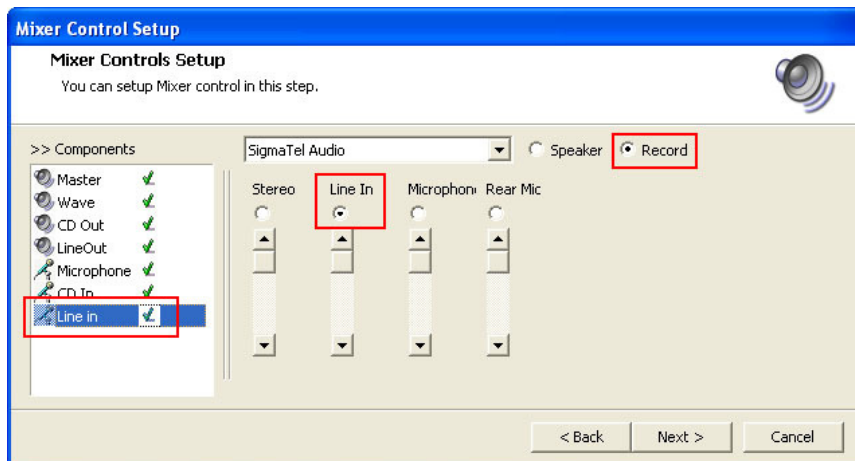
Select Line Out from the List of Components and choose an appropriate controller.
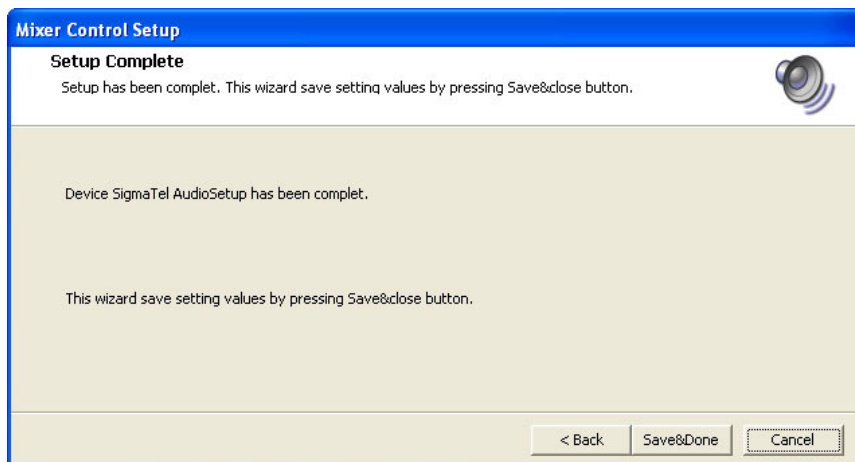

Select Microphone from the list of Components and choose and appropriate controller.

Select CD In from the list of Components and choose and appropriate controller.

Select Line In from the list of Components and choose an appropriate controller.

Click on "**Next**" button if all components are configured.

Click on "**Save&Done"** to finish the MCSetup.

. If there is another sound card installed in the system, run the MCSetup again and repeat the above procedure to configure the corresponding device (to enable 4 channel sound input)

. Once Media Control Setup is complete, DVR Main application will use configured information to operate with sound input.