

DVR

(Digital Video Recorder)

User Manual

VER: 1.1

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1. About Capture Card

▶ Camera Input

Up to 16 camera input.

▶ Sensor Input

Up to 16 sensors.

▶ Relay Outputs

Up to 8 relay outputs.

▶ Audio Features

- Up to 16 channel sound recording.
- Each channel can have two way of communication, one by one channel.

▶ Split Screen Display

There are several split screen display modes to choose from: full, 4, 6, 9, 10, and 16 split screen display. Users can enlarge the screen to 1024X768.

▶ PAN/TILT/ZOOM/FOCUS

Users can control the PTZ cameras from the DVR and the remote site.

▶ Auto Reboot: Watchdog

Users can activate the Watchdog functions to automatically reboot the DVR when the Watchdog detects a system failure.

▶ Motion Detection and Sensor Triggering

Record images only by motion detection or sensor triggering to save memory.

▶ Scheduled recording

You can schedule the program to work only whatever you want, for example, recording data only on specific periods and days of the week.

▶ Data Backup and Auto Backup

Data can be recorded onto different media (like DAT, CD, or DVD), and you can specify the camera to record, and the same for date and time. And scheduled recording means you can automate the whole Backup process.

▶ **Digitalized Video Search**

Recorded data can be reviewed in digital, each camera or all at a time, and you can specify the date and time period of the search. You can also extract an image from the video to save separately and print it out, enlarge and edit it.

▶ **Network Support (TCP/IP Protocol)**

By network support, you can log on to DVR from any remote site to search through and download video data, and even change the settings of the program.

▶ **Support POS SYSTEM**

Record data from external devices(POS, Access Control, ATM, etc)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.

▶ **Specifications**

Function	Special		
Camera Input	4 Port (NTSC/PAL)	8 Port (NTSC/PAL)	16 Port (NTSC/PAL)
Sound Input	4 Port	8 Port	16 Port
Sensor Input	4	8	16
Relay Output	4	4	8
Composite Output	1 Port (4CH · 8CH)		2 Port(16 CH)
Image Format	MPEG4		
Recording Mode	Watch, Normal, Motion Detection, Sensor, Scheduled Recording		
Remote Control	Full remote control PSTN, ISDN, ADSL, LAN and TCP/IP		
Resolution	352 x 240 , 704 x 480 , 704 x 240 (NTSC) 352 x 288 , 704 x 576 , 704 x 288 (PAL)		
Back-up	DAT, CD, DVD		
PAN/TILT/ZOOM /FOCUS	RS-232 Interface RS-422/485 (option)		
Image Format	YUV		

► DISPLAY / RECORDING SPEED

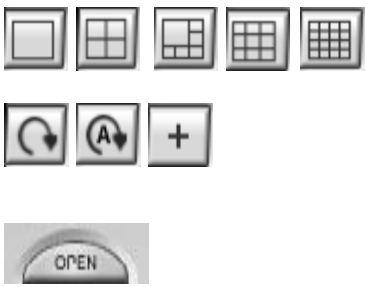

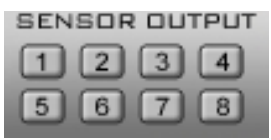
- the display will be real time, even in high resolution (704 X 480 or 704 X 576...)
- The recording frame table is as following:





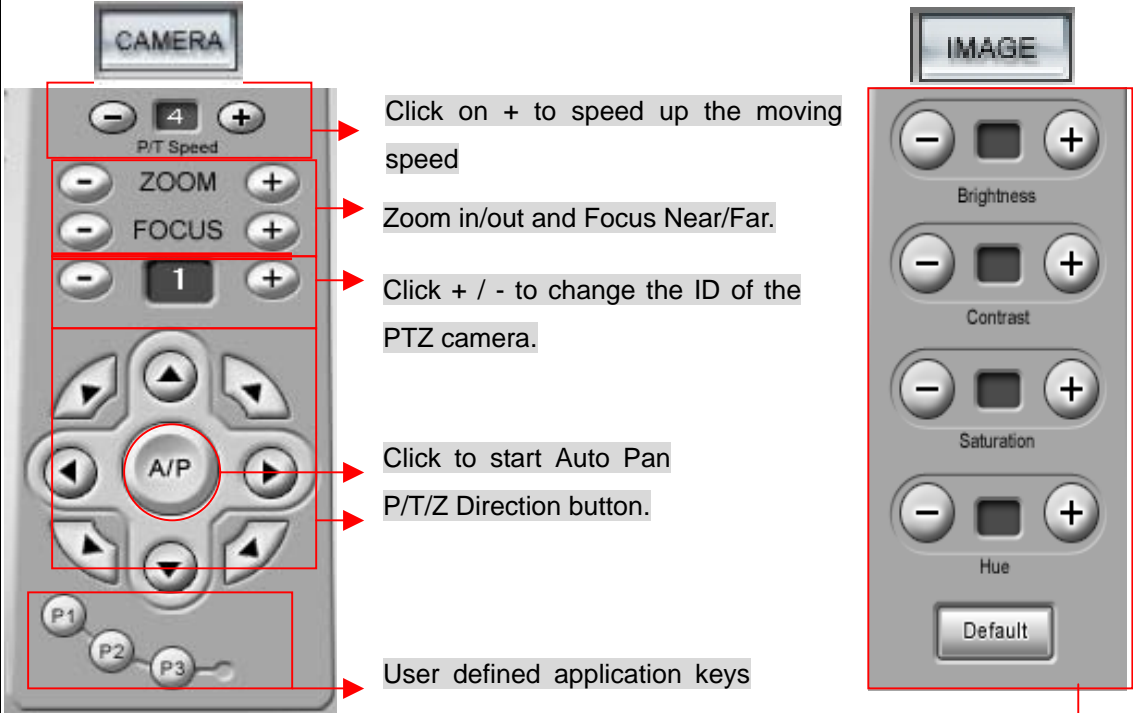
	NTSC: 352 X 240	704 X 240, 704 X 480	PAL: 352 X 288	704 X 288, 704 X 576
4 CH	120 Frame/sec	30 Frame/sec	100 Frame/sec	25 Frame/sec
8 CH	240 Frame/sec	60 Frame/sec	200 Frame/sec	50 Frame/sec
16 CH	480 Frame/sec	120 Frame/sec	400 Frame/sec	100 Frame/sec




- Main Board to be recommended strongly to use 865 PE Intel chip. The compatible exact Model Name shall be inquired to Vendor.
- More than 256MB of memory, but prefers 512 MB .
- Compatible platform: Windows 2000, XP.
- Screen Savers must be "Disable".
- System standby mode, monitor energy saving mode, and hard disk energy saving mode must be "Disable".
- Version No. of Driver and operating software must be noted separately for future up-grade service.
- VGA card to be recommended latest version of ATI to be competent to the overlay image format.

2. Main



<p>A</p>		<p>Split Screen button for 1,4,6,9,16</p> <p>Next Page / Auto Next Page/ Layer Screen /</p> <p>Open PTZ&Image control panel.</p>
<p>B</p>		<p>Press “Emergency Record ” to start the continuous recording of ALL CHANNELS MANUALLY,press again will GO back to previous setting</p>
<p>C</p>		<p>Click the number button to turn on and off the corresponding relay.</p> <p>Note: The number of the relays depends on the models. Please refer to the Specification for the details.</p>

D		Click the button to enter another DVR program.
E		Click Log In and enter the ID and password to login. Click Log Out to logout.
F		Exit
G	 <p>2.The current date and time</p> <p>1.Lit up during Backup</p> <p>4.Blinking while connected</p> <p>3. The used volumes / the total available volumes</p>	
H	 <p>Click on + to speed up the moving speed</p> <p>Zoom in/out and Focus Near/Far.</p> <p>Click + / - to change the ID of the PTZ camera.</p> <p>Click to start Auto Pan</p> <p>P/T/Z Direction button.</p> <p>User defined application keys</p> <p>Image Control panel</p>	

<p>I</p>	 <p>1. The top row: A blinking light indicates that the camera is enabled, but no video received.</p> <p>The bottom row: The box is lit up during recording, and the color of the light indicates the recording mode.</p>
<p>J</p>	 <p>Preset points, Preset function .</p> <p>NOTE: All the PTZ function mentioned above depends on if the <u>PTZ PROTOCOL</u> itself provides such capability.</p>
<p>K</p>	 <p>Click the button and select channel, the sound will be Broadcasted from the choosing camera</p>

✘ On the 6 and 10 split image screen, if you want to have a large image, click the right hand of mouse, located on that image screen. Then, that image moves to large image location.

✘ You can use F5, F6 as hot key for larger screen. F5 leads the enlarge screen but clicking F6 next to F5, leads more larger screen.

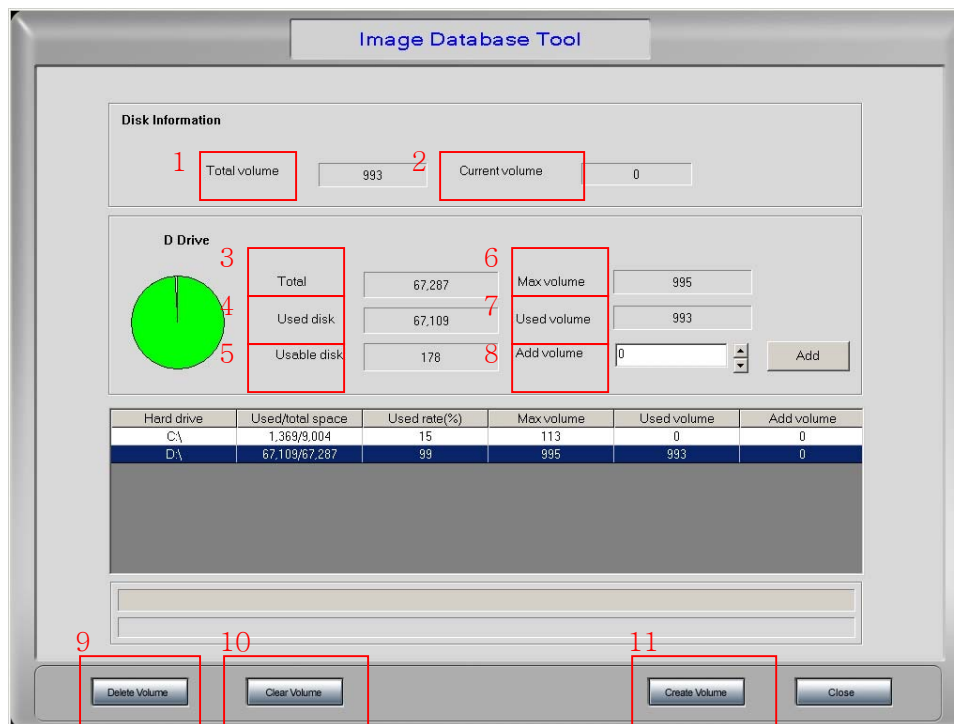
3. Setup

Start "DVR Setting", take note of the following appearance.



- 1. Disk tool** - Create a file system. (Program will create its own file system, so that the large amounts of data can be handled safely and it reduces the danger of system failure.)
- 2. System** - Settings for network connection options, initial screen, sounds, automatic restoration, etc.
- 3. Camera** - Set up of the cameras and the digital outputs and schedule recording etc.
- 4. Sensor**- Settings for max.16 sensors.
- 5. Backup**- Settings for automatic backup schedule.
- 6. User Admin** - Different users are assigned to different access on DVR.

3-1. Disk Tool



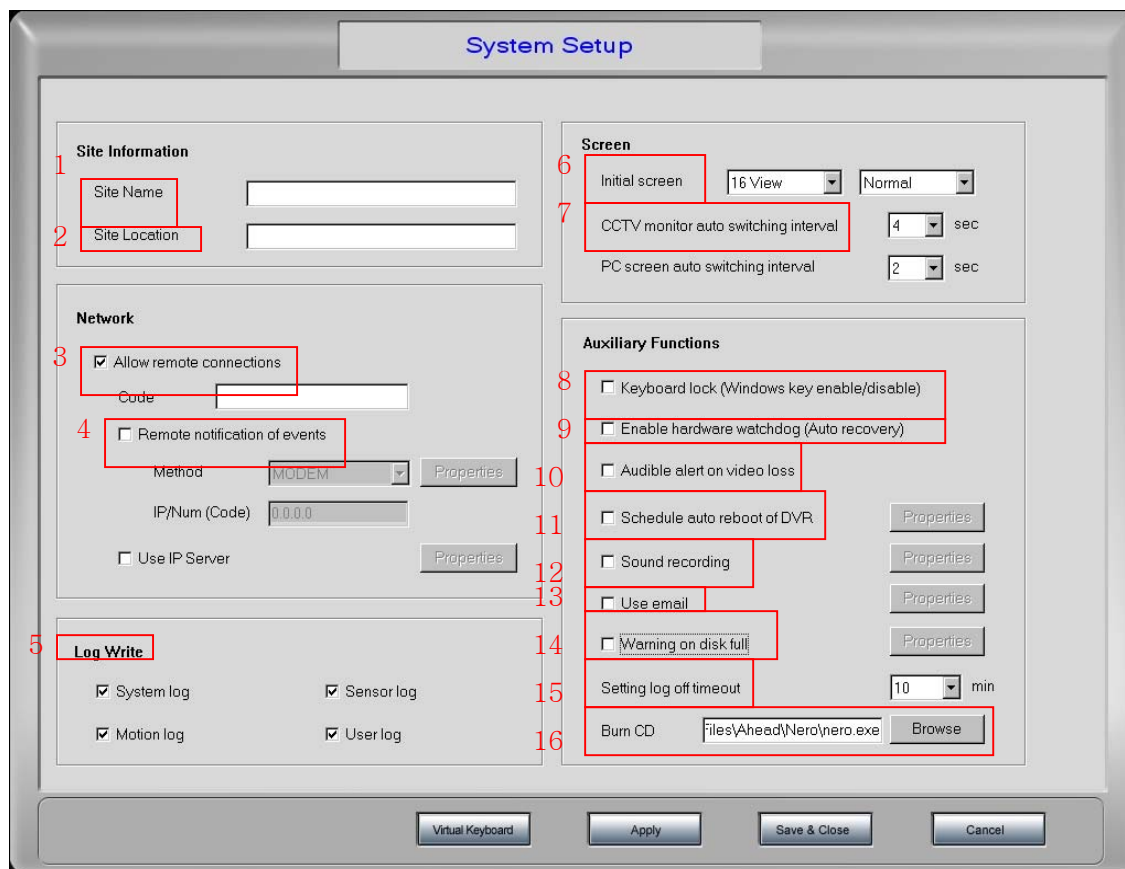
1. **Total Volume**- The total number of all hard disk volumes
2. **Current Volume** –The used volumes
3. **Total** - The total capacity of hard disk.
4. **Used Disk** - Hard disk being used currently.
5. **Usable Disk** - The capacity of hard disk available.
6. **Max Volume** - The total number of Volumes available.
7. **Used Volume** - The number of Volumes being used.
8. **Add Volume** - Input the number of needed volumes.
9. **Delete Volume**- Discard all volumes from the selected hard drive.
10. **Create Volume** – Add Volume.
11. **Clear Volume** – Clear all image data.

Enter the number of needed volumes on "Add Volume" and click "Add" button, check the correct number appearing on "Add Volume" on the graph below, and click "Create Volume" button to create a file system on the selected Hard Disk.

What is a Volume?

One(1) Volume equals to 66MBs of hard disk space. Motion Picture Data are recorded in these volumes, and once a volume is completely full the program starts overwriting from the beginning of the volume. (Important data better be backed up prior to this overwriting process.)

3-2 System Setup



Site Information

1. Site name: Key in name of the system,(This name for sending mail).

2. Site location: Key in address of the system.

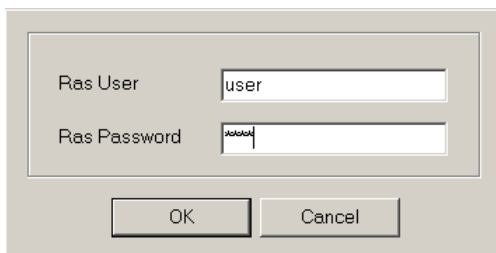
Network

3. Allow remote connections : Check on the box to allow connection from remote site.

4. Remote notification of events

Option of sending notification to where, in case of movement detection or sensor trigger. Check if it allows notifying over network PC, where are known with IP address or the number (Code) and installed with network program.

Method : In use of Modem, Definitely Set RAS User.



Note :

The "Code" is used for notification and dynamic IP from main DVR. This code shall be made within 10 digital mixed with alphabetic and numeric.

- Use IP Server

: If IP server is utilized, it will be much convenient in access to network without input frequently the changed dynamic IP. This can be achieved by assigning the unique Code to the DVR and by configuring that code number to DVR.

The default update time is one hour.

IP Server: Specially developed Program to control Dynamic IP.

Notify interval: select IP address update time.

- NOTE :**
1. Code number shall be made with numeric and alphabetic within 10 digits, discerning capital letter and small letter.
 2. Users have to register the site name(code) before connecting to our IP server please check **chapter 16**

5. Log Write

- Log in information will be recorded to C:\ for the desired categories. Check on the box to allow logging.

6. Screen

- **Initial screen:** Choosing the number of camera on the screen while starting the program. (The number of splits chosen will determine how many cameras shown on the monitor screen.) Besides, you can select Norman, large or full screen when starting DVR.

7. CCTV Monitor Auto Sequential Interval: Set up the interval time of the sequential switching for Composite-TV Out port. Only for Full Screen switching. The other TV output is as the same as DVR Main displays. Which is to say, there are two TV-output.

- Auxiliary Functions

8. Keyboard lock (Windows key disable / enable) : Disables Shift, Ctrl, Alt, and the Windows Button from the keyboard.

9. Enable hardware watchdog (Auto Reboot): Allows rebooting when system problems are detected.

Note: For this, make sure "DVR Main.exe" to be set at "Startup" of "Program" in Windows.

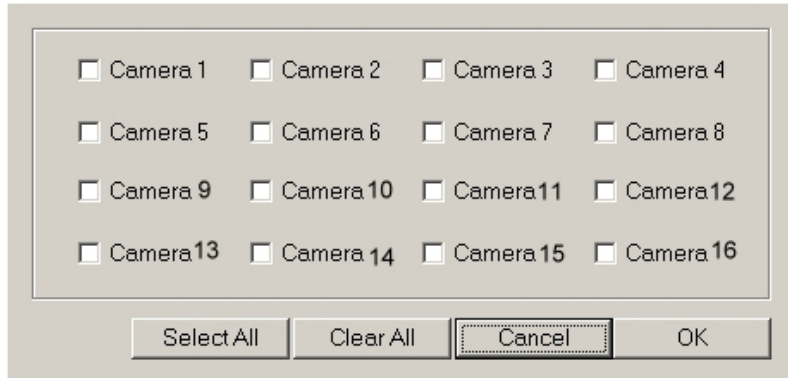
10. Audible warning on video lost: When Motion or Sensor or video lost are detected, it makes beep sound.

11. Schedule auto reboot of DVR : You can set the weekday and time, as you want, so that DVR system can be rebooted automatically regardless of watch dog functions

12. Sound Recording

: Check if enable sound recording. (It shall be clicked for networking - two-way communication.)

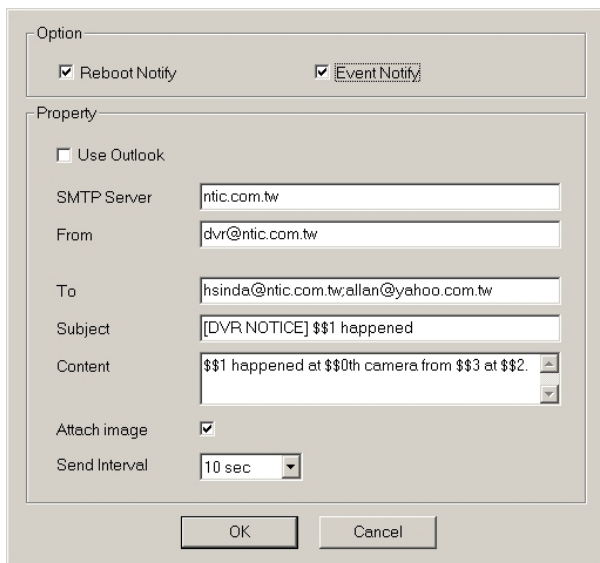
- Selected Channel



Key of Notes

1. You shall install updated versions of Direct X than or equal to Direct X 8.0.
2. Do not forget to use the amplification microphone.
3. Two way communications shall be made one by one channel.

13. Use E-mail



- **Reboot Notify:** Whenever main program begins to start, its time and System IP number are noticed to the designated address. Thus even when you are using the changeable IP on main machine, you can make every remote viewers be accessible.

- **Event Notify:** Upon detecting the event over motion and sensor it sends the alarm by e-mail automatically.

Attention:
If you use E-mail notify,you should set **Remote notify schedule**

- Property

- SMTP Server:** Prior to sending e-mail, you must configure the mail server addresses.
- From:** Fill in the account for sending mail. (If you didn't fill it out, you have to key in any of ID address. Ex. abc@abc.com) This mail is to send by the name of site name.
- To:** Configuration of receiver account.(Can use **Multiple mail address**)
- Subject:** Title of sending mail. (Describe as you want.)
- Content:** Contents of sending mail. (Describe as you want.)
- Attach image:** Message with image file.

Send Interval:

Be understood mail shall be sent just one mail in this interval time definitely. In describing Subject and Contents above, following value character can be used. So, if you fill \$\$0 in text. Automatically the camera No shall be included in mail text.

(Note): Subject, Content, Send Interval are available only when you set up 'events notify'.

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

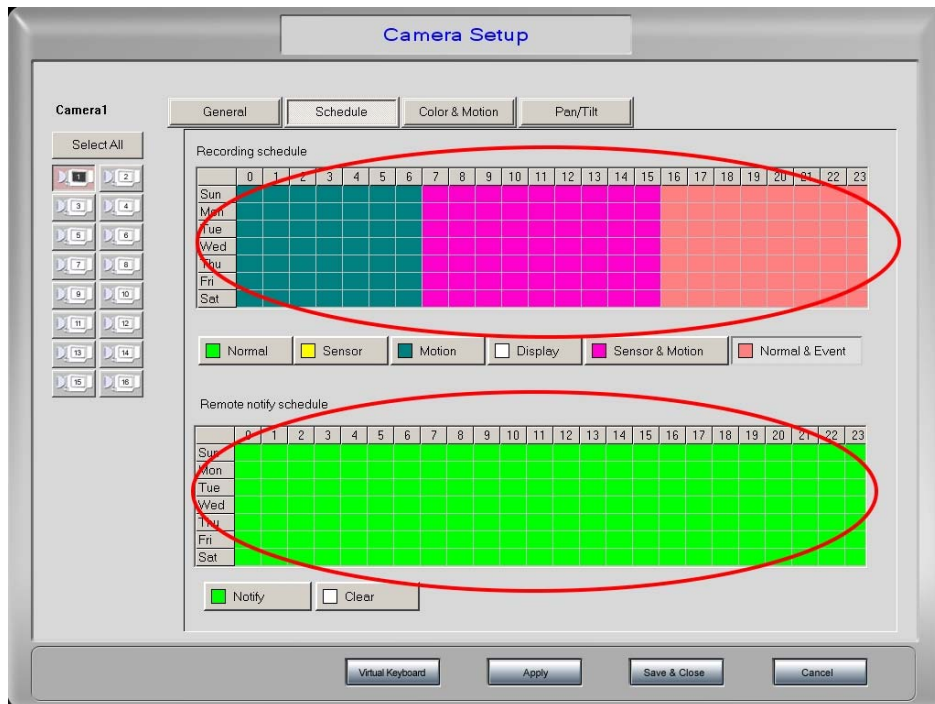
In composing "Subject" and "Content" as above, following cipher shall be used. So, if you type \$\$0 in composition text.

Automatically It will be displayed as "camera No" in the sent mail .

Attention:

1. Multiple mail address may be available by the use of individual addresses. At this time you shall specify ";" marks between multi-mail addresses.
 .(ex:aa@ntic.com.tw;bb@ntic.com.tw;cc@ntic.com.tw)

2. if you select "Events Notify", you required to set "camera schedule" as "motion" or "Sensor & Motion" or "Normal & Event" and set "remote notify schedule"



3. if you select "use outlook", you need to set your account in outlook.

14. Warning on disk full

Whenever not more than the preset value in the volume unit or percentage was left in unrecorded volume, you may have some warning against this by going off the warning on screen so that operators can be ready to take measures against this.

- Warning at value;

- Last volume: if you check it, the typed figure is to become the preset value for warning.
- Specify the used percent: you can take the preset value by % of target volumes within the range of 90-99 %. The target volume, mentioned here, may be changed subject to next option in “ Warning at disk”.

- Warning at disk

- Total disk: If you check this, above preset value, mentioned in “Warning at value” is to be regarded against totally created volume in all of disk. For example, when you set the volume 100 in drive C, 200 in drive D, the specified last volume is accounted as that against 300 volumes.

Current disk: If you check this, above preset value, mentioned in “Warning at value” is to be regarded against the created volume in each of disk. For example, when you set the volume 100 in drive C, 200 in drive D and currently DVR is using DB of drive D, the specified last volume is observed it against 200 volume in drive D.

Warning at a term : This feature is made to give the alarm in advance when it comes to be reached at the pre-schedule duration for recording in days. Firstly, pre-determine the required period for saving of DVR data in days. When you wish to get the warning at the preset time before filling of disk, you can input the desired preset time in hour: minutes.

- Start date: As for this purpose, It is the starting day in counting fro recording.
- Warning time : This is the warning time (hour; minutes) at calendar date to be due after “Saving duration(days) “ since the saving has been started.
- Saving duration(days) : The target saving days.

Thus, this feature explains : when “Start date” is 2003/11/25 and “Warning time” sets as 09:00 and “Saving duration (days)” is 10 days, then the warning goes off at 2003/12/5/ 9:00.

-Saving options on Warning : This is the options to accept or not the overwriting against the message before it starts overwriting after DB volume has been filled.

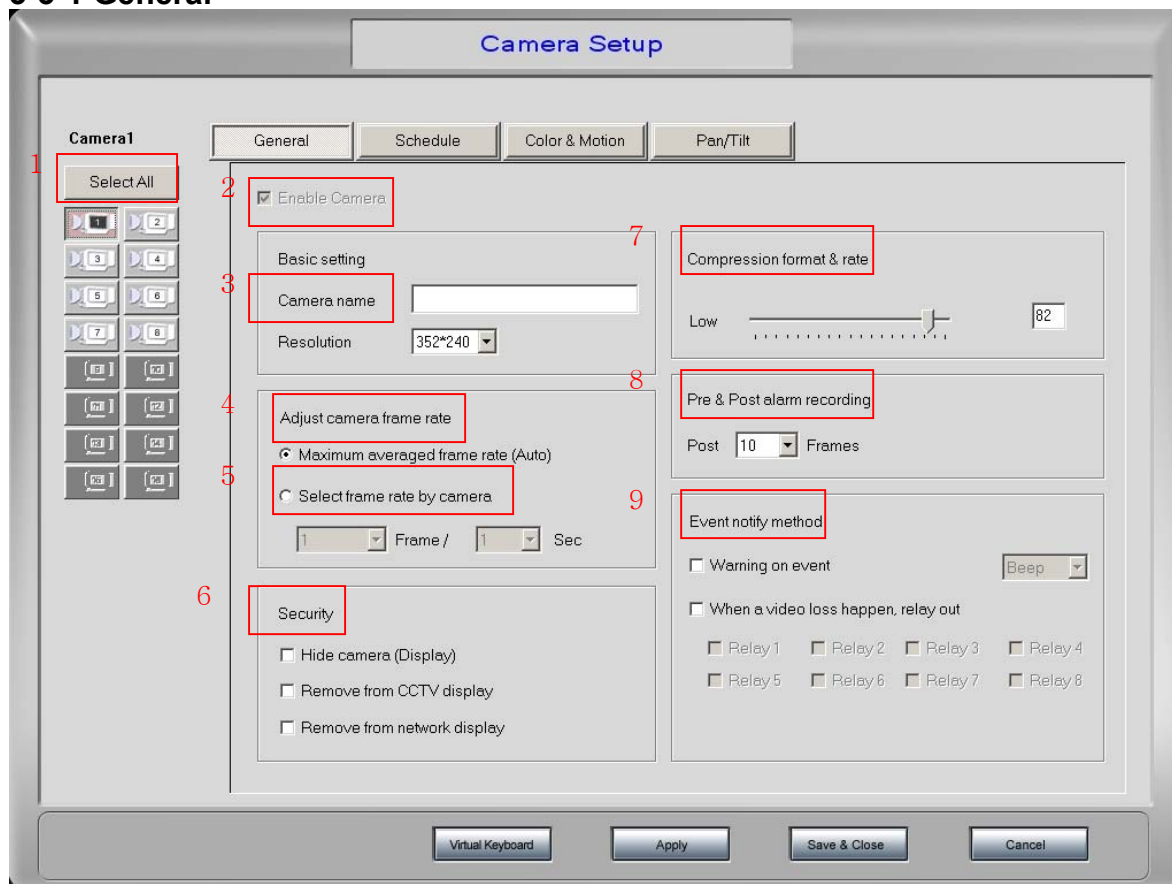
- Save on warning: Checking allows overwriting DB files after volumes have been filled fully.
- No save on warning: Checking doe not allow overwriting on DB file. At this moment, the recording is stopped no matter what the recording schedule was made.

15. Setting log off timeout : It is the valid time in minutes from login to logout. Only during this period, all of key-in and configurations may be valid (indicated “log-out”). If you want to set another after this set time has passed (indicated “log-in”), you shall be required to input the log-in again.

16. Burn CD: Select CD burning program (CD burning program will start once CD Burn button is selected in Search program)

3-3 Camera

3-3-1 General



1. Select All : If you click this , every of settings in “General”, “Schedule”, “Color & Motion” “Pan/Tilt” of all camera becomes same as for the selected camera’s setting value.

2. Enable Camera : Check the box to enable camera.

3. Camera Name : Insert the name of the camera location.

- **Resolution:**

352 x 240 , 704 x 480 , 704 x 240 (NTSC)

352 x 288 , 704 x 576 , 704 x 288 (PAL)

Note:

Because 1~4 camera use one chip,so if you change 1 camera resolution,2,3,4 camera resolution will Change at the same time;5~8,9~12;13~16 are same as 1~4 camera

4. Adjust camera frame rate

- **Maximum averaged frame rate:** Choose to record data on the Capture Card with the greatest frame per second rate possible.

5. Select frame rate by camera: Set the number of frames per second to be recorded.

6. Security

- **Hide camera (Display):** Choose to hide camera images from the PC monitor.
- **Remove from CCTV display:** Choose to block camera images from going out the Composite-Out port.
- **Remove from Network display:** It makes the images not to send to DVR-Net .

7. Compression formate & rate : change the compression rate.

8. Post alarm recording

(Enabled only when using Motion or Sensor from the 'Scheduling' menu)

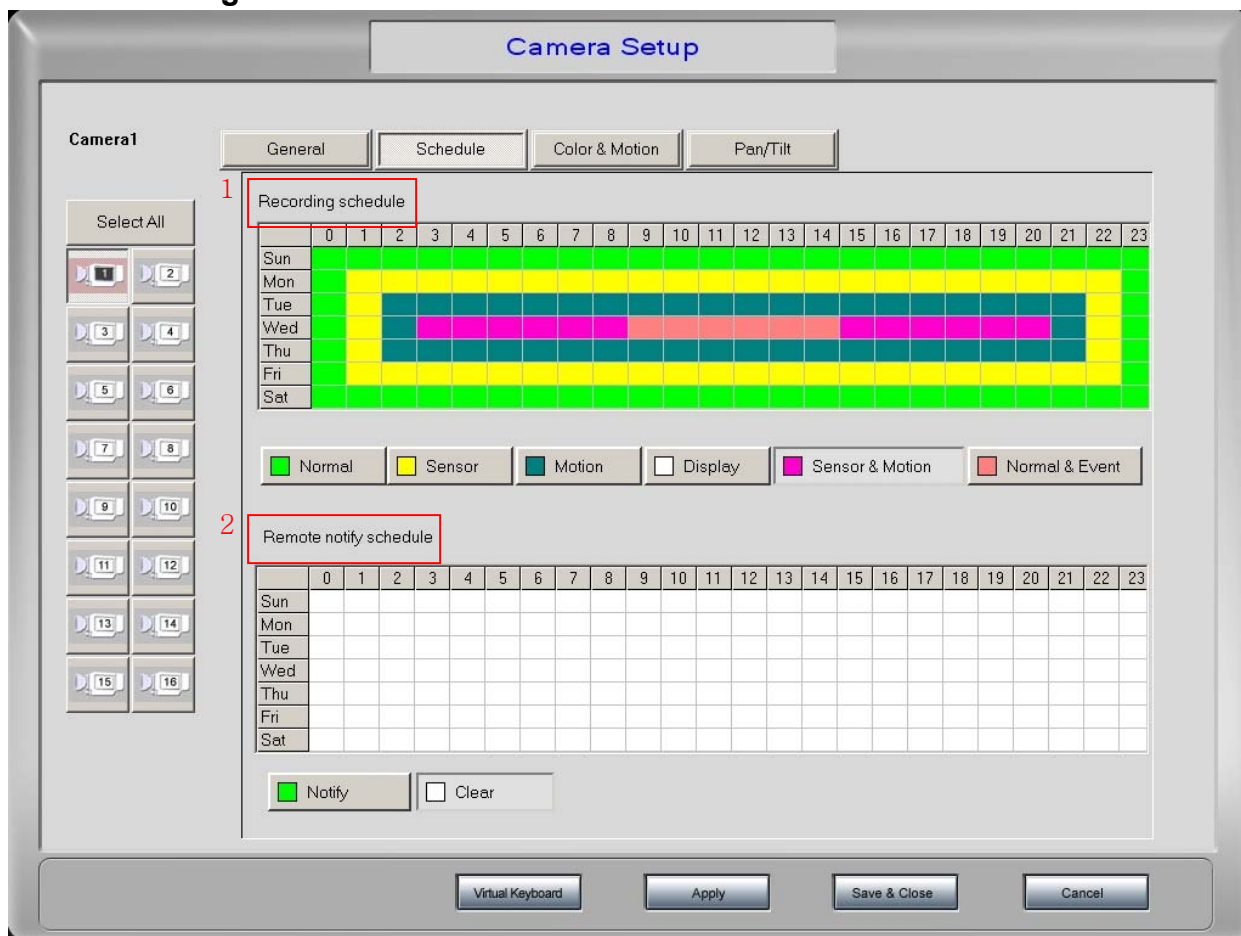
- **Post :** Records the selected amount of images after a Motion or Sensor detection.

9. Event notify method

- **Warning on event:** When events come out by detecting motion or sensor, it goes off the beep sound. At this time, Red mark is shown on that screen. If click on that screen, the beep will disappears.
- **When a video loss happen, relay out::** It is used for activating a relay-out when video loss happen to be arisen.

Remember pushing the "**Apply**" OR "**Save&Close**" button to complete the settings of individual camera.

3-3-2 Scheduling



Choose the time (set by hour and day-of-the-week) for recording images of the camera from the Scheduling menu.

1. Recording schedule

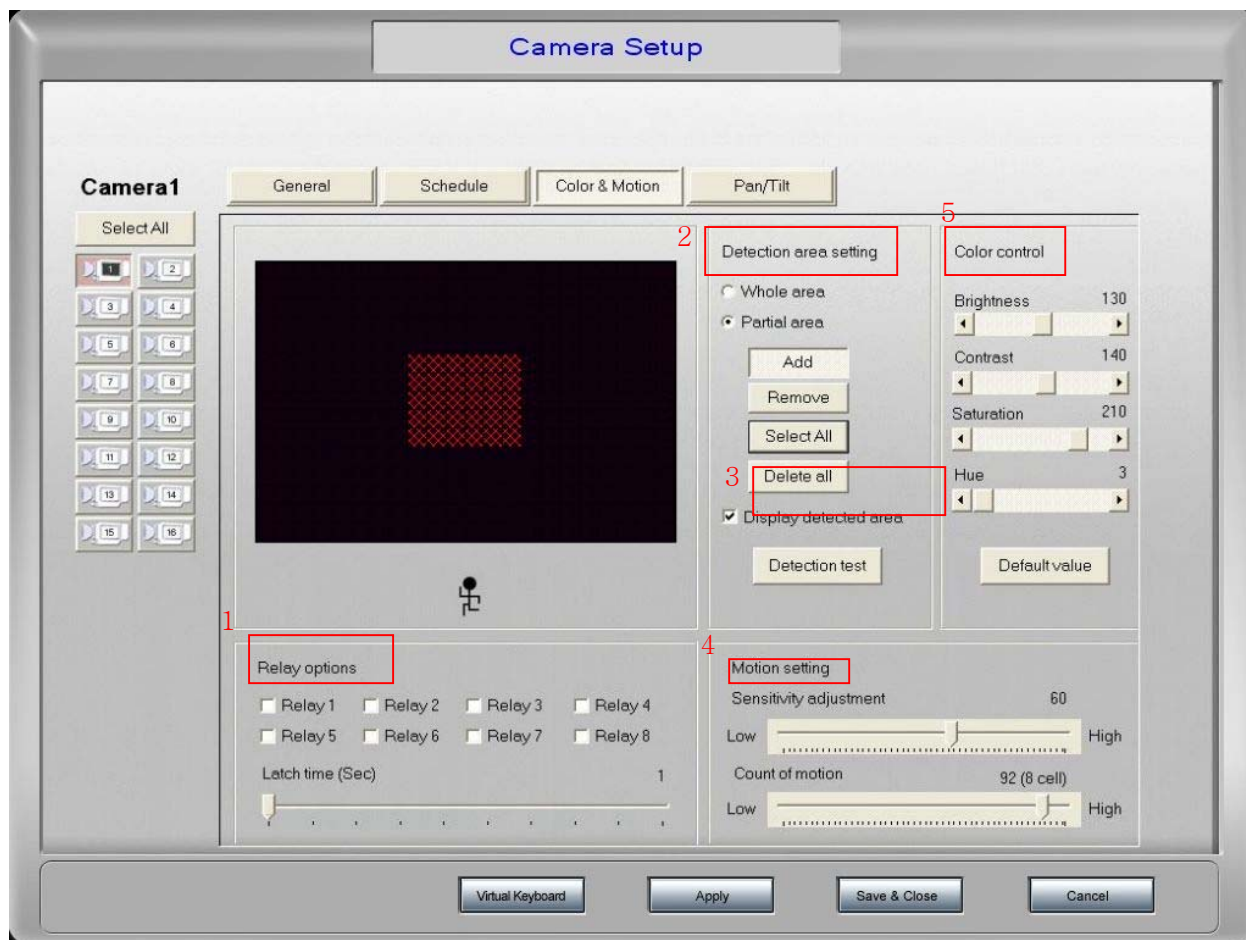
- **Normal** : All images captured on the camera is to be recorded.
- **Sensor** : Record images only when the sensor is triggered.
- **Motion** : Record images only when motion is detected.
- **Display** : Choose not to record images, just for view.
- **Sensor & Motion** : Record images when the sensor is triggered or motion is detected.
- **Normal & Event**: Record only one(1) fps(frame per second) when no motion (or sensor) is detected, but continuous recording once when detection occurs.

2. Remote notify schedule

Data will be transmitted via the network program on the chosen time of the schedule chart. (enable only when set by Motion & Sensor or E-mail notify)

- **Notify** : Set the desired time and day-of-the-week.

3-3-3 Color & Motion



From this menu, control the color of the image, make detailed settings when Movement is set on the Schedule menu, and choose Digital Outputs (sirens, etc.).

1. Relay options : Enable when Motion is selected on the Schedule menu.

- **Use relay** : Click for use, the 4 relay outputs.
- **Port 1~8** : Select each of the desired port to be enabled.
- **Latch time** : Select the time differential to remain signal prolonging after motion(sensor) triggered.

2. Detection area setting

- **Whole area** : Detect the motion within a full screen area.
- **Partial area** : Click "Add" and drag for a specific area to detect motion. And "Delete" to erase the zone setup.

3. Display detected area: Check the box, and press the "Detection test" to test the sensitivity of motion detection.

4. Motion setting

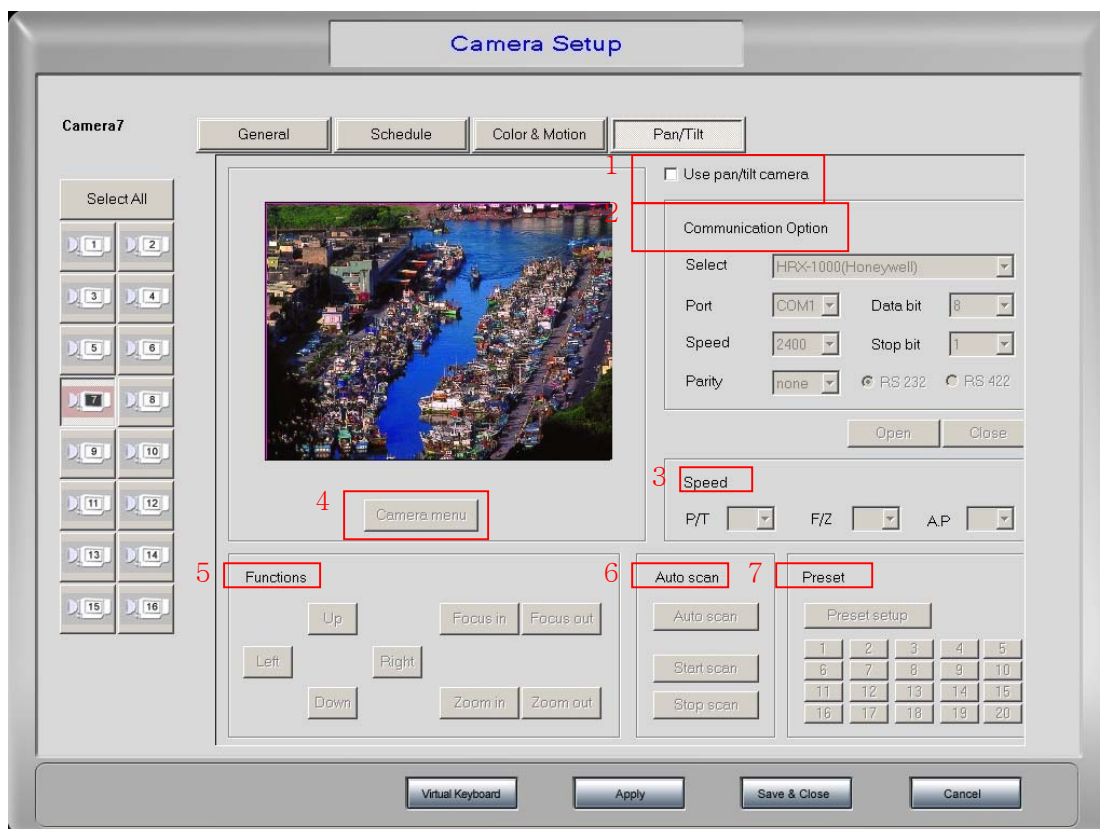
- **Sensitivity adjustment:** Set the sensitivity for each cell, range from low(1%)~high(100%)
- **Count of motion:** Set the count of motion, range from low(324 cell)~high(1 cell)

EX: Set the sensitivity adjustment as "80", the Count of motion as 5 cell, it means that we set the sensitivity as 80 for each cell, when the motion trigger area more than 5 cell,dvr will start recording.

5. Color Control

Set up the Brightness, Contrast, Saturation, and Hue of each camera image. "Default Value" button to return to the original ones.

3-3-4. P/T/Z



1. **Use pan/tilt camera** : Check to enable Pan/Tilt options.

2. Communication option

- **Select** : Select the maker/model receiver for application
- **Port** : Select the serial port to connect to the computer
- **Speed** : Set the speed of the Pan/Tilt option.(it depends on the camera equipment being used)
- **Parity, Data bit, Stop bit, RS232, RS422** : Set in accordance with the Pan/Tilt equipment manual.
- **Open** : This is for PTZ configuration . Click "Open " then, It come to port to be opened.

- **Close** : This is for closing PTZ port.

3. Speed

- **P/T** : Speed adjustment of Pan/Tilt
- **F/Z** : Speed adjustment of Focus / Zoom
- **A.P**: Speed adjustment of Auto scan

4. Camera menu : If clicks, you can see the menu for PTZ devices.

5. Functions: At function, many tab can be used for moving up/down, left/right and to activate the focus and zoom.

6. Auto scan

- **Auto scan** : It makes scanning from “Star scan” to “stop scan”.
- **Start scan**: It defines the starting position of PTZ.
- **Stop scan**: It defines the ending position of PTZ.

7. Preset

- **Preset setup** : This helps PTZ to memorize No. of the appointed locations to go , up to 10 locations.

For example , how to set the preset at no.1 , is like this.

Click “ preset setup” and “No. 1” Tap, and Move PTZ to the desired location and stop and depress the taps of “ preset setup” and “No. 1”.

Note : 1. Definitely click “close” after set as you want by clicking “ Open”

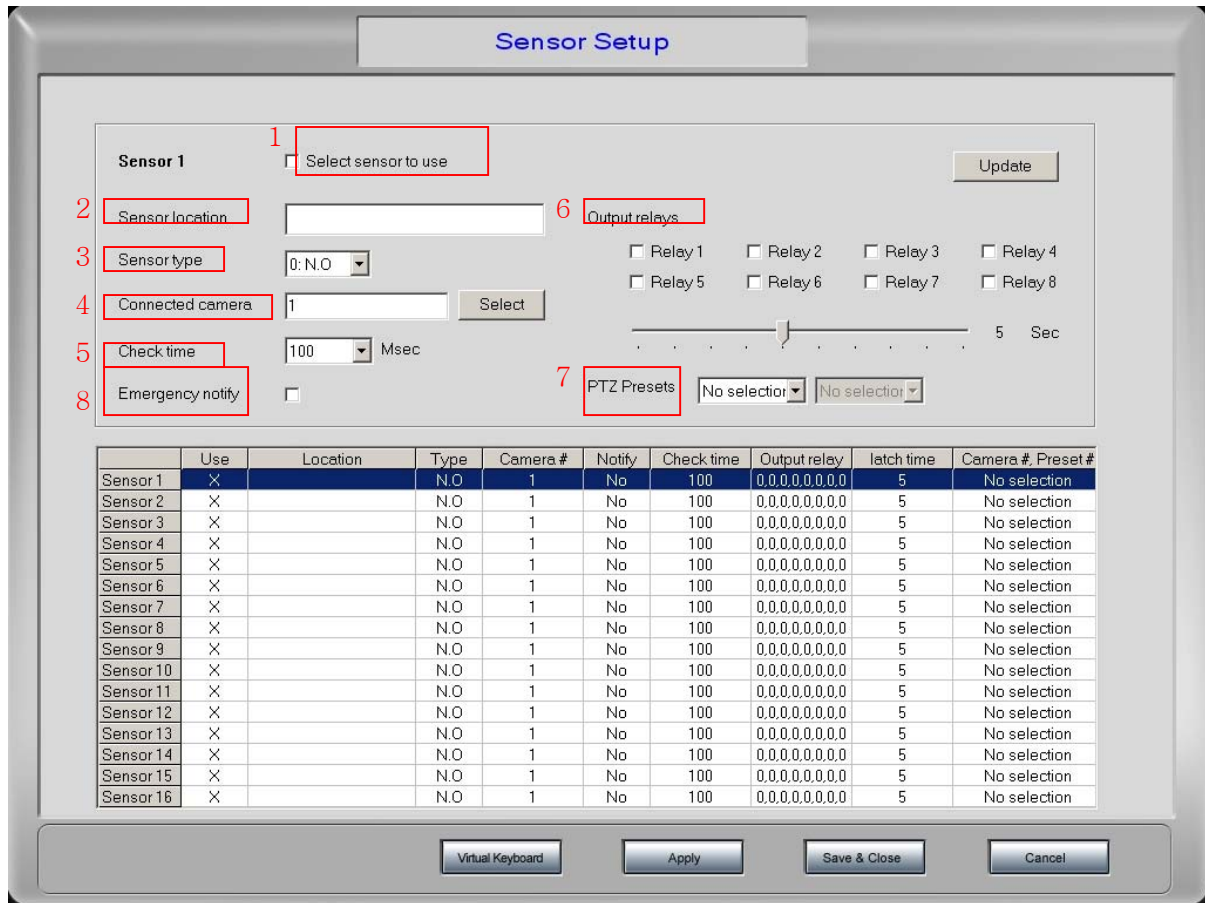
2. Depending upon PTZ type, activating items such as auto scan, camera menu , preset, speed etc, may be different when click “open”. For further specifications for PTZ, please refer to PTZ manual supplied by PTZ maker.

3 .When port open error message appears on Window XP platform, you may change the network port: 3003 by using “start.exe” located in DVR folder under “program file” folder.

P/T/Z camera Supported Protocols List:

- | | |
|------------------------------|-------------------------|
| > D-Protocol(Pelco) | > P-Protocol(Pelco) |
| > DSCP(DynaColor) | > 5-Series(Pelco) |
| > Vicon | > Panasonic |
| > Philips | > Kalatel |
| > Cannon | > PIH7000(Lilin) |
| > StarPT | > SAE Elec. |
| > CCD Control Box | > SSP(Samsung) |
| > SPD1600(Samsung) | > MD-1000(Nicecam) |
| > CRR1600i(Fine) | > SUNGJIN |
| > SERIM | > PT102N(C&B) |
| > HSD-251 (Honeywell) | > HSD-251 II(Honeywell) |
| > DRX500(Dongyang) | > HSD251(FULL) |
| > LPT-A100L(LG) | > GC655/755(Honeywell) |
| > 2000(SensorMatic) | > DY255-DRXB(Dongyang) |
| > CRD-J6416 | > KPC-S38CZH |
| > SecuMera Pro(TechnoVision) | > NKH-97CHE(NikoPT) |
| > WPT101 | > CP-32M(CommaxPT) |

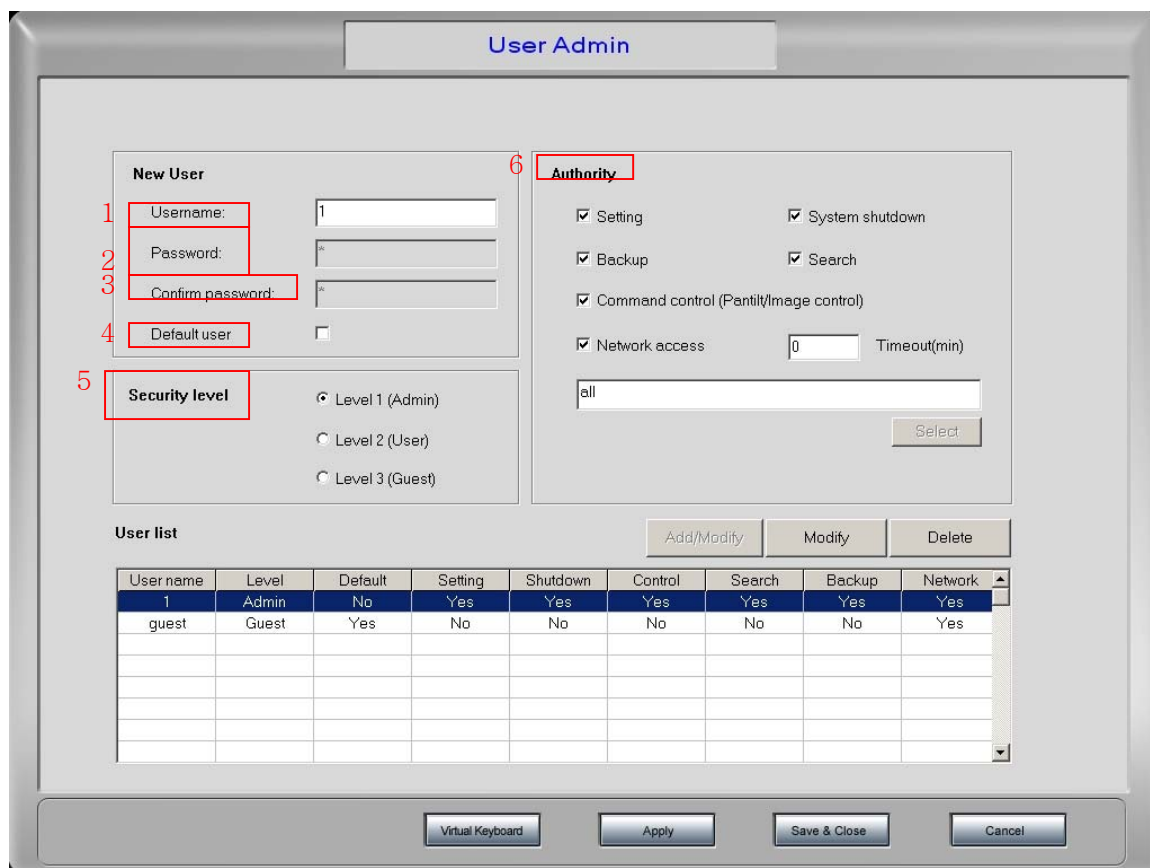
3-4 Sensor



1~16 sensors can be connected, and sensor activation can be linked to Digital Outputs and cameras.

1. **Selected sensor to use:** Check the box of the chart on the bottom half of the screen to choose specific group which sensors to use.
2. **Sensor location :** Input the position of the sensor.
3. **Sensor type :** Choose the sensor type being used. (Sensor activation: 0-NO, Sensor disables while sensor activated: 1-NC)
4. **Connected camera :** Choose the camera to enable recording when sensor is activated.
5. **Check time :** Check for sensor movement every designated interval.
6. **Output Relay 1~8 :** Choose the appliances connected to the Digital Output.
 - **Output time :** Select the time differential continuity.
7. **PTZ Preset:** Select the camera number and Preset number when sensor trigger.
8. **Emergency notify :** Regardless of "Remote notify schedule" in "Schedule", if you checked "Remote notification of events" in "System Setup" of Settings, Notification can be sent on the event of sensor trigger, to the desired destination.

3-5. User Admin



1. **User Name** - Input name of admin or user.
2. **Password** - Input password.
3. **Confirm Password** - Password for check.
4. **Default user** –when you log in DVR program,program will login with default user.
(Admin can't set "default user")
5. **Security Level** - Select the level of the authority.
6. **Authority** - Assign the functions to which the admin. Will have authority.(if you set Network access,you can set the user timeout for net-dvr login)

After filling the user information and checking the appropriate boxes, push the "Add/Modify" button to register the admin. information. To change the status of an existing administrator, click on the administrator from the graph and make the desired changes.

To delete an administrator or user, click on the desired admin. and push the "Delete" button.

4 Utility

4-1 Backup Setup

The screenshot shows the 'Backup Setup' dialog box with the following components:

- 1** Use schedule
- 2** Scheduling: Sunday
- 3** Hour: 0 Minute: 0
- 4** Camera selection: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
- 5** Backup Device Setup: C: [Browse]
- 6** Schedule table: Start backup timer [Update]

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Time	Status	Backup path
Sunday	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	00:00	Off	C:
Monday	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	00:00	Off	C:
Tuesday	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	00:00	Off	C:
Wednesday	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	00:00	Off	C:
Thursday	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	00:00	Off	C:
Friday	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	00:00	Off	C:
Saturday	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	00:00	Off	C:

Recorded images can be backed up automatically when a Backup Schedule is noted. If choose the day-of-the-week, then the backup done automatically. **Remember that automatic Backup is enabled only when "Backup" on the file is enabled!**

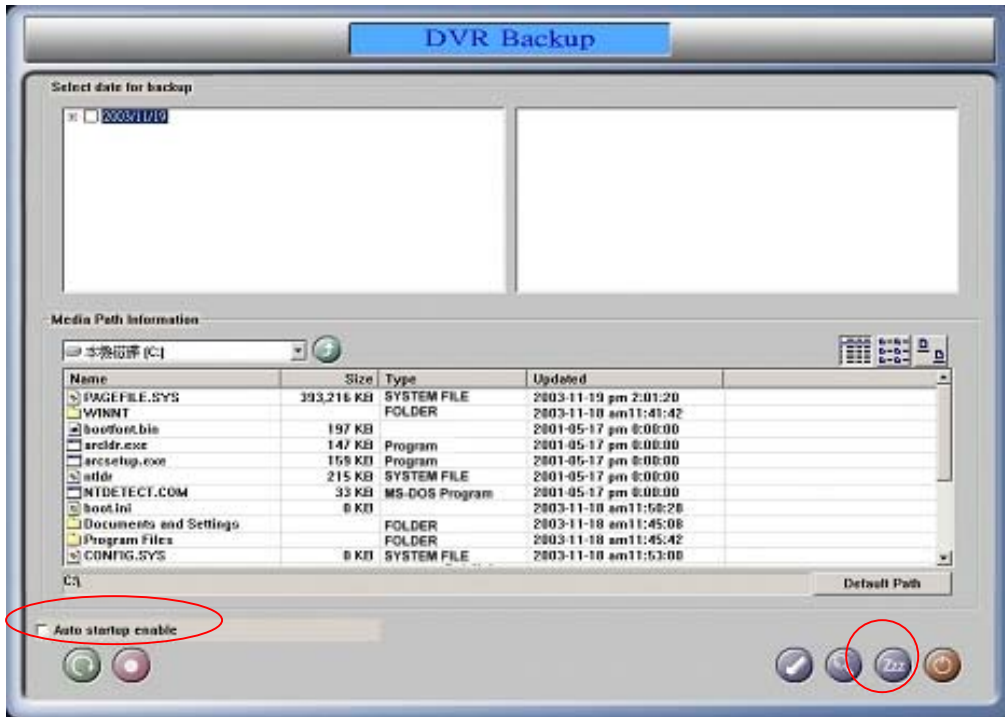
- 1. Use schedule** : check to use a Backup Schedule.
- 2. Scheduling** : choose date from the chart below.
- 3. Hour, Minute** : choose the time to start Backup.
- 4. Camera selection** : select the cameras that you want them to be backed up.
- 5. Backup device setup** : choose a specific hard drive to save the backup data. (data can be recorded on CD or DVD, and these are shown as drives on the computer. ex) HDD will be shown as drives C: D:, CD will be drive E:, etc.)
- 6. Start backup timer** : On rebooting, clicking this undertakes the Back-Up setting to be stored in resident memory.(This event is likely to be recognized with appearance of the tray bar at screen, bottom right-sided.)

When finished with the settings, be sure to push the "Update" button to save them. Updated information should be shown on the chart on the screen.

When finished the Backup settings, be sure to run the Backup EXE file before starting the main program, otherwise scheduled backup will not work automatically.

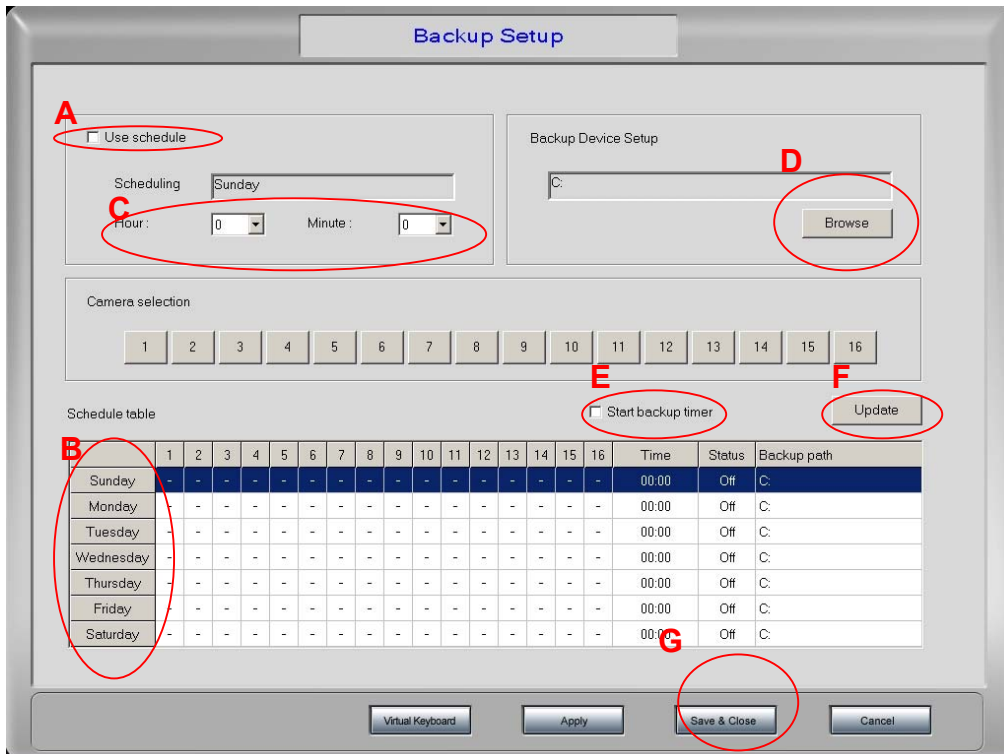
4-2. Setup Auto Backup

1.[Start]→[Programs]→[DVR SYSTEM]→BACKUP



Check "Auto startup enable", then click the button "Zzz" to task bar.

2.DVR-Setting→Backup



- A. check "Use schedule"
- B. select "data"
- C. select "hour" and "minute",Backup program will start backup at this time
- D. select save path
- E. check "start backup timer"
- F. click "Update"
- G. Save&Close

Then close DVR-Setting and execute DVR-Main

What is "Start backup timer"

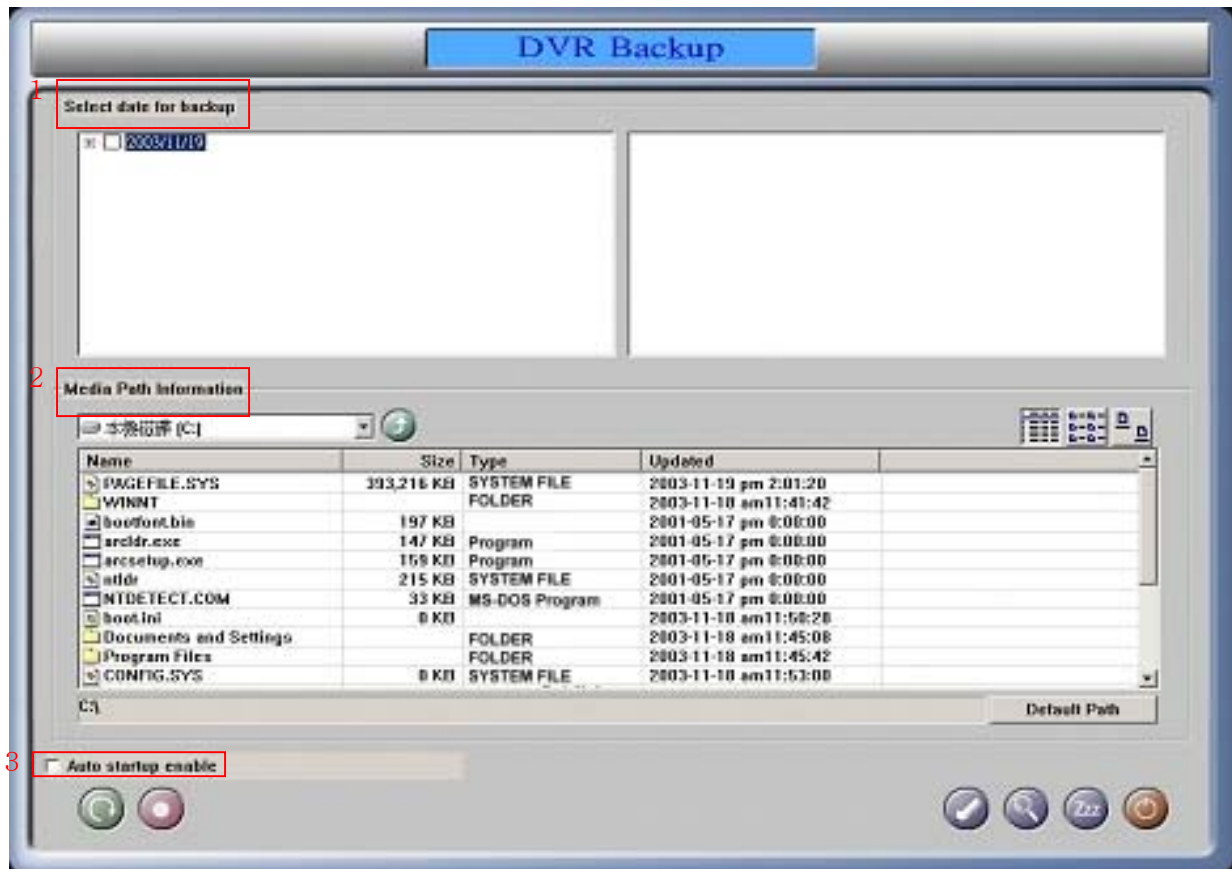
Ex: Make backup at 12:00(Sunday) and set "start backup timer". It means that DVR will make back up from 12:00 until next time of backup. Make next backup at 18:00 Wednesday, DVR will record the backup during 12:00(Sunday)~18:00(Wednesday) and start next backup.

3.DVR-main

When times up, the screen will like this.



4-3 Manual Backup



Backup can be done manually by choosing the desired folder, or be done automatically using a Backup Schedule.

- 1. Select date for backup :** From the window on the left, choose the camera and date, hour, minute desired for backup. The window on the right shows the progress of the backup process as it occurs.
- 2. Media Path Information :** Create a folder as a desired backup destination, find it from the window and double-click on it.
- 3. Auto Startup :** When the box is checked, automatic backup according to the present settings will occur the next time "DVR Backup" is activated.



: Erase all settings.



: Start backup according to current settings. (You'll be asked once more to verify the drive and folder chosen as backup destination)



: Display the starting and the finished time of backup.



: Run "Backup Viewer".



: Backup program switches to stand-by mode. (If Backup Schedule was chosen on the user settings, then the Backup program MUST be activated and is in stand-by mode!!)



: End Backup program.

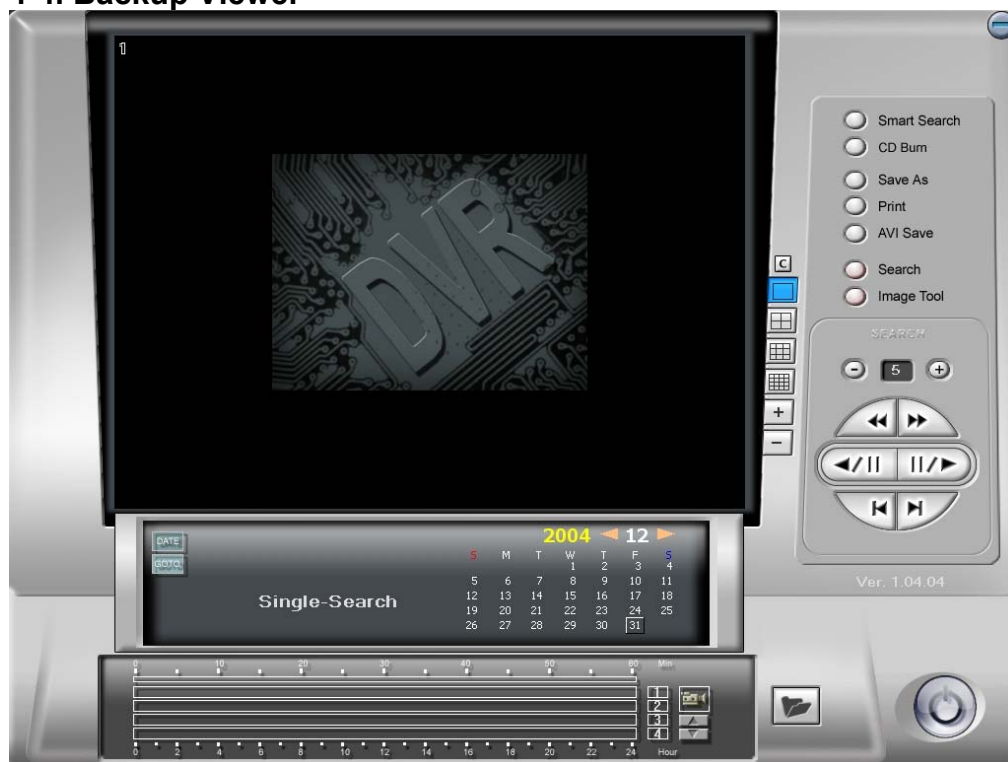
When copying Backup data to other media: you MUST use folder name as date-camera no-time in order . That is you must use the same folder name as the folder name in Backup folder.

And Backup files are named by minute unit while hour is set by folder name. It's recommended you use like it, too.

Example dat, 01.dat : back-up file at 01 minutes of backup date

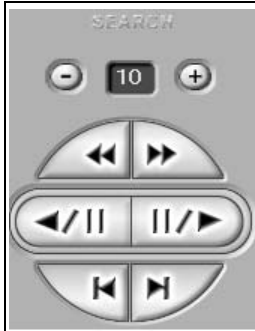
 Dat.12 dat : back-up file at 12 minutes of backup date

4-4. Backup Viewer



Backup Data can be reviewed with only the "Backup Viewer" program, on a search-by-date basis.

	<p>'Date' : Choose the specific date desired for search. If the dates do not appear on screen, push the "Date" button below.</p>
<p>'Goto': Directly to select date and time that you want.</p>	
<ul style="list-style-type: none"> <input type="radio"/> Smart Search <input type="radio"/> Save As <input type="radio"/> Print <input type="radio"/> AVI Save 	<p>"Smart Search": Use for more quickly to find out when the object moved.</p> <p>"Save As" : to save the current image,</p> <p>"Print" to print it out.</p> <p>"AVI Save" button to save motion picture images from that point to the point you choose to stop as an .avi file.</p>
<ul style="list-style-type: none"> <input type="radio"/> Search <input type="radio"/> Image Tool 	<p>"Search" button to use the SEARCH menus,</p> <p>"Image tool" button to use the Image Tools menus.</p>
	<p>Image information display on/off button</p>
	<p>You can take the data from the backup data as per every date</p>



SEARCH menu appears as the "Search" button is pressed. You can play images both forwards and backwards, and search image by image, also both forwards and backwards



IMAGE menu appears as the "Image tool" button is pressed. Use the various options (Zoom In/Out, Sharpen, Soften, B&W) to adjust the image.



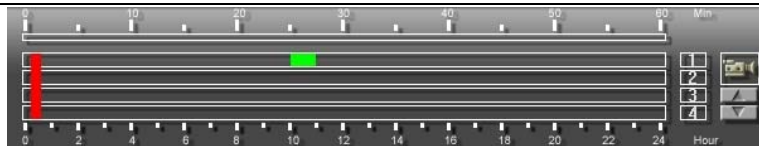
Push to end "DVR Search"



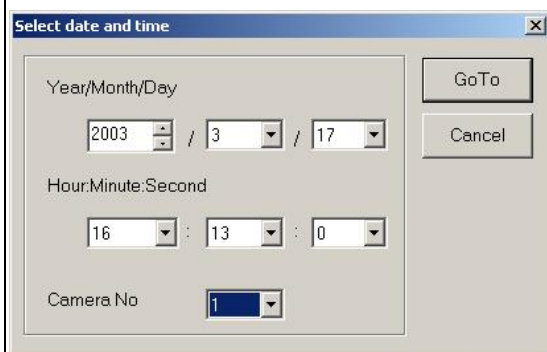
Switch Camera mode and sound mode by double click.



Use the buttons to scroll through cameras 1~4, 5~8, 9~12, 13~16.



The camera number (numbers on the right), hour (numbers on the bottom), and minute (numbers on the top) are indicated on the graph, and click the mouse to search the desired data.



On this menu, select time and date to be searched directly and Click "GOTO". Then the stored image files appear if the stored data exists as effective of that date and time. If not exists, the data, at the closest to that date or time, are searched.




CD BURN

Start CD burning program

4-5. Auth Image Tool




This program deciphers images saved by the Search or Backup Viewer Program, and tells you when an image has been altered.


-  Open an image to decipher. With real unaltered images, the image information appears as shown above, but nothing appears for altered images.
-  Print image.
-  End program.


4-6. AVI Viewer



This program allows you to watch Avi file saved as in MP4 type in Search or Backup Viewer. However, if execution file is included while saving AVI, the file is saved as EXE file and has viewer inside the file. Thus no other viewer is needed in order to see it.

 : Open MP4 file.

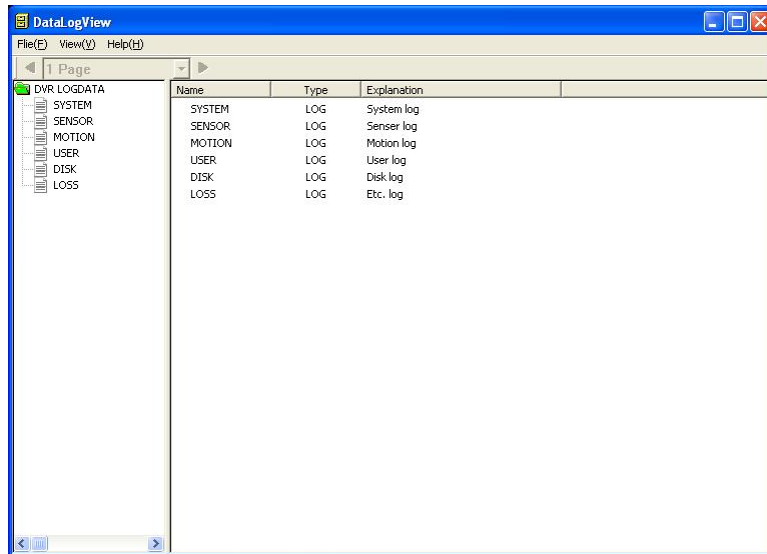
 : Play, pause, stop button

 : Play by 1 frame at a time (back and forth)

 : Adjust image size.

 : Sound button. Press before play the video.

4-7. Log Viewer



This program interprets Log file that is created during operation.

The log file contains following information.

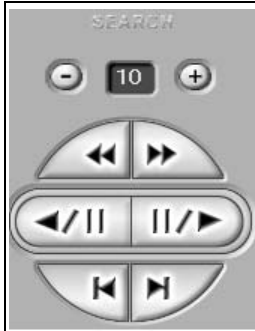
1. Start and end of program (Main, Search, and setting)
2. Motion and sensor record (time and camera number)
3. User login and logout record
4. Disk warning message (DB overwrite warning message)
5. Video loss record

5. Search



Search Single or Multiple image data according to date and time and camera. Desired images can be saved separately and even be printed.

	<p>► 'Date' : Choose the specific date desired for search. If the dates do not appear on screen, push the "Date" button below.</p> <p>► 'Goto': Directly to select date and time that you want.</p>
<ul style="list-style-type: none"> <input type="radio"/> Smart Search <input type="radio"/> Save As <input type="radio"/> Print <input type="radio"/> AVI Save 	<p>"Smart Search": Use for more quickly to find out when the object moved.</p> <p>"Save As" : to save the current image,</p> <p>"Print" to print it out.</p> <p>"AVI Save" button to save motion picture images from that point to the point you choose to stop as an .mp4 file.</p>
<ul style="list-style-type: none"> <input type="radio"/> Search <input type="radio"/> Image Tool 	<p>"Search" button to use the SEARCH menus,</p> <p>"Image tool" button to use the Image Tools menus.</p>
	<p>Image information display on/off button</p>



SEARCH menu appears as the "Search" button is pressed. You can play images both forwards and backwards, and search image by image, also both forwards and backwards



IMAGE menu appears as the "Image tool" button is pressed. Use the various options (Zoom In/Out, Sharpen, Soften, B&W) to adjust the image.



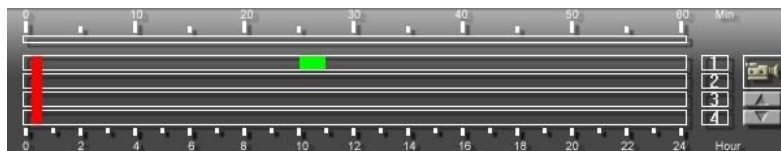
Push to end "DVR Search"



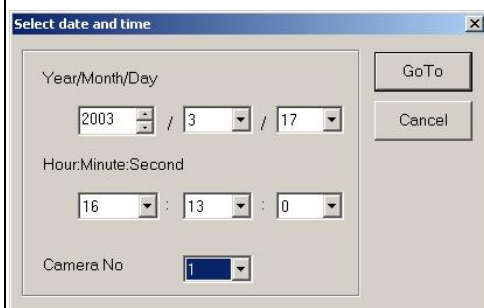
Switch Camera mode and sound mode by double click.



Use the buttons to scroll through cameras 1~4, 5~8, 9~12, 13~16.



The camera number (numbers on the right), hour (numbers on the bottom), and minute (numbers on the top) are indicated on the graph, and click the mouse to search the desired data.



On this menu, select time and date to be searched directly and Click "GOTO". Then the stored image files appear if the stored data exists as effective of that date and time. If not exists, the data, at the closest to that date or time, are searched.

CD BURN

Start CD burning program

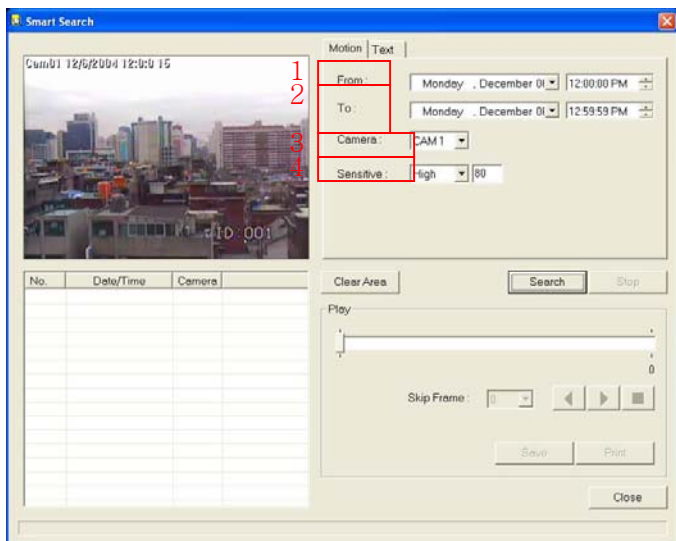
When you click "AVI Saving", following menu appears, you can designate the camera No. and recording start / end time, folder location to be stored and data type. Now, press "Start", then AVI storage becomes to start.

The screenshot shows a dialog box titled "AVI" with the following fields and controls:

- Start Time:** Year/Month/Day (2004 / 7 / 12) and Hour:Minute:Second (0 : 34 : 0).
- End Time:** Year/Month/Day (2004 / 7 / 12) and Hour:Minute:Second (0 : 34 : 0).
- Camera:** A grid of checkboxes for cameras 1 through 16.
- Save Directory:** A text box containing "C:\" and a browse button (...).
- Include execute file:** A checked checkbox.
- MSG:** A text box containing "MSG".
- Buttons:** "Start", "Stop", and "Close".


PS: If there is no AVI player for Mpeg4 format on your PC, please select "include execute file" then the file can be played normally.

5-1. Smart Search

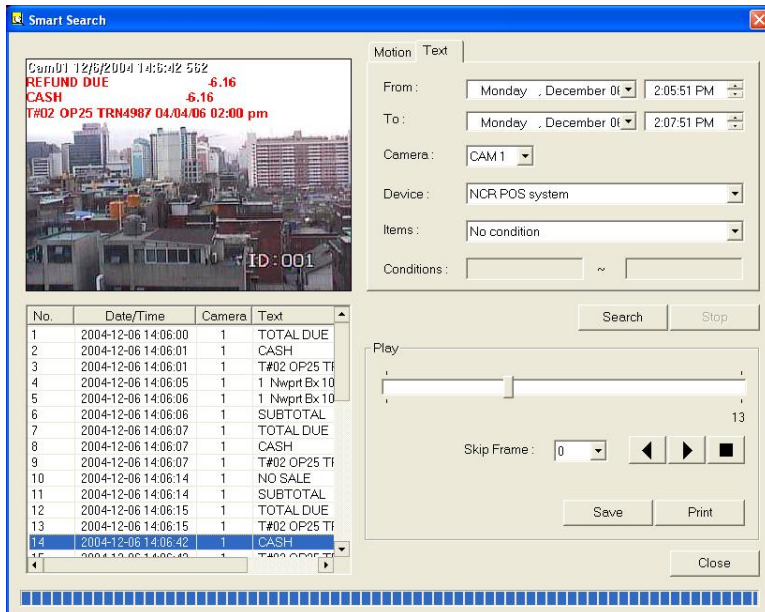


- 1. Date:** date to be searched
- 2. Time:** time to be searched
 - **From:** starting Time to be searched
 - **To:** ending time to be searched
- 3. Camera:** camera no. to be searched
- 4. Rate of Motion:** No. of recording sensitivity at the area to be searched. The Sensitivity are ranged to High:60, Middle:40, Low:20. But by directly inputting the value, the results may be different.

Note: The lower No. of “ rate of motion ”, the higher sensitivity it has , The higher sensitivity has more precise detection. But it needs more data and takes more time to search.

Search	search the images per preset data.
Stop	It stops smart searching.
Clear Area	It deletes the designated area for smart search.
NO.	It indicates the total no. of image files searched by smart searching.
Skip Frame	If you feel inconvenient in handling the huge stored data, you can make the data file reduced to compact data file by skipping as much as the set values.
	These tab are used for “Play”, “reverse Play”, ”Stop” when searching data.
Save	It makes saving of data searched by smart searching function. (Save file is made with .BMP.
Print	It prints the searched data by smart search function.
Close	Close the smart searching process.

5-2 POS data search

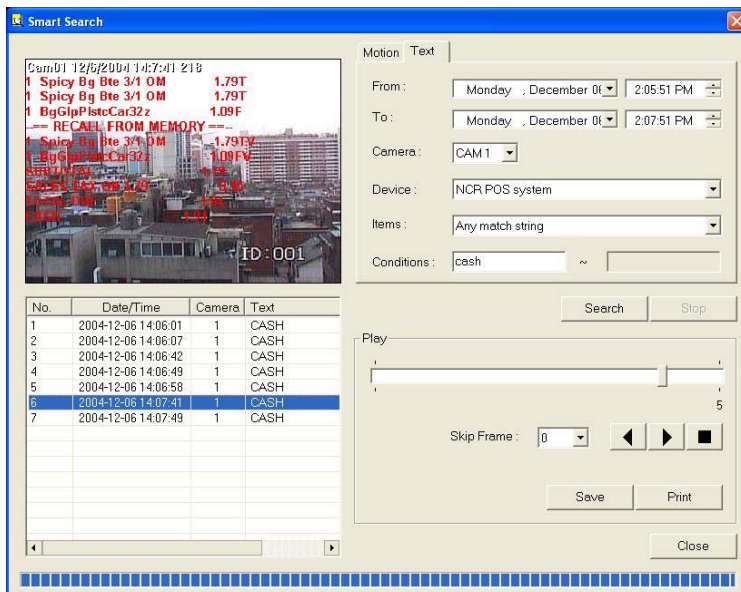


Run Smart Search and click Text tab.

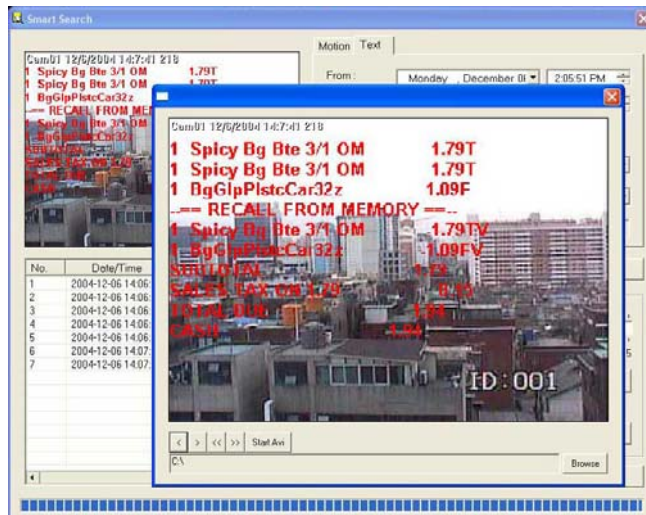
- Choose date, time and camera number to search.
- Select device.
- items: No condition – This will search every data that has been appeared in the time period.

Any match string – User can compose a string (in condition) to compare and search data text.

* Event string – when event string has been registered in Device Setup, the event string appears in items



Double click on one of searched result will bring a pop-up window as following picture.



The size of pop-up window is adjustable to feed the demand of larger viewing. Click on one of four corners to enlarge or shrink the picture.

This pop-up window allows play by frame, playback, and AVI saving.

6.Features of DVR-Net

- **Support of TCP/IP Protocol (PSTN, ISDN, ADSL, etc.)**
Use any of the communication protocols to log on to DVR.

- **Real-time Monitoring**
Log on DVR-Net to monitor real time DVR images.

- **Searching and Recording DVR data**
Search recorded data in DVR, and save it in the remote site.

- **Two-way Voice Communications**
DVR-Net allows users to receive and send audio to DVR.

- **PAN/TILT/ZOOM/FOCUS remote control**
Control PTZ cameras remotely by DVR-Net.

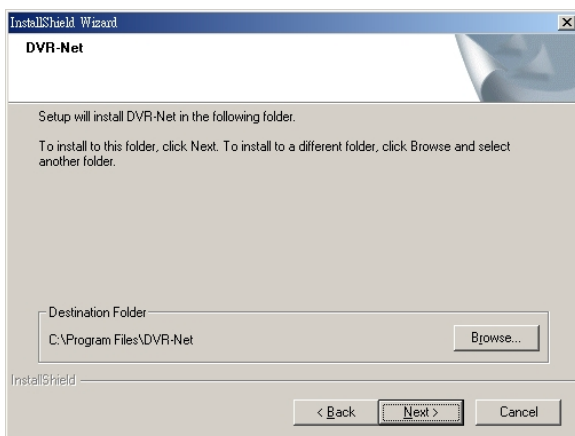
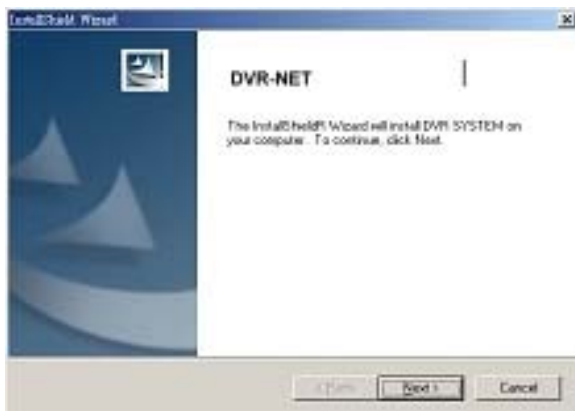
- **Change DVR Settings Remotely**
DVR-Net enables users to turn on/off cameras, change recording schedules, and reset sensors

- **'Notify'(Automatic message alert from DVR)**
DVR-Net is automatically started upon a DVR event, motion detected or an alarm triggered.

- **Compatible O.S**
Windows 2000/XP systems.

7. Installation of DVR-Net

Click on 'setup.exe' and follow the messages.



You Need to restart computer

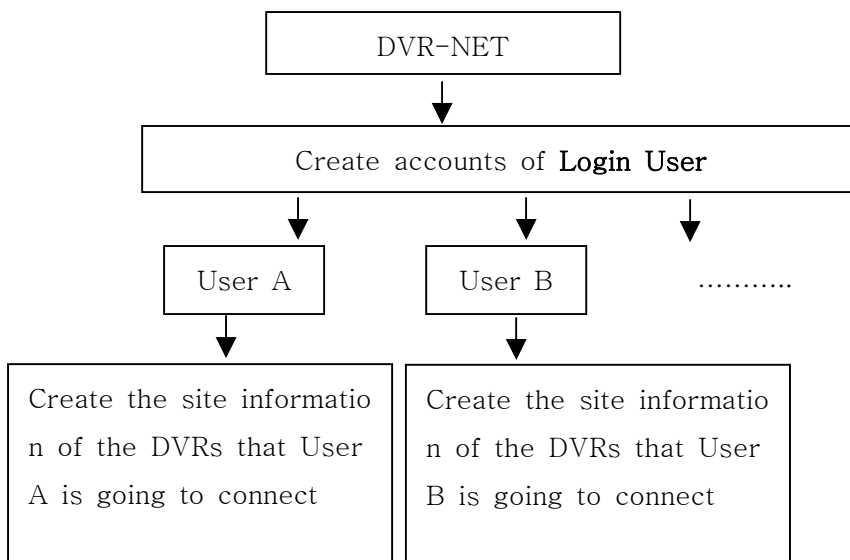


It shows at desktop after the installation is completed.

8. DVR-Net

8-1 DVR Login Configuration:

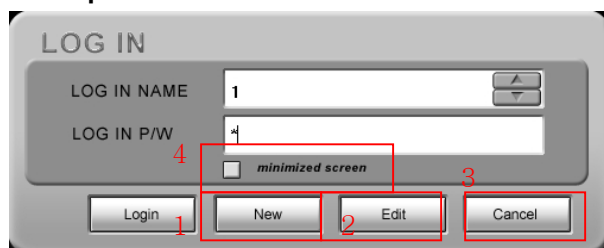
8-1-1 How it works



8-1-2 First Time Setting

✦ **Step 1:** Run DVR-Net and it pops out the following log-In window.

✦ **Step 2:** Select **New**



- 1. **New** : Add a new log-in user and create DVR sites under this user name
- 2. **Edit** : Edit the DVR site configuration
- 3. **Cancel** : Exit without change
- 4. **Minimized screen** : Minimized the screen of system

✦ **Step 3: Input the user information:** this is to set up the information of users that log in to the DVR-Net

- 1. **Login name** : Create an account of the Login User
- 2. **Description** : Describe the user.
- 3. **Password** : Assign a password to the user
- 4. **Confirm P/W** : Re-type the password

➤ **Step 4: Click OK to continue “Register site information”** : click New to register the site information of the DVR that is going to be connected.

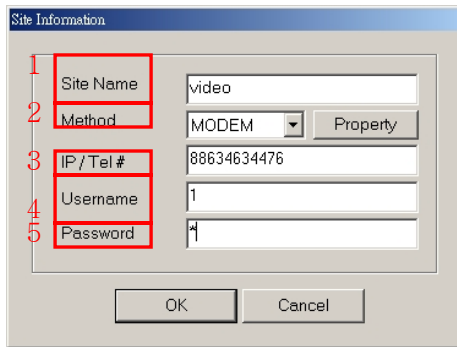
Site name	IP/Tel no.	Method	

- 1. **New** : Create a new DVR site .
- 2. **Edit** : Edit a site.
- 3. **Delete** : Delete a site.
- 4. **Close** : Save and Exit.

Note :

- 1. Site names are not allowed to be repeated.
- 2. Do not edit or delete any site while DVR-Net is running.

Step 5: Register site information, and click “OK” to save the settings.



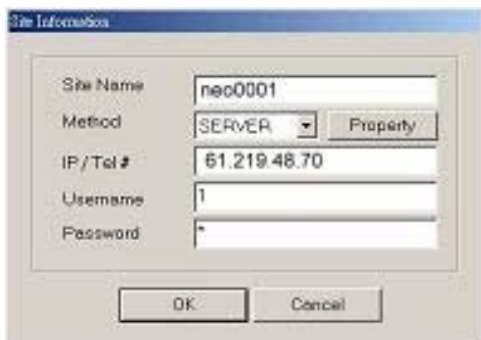
- 1. Site name :** Create a site name.
- 2. Method :** Select “TCP/IP” for LAN, Cable Modem, ADSL
 Select “Modem” for PSTN Modem
 Select “Server” for use IP Server.
- 3. IP/Tel no. :** Input the IP address or telephone number (for PSTN/modem) of DVR
- 4. User name :** Key-in the user ID that allows “Network Access” in your DVR “User Admin” list
- 5. Password :** Input the password of this ID

Connection by Modem, select method to Modem,click “property “ and type the contents at dialogue box of “Ras User” and “Ras Password” like figures,depending upon OS types; Window98 or Windows2000 / XP.



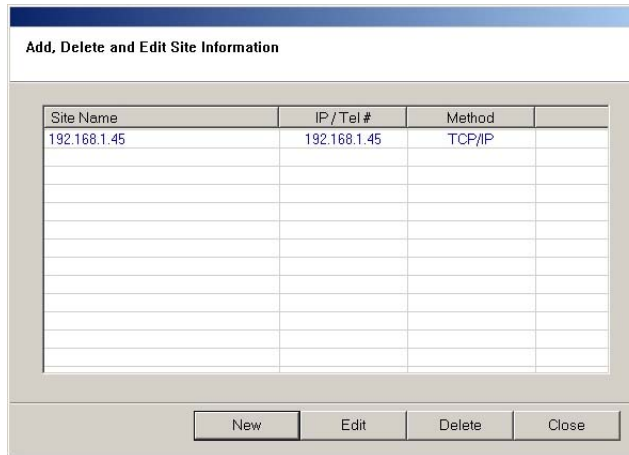
If the DVR’s OS. is Windows9x, You should not specify anything in dialogue box of “Ras User ” and “Ras Password” .
 If the DVR’s OS. Windows2000/XP, You should specify anything in dialogue box of “Ras User ” and “Ras Password”

Connection by IP Server, the Site Name will be the DVR’s code number which you want to connect.

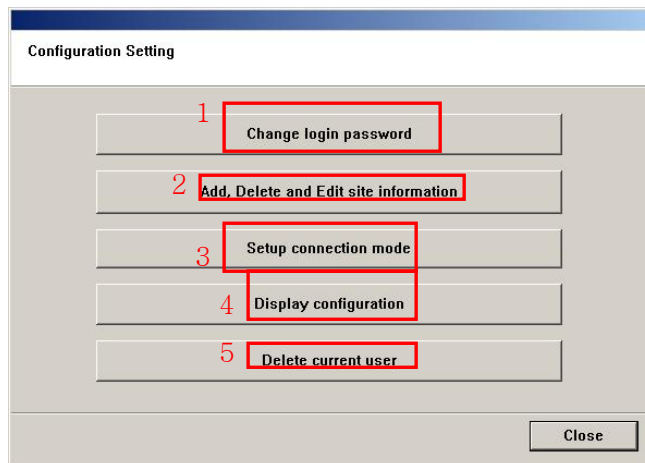


Note
 This “Site Name” must be exactly same with the code set in the DVR

- ✦ **Step 6: To re-edit or to delete the sites you just created:** select the site and click Edit/Delete to re-edit/delete the site.
- ✦ **Step 7: Repeat step 5 and 6 to create another new site.**

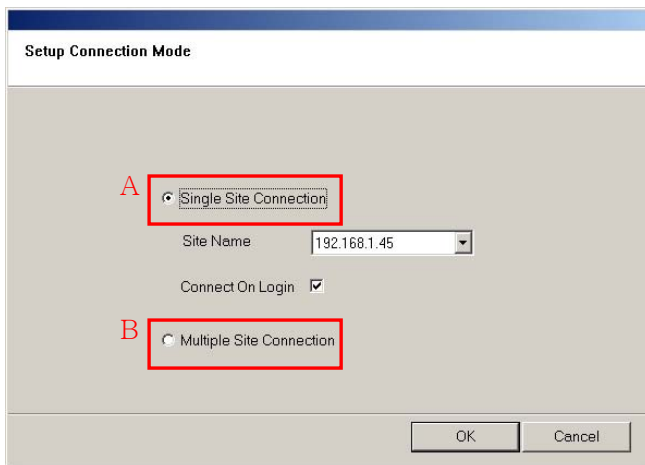


- ✦ **Step 8: Click “Close” to save settings and continue.**
- ✦ **Step 9: Click “Setup connecting mode”**



- 1. Change login password :** change DVR-NET users' passwords.
- 2. Add,Delete and edit site information:** register site information.
- 3. Setup connecting mode:** set the connection mode, Single site or Multi sites.
- 4. Display configuration:** setup the initial display screen, assign a directory to save data and a file name to save system log, and setup whether and when to display caption.
- 5. Delete current user:**

Step 10: Setup “Setup connecting mode”: Select Single or Multiple, and check Initial Connect for broadband users.

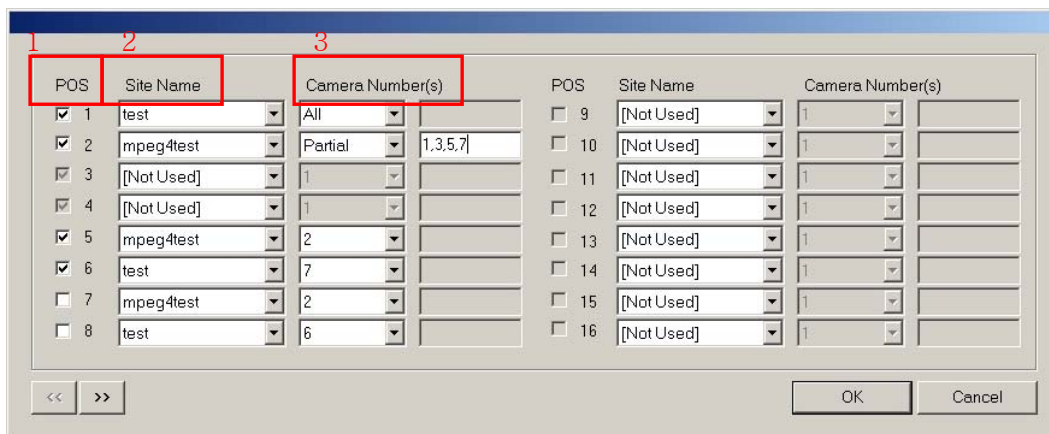


A- Single site connect: When there is only one DVR site to be connect and check “Initial Connect”

- When Initial connect Checked – suggest to check the box for broadband users
DVR-NET transmits video of all cameras automatically
- When Initial connect Unchecked – Users have to click the camera button manually to start video transmission

B- Multiple site connect: When there are more than one DVR site to be connected

** The following picture is just an example. Please enter correct site information.



1. Pos(Position): The channel number of DVR-NET.

2. Site name : Select the site to be connected.

** Not Used: if no site to be connected in this channel

3. Camera number(s) :

Choose the Camera Number of that DVR that you want to monitor in DVR-NET.

All: Show all cameras of that DVR site in this Position.

Partial: Display each camera auto-sequentially in the order you put down in this column.

You can set switch interval in the following step.

- ✦ **Step 10: Setup “Display configuration”:** Choose an initial screen, assign a Save Directory and create the log file name.

- 1. Initial view:** Set the initial screen as full screen, quad screen, or other split mode, when DVR-NET starts to run. There are 1, 4, 6, 9, 10, and 16 split mode to choose from.
- 2. Data location:** It makes a set up of directory to be stored when clicks “Save” under accessing to DVR-Net.
- 3. Log file:** Create a file name to save system activity log.
- 4. Switching interval:** Input the seconds of the switching interval.
- 5. On screen display:** Image position No, site name, camera No/Name, can be set-up in this mode.
- 6. Display Name:** Choose when and whether to display the above information.
 - **Always:** Show caption all the time.
 - **Only Mouse On:** Show caption only when the mouse is moved to a certain channel.
- 7. Use IP Server:** Check if IP SEVER shall be used.
 - **Code:** Type the Code which was input at ‘IP/Num(Code)’when setting of ‘Remote notification of events’ at DVR System.

Note:

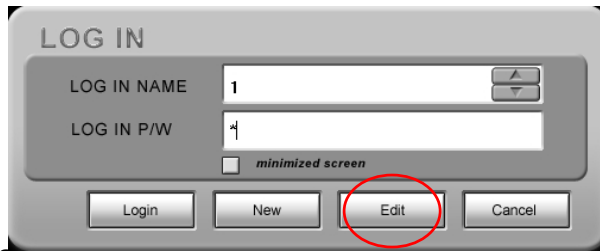
1. Code no. shall be made with mix of alphabetic and numeric letter. Also it discerns capital and small letter.
2. Do not confuse “Code” of ‘Use IP Server’ in Network setting of System configuration in DVR system.

- **Server:** Address of IP Server

- ✦ **Step 10: Click “OK” to finish and close the configuration setting.**
- ✦ **Step 11: Log In:** Input your DVR-NET ID/PSW and click Login.

8-1-3 Re-Edit Site Information

- ✦ Step 1: Input your DVR-NET ID/PSW and then click Edit.



LOG IN

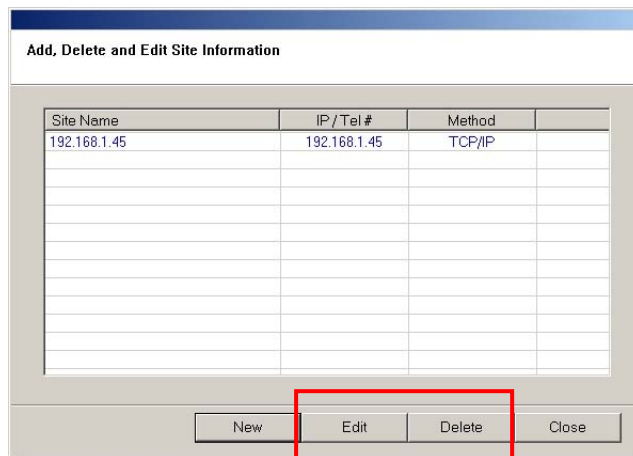
LOG IN NAME 1

LOG IN P/W 1

minimized screen

Login New Edit Cancel

- ✦ Step 2: Select the site you want to edit/delete and click Edit/Delete to re-edit/delete the site.

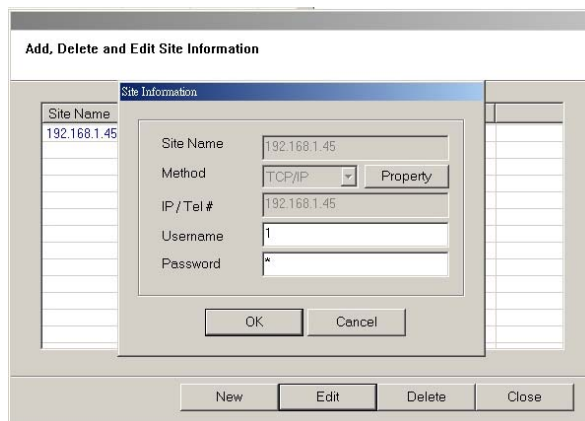


Add, Delete and Edit Site Information

Site Name	IP / Tel #	Method
192.168.1.45	192.168.1.45	TCP/IP

New Edit Delete Close

- ✦ Step 3: Click OK to finish editing.



Add, Delete and Edit Site Information

Site Information

Site Name 192.168.1.45

Method TCP/IP Property

IP / Tel # 192.168.1.45

Username 1

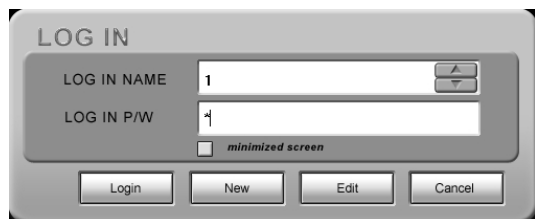
Password *

OK Cancel

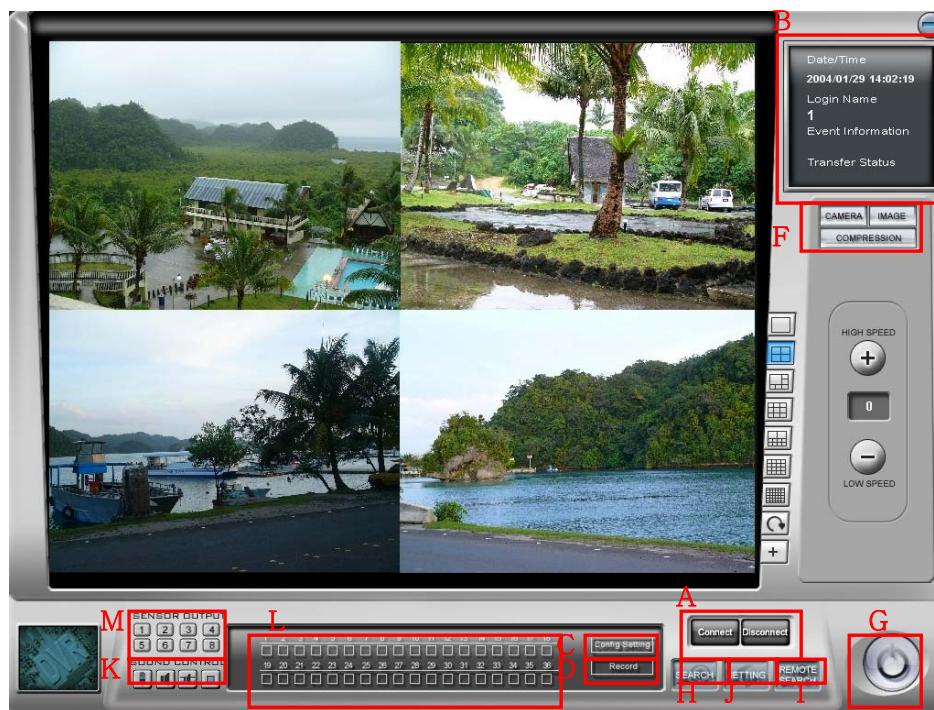
New Edit Delete Close

- ✦ Step 4: Refer to [7-1-1](#) for the other settings.


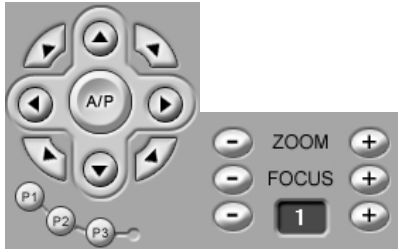


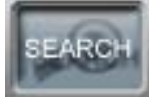
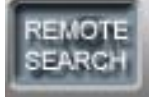


8-2 Accessing DVR-Net


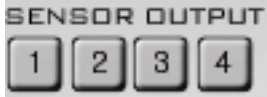



Please put "name & password" and click "Login"



A		It is for login and logout to DVR-Net
B		<p>-Date/Time: Present time and date indicated in the system.</p> <p>-Login name: It says the registered User ID to be used in log-in</p> <p>- Event Information: It can notify when an event (Motion detection or Sensor activation) happens in DVR.</p>
C		It configure the information for log-in of DVR-Net
D		Save the images being transferred. (Search through the saved data on Local Search)
F		Switching panel of Camera control (Pan/Tile/Zoom) and Image control and Compression Rate.

		<p>Preset point and Preset, Tour function</p>
P		<p>PTZ camera function and direction button.</p>
T Z		<p>Buttons of the COMPRESSION RATE menu appear as the "COMP Rate" button is pressed. Choose HIGH SPEED to increase the rate of data transfer but decrease the image quality. Choose LOW SPEED to do the opposite.</p>
G		<p>End DVR-Net</p>
H		<p>Local Search - Search through data saved on the DVR-Net system</p>
I		<p>Remote Search - Search through data saved on DVR, and save the data on the current computer</p>
J		<p>User settings Change the settings of the DVR through DVR-Net.</p>
K		<p>Enable voice communications with DVR. ("Sound Recording" on the DVR User settings menu must be set on) Send Voice / Receive Voice / Send and receive voice / cancel.</p>

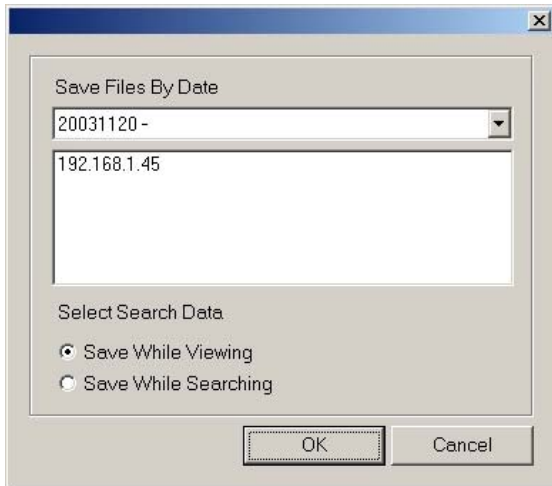
	<p>L While connecting to DVR-Net, if you point out the upper channel small box by mouse, the connected site information such as IP address (Tel No), camera Number, validity of connection. So it's very easy to know who are connecting. Also, when pressing upper box of camera, if it turns to apricot color button pressed, it means it is connected. Otherwise, it means the connection is not valid</p>
	<p>M Relay state, you can turn it on or off manual.</p>
	<p>N Click the number button to turn on and off the corresponding relay from DVR-NET</p>

8-3 Local Search



Its feature makes it possible to search the recorded data in DVR-Net.

On screen, if you press the button like a left-handed Icon, following box pops up



The name of system where the data recorded, are shown in lists. So, selecting the system which wish to be searched in and check the option of “Saved while viewing” or “Save while searching” and press “OK” as final.

Saved while viewing – It can make it recorded while watch the screen connected to DVR.

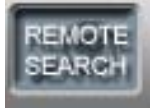
Saved while searching – It can make it recorded at DVR-Net while searching the recorded data in -DVR.



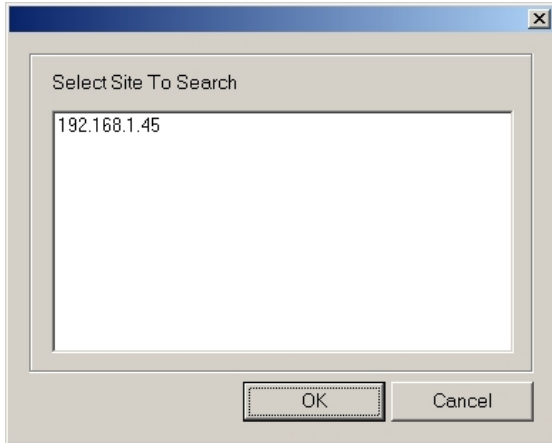
**Most of operator is similarity
Search program**

8-4 Remote Search

To search the recorded data in DVR by DVR-Net.



If pressing the button likes left-handed Icon, picture box like followings, will be shown.



After selected the site name, click "OK", then following screen pops up.



Most of operator is similarity **Search** program

NOTE :

Local Search and Remote Search can't Play sound

8-5 Remote Setup

It is possible to configure the DVR while presently connected with DVR-Net



: Press the left handed Icon on screen.

< Ref > : Please refer to the further detail procedure of configurations.

8-6 Notification of event happening

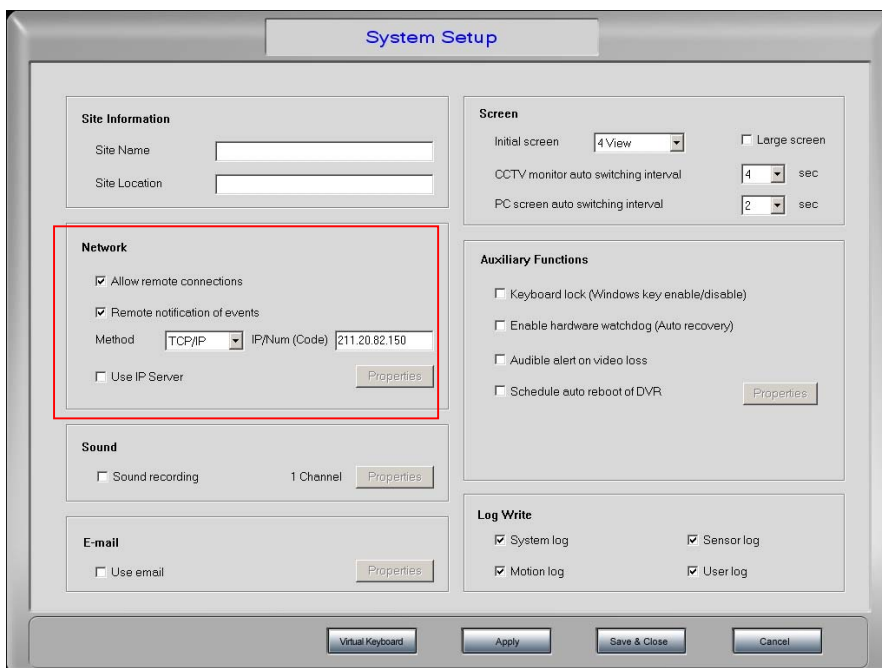
This feature is that event happening such as motion detection and sensor activation may be notified to DVR-Net on real time.

The method of using this feature is as follows.



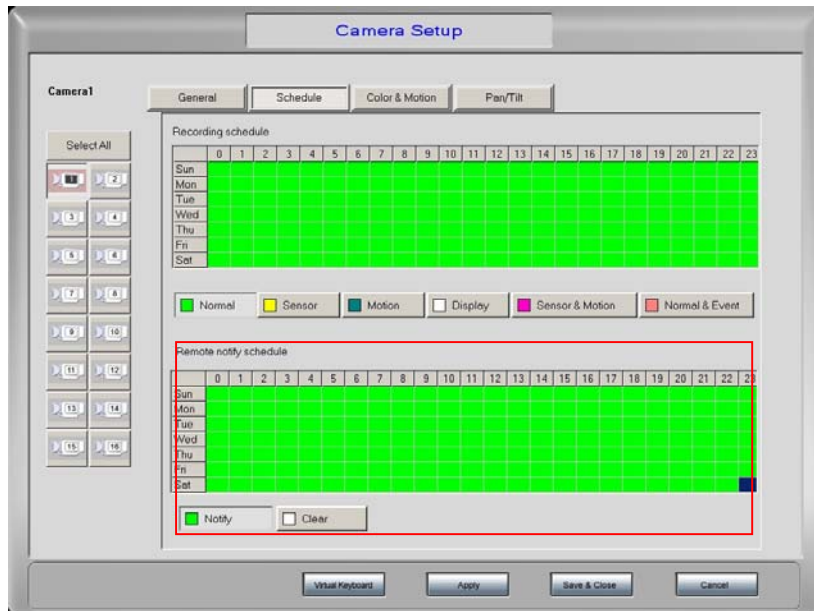
By press the Icon like left-handed picture, you can configure the system set-up of DVR at

remote location.



At system setup, check “Notify remote site of any Events” on network and input the method of access by TCP/IP or Modem in a line with IP address or Telephone No.

Next, it is required to set “Notify scheduling” on selected day of week in “Scheduling” of “Camera setting”.



It is easy to find out at what channel the event happens because the channel has specially image boundary with red colors-line.



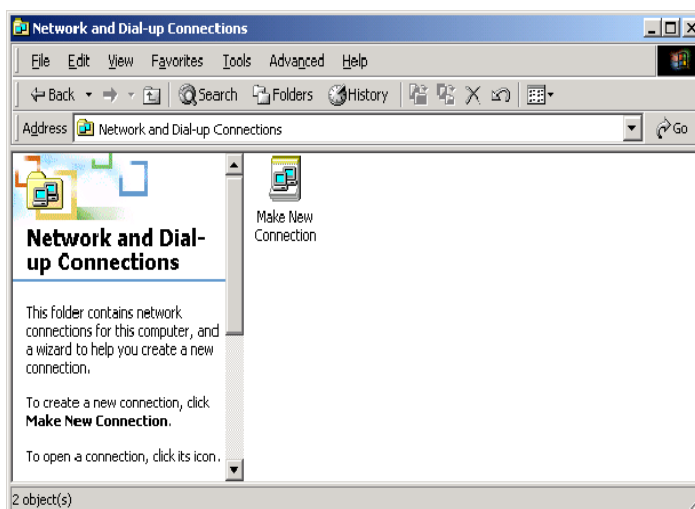
9. Setup the Dial-Up Server

Attention: Before you start to setup it, please make sure that the Modem spec. is with the “**Accept incoming connection**”.

To connect to DVR using a modem, a Dial-Up Server must be installed on the DVR. To connect by using a modem, both of the DVR and DVR-Net must be equipped with a modem. To connect with an IP address Both of the systems must have an IP address.

9-1 For Window2000

Click Start > Setup > Control panel > Network and Dialup Connection and you can see follow screen.

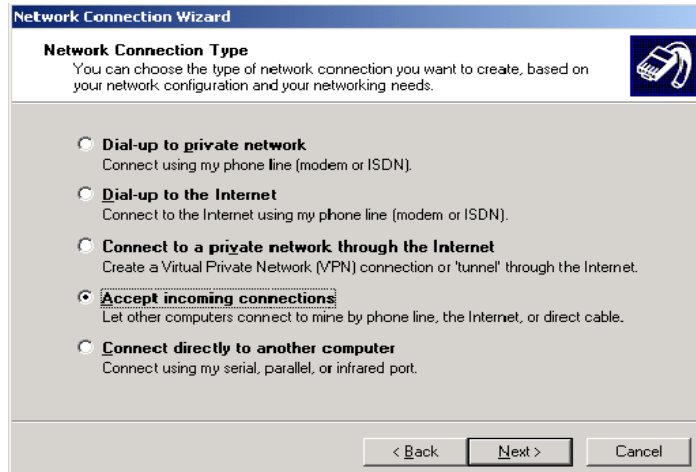


Click 'Make New Connection' , then follow screen comes.

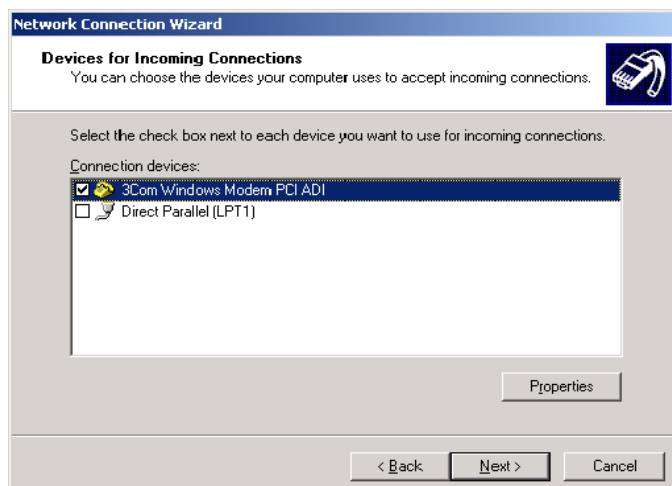


Click 'Next'.

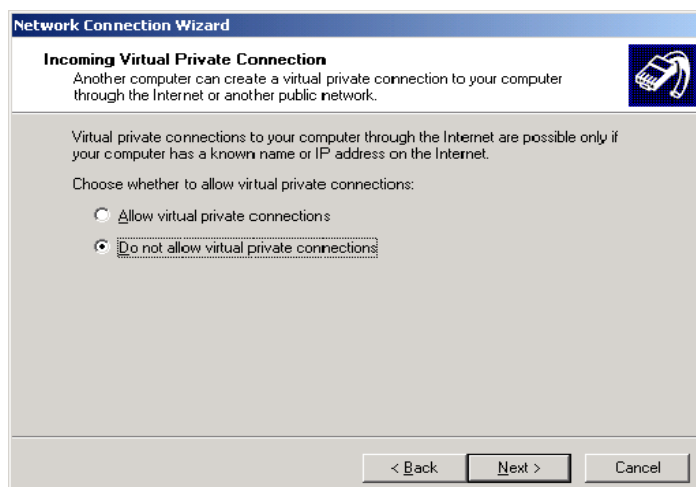
Select 'Accept Incoming Connections' and Click 'Next'



Selecting the proper modem on modem list, Click 'Next'
(Following picture is sample for selecting "3Com" Modem.)



Select 'Do not allow virtual private connections' and Click 'Next'.

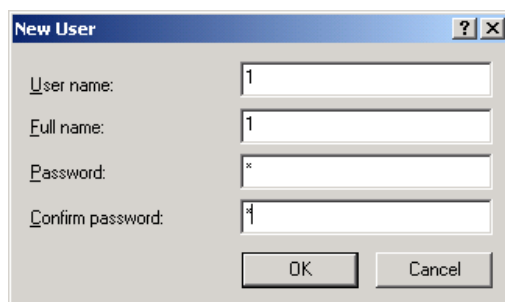


Then, the Screen with 'Allowed Users' comes out.

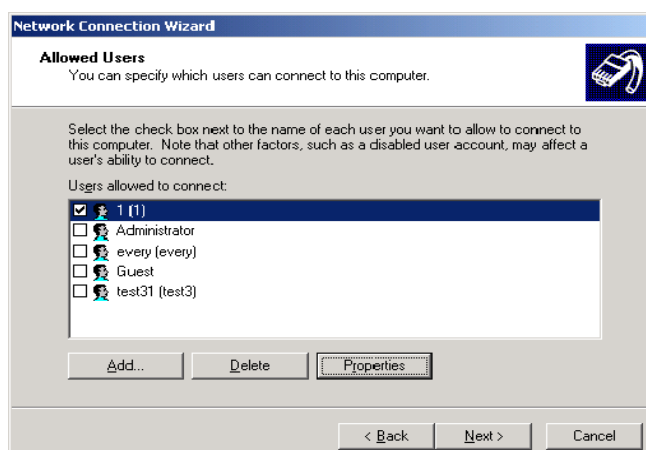
Here, you can add the user from Net viewer allowed to access DVR main. For this process, Click 'Add...'



And now, Fill in the names of added were and password. Press 'OK'.

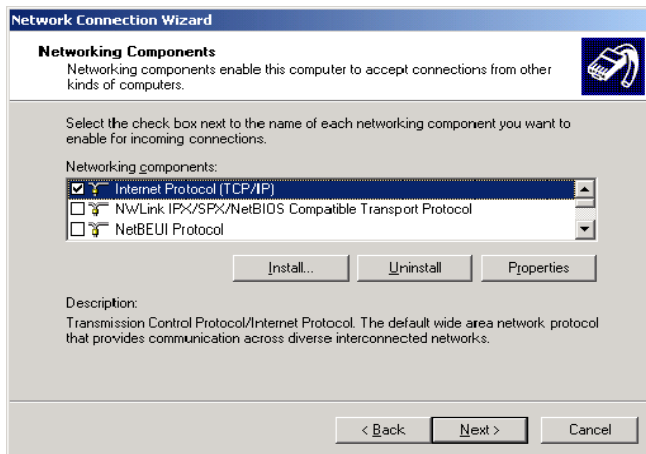


When you finish to input user "1" to be accessed, then those allowed users are shown with 'user 1' currently input for example.



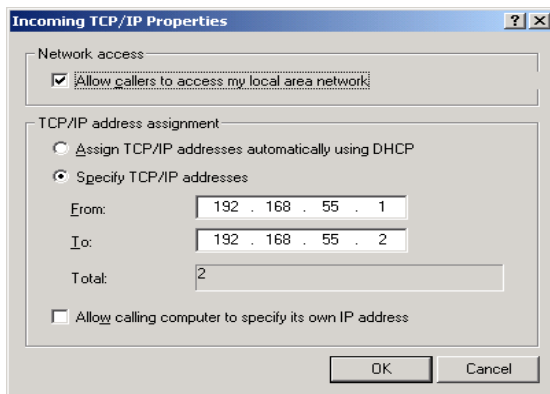
And now, Click 'Next'.

Checking "Internet Protocol TCP/IP" and Press 'Properties'.



Checking “Allow callers to access my local area network” and In TCP/IP address assignment, check “Specify TCP/IP address”

And now, fill the IP No of DVR main in blank of “From” while filling the IP No of Net Viewer in “To”.



Note: Because of Windows, the IP address must be 192.168.55.1, Otherwise it can't be connection.

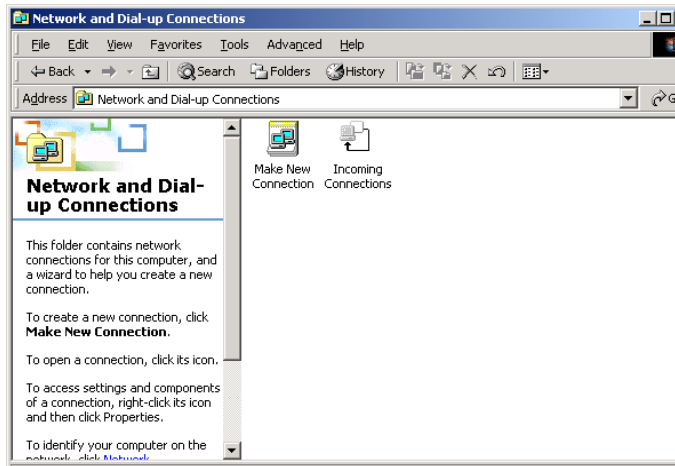
Designating TCP/IP add, Click ‘OK’ and ‘Next’ on following screen.

Then you can see following screen “Completing the Network Connection Wizard”.

Here, you can specify the connection name are you want and Click ‘Finish’.



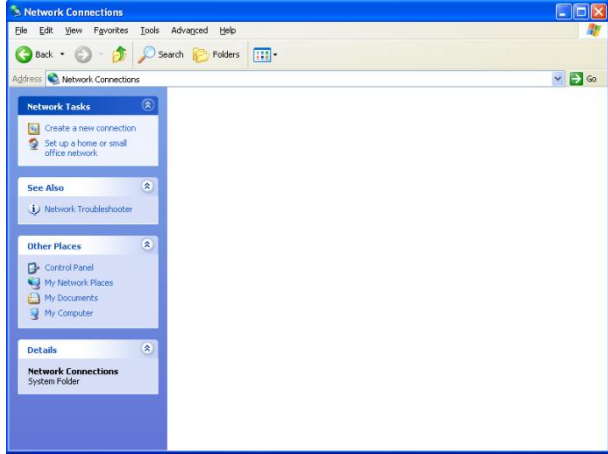
Now, you can see that Icon you have configured up to now, on following screen.



These procedures are described for installing dialup network server, only. So, the procedures for accessing network viewer shall be referred to the related previous article.

9-2. For Windows XP

Click Start > Setup > Control panel > Network Connection and then you can see follow screen.



Select "Create a new connection"



Click 'Next'.



Select "Set up an advanced connection"

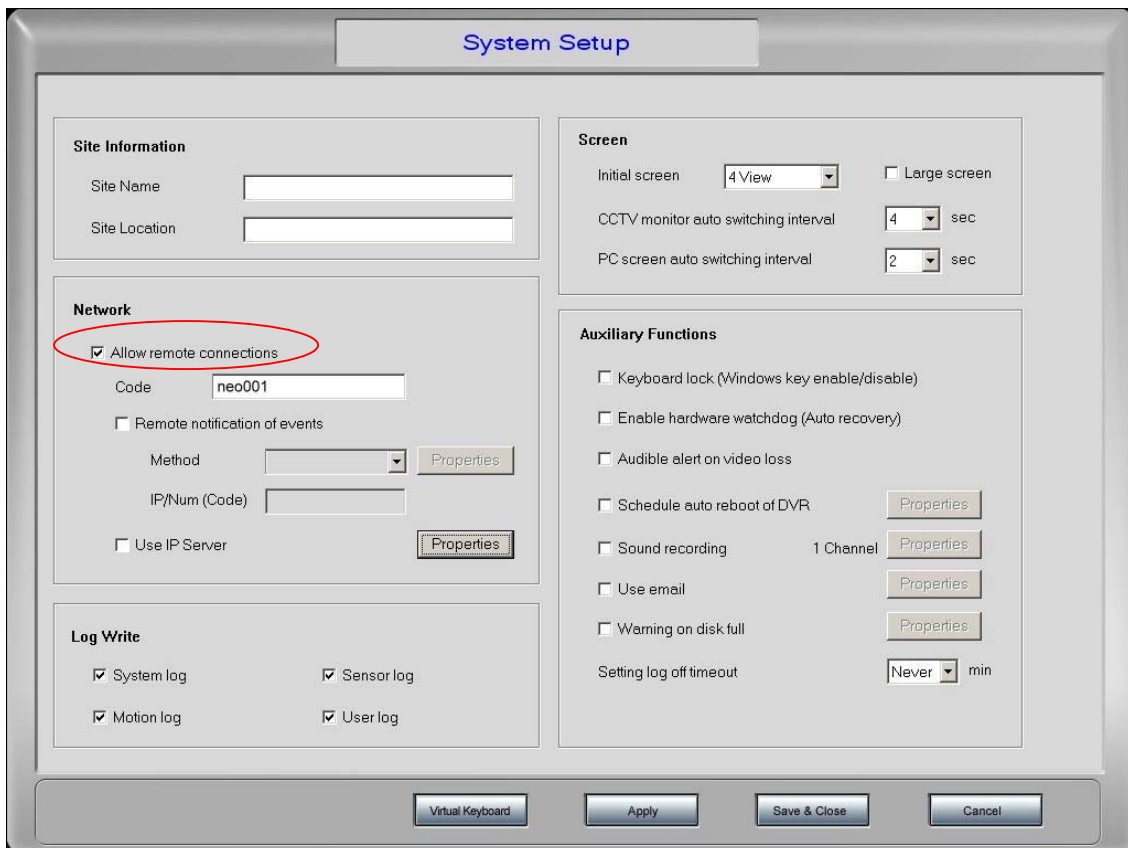


Check "Accept incoming connection" and Click "Next"

Then, the other step as the same with Windows2000

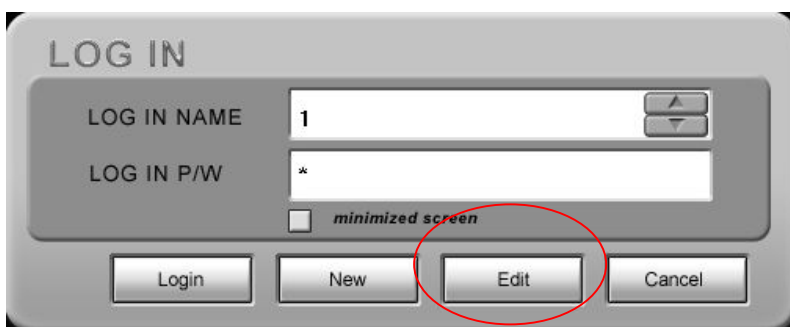
9-3 DVR setting

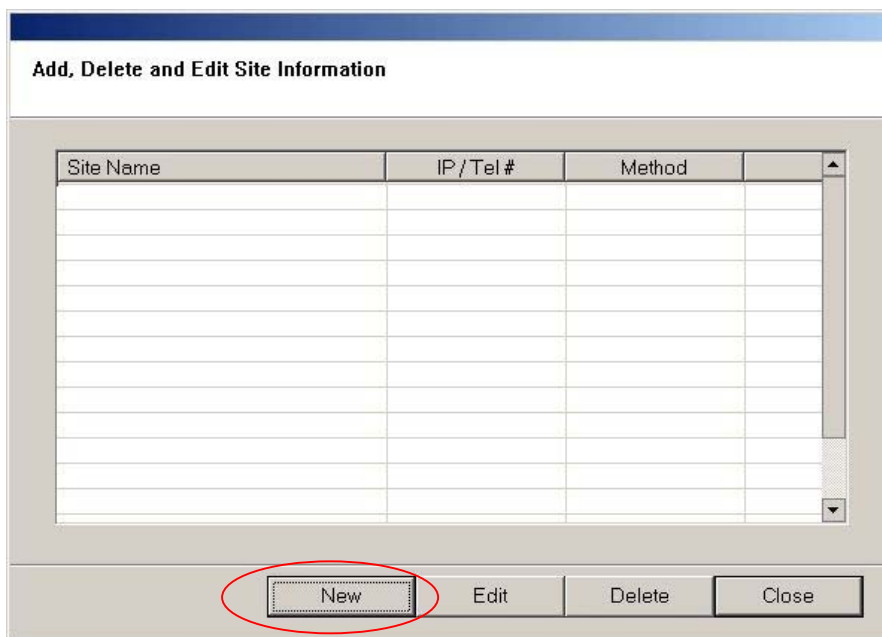
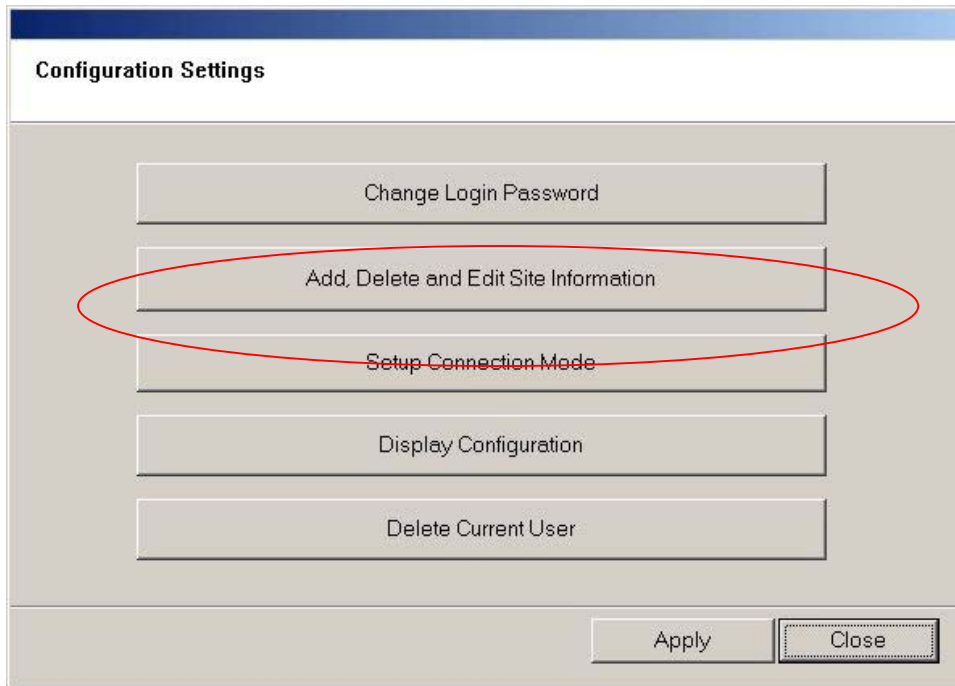
A dvr-main setting

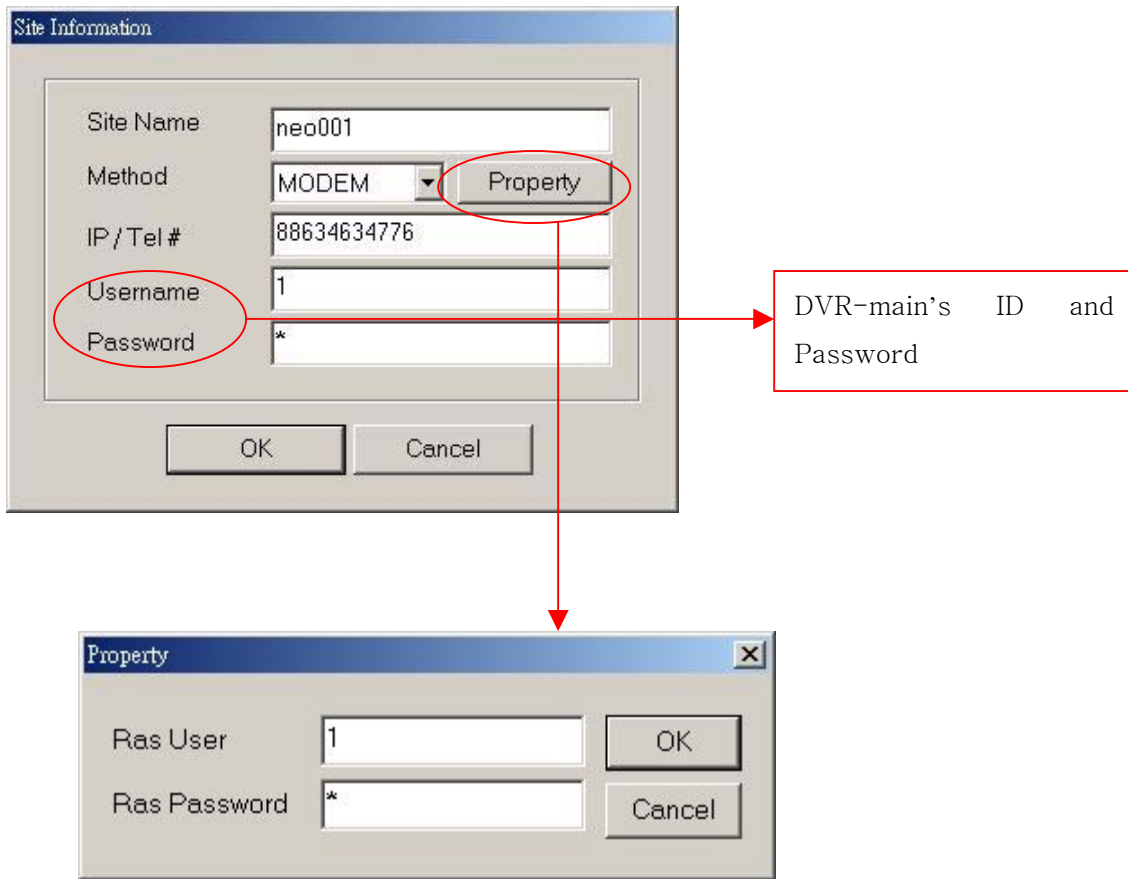


B DVR-NET setting

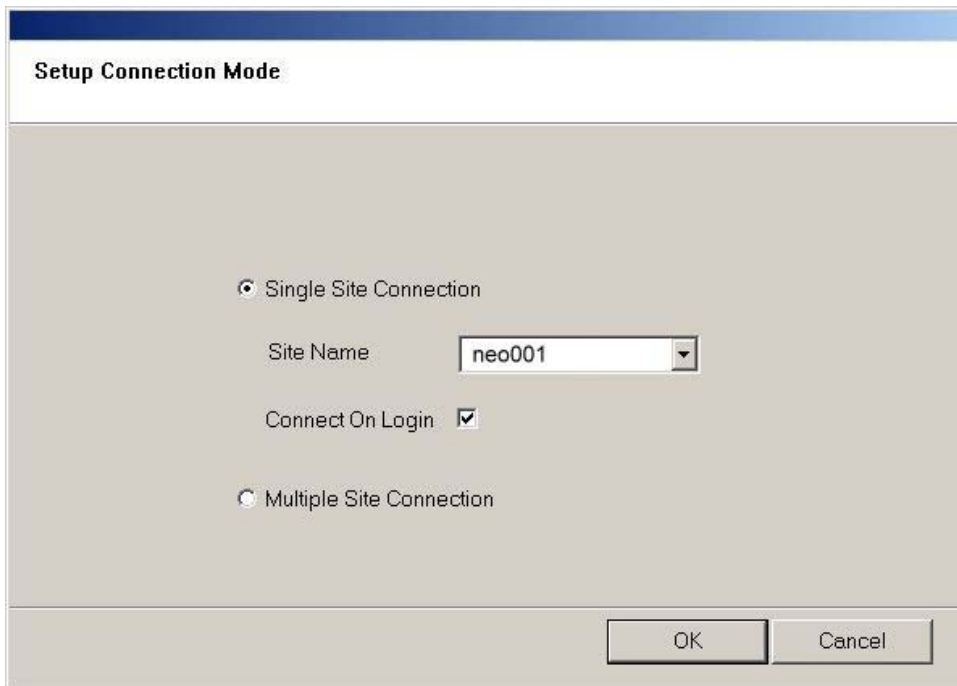
Execute dvr-net program





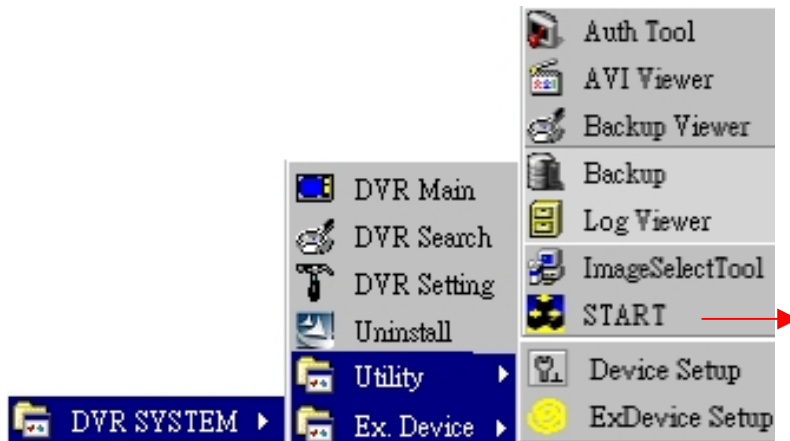


PS.User and password not dvr-main's ID and password,those are dial-up server's user and password.



You can select "Single" or "Multiple" site Connection

10. DVR Management

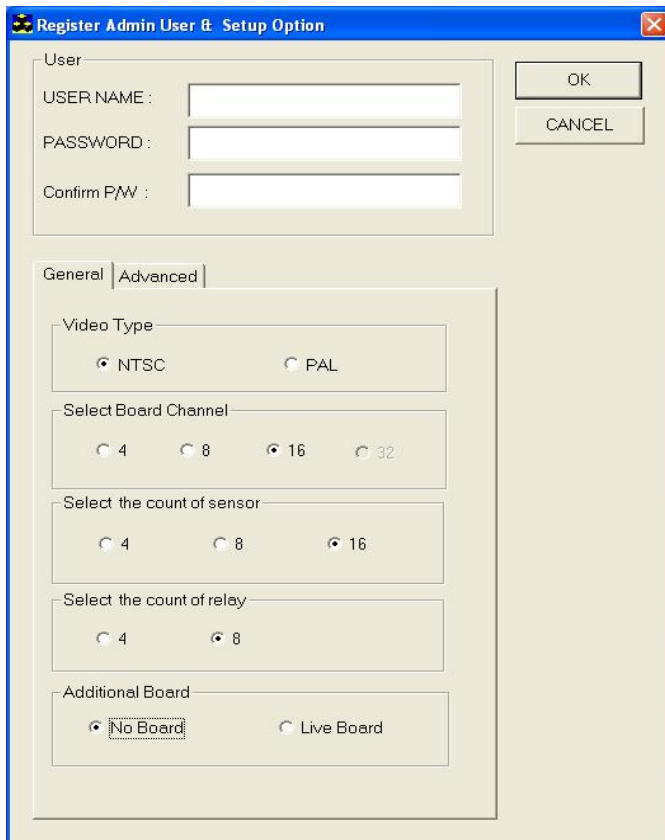


Run "START.EXE" , Then check user dialog box will appear



- **USER NAME** : Type Name of Top manager .
- **PASSWORD** : Type Password of Top manager.

10-1. Basic settings



-User
Key-in the new administrator name and password.

-Video Type :
Select the camera type which is available at your locations.

-Select Board Channel :
Type the channel no. of board you installed

-Select the count of sensor
Select the sensor input no.

-Select the count of relay
Select the relay output no.

-Additional Board
select "NO Board"

10-2. Advanced settings

The screenshot shows a dialog box titled "Register Admin User & Setup Option". It has two tabs: "General" and "Advanced". The "User" section at the top has three input fields: "USER NAME" containing "1", "PASSWORD" with a masked asterisk, and "Confirm P/W" with a masked asterisk. To the right are "OK" and "CANCEL" buttons. The "Advanced" tab is active, showing a "Network Port Setup" section with a "Default" button and a table of four rows (1st to 4th) with values 3000, 3001, 3003, and 8800. Below this is a "WatchDog Option" section with three settings: "Interval Time" set to 30 sec, "Use Beep Sound" set to ON, and "When user finish program, enable watchdog" set to OFF.

- Network Port Setup

- 1 ST ~ 4 ST : Type the port no. for Network.
- 1 st : for Image
- 2 nd: for PTZ and command
- 3 rd: for Setting
- 4 th: for sound

- Default : Click Default, Then it sets as default.

- WatchDog Option

- Interval Time: it sets the time of beep sound.
- Use Beep Sound : it allows to go off beep sound by selecting "on".
- When user finish program: it allows to go off beep sound when program finish to run by selecting "on".

Upon finishing these configurations, Log-in with the user ID and password of top manager and tap "OK".

11. User Define PTZ Protocol

For define PTZ protocol, you have to refer PTZ's data sheet, or contact with distributor.

Two file need to check,

One for option file, file location at <windows>\AngelCam.dat

Find [PT_INFO] section, and change the PT_CNT option and new PTZ name.

Other is in <Program Files\DVR System\PT> and make new file as the same with the other.

1. Section List

Section	Description
GENERAL	Settings of Parameter under Communication Backgrounds and Functional Definition of Pan / Tilt
DATA	Data setting of constant data and reserve data
DATAEX	Camera No., Preset No. and define Speed step
CAMERAEX	Define the extended camera no.
CHECKSUM	Formally define Checksum
SPEED	Define setting of Pan/Tilt, Zoom / Focus, Speed
COMMAND	Define functional Protocol format
COMMAP	Define Mapping Code of Command section Data

2. Section Detail

(1) "GENERAL" section

Key	Description
NAME	Setting of Pan / Tilt Name
SPEED	Setting of Baud rate Available variable) 2400, 4800, 9600, 14400, ...
PARITY	Set of Parity bit Available variable) N (none), O (odd), E (even)
DATABIT	Set of Data bit Available variable) 4, 5, 6, 7, 8
STOPBIT	Set of Stop bit Available variable) 1, 1.5, 2
PRESET	Set of use / not-use of Preset function Available variable) 0 (Not use), 1 (Use)
AUTOSCAN	Set of use / not-use of Auto scan function Available variable) 0 (Not use), 1 (Use)

TOUR	Set of use / not-use of Tour function Available variable) 0 (Not use), 1 (Use)
CAMERAMENU	Set of use / not-use of Camera Menu feature Available variable) 0 (Not use), 1 (Use)

Example)

```
[GENERAL]
NAME = LiliPT
SPEED = 9600 //Use "baud rate 9600 bps"
PARITY = N //No parity bit
DATABIT = 8
STOPBIT = 1
PRESET = 1 // Use the preset function
AUTOSCAN = 1 // Use auto scan function
TOUR = 1 // Use tour function
CAMERAMENU = 0 // Do not use Camera menu feature
```

(2) DATA section

Key	Description
LEN	Total No. of Data (or Last No.)
DATA[n]	Settings of data <ul style="list-style-type: none"> - format [No. of byte], [one byte to be shown as 2 digits in hexadecimal] - example In case of express "abc", DATA1 = 3, 616263 <p>* But, the value start from No. 1</p>

Example)

```
[DATA]
LEN = 2
DATA1 = 1, 30 //'0'
DATA2 = 4, 61626364 // 'abcd'
```

(3) DATAEX section

Key	Description
CAMERA	Define Camera No. - format <i>[No. of byte], [one byte to be shown as 2 digits in hexadecimal], ...</i> * Up to 16 as maximum, Settings are available.
PRESET	Define the Preset No. - format <i>[No. of byte],[one byte to be shown as 2 digits in hexadecimal], ...</i> * Up to 10 as maximum, Settings are available
PTSPEED	Setting of basics and No. of Pan/Tilt Speed Step - format <i>[Total No. of step], [No. of basic step]</i> * No. of step area integer and ranged from 1.And No. of basic step can never be more than No. of total step.
FZSPEED	Setting of No. of Zoom/Focus Speed step and basic step * same as setting of PTSPEED
APSPEED	Setting of No. of Auto Pan Speed step and Basic step. * same as setting of PTSPEED
PSSPEED	Setting of No. of Preset Speed step and basic step. * same as setting of PTSPEED

Example)

[DATAEX]

CAMERA = 1, 31, 32, 33, 34, 35, 36, 37, 38, 39, 3A, 3B, 3C, 3D, 3E, 3F, 40 //Camera No. of #1 is 0x31 and that of #16 is 0x40

PRESET = 1, 01, 02, 03, 04, 05, 06, 07, 08, 09, 0A

PTSPEED = 7, 4 // Use step 4 among total 7 steps of speed level

FZSPEED = 7, 4

APSPEED = 7, 3

PSSPEED = 20, 10

(4) CAMERAEX section

Key	Description
LEN	Total No. of data (or last No.)
CAMERA[n]	Define Camera No. - format <i>[No. of byte],[one byte to be shown as 2 digits in hexadecima], ...</i> * Spread out up to 16 as maximum

Example)

[CAMERAEX]
LEN = 2
CAMERA1 = 1, 41, 42, 43, 44, 45, 46, 47, 48, 49, 4A, 4B, 4C, 4D, 4E, 4F, 50
CAMERA2 = 1, 81, 82, 83, 84, 85, 86, 87, 88, 89, 8A, 8B, 8C, 8D, 8E, 8F, 90

(5) CHECKSUM section

Key	Description
LEN	Total No. of step (or Last No.)
CHECK[n]	Formal Definition of Checksum - format <i>[data index], [No. of byte], [operation], [(1)additional value], [(2)o peration], ... (repeat (1) ~ (2))</i> * data index are calculated from 0 * additional value - 0 : when Single calculation is applied. * operation value - -1 : no - 0 : = - 1 : + - 2 : - - 3 : * - 4 : / - 5 : ^ (exclusive or) - 6 : ~ (not) - 7 : (bit or) - 8 : & (bit and)

--	--

Example)

<p>[CHECKSUM]</p> <p>LEN=2</p> <p>CHECK1 = 0, 7, 1 // add 7 bytes from 1st data</p> <p>CHECK2 = 0, 8, 1, 0, 5 // add 8 bytes from 1st data and make that value " exclusive or"</p>
--

(6) SPEED section

Key	Description
LEN	Total No. of data (or last No.)
SPEED[n]	<p>Data Setting per speed step</p> <ul style="list-style-type: none"> - format <p>[No. of byte], [one byte to be shown as 2 digits in hexadecimal i /], ...</p> <p>* Up to 16 step as maximum, Settings are available.</p>

Example)

<p>[SPEED]</p> <p>LEN = 3</p> <p>SPEED1 = 1, 89, 92, 9B, A4, AD, B6, BF // the value of 1st step is 0x89 and the value of 7th i s 0xBF.</p> <p>SPEED2 = 1, 89, 92, 9B, A4, AD, B6, BF</p> <p>SPEED3 = 1, 0C, 18, 24, 30, 3C, 48, 54, 60, 6C, 78, 84, 90, 9C, A8, B4, C0, CC, D8, E4, F0</p>

(6) COMMAND section

Key	Description
LEN	Total No. of data (or last No.)
CMD[n]	<p>Definition of command data</p> <ul style="list-style-type: none"> - format <p>[No. of total byte], [(1)data index], [(2)No. of byte], [(3)data val ue], ... (Repeat (1) ~ (3))</p> <p>* data index start from 0.</p> <p>* data value</p> <ul style="list-style-type: none"> - \$d[n] : use the value defined at DATA section - \$c : use camera No. defined at DATAEX section - \$c[n] : use camera No. defined at CAMERAEX section

	<ul style="list-style-type: none"> - \$p : use Preset No. defined at DATAEX section - \$\$s[n] : use the defined formula at CHECKSUM section - \$\$s[n]1 : use low bit calculated by relevant formula - \$\$s[n]2 : use high bit calculated by relevant formula - \$\$s[n]3: character value of low bit of value calculated by relevant formula - \$\$s[n]4 : character value of low bit of value calculated by relevant formula - \$e[n]1 : p/t speed used the defined value at SPEED section - \$e[n]2 : f/z speed used the defined value at SPEED section - \$e[n]3 : auto scan speed used the defined value at SPEED section - \$e[n]4 : preset speed used the defined value at SPEED section <p>But, n means the index value of key to be used for relevant section</p> <ul style="list-style-type: none"> ▪ example <p>In case of ,</p> <p style="padding-left: 40px;">CMD1 = 3, 0, 1, \$c, 1, 1, 04, 2, 1, \$e11</p> <p>,No. of total data byte is 3 and 1 byte from 1st index means camera no. 1 byte from 2nd byte stands for 0x04 in hexadecimal.</p> <p>One byte from 3rd byte represents the value of P/T speed, which brings value of SPEED1 key.</p>
<p>CMDS[n]</p>	<p>Index definition of command data to be used for stopping the relevant command.</p> <p>* The Index value means Index defined at COMMAND section.</p>
<p>CMDEX[n]</p>	<p>Definition of Repeat command</p> <ul style="list-style-type: none"> ▪ format <p>[timer], [command index], [repeat count]</p>

	<p>* timer</p> <ul style="list-style-type: none"> - setting as values in millisecond - -1 : no use <p>* repeat count</p> <ul style="list-style-type: none"> - -1 : infinite - 0 : no repeat
--	---

Example)

```
[COMMAND]
LEN = 21
CMD1 = 3, 0, 1, $c, 1, 1, 04, 2, 1, $e11
CMDS1 = 14 // Stop command of #1 command is used for the command data of #14.
CMDEX1 = 0, 1, -1 // Repeat command after #1 command, makes it continue to run #1 command endlessly in 0 millisecond (without interval) until the next command or stop command comes.
...
CMD8 = 8, 0, 2, AA5F, 2, 1, $e22, 3, 3, $d1, 6, 1, $c, 7, 1, $s1
// Length of total data is 8 bytes and 2 bytes from 1st byte are shown as 0xAA, 0x5F.
1 byte from 2nd byte means F/Z speed value which brings SPEED2 of SPEED section and 3 bytes from 3rd byte bring value of DATA1 key of DATA section. 1 byte from 6th byte means camera no. and 1 byte from 7th byte is value of checksum used formula CHECK1 of CHECKSUM section.
...
```

(8) COMMAP section

Key	Description
LEN	Total No. of data (or last No.)
CMD1	Move Tilt up Setting of index value of command section, which are mapping with relevant command.
CMD2	Move Pan right, Tilt up
CMD3	Move Pan right
CMD4	Move Pan right, Tilt down
CMD5	Move Tilt down
CMD6	Move Pan left, Tilt down
CMD7	Move Pan left
CMD8	Move Pan left, Tilt up

CMD9	Activate Auto pan (scan)
CMD10	Activate Focus in
CMD11	Activate Focus out
CMD12	Activate Zoom in
CMD13	Activate Zoom out
CMD14	Stop 1
CMD15	Stop 2
CMD16	Open command
CMD17	Close command
CMD18	Start Preset setting
CMD19	End Preset setting (or Saving)
CMD20	Activate Preset
CMD21	Remove all setting value of Preset
CMD22	Tour Set (tour set is made by all of set value for Preset)
CMD23	Activate Tour
CMD24	Set the starting of Auto Scan
CMD25	Set the ending of Auto Scan
CMD26	(auxiliary) Power 1
CMD27	(auxiliary) Power 2
CMD28	(auxiliary) Power 3
CMD29	(OSD) Camera menu display

Example)

```
[COMMAP]
LEN = 23
CMD1 = 1
CMD2 = 2
CMD3 = 3
...
CMD23 = 21
```

Attention:

Please refer the data sheet to make new protocol files; any of improper operation will make PTZ devices damage and DVR program will crash.

12. Connection Port

12-1. Port and Function table

For remote site connection, program using some port to transmit data.

Port number	Type	Function	
3000	TCP	Image	Changeable(1 st)
3001	TCP	Command/PTZ	Changeable(2 nd)
3003	TCP	Setting	Changeable(3 rd)
8800	UDP	Sound	Changeable(4 th)
4000	UDP	IP Server notify	Fixed
3005	UDP	Event notify	Fixed

If using same level networking, you don't need to care about it.

But for the other, like Real-IP and Virtual-IP connection, or PC with firewall, you have to know something about it.

12-2 Remote with Virtual-IP

In case of Remote site with Virtual-IP, you have to find out the IP-mapping at router.

For example, Router device: Speed Stream 2601

Supported function: NATP (Network Address Port Translation), Host Mapping

Advanced Setup

These features are optional, and should be disabled when not required. Use the links to configure each feature.

Special Internet Applications	Configure this device to allow use of non-standard Internet applications, such as Video-conferencing, 2-way communication, and Games Servers.
Predefined NAPT Servers	Allow Internet users to access Servers on your LAN. Without this feature, access would be blocked by the Firewall in this device.
Advanced NAPT Server Configuration	Define non-standard NAPT Servers using port numbers.
Host Mapping/NAT	Allows unrestricted 2-way Internet communication by 1 computer.
Operation	Special Internet Applications <input checked="" type="radio"/> Enable <input type="radio"/> Disable NAPT Servers <input checked="" type="radio"/> Enable <input type="radio"/> Disable Host Mapping/NAT <input checked="" type="radio"/> Enable <input type="radio"/> Disable


Save Cancel

Please refer the router manual for more detail about setting steps.

In this case, there is two ways to do it.

- 1. Using NAPT, setup the port which you want to use at remote PC.

Advanced NAPT Server Configuration

 Define Special-purpose NAPT Servers on your LAN. These function the same way as the other NAPT Servers.


Select Server	Name: <input type="text" value="dvserver"/> <input type="button" value="Get Data"/> Click "Get Data" to see correct data for selected server.
Details	Name: <input type="text" value="dvserver"/> <input checked="" type="checkbox"/> Enable IP Address: <input type="text" value="192"/> . <input type="text" value="168"/> . <input type="text" value="1"/> . <input type="text" value="100"/> Protocol: <input type="text" value="UDP"/> Internal Port No.: <input type="text" value="3005"/> (required) External Port No.: <input type="text" value="3005"/> (Optional) <input type="button" value="Clear Form"/>
<input type="button" value="Add"/> <input type="button" value="Delete"/> <input type="button" value="Update"/> <input type="button" value="List All"/> <input type="button" value="Cancel"/>	

Remote's IP address

Type and port number

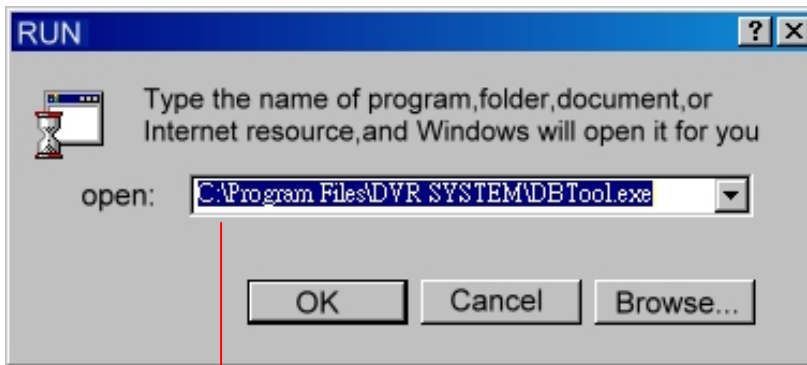
- 2. Use Host Mapping, for all of the port to remote PC.

Host Mapping/NAT

 Allows one (1) computer to have unrestricted 2-way communication with Internet servers or users.

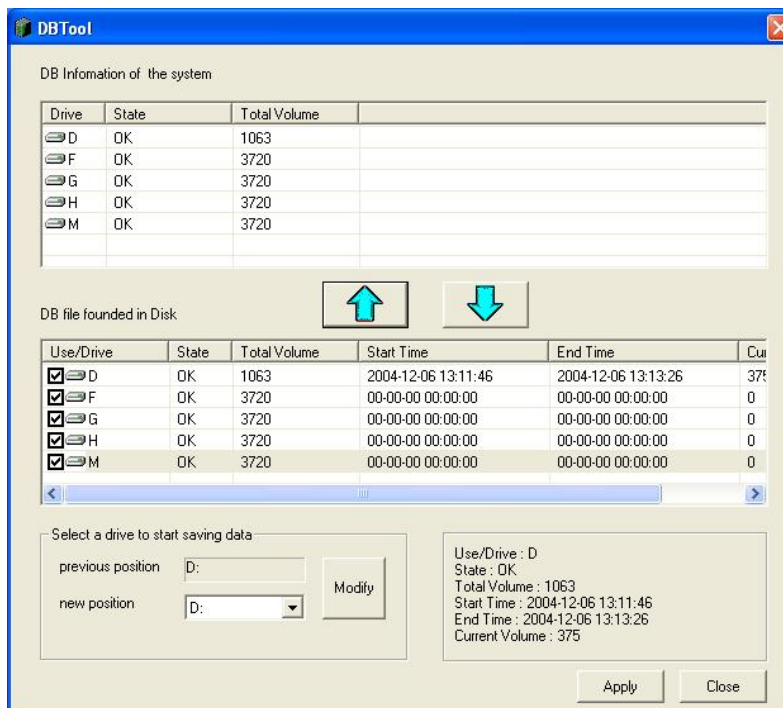
Enable	Because of the security risk involved in using this feature, it should be activated only when necessary. <input checked="" type="checkbox"/> Enable Host Mapping/NAT feature
LAN IP Address	Enter the local IP Address of the Host Mapping/NAT device or PC. LAN IP Address: <input type="text" value="192"/> . <input type="text" value="168"/> . <input type="text" value="1"/> . <input type="text" value="100"/>
<input type="button" value="Save"/> <input type="button" value="Cancel"/>	

13. How to use DBTool



Program default path is : **C:\Program Files\DVR SYSTEM\DBTools.exe**

1. This procedure is applied to the program version 4.00.01 or issued later.
2. This utility is requisite when the disk where database had been stored at, is moved to other machine to be stored, and when you are going to search the database there.
3. Right after you transferred the data to other machine, you shall check in order to use the volume data with this "Data Base Tool".
4. Also, you can search the required data in the drive only as you want by utilizing this "Data Base Tool".
5. On the way of data searching, when you happen to encounter the same date's data in different drives, only the data of that drive, nearest to "A", are to be searched out. For example, if "C" and "D" drive has same date's data and you try to search by selecting both of "C" and "D" drive, then, search program performs at "C" drive first.



- **DB file founded in Disk**

- Automatically scanning all of drives in system, this Tool indicates the list of the drives contained the volume/database for DVR.
- Check what drive you are going to make use of.

- **DB Information of the system**

- Press "↑". And then the drive names checked in "DB file founded in Disk" is added on the DB information list.
- All of drive names checked in "DB file founded in Disk" shall be shown on this DB information list.

- **Select a drive to start saving (recording) data**

- Make sure you must choose what drive it starts being stored (recorded) at, first.

- Example-

1. Data Searching after transferring one hard driver to other machine

- (1) Install hard drives.
- (2) Install software of DVR-main.
- (3) Run the setup file, DBTool.exe.
- (4) Check the drives shown in "DB file founded in Disk" or the drives you selected for searching of particular data.
- (5) Press "↑" button in order to add the checked drives to "DB Information of the system".
- (6) Press "Modify" after you select the drive of "Select a drive to start saving data" to be stored (recorded) first.
- (7) Press "Apply" as final.

Note: Definitely make sure that the drives checked in "DB file founded in Disk" should be shown in the drive names of "DB Information of the system", too.

2. From now on, you can make use of data search and others, by running " Search " program.

Note: "DVRDB" is the folder for "volumes", generated by DVR program.

3. By copying just this folder to other machine installed with DVR program, you can use it as another DVR system.

14. Direct Web

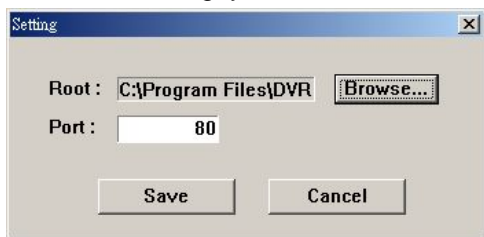
14-1 Server



: Once Direct Web program was installed, the tray bar icon like the left side picture, is generated. This program was installed automatically, along with DVR- main program.

Note: When there is any collision against the firewall or port in the server with Direct Web, click the right hand button of the mouse on the tray bar icon and select "setting". And now change the port.

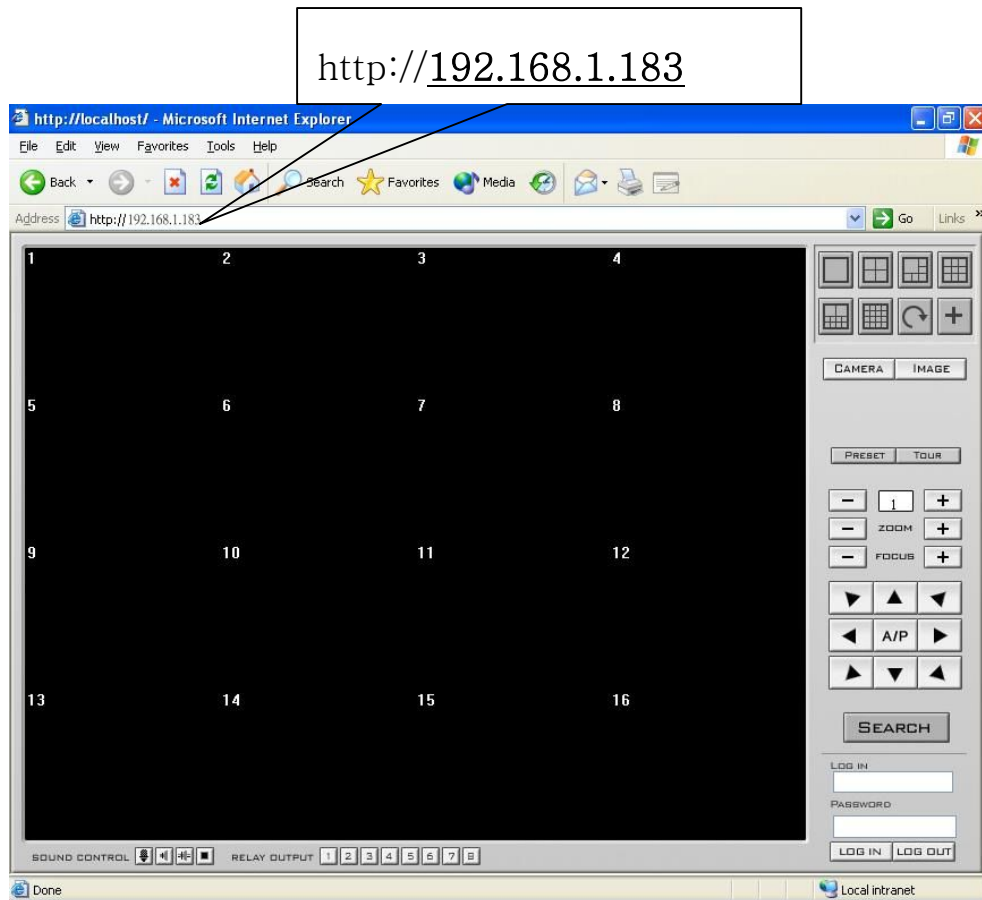
As for root setting, you are recommended to use the defaults setting.



Note: Sometimes the port 80 will be collided, you can change other port number

14 -2 Client

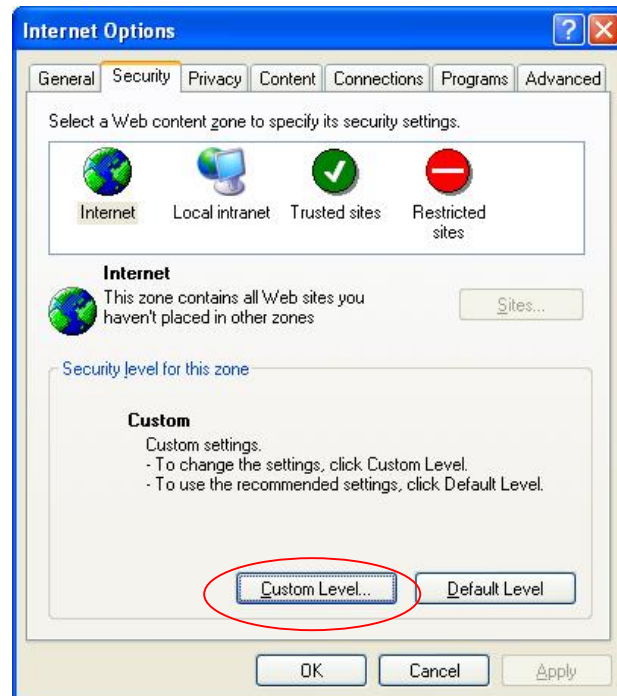
When you input IP address of direct web on " Address", the following skin appears.



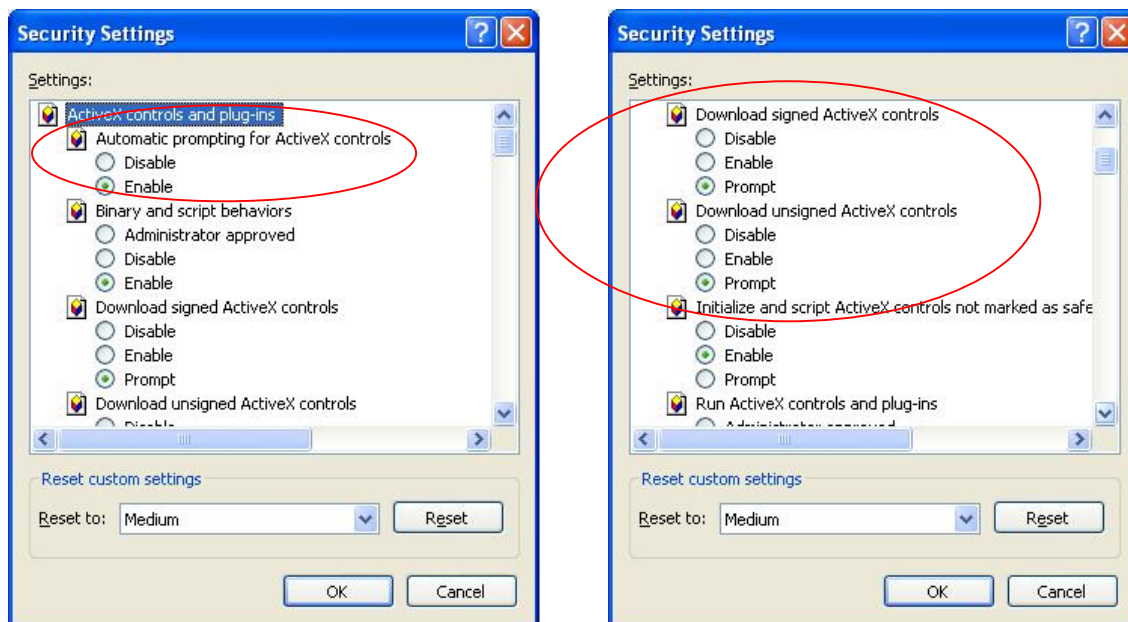
Note:

You need to setting IE browser before you connect to DVR.

1. execute IE browser
2. [Tools]→[Internet options..]
3. [Security]



4. Custom Level



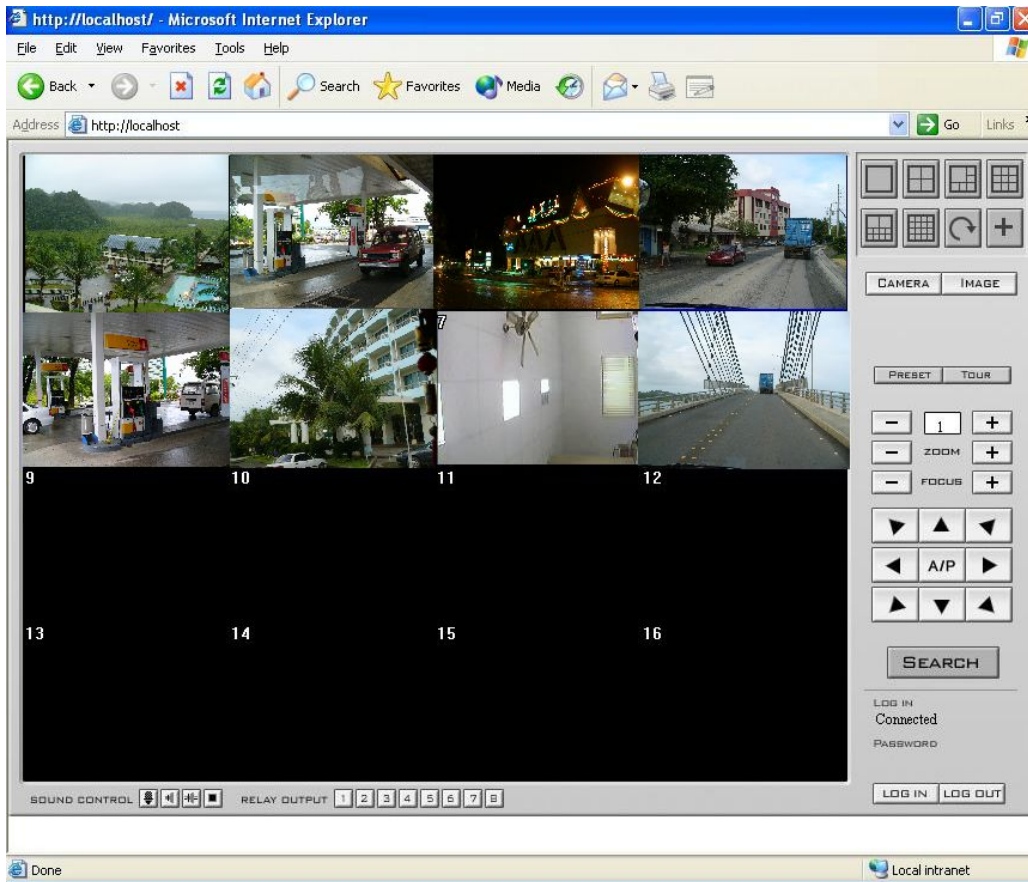
- a. Automatic prompting for ActiveX controls--→"Enable"
- b. Download signed ActiveX controls--→"Enable" or "Prompt"
- c. Download unsigned ActiveX controls--→"Enable" or "Prompt"

Click "Yes" to install "ActiveView.cab"

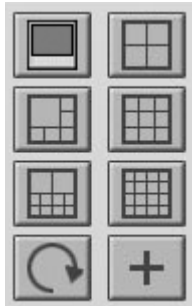


After you input the User ID and Password, authorized to access DVR System, click "LOGIN". Then, you can be connected

The following picture shows the web view after you connected to the Server having Direct Web.



These buttons are for the use of



1 channel , 4 channel

6 channel , 9 channel

10 channel , 16 channel

Swap of channel,Screen

PTZ control tabs are for the use of

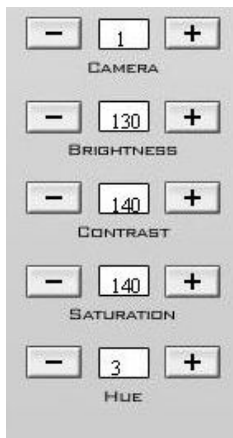


Selection of camera No',

Zoom Out / In

Focus Out / In'

Moving of camera toward the arrow of the direction.



Selection of camera No',

Brightness

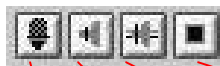
Contrast

Saturation

Hue



Relay output



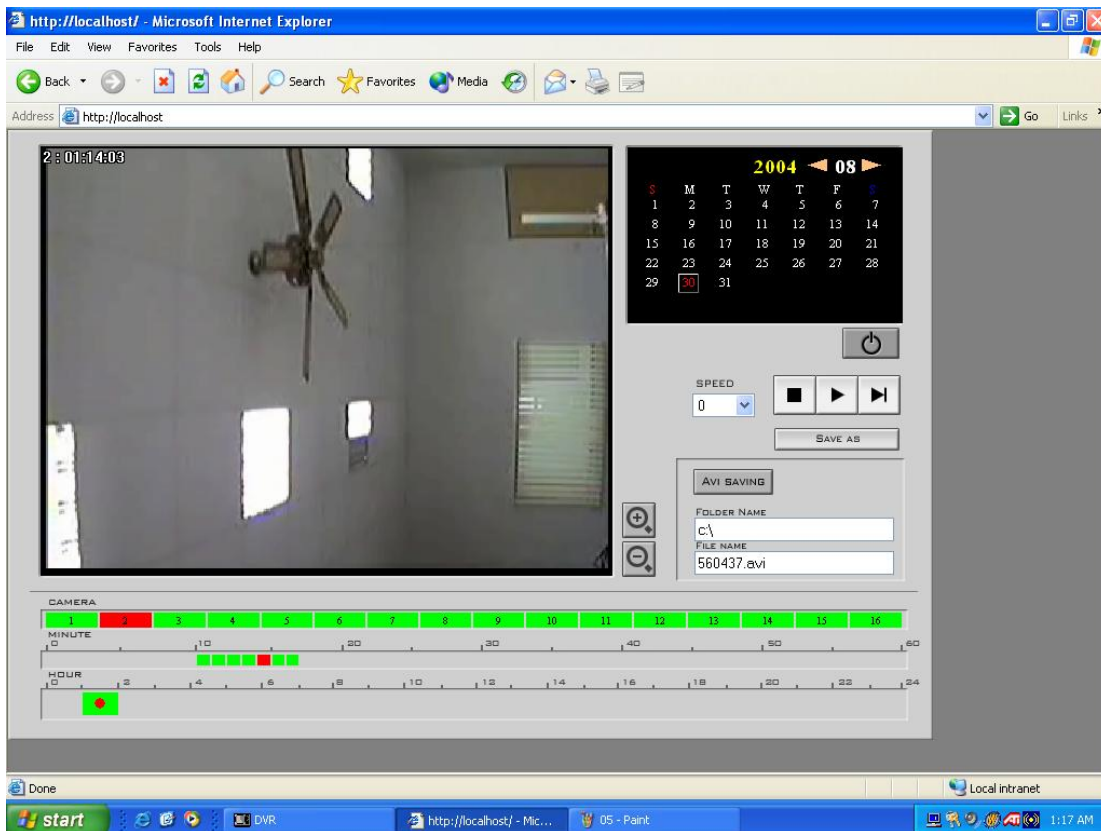
Enable voice communications with DVR. ("Sound Recording" on the DVR User settings menu must be set on)

Send Voice / Receive Voice / Send and receive voice / Stop



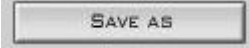
Search DVR's image data

When use "SEARCH", Browser will install "Angelcalc.cab", click "yes" to installation.





Save motion picture images as an .avi file.



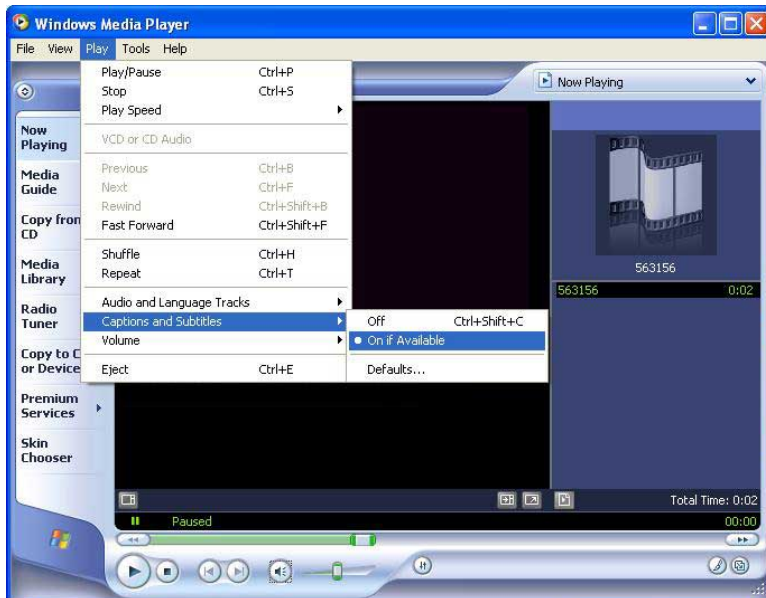
Save image as .bmp picture



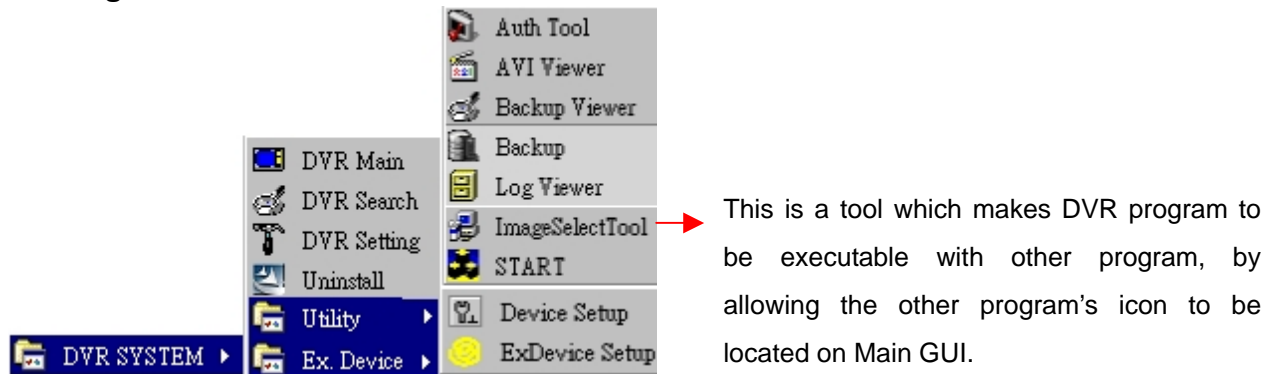
If you want adjust playing' speed, you can set values for faster or slower

14-3 Viewing AVI saved file information

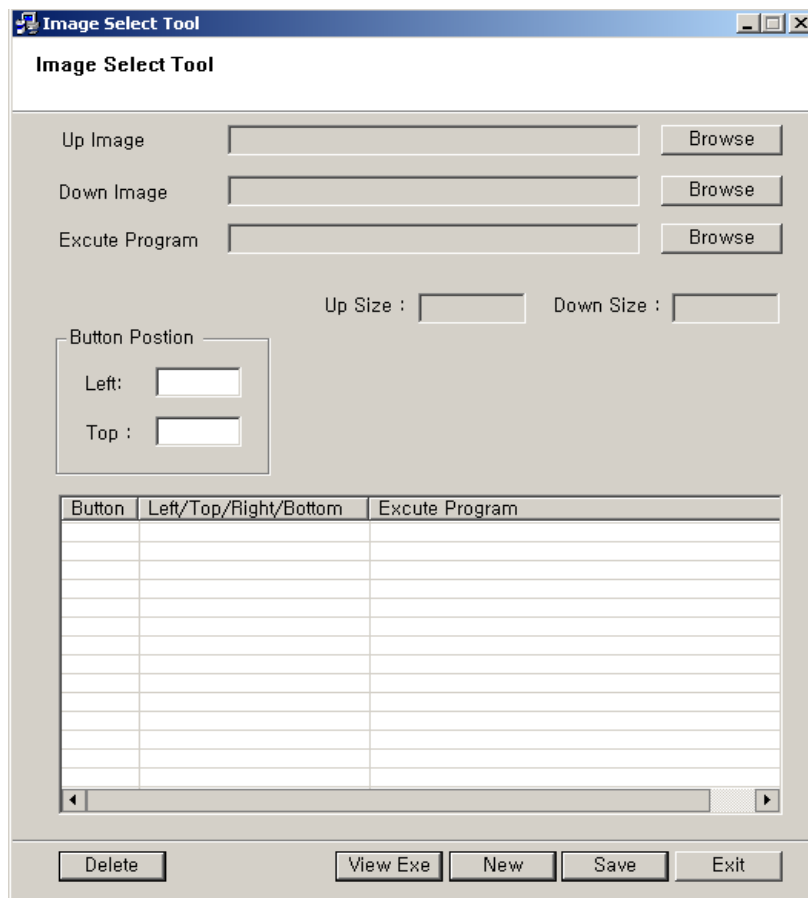
AVI files that has been saved in DVR -Net or Direct Web includes information and this information can be viewed in Windows Media Player with Captions On. (example – Windows Media Player 9.0)



15 Image Selection Tool



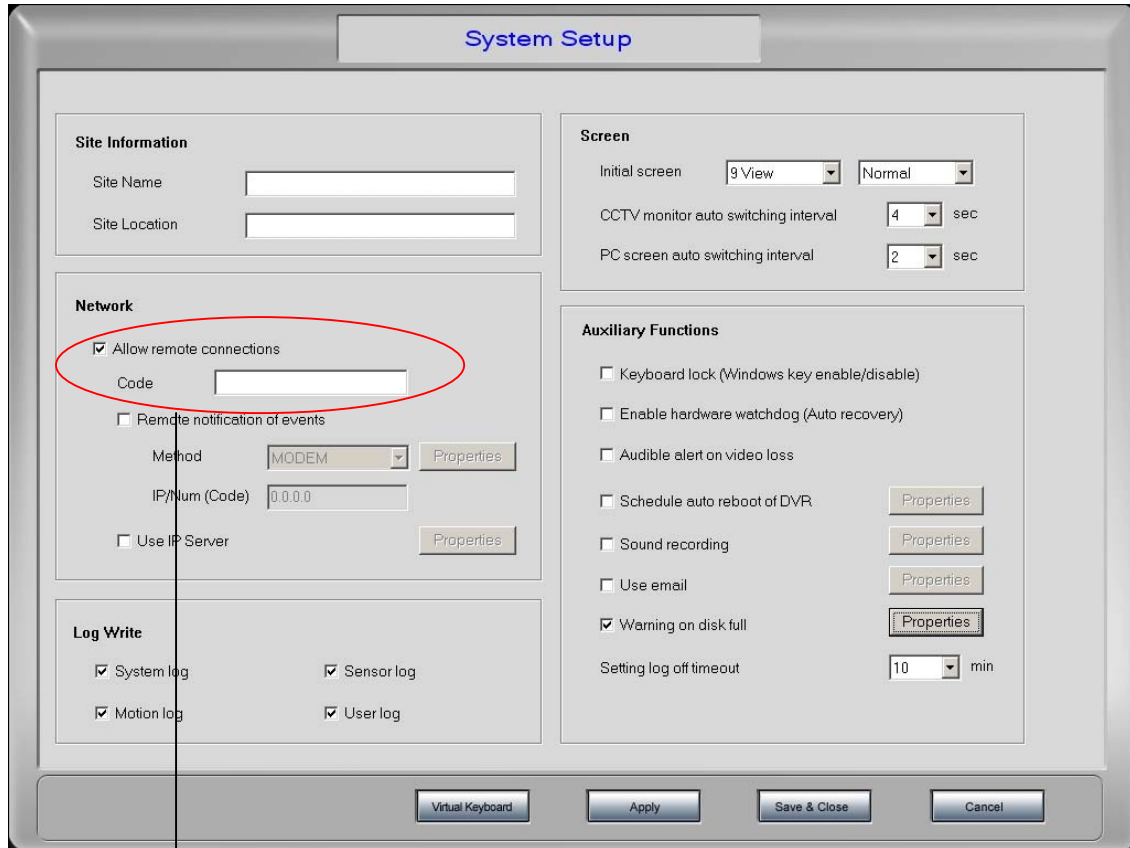
Run "ImageSelectTool.exe" and following menu plate comes.



- **Up Image:** Icon image, displayed at no pressing or depressing of button.
- **Down Image:** Icon image, displayed when you press this button.
- **Excute Program:** Program to run in conjunction with DVR program.
- **Up Size:** Size of Up Image (width X height)
- **Down Size:** Size of Down Image (width X height)
- **Button Position:** Designate the starting location of generated button.
- **Left:** X Coordinate of generated button
- **Top:** Y Coordinate of generated button

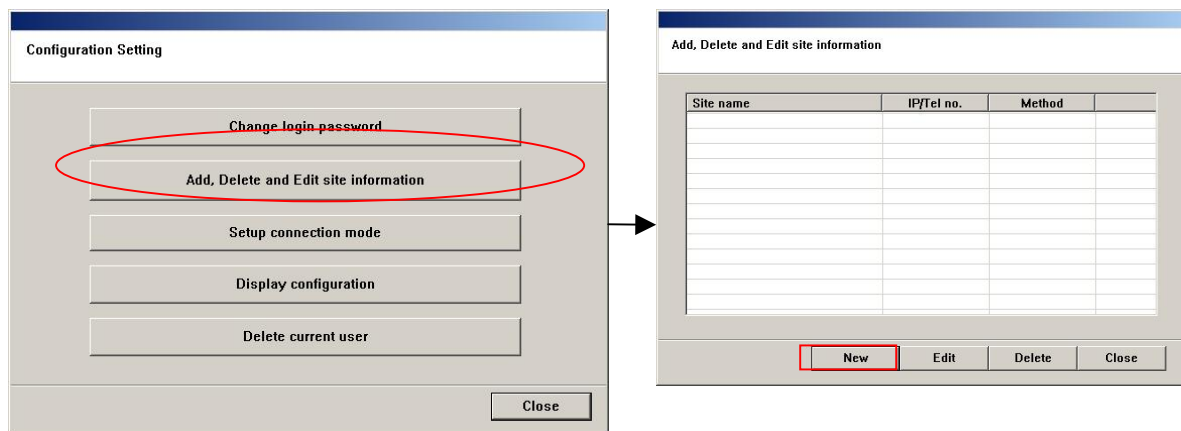
16 HOW TO USE REMOTE SOFTWARE

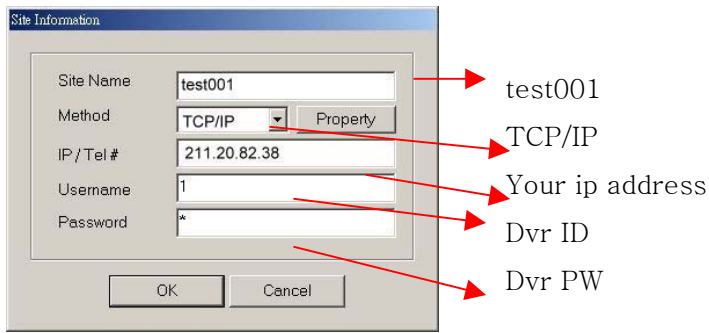
1.DVR SETTING→SYSTEM



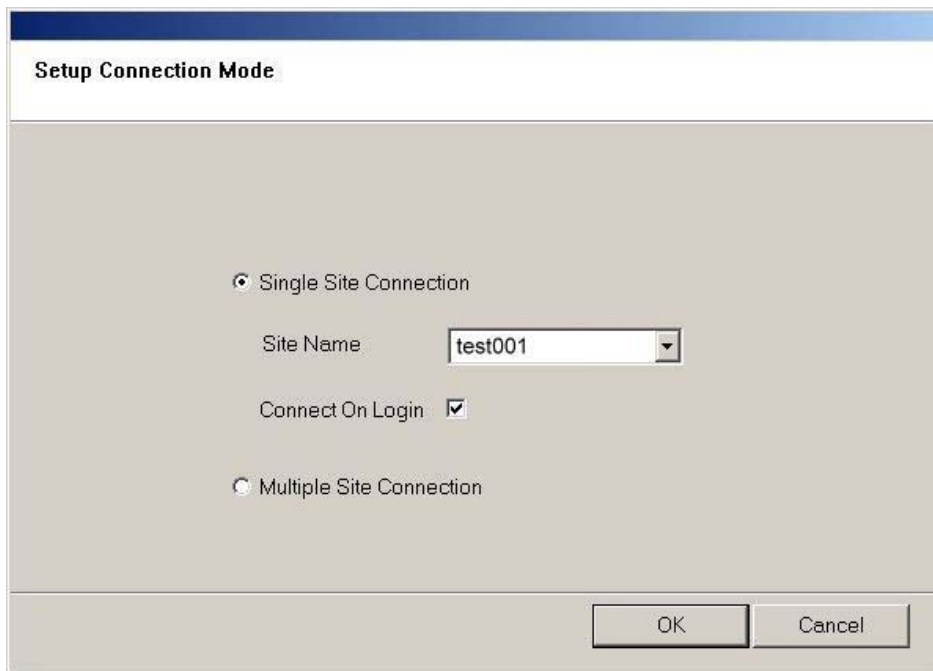
- a. Check "Allow remote connection"
- b. input "code" for example: test001

2.DVR-NET

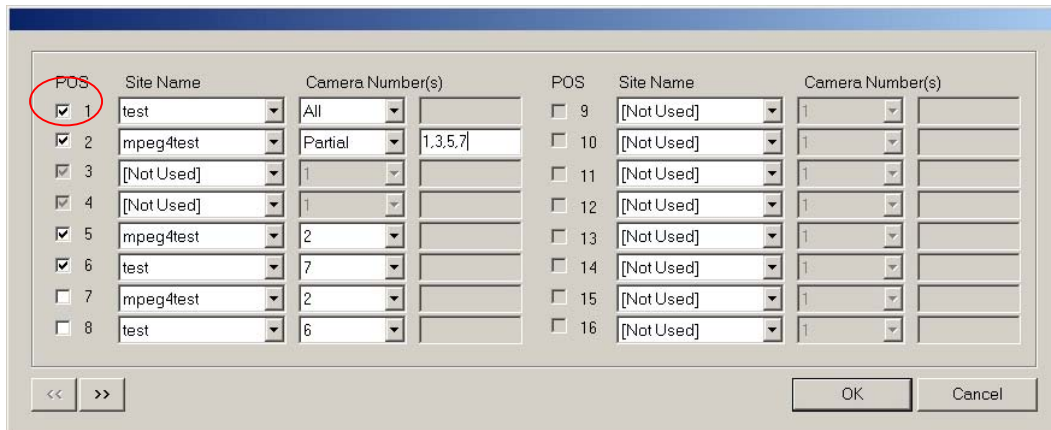




You can select Single or multiple site connection



If you select multiple site connection, you need to check "POS"



If your computer have firewall,you need open some port for DVR connection,
The table is port setting:

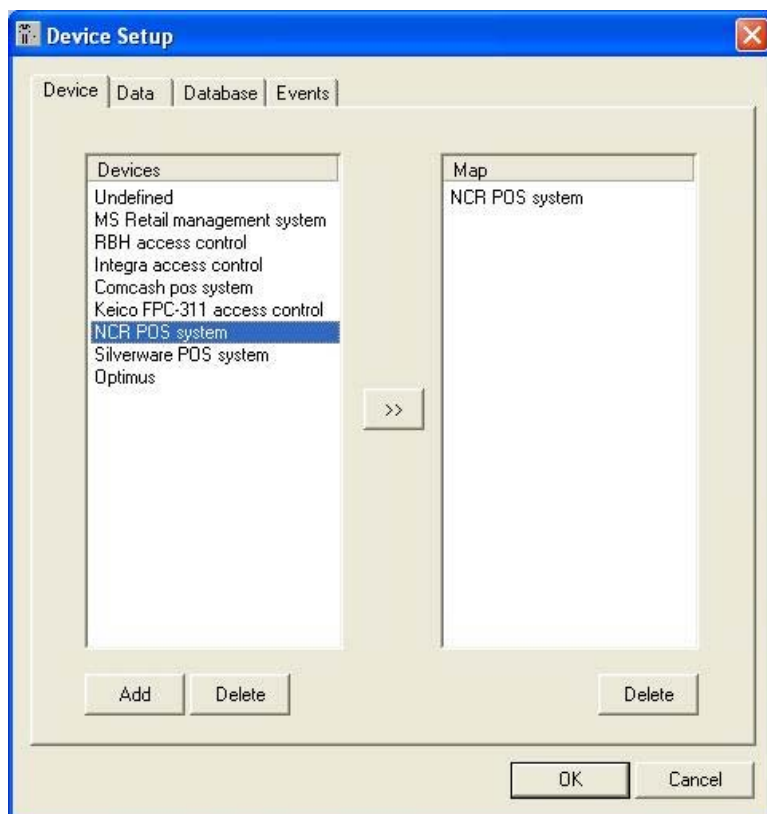
Port number	Type	Function	
3000	TCP	Image	Changeable(1 st)
3001	TCP	Command/PTZ	Changeable(2 nd)
3003	TCP	Setting	Changeable(3 rd)
8800	UDP	Sound	Changeable(4 th)
4000	UDP	IP Server notify	Fixed
3005	UDP	Event notify	Fixed

17. POS, Access Control, External Device Setup



17 - 1. Device Setup

17 - 1 - 1. Select Device



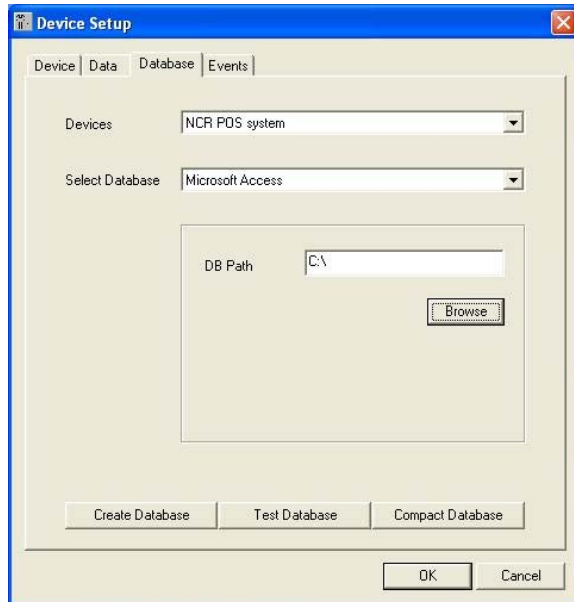
Register POS or Access control device in the Map by pressing “>>” button.

*External device can be connected as many as number of cameras.

17 - 1 - 2. Create database

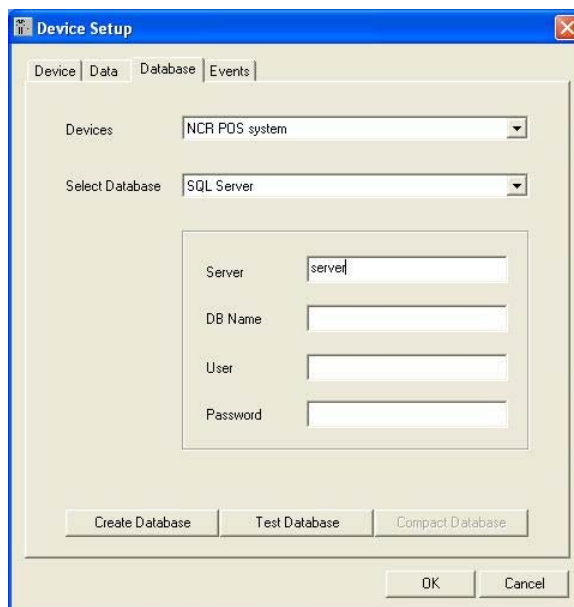
Support type of database : Microsoft Access and SQL server

- Microsoft Access -



Select folder to create DB and click **“Create Database”**, **“Test Database”**, Compact Database in order to create database and test it.

- SQL Server -



Fill out SQL Server name, DB name, User name SQL server and, Password.

Click in order : Create Database -> Test Database -> Compact Database

17 - 1 - 3. Events setting



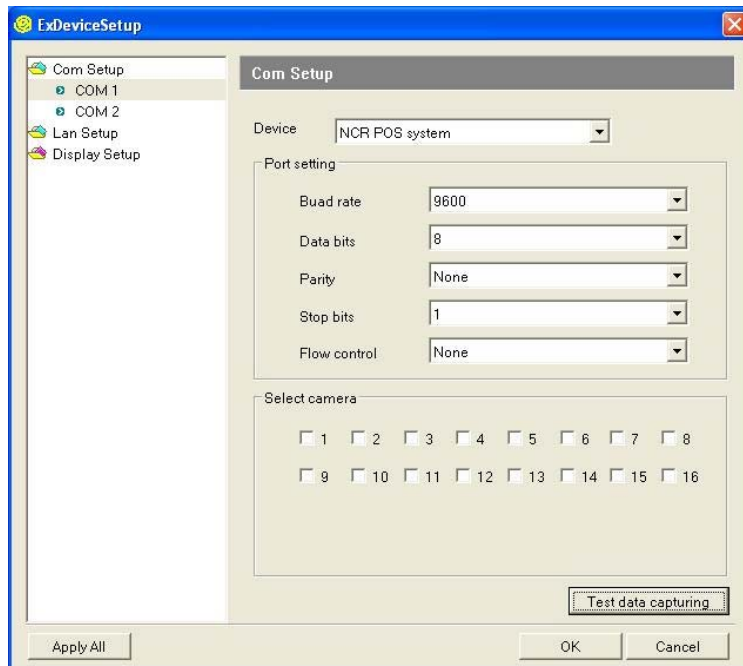
- . After selecting Device click "Add" button to add event string.(case sensitive.)
- . Select each registered even string and choose Notify method(Beep, Mark, Popup).

17 - 2. ExDevice Setup

External device connects to DVR through both Serial port and TCP/IP.

Port Converter allows RS-422/485 and parallel connection.

17 - 2 - 1. Com Setup



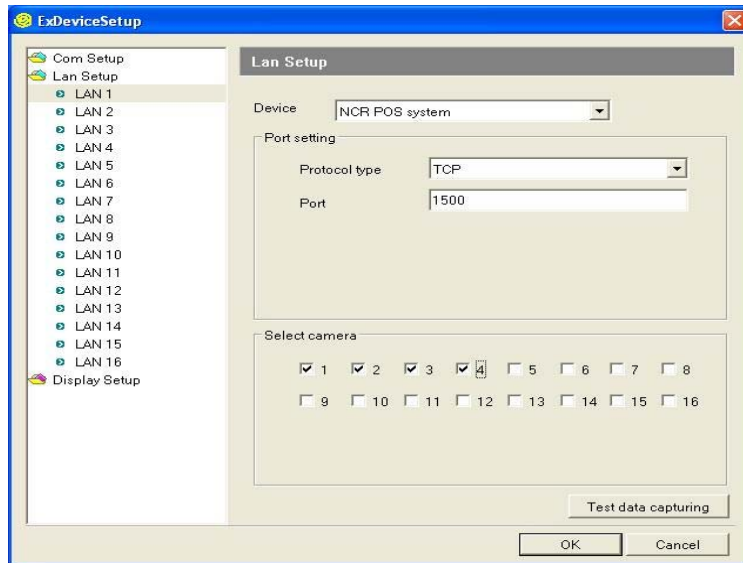
Available ports are listed in the left side.

* If there are more External devices than available ports, extra COM port card

- Select the port where external device is connected.
- Select Device.
- Change the port setting to match up external device.
- After setting, test the connectivity of external device by "Test data Capturing".

* if noting comes up in Test data capturing, correct the setting value and cable connection.

17 - 2 - 2. Lan Setup



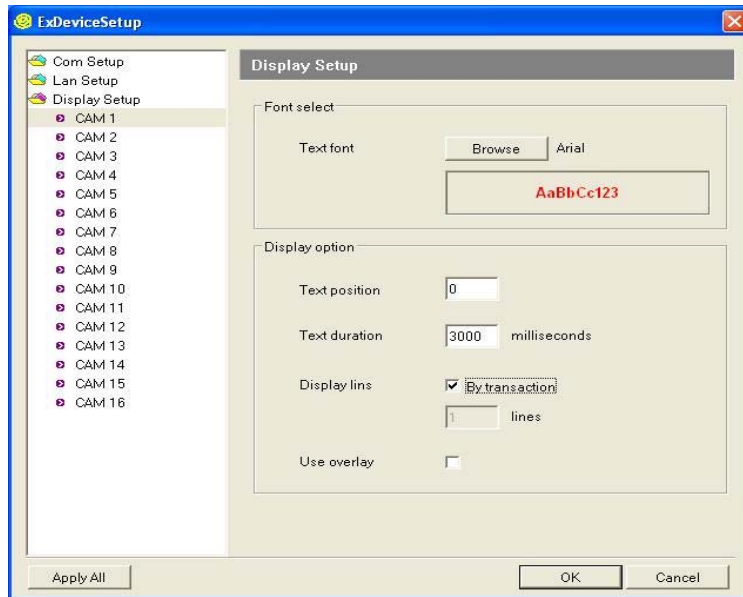
* Multiple external devices can be connected with single TCP/IP connection.

Each device must be given a unique port number.

- Choose Lan from list.
- Select Device.
- Change port setting to match up the device.(support TCP or UDP)
- Choose a camera(s) to display data from external device.
- After setting, test the connectivity of external device by "Test data Capturing".

* if noting comes up in Test data capturing, correct the port setting and cable connection.

17 - 2 - 3. Display Setup



Setup the property of display of text data.

- Choose camera number.
- **Font select:** Click Browse and change font, size and color.
- **Text position:** Setup the position of text. Default is set to top of the screen. As number increases, text will be displayed farther from the top.
- **Text duration:** Set time for text to stay on screen.
- **Display lines:** By transaction – Keep display text regardless number of lines until transaction data has received.
lines – Set the desired line to displayed text.
- **Use overlay:** When checked, camera image and data from external device is compound together.(depends on external device, main display in device can be compound as well). When unchecked, they are not compound together. However, It is still possible to verify the data and image together in the Search and remote access.