

SAFE-2000 | SAFE-2200 | SAFE-4000 | SAFE4000(T) | SAFE-4200 | SAFE-4200(T) | SAFE4400

DVR USER MANUAL

VER 2.8.7



TABLE OF CONTENTS

SECTION	PAGE
1. SYSTEM START AND SHUT DOWN	1
1.1 PROGRAM START.....	1
1.2 PROGRAM EXIT.....	1
1.3 SHUT DOWN.....	2
1.4 SHELL MODE.....	2
2. SETUP.....	6
2.1 SETUP SCREEN.....	6
2.2 SETUP MENU BAR.....	7
2.3 CAMERA SETUP.....	8
2.4 RECORD SPEED SETUP.....	9
2.5 RECORD SCHEDULE SETUP.....	11
2.6 MOTION SETUP.....	13
2.7 AV MONITOR.....	14
2.8 SENSOR & ALARM SETUP.....	15
2.9 AUDIO SETUP.....	16
2.10 ACCOUNT SETUP.....	17
2.11 NETWORK SETUP.....	20
2.12 DIET MODE SETUP.....	22
2.13 ETC SETUP.....	25
2.14 SOFT KEYBOARD.....	27
2.15 CONFIRM & CANCEL.....	28
3. SURVEILLANCE.....	29
3.1 INTRODUCTION.....	29
3.2 SCREEN DIVISION SETUP.....	30
3.3 RECORDING STATUS.....	32
3.4 CAMERA CONTROL.....	33
3.5 REAL TIME AUDIO.....	34
3.6 DVR INFORMATION WINDOW.....	34
3.7 LOG WINDOW.....	35
3.8 EVENT & LOG HISTORY WINDOW.....	35
3.9 CONNECTED USER STATUS.....	37
4. SEARCH.....	38
4.1 INTRODUCTION.....	38
4.2 SEARCH SCREEN FORMATION.....	39
4.3 VIDEO SEARCH.....	40
4.4 PLAY CONTROLS.....	41

4.5 AUDIO PLAY.....	42
4.6 IMAGE SAVE.....	43
4.7 IMAGE PRINT.....	43
5. MULTI – SEARCH.....	44
5.1 MULTI - SEARCH.....	44
5.2 INTRODUCTION.....	45
5.3 MULTI - SEARCH.....	47
5.4 ZOOM IN MODE.....	49
5.5 BOOKMARK.....	50
6. PANORAMA SEARCH.....	51
6.1 PANORAMA SEARCH SCREEN.....	51
6.2 INTRODUCTION.....	52
6.3 ADVANCED SEARCH.....	54
6.4 IMAGE PRINT.....	55
6.5 PANORAMA SCREEN ZOOM.....	56
6-6.IMAGE ADJUSTMENT.....	57
6.7 SMART SEARCH.....	58
7. FILE BACKUP.....	59
7.1 ENTERING THE BACKUP SCREEN.....	59
7.2 INTRODUCTION.....	60
7.3 BACKUP SELECTED FILE.....	61
7.4 BACKUP BY TIME.....	62
7.5 FILE SAVING STRUCTURE OF SAFE-DVR FOR BACKUP.....	63
8. APPENDIX 1.....	64
8.1 OPEN PROTOCOL.....	64
8.2 STARTING OPEN PROTOCOL.....	64
8.3 OPEN PROTOCOL SETUP.....	65
8.4 OPEN PROTOCOL EXAMPLE.....	66
8.5 HEXADEMICAL NUMERIC SYSTEM.....	68
9. APPENDIX 2.....	70
9.1 DVR WEB WERVICE.....	70
9.2 WEB VIEWER.....	70
10.1 TCP / IP filtering.....	73
10.2 TCP/IP setup for 'TCP/IP filtering'.....	73

1. SYSTEM START AND SHUT DOWN

1. SYSTEM START AND SHUT DOWN

1.1 PROGRAM START

After installing the DVR program, it will automatically run when the power is on. The program will be registered on the 'START UP' program. If you have ① shut down the program yourself or ② deleted the program from the 'START UP' program list, please click the program icon on the desktop.

1.2 PROGRAM EXIT

When exiting the program, please exit by pressing the [Exit] button.
You will exit to the Windows 2000 desktop.

1	Press [Exit] button on the Monitoring Screen.	
2	Select [Admin] on the [USER NAME] and then enter its [PASSWORD]. (The default Password is '1') Then press [OK] and the program will be closed.	

1. SYSTEM START AND SHUT DOWN

1.3 SHUT DOWN

Any improper shutting down may occur system trouble. Please follow these steps to shut down the DVR system completely and safely.

1	<p>After exiting the DVR program, press [Shutdown] icon. At the shutdown dialog box, select [Shutdown] and press the [OK] button.</p> 
2	<p>Within a minute, the system will be completely shut down.</p>

1.4 SHELL MODE

SAFE DVR(ver 2.8.7.) provides the shell mode that provides compulsory functions of Windows 2000 to keep a DVR only as a surveillance device. With the shell mode, user cannot operate a program or access to the internet which may interrupt the proper operation of a DVR.

DVR Shell functions are as below.

1. SYSTEM START AND SHUT DOWN



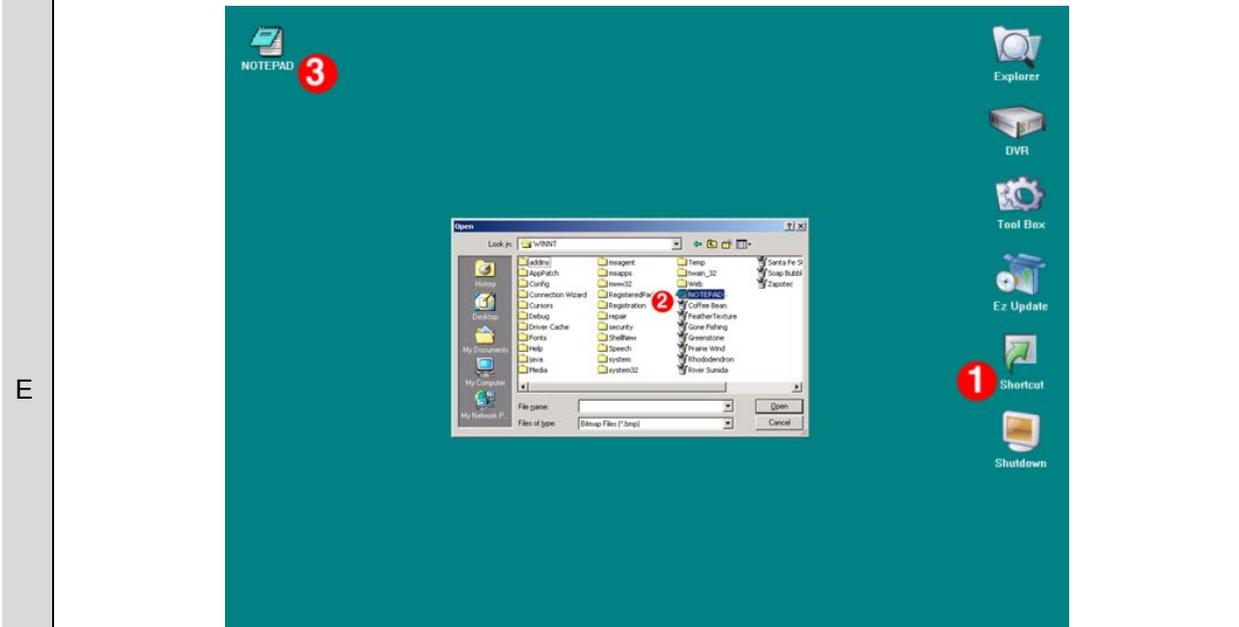
A	Open the Windows Explorer.
B	Start the DVR program.
C	<p>When user starts the [Tool Box], below window will appear.</p> <p>In [Tool box], user can</p> <ol style="list-style-type: none"> 1. see working programs through 'Task Manager'. 2. make/modify the network information of a DVR including IP through 'Network'. 3. set a print after installing it through 'Printer'. 4. set time/date for the recorded images and the search for them through 'Date/Time'. 5. set multimedia stuff including a sound card through 'Multimedia'. 6. see the version of the DVR through 'Version Info'.

1. SYSTEM START AND SHUT DOWN



D User can update the DVR program through the appointed server.

User can make a shortcut icon for a program with 'Shortcut' function.



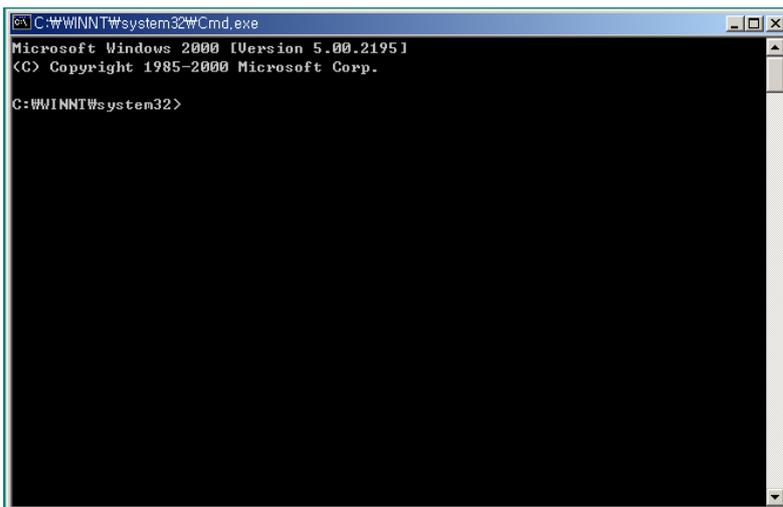
Double-click the shortcut icon to open the file explorer.
 Choose the file and press [Open] button.
 The shortcut icon that user chose made on the left-top of the DVR Shell screen.
 To remove the icon, click the icon and press [Delete] key on a keyboard.

F Finish/Restart the system.

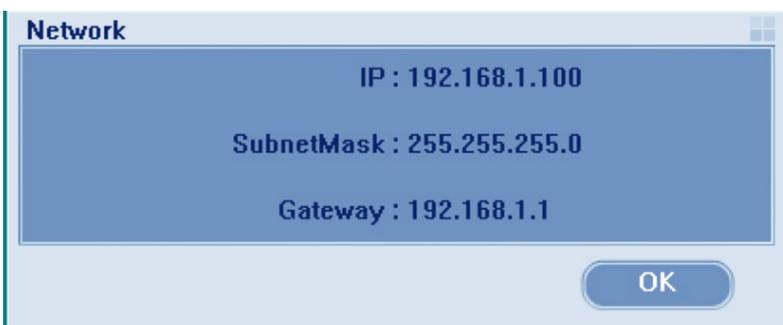
G Uninstall the program.

H Command window

1. SYSTEM START AND SHUT DOWN



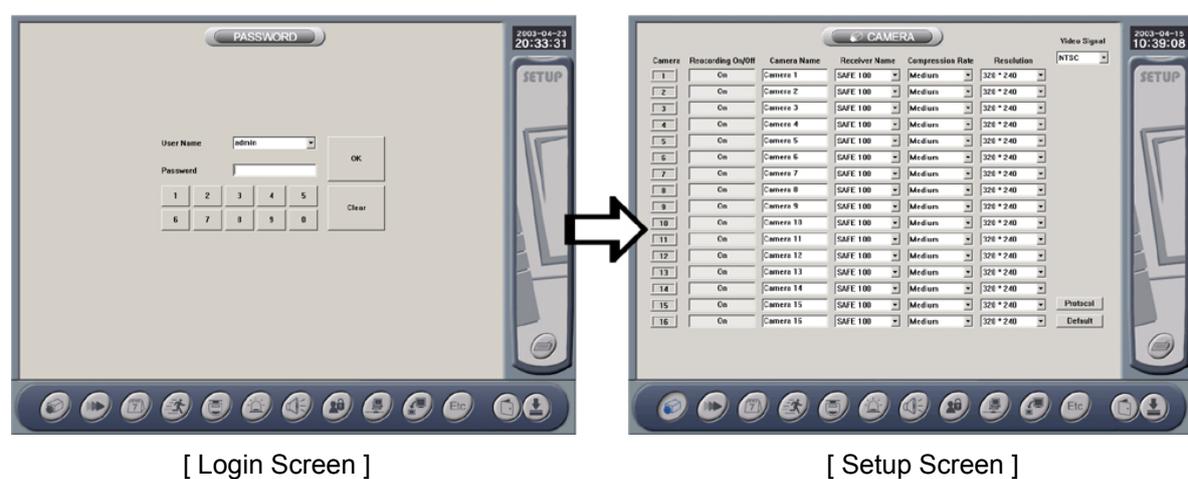
User can check the IP.



2. SETUP

2. SETUP

2.1 SETUP SCREEN

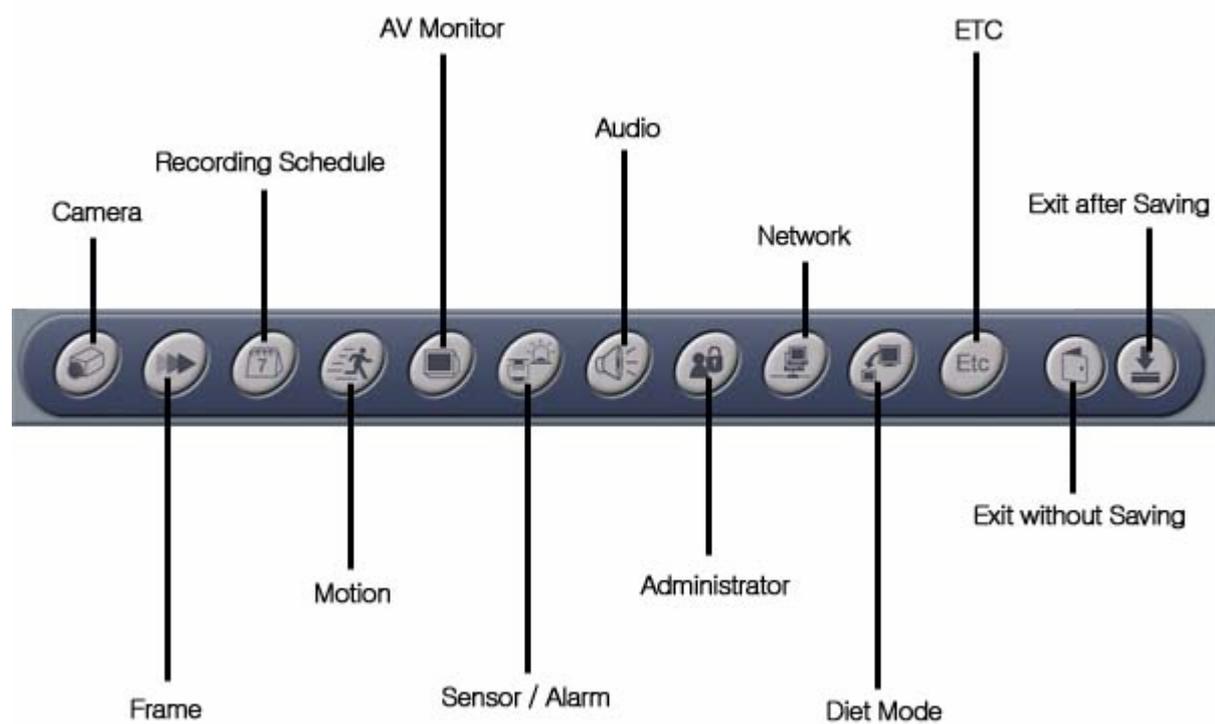


1	Press [Setup] button on the Monitoring Screen. The Login Window will appear.	
2	Select Admin on the [User Name] box and enter the password. (The default password is '1') Then press [OK] button. The Setup Screen will appear.	

2. SETUP

2.2 SETUP MENU BAR

The setup menu bar consists of 11 setting buttons, a cancel button and a confirm button.



2. SETUP

2.3 CAMERA SETUP

The Camera Settings are as followed.

The screenshot shows the 'CAMERA' setup screen. At the top right, the date '2006-02-24' and time '9:22:08' are displayed. The main area contains a table with 16 rows, each representing a camera. The columns are: Camera (numbered 1-16), Recording (ON/OFF), Screen Visible (Visible/Hidden), Camera Name (Camera 1-16), Protocol (ORX1000), Compression (Medium), Resolution (320 * 240), and Video Type (NTSC). A 'High Res.' button is located to the right of the Resolution column. A 'Default' button is located at the bottom right of the table. A sidebar on the right contains a 'SETUP' button and a 'High Res.' button. A bottom navigation bar contains various icons and an 'Other options' button.

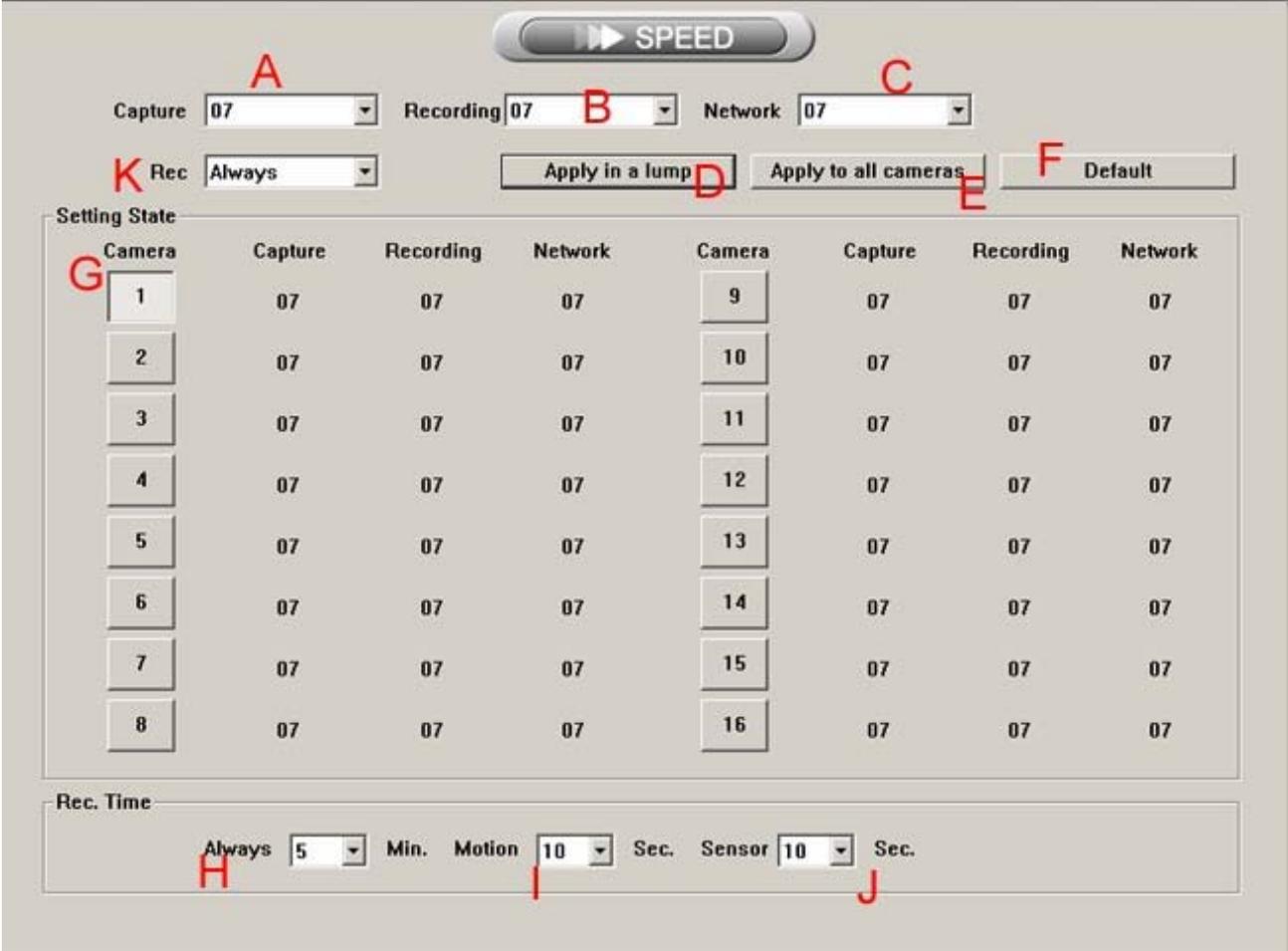
A	Recording on/off	Turn on/off each camera recording.
C	Camera name	Name each camera. (10 alphabets maximum).
D	PAN/TILT Driver	Select a kind of the Pan/Tilt driver for the PTZ camera. You can select various drivers for each camera.
E	Compression rate	Sets the compression rate. (The higher the rate, the longer the recording time)
F	Resolution	Select the recording resolution. (320X240, 640X240, 640X480)
J	Default	Set all settings to default.

2. SETUP

I	Protocol	Able to enter a protocol of RX-Driver that is not supported by the system.
G	Video signal	Select the video signal between NTSC & PAL.
B	Screen Visible	Administrator will hide some screens which should not be shown on the surveillance mode.

2.4 RECORD SPEED SETUP

Set the recording schedules in this menu.



A	CAPTURE	Frames transmitted from connected cameras. For example, if user set it as 7 for No.1 camera, DVR will receive 7 frames per second from No.1 camera.
B	RECORDING	Frames recorded from captured frames. User only can set it under capture values.

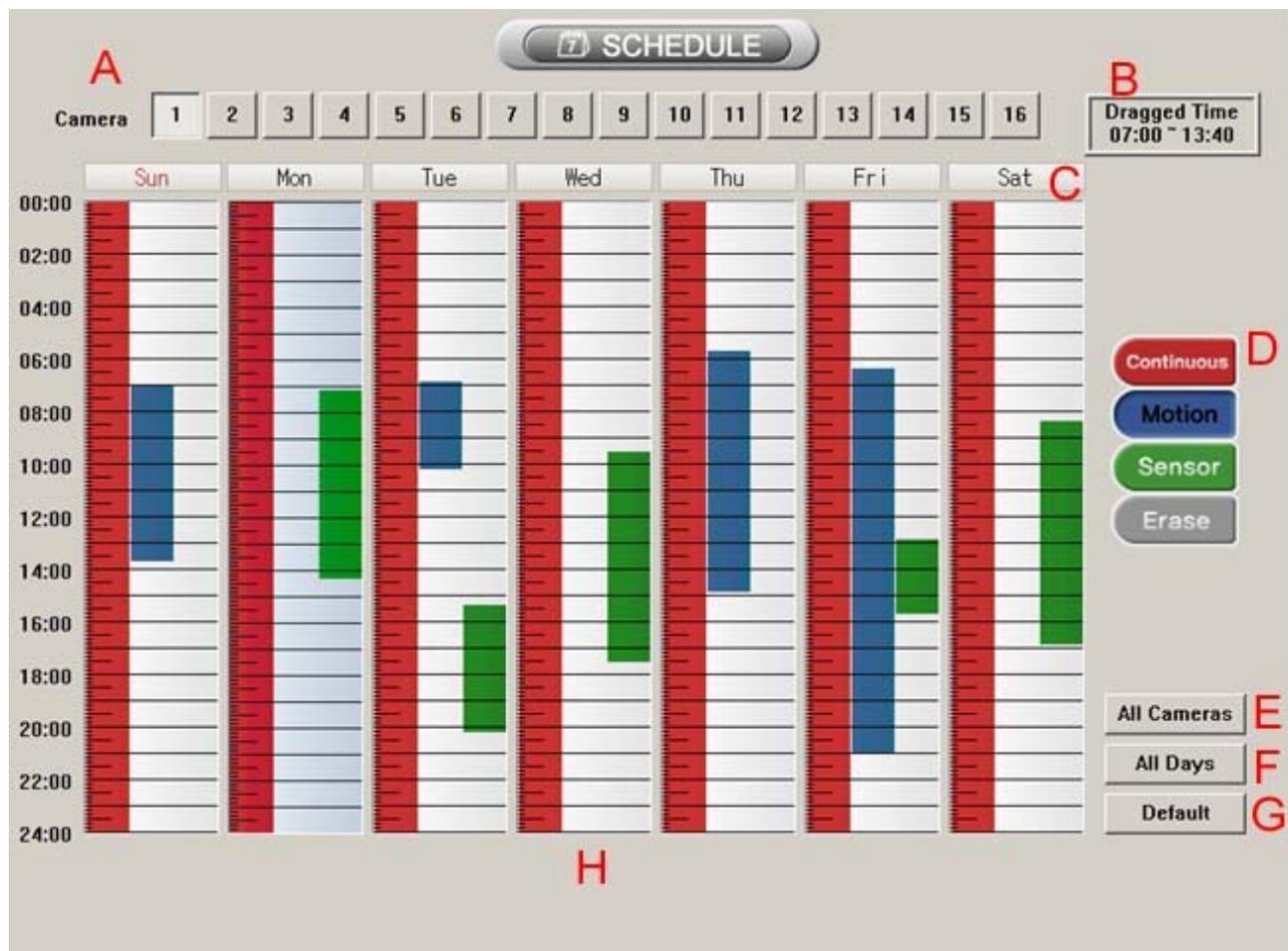
2. SETUP

C	COMMUNICATION	Frames which will be sent to a remote site. However, when the DVR is in recording, the frames will be adjusted automatically depending on recording speed.
D	APPLY IN A LUMP	Standardize the values of capture, recording and communication as capture's.
E	APPLY TO ALL CAMERAS	Set other cameras values as selected camera's.
F	DEFAULT	Set all items as default.
G	CAMERA	Choose the camera to set.
	REC TIME	<p>Recording time setting.</p> <p>(H) Always: Records images all times. Able to set the creation time of record file every 3~10minutes.</p> <p>(I) Motion: Starts recording image after a motion is detected. User can set the system to keep recording for amount of time. (3~10 seconds)</p> <p>(J) Sensor: Starts recording image after the sensor detects something. User can set the system to keep recording for amount of time. (3~10 seconds)</p>
K	Rec	Set each frame for each recording mode, especially with multi-recording

2. SETUP

2.5 RECORD SCHEDULE SETUP

Set the recording schedules for each camera in this menu.



A	Camera	Select the camera to record images. You can select multiple cameras by pressing the [CTRL] key.
B	Select Time	Display the selected recording time
C	Day Select	Set the recording mode to the selected day
D	Recording Mode Buttons	Select the recording mode.(Always/Motion/Sensor)
E	All Cameras	Set all camera recording modes like the selected camera.
F	All days	Set all recording schedules like the selected schedule date.
G	Default button	Set all to default.

2. SETUP

H	Recording Schedule	Display 24hours of the selected day. User can set the recording schedule on this.
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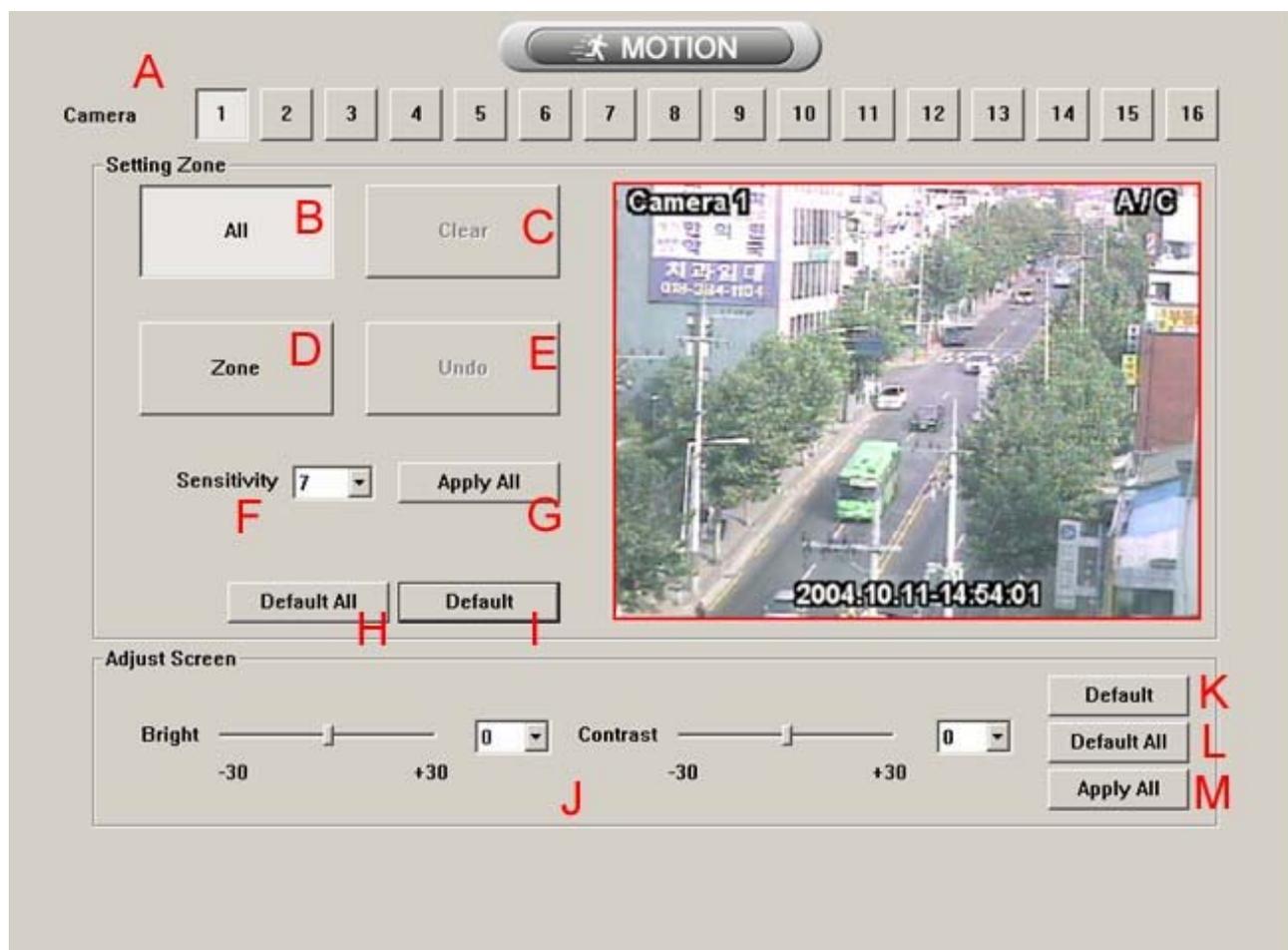
Schedule settings are as follows.

1	Select a camera to set the recording schedule.
2	Select the recording mode.(Continues/Motion/Sensor)
3	Drag the mouse to set the time and date for image recording.
4	Repeat step ②, ③ to set the recording schedule.
5	If you want to set one recording mode on a Whole day, select the recording mode and press the date button. (Ex. If You want to set [Continues] 24hours on Wednesday, select the [Continues] and press [Wed])
6	Press [All Cameras] to set all camera schedules same as the settings on one camera. (Ex. If You want the set all the cameras like camera no.1 like the picture on top, press [All Cameras])
7	If you want to set every day the same, press the [All Days] button.

2. SETUP

2.6 MOTION SETUP

Set the motion detection and sensitivity of each camera. User can also set the brightness and contrast of the camera.



A	CAMERA	Select camera for setting Motion detecting mode.
B	ALL	Select Whole image for Motion detecting area.
C	CLEAR	Clear the last surveillance area that was set.
D	ZONE	Use part of the camera images for Motion detecting area.

Please refer to below to set the detecting zones.

- ① Select a camera.
- ② Press [Zone] button.
- ③ Drag the desired zone. (The zone forms like a square.)

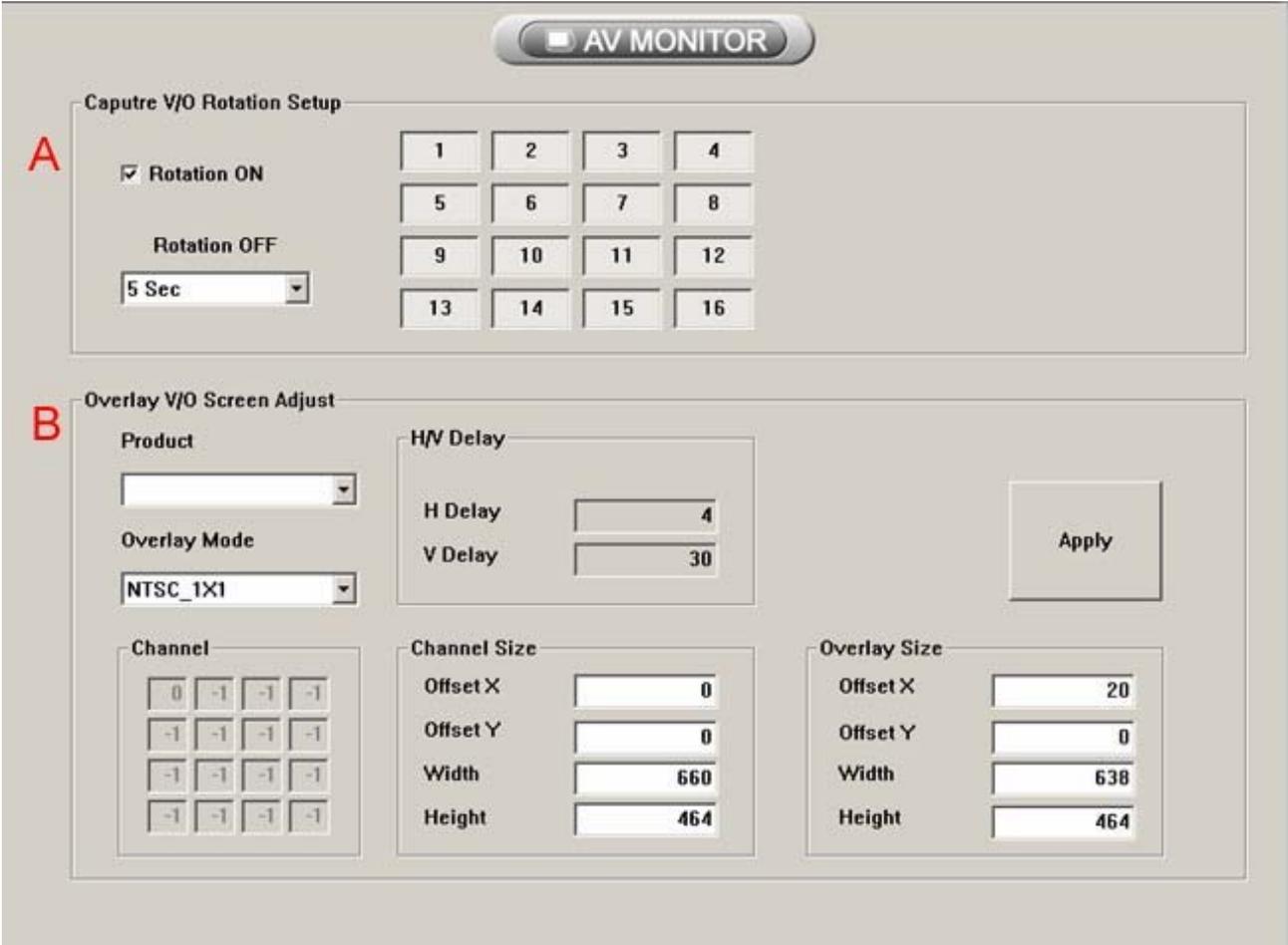
E	UNDO	Clear all zones.
F	SENSITIVITY	Set the sensitivity of the motion detection. The system gets more sensitive

2. SETUP

		when user sets the sensitivity to lower number.
G	APPLY ALL	Standardize the sensitivity of all cameras as set.
H	DEFAULT ALL	Default all values.
I	DEFAULT	Default the values of a selected camera.
J	SCREEN ADJUSTMENT	User can adjust the brightness and contrast by moving the slide bar or choosing the number.
K	DEFAULT	Default the brightness and contrast of selected camera.
L	DEFAULT ALL	Default the brightness and contrast of all cameras.
M	APPLY ALL	Standardize the brightness and contrast of all cameras as set.

2.7 AV MONITOR

Set the displaying screen of Monitor (analog Monitor), Not a PC Monitor of DVR.



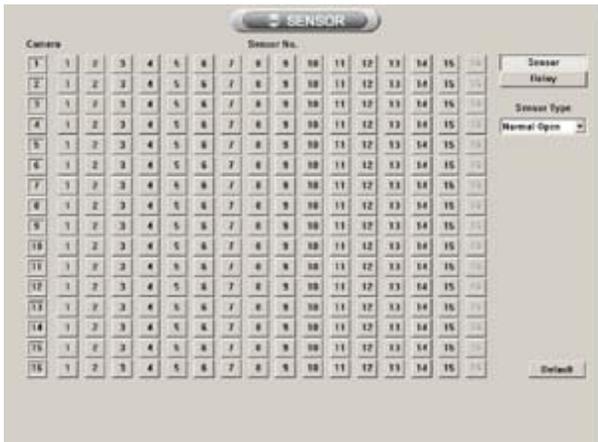
2. SETUP

A	Set capture rotation, rotation period and visible cameras This function can not use with SAFE4000T and SAFE4200T
B	Adjust overlay coordinates, width and height according to AV monitor model.

2.8 SENSOR & ALARM SETUP

Set the sensor and alarm for better monitoring. The sensor will only activate when the sensor schedule is set. The alarm will activate at sensor and motion recording mode.

2. SETUP



[SENSOR SETUP]



[ALARM SETUP]

1	One sensor can link with 3 cameras.
2	One camera can link with 3 sensors maximum.
3	Sensor no.16 is used for communication. It will transmit the DVR recording data to distant places. This sensor must be made a switch type.
4	You can select a type of sensor either 'Normal Open' or 'Normal Close'.
5	You can set 16 alarms maximum for one camera.

2.9 AUDIO SETUP

User can select the camera that will link with 16 audio channels. To record the sound with the recording image, select the camera and turn the Audio ON/OFF or select the number.

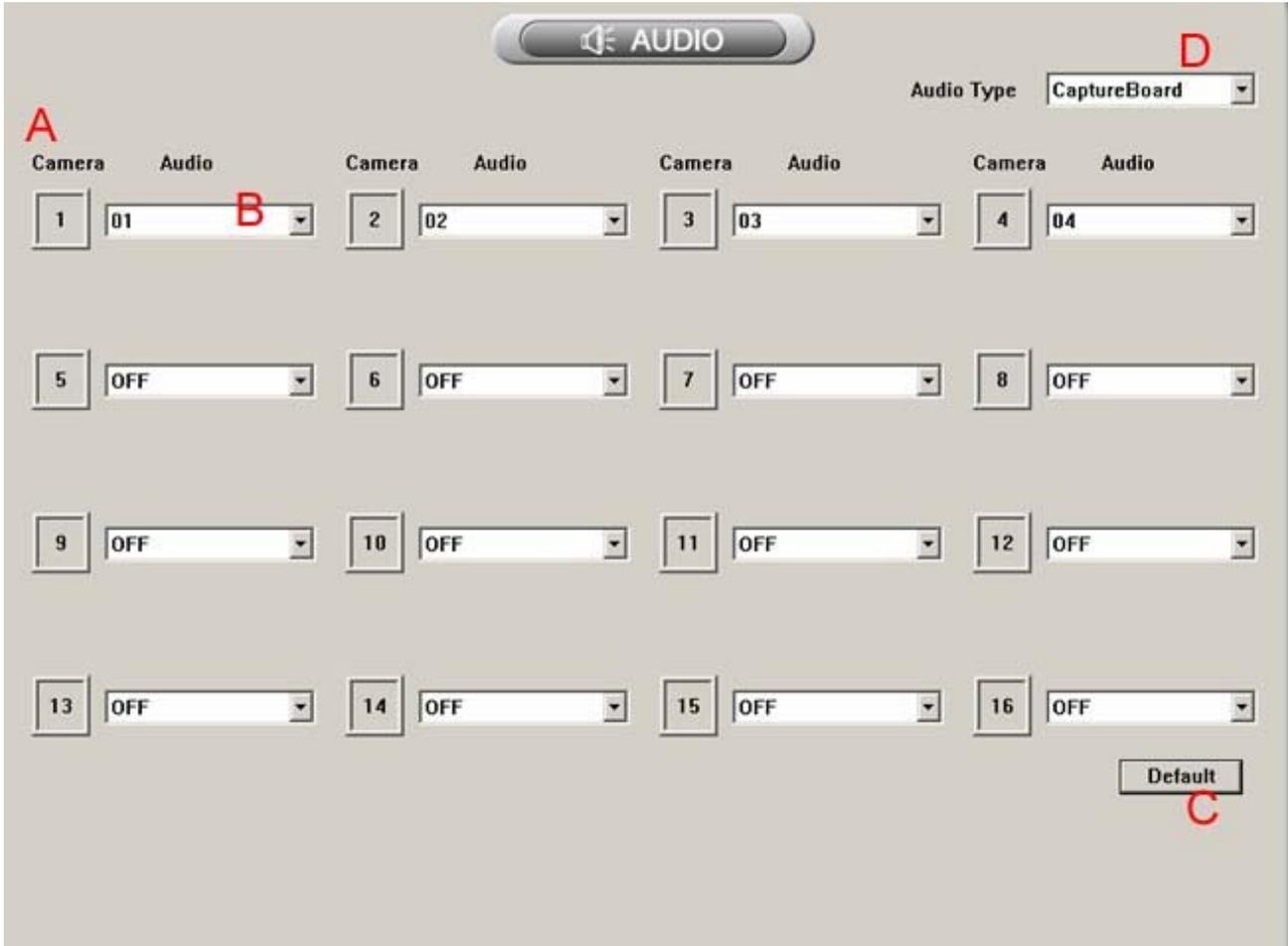
If you want to use multi-channel audio, you need a higher hardware spec than a basic spec.

16ch full Audio recording's basic spec is as below.

CPU : Intel Pentium4 2.8 GHz

RAM : 512MB

2. SETUP



A	Camera	Show the camera number
B	Audio	After selecting a camera, you can set the audio on/off.
C	Default	Set all values to [off]
D	Audio Type	Select "CaptureBoard" when using more than 2 audios.

2.10 ACCOUNT SETUP

Admin user can add/modify/delete an ID and give it an authority for DVR functions. Previously made IDs are on the left list and add/modify/delete for an ID is made on the right menu.

Only Admin user can do the account setup.

2. SETUP



A	ID	Show the entire present IDs.
B	AUTHORITY	Show authorities given to each ID.

2. SETUP

C	ADD	Add new ID.
D	MODIFY	Modify the authority of previous IDs.
E	DELETE	Delete previous IDs.
F	ID	Type the ID.
G	PASSWORD	Type the password for new or previous ID.
H	OK	Type the password above again to be sure.
I	<p>[AUTHORITY]</p> <p>Selected ID has an authority for a checked function.</p> <ol style="list-style-type: none"> 1. Setup: An authority for setup. 2. Search: An authority for search. 3. Backup: An authority for backup. 4. DVR Power: An authority for DVR on/off. 5. Duplex Audio: An authority for using the duplex audio. 6. Remote Setup: An authority for the remote setup. 9. Communication: An authority for remote access to the DVR. (Up to 5 IDs can get this authority.) 8. Safe Mode: An authority for access in Safe Mode. (Safe Mode authority is only given to one ID.) 7. Remote Search: An authority for access in M-Client. 10.Setup: An authority for remote access to the camera channels unit as like as below picture. 	
	CLEAR	Delete the information.

2. SETUP

ACCOUNT

ID	Authority
admin	Setup, Search, Backup, DVR Power
guest	Communication, RemoteSearch
1	Communication, Remote Setup, Duplex Au...
2	Communication, Remote Setup, Duplex Au...
3	Communication, Remote Setup, Duplex Au...
4	Communication, Remote Setup, Duplex Au...
5	Communication, Remote Setup, Duplex Au...

AddModifyDelete

Modify
ID:
Password:
OK:

Stream Channel Setup

1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16

ModifyDiscard

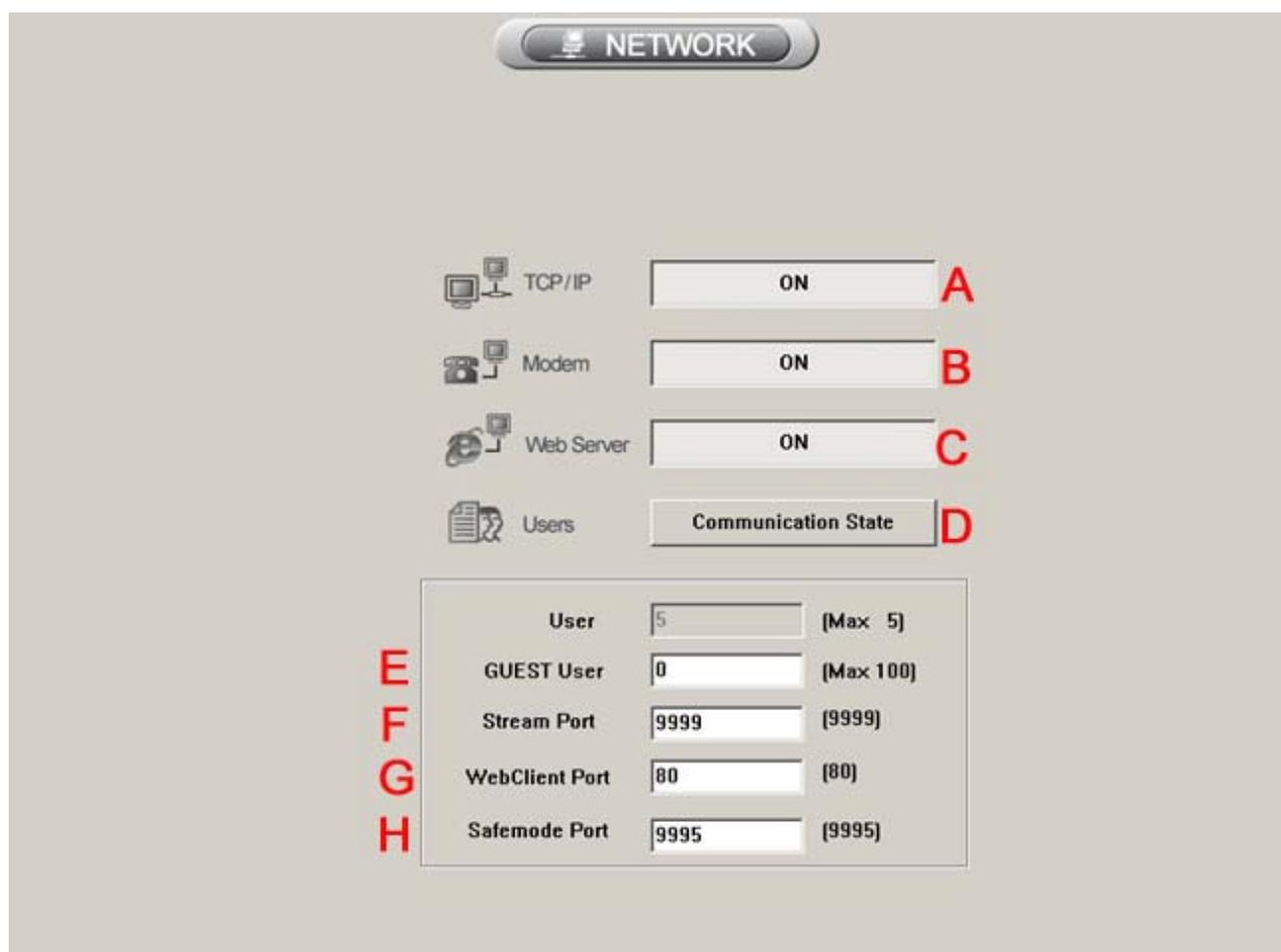
Caution] Checked channels won't be displayed through client programs.

2.11 NETWORK SETUP

User can set the functions regarding the remote access in the network setup.

1. TCP/IP access on/off
2. Modem access on/off
3. Web server on/off
4. Connected user status and connect block
5. Control Maximum guest users

2. SETUP



A	TCP/IP	(ON) : Permits the access through Internet to a DVR. (OFF) : Don't permit the access through Internet to a DVR.
B	MODEM	(ON) : Permit the access through a modem. (OFF) : Don't permit the access through a modem
C	Web Server	(ON) : Permit the image transmission using an web browser. (OFF) : Don't permit the image transmission using an web browser. Please refer to '9. Appendix 2' for further information on 'Web Server'.
D	Users	User can see connected user IDs, IP and functions in use. User also can disconnect them with [disconnect] button. User can see the connected user status by clicking 'Ctrl + U' in the main screen.
E	GUEST user	User can appoint the maximum number of guest users. There is no big difference between 'user' and 'Guest user', but Guest user helps DVR

2. SETUP

		operates stable by reducing memory working.
F	Stream Port	Defaulted port: 9999
G	Webclient Port	Defaulted port: 80
H	Safemode Port	Defaulted port : 9995

- Tip! 1.** User can appoint the maximum number of guest users. Guest user has no authority for search and setup, and up to 100 guest users can connect to a SAFE-DVR simultaneously. There is not such a big difference between 'User' and 'Guest user', but Guest user helps your DVR system operates better by reducing memory spending.
2. User has to change TCP/IP filtering after changing Stream Port, WebClient Port and Safemode Port. Please refer to 10.1 TCP/IP filtering
 3. If you changed Stream port you have to change the HTML file in the folder(C:\WSAFEXXXX\html\Winindex.html). Please refer to the below picture.

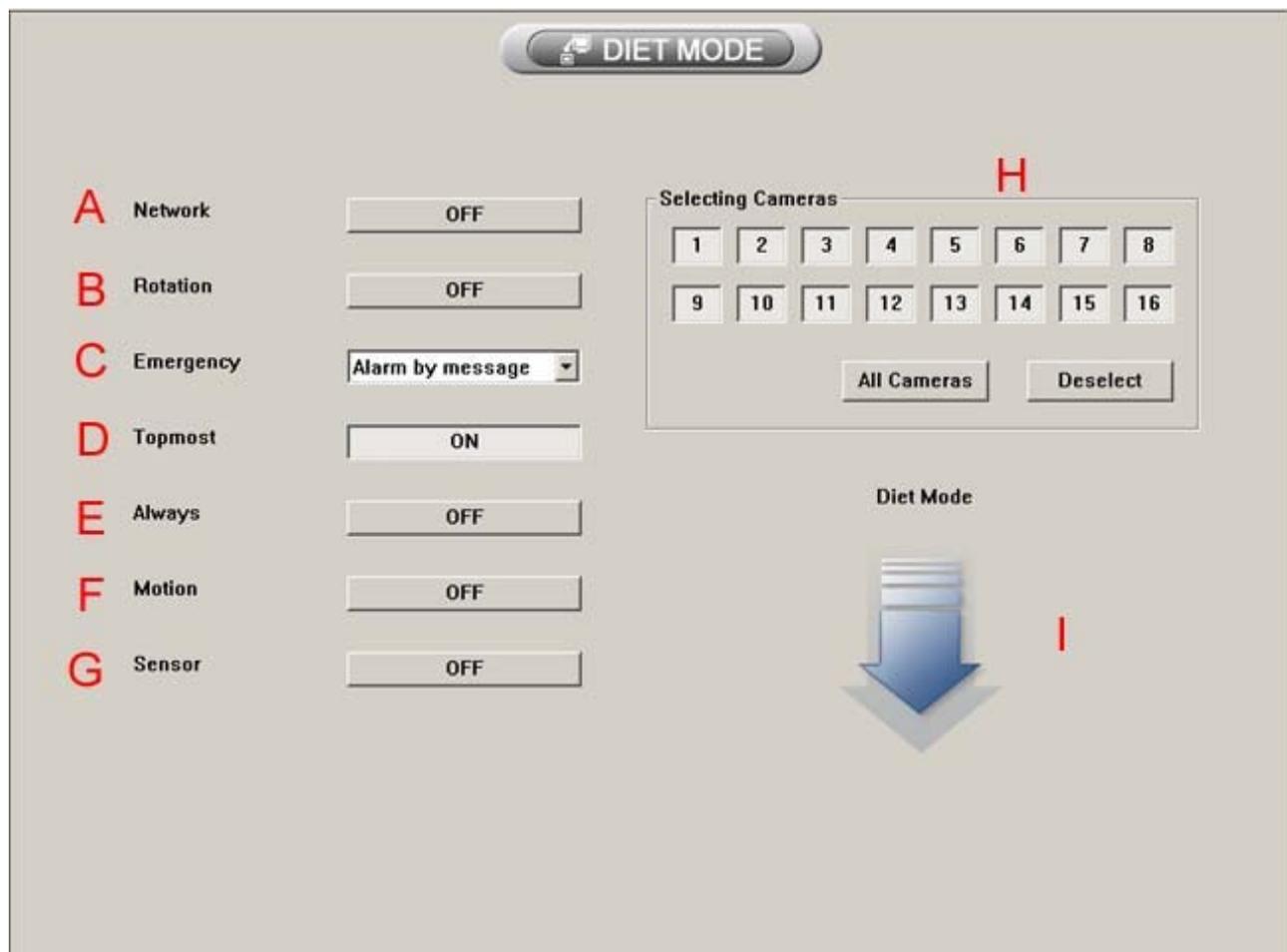
```
<OBJECT id=Client1 classid=CLSID:938994FD-52F2-465A-B297-E808E08C32EC
width=640 height=480
codebase="WClient.CAB#version=1,0,0,13">
<PARAM NAME="OCXID" VALUE="OCX01">
<PARAM NAME="IP" VALUE="127.0.0.1">
<PARAM NAME="USER" VALUE="guest">
<PARAM NAME="PASSWORD" VALUE="guest">
<PARAM NAME="CameraID" VALUE="0">
<PARAM NAME="Mode" VALUE="4A">
<PARAM NAME="UseDirectX" VALUE="0">
<PARAM NAME="UseThread" VALUE="0">
<PARAM NAME="PORT" VALUE="NUMBER OF STREAM PORT">
</OBJECT>
```

 as like as "9990"

2.12 DIET MODE SETUP

User can minimize the monitoring screen using the diet mode function.

2. SETUP

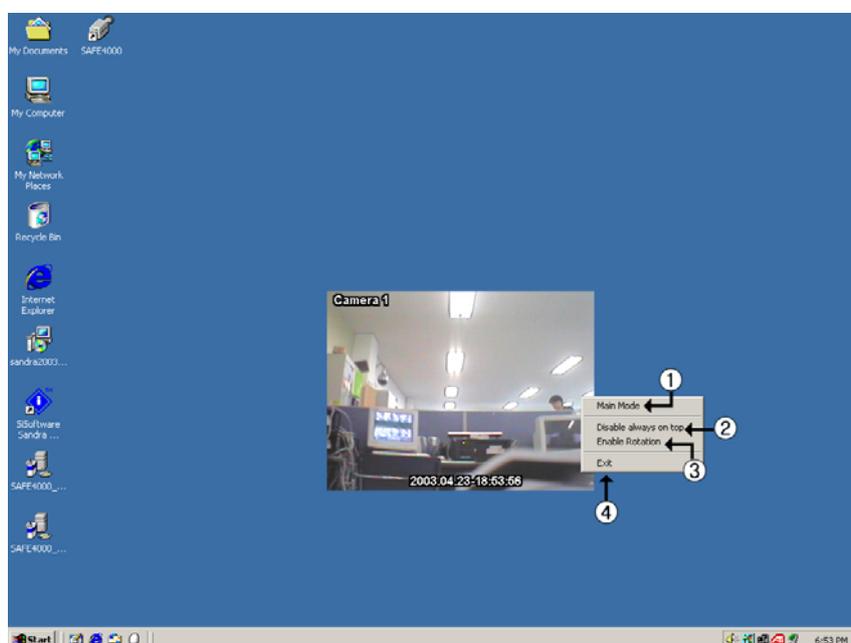


A	Remote service	ON: Turns on access to DVR with TCP/IP, Modem. OFF: Turns off access to DVR with TCP/IP, Modem.
B	Rotation	ON: Turns on rotation on diet mode. OFF: Turns off rotation on diet mode.
C	Emergency	Set emergency situation on diet mode. Return to main page: Goes back to main page in an emergency. Message popup: Pops up a note in an emergency. * No use: Do not use this mode.
D	On top	ON: Always puts the monitoring screen on top. OFF: Turns off this mode.
E	Continuous recording	ON: Always record images. OFF: Turns off this mode.
F	Motion	ON: Use motion recording on Diet mode.

2. SETUP

	recording	OFF: Turn off this mode.
G	Sensor recording	ON: Use sensor recording on Diet mode. OFF: Turn off this mode.
H	Camera	Select the cameras to use. (1) All: Select all cameras. (2) Cancel: Cancel the selected cameras.
I	Diet mode(↓)	Activate the Diet mode.

Right click on the Diet mode screen to see the menu.



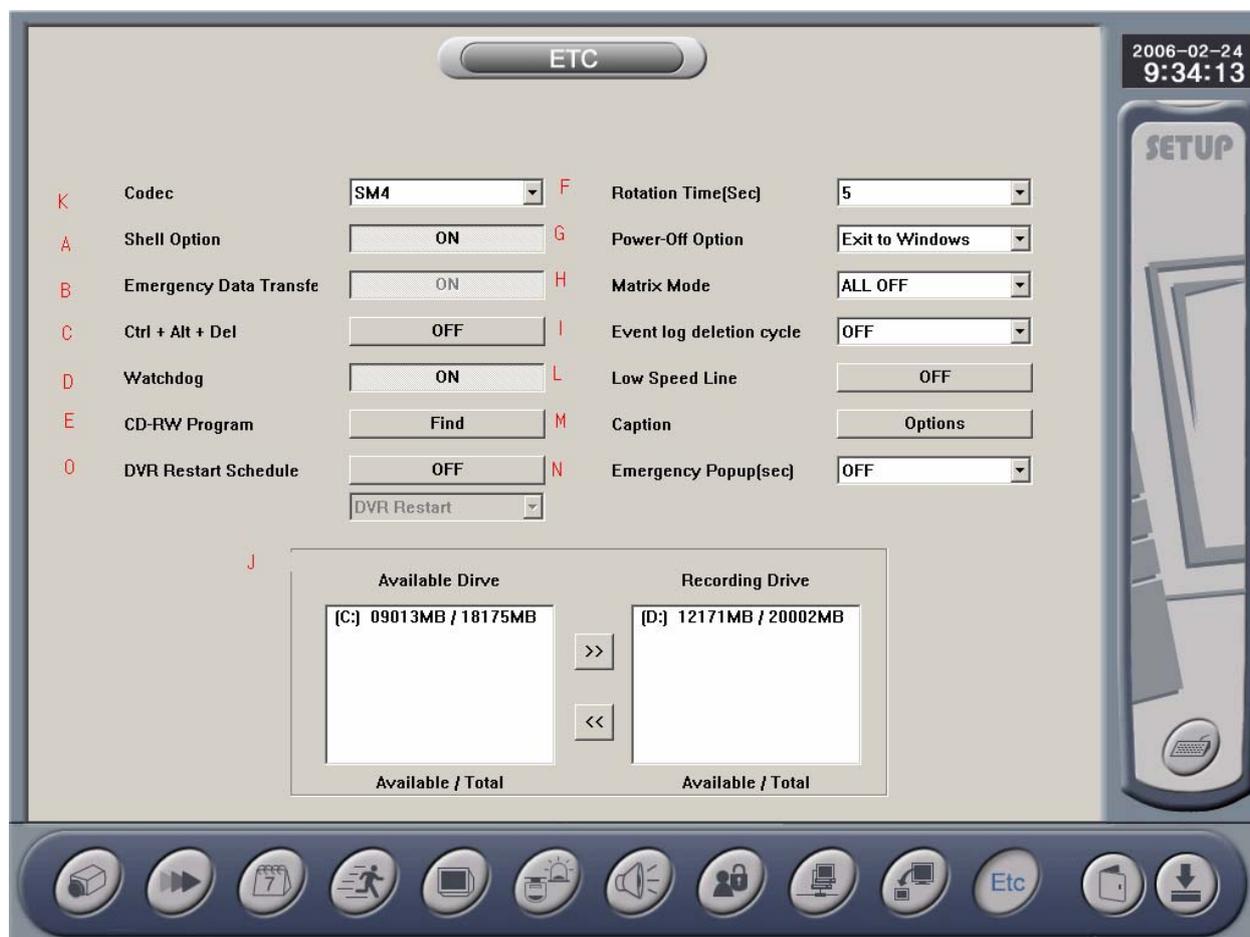
[DIET MODE]

1	Main page	Return to the DVR monitoring screen.
2	On top	ON: Always puts the monitoring screen on top. OFF: Turns off this mode.
3	Rotation	ON: Turns on rotation on diet mode. OFF: Turns off rotation on diet mode.
4	Exit	Exit the Diet mode and turn off the DVR system.

2. SETUP

2.13 ETC SETUP

Set various functions on this menu.



A	SHELL OPTION	Select DVR Shell mode on/off. After user changes the setup, the system will restart automatically.
B	Emergency Data Transfer	If you installed a sensor board, you can not use this function. If you didn't install a sensor board, this function will transmit the DVR recording data to distant places.
C	Ctrl + Alt + Del	By setting this function [Off], user can block other users from the system using [Ctrl + Alt + Delete] function key.
D	WATCHDOG	Watchdog is a system that automatically reboots the program when there is an error on the system.

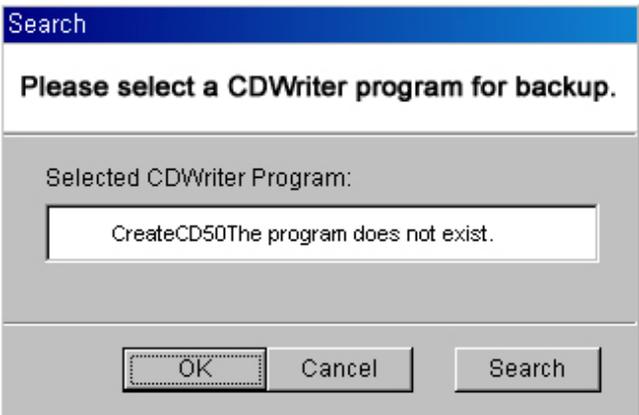
2. SETUP

E	CD-Writer PROGRAM	To save recorded image files in a CD, you must set the CD Writer program. (Before this, the CD Writer program must be installed on the Windows)
F	ROTATION TIME (SEC)	Set the rotation time of the monitoring screen.
G	POWER OPTION (SEC)	There are 3 types of power options. Exit to window: Exit to window or Shell when the DVR program is over. DVR system restart: Restart the DVR system when the DVR program is over. DVR power off: Power off the DVR system when the DVR program is over.
H	Matrix Mode	Set location of each screen as user pleases just by dragging.
I	CYCLE FOR REMOVING EVENT LOG	To avoid the waste of HDD with event log file, the DVR will delete the event log information regularly.
J	RECORDING HDD	If there are multiple HDDs in your system, user can select which HDD to record, 'HDD Available' stands for the available HDDs, 'HDD In USE' stands for the HDDs that are in use of recording images.
K	Codec	SM4 for SAFE4400 MPEG4 for SAFE2000, 2200, 4000, 4000T, 4200, 4200T
N	Emergency Popup(sec)	When emergency occurs (under Motion & Sensor recording mode), pop-up window appears in the screen. Only over SAFE4000 model.
L	Low speed line	For low speed modem you can choose high A/B/C in the compression of camera set-up.
O	DVR Restart	For securing system stability, you can set the rebooting cycle.
N	Caption	User can choose caption of screen like as time, camera name and recording type

2. SETUP



User can select a CD-Writer program as below.

1	Press 'Search' at ⑤ on the picture above.
2	<p>A window will pop up after pressing the [Search] button. You can press [Search] on this window to find the program file you want.</p> 
3	When the search is over, press [OK] to end the setting.
4	Go to the Monitoring screen and press the [Save] button to save.

2.14 SOFT KEYBOARD

The Soft Keyboard is a function that can be used when there is no keyboard connected.

User can use this by clicking the Soft Keyboard button. Move and click the mouse on the Soft Keyboard to use.

2. SETUP



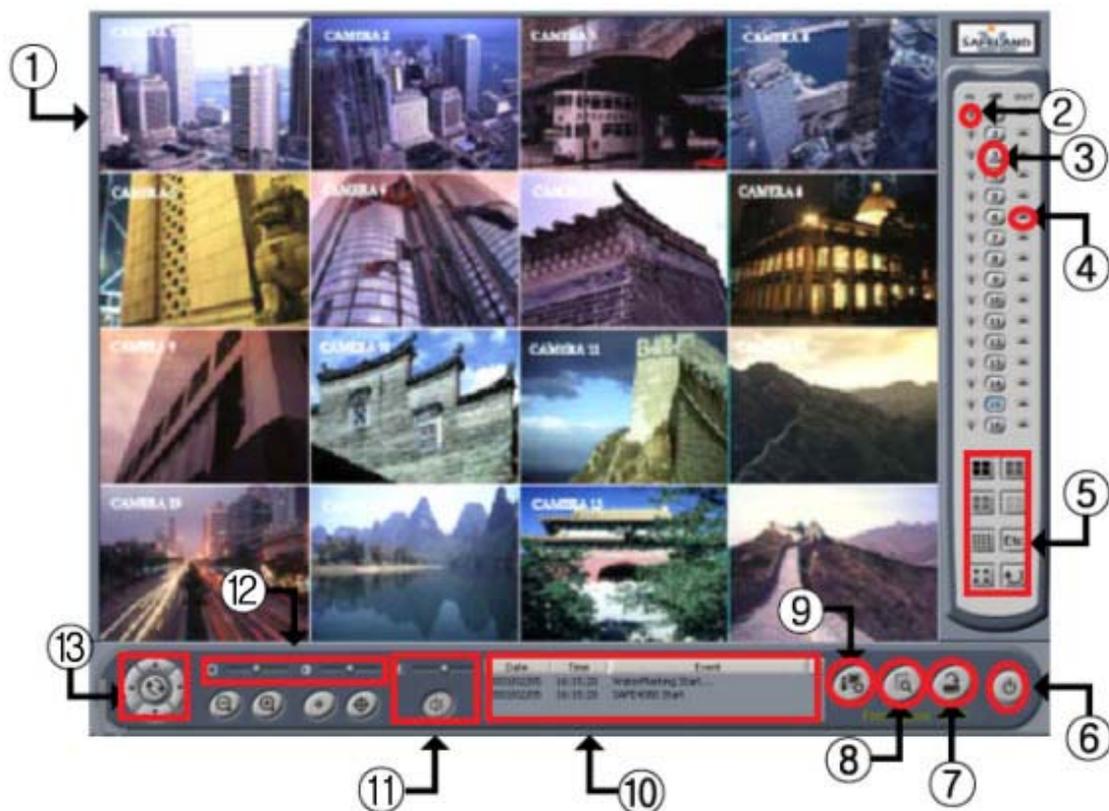
2.15 CONFIRM & CANCEL

	Confirm	Save all settings and exits the program
	Cancel	Cancel all settings and exits the program

3. SURVEILLANCE

3. SURVEILLANCE

3.1 INTRODUCTION

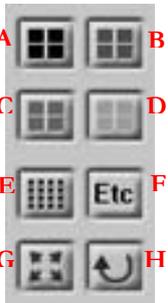


1	Camera Display	Show user the video from related camera.
2	Sensor Indicator	Show user status of sensor inputs. During sensor activation, the related indicator will turn to red.
3	Camera Button	Allow user to select a camera for control. Pressing any one of these buttons will show user a selected camera in a single screen view.
4	Alarm Indicator	Show status of sensor outputs. During sensor activation, the related indicator will turn to red.
5	Screen Division Button	Allow user to select screen division
6	Exit Button	Exit the program.
7	Backup Button	Bring up Backup Screen.

3. SURVEILLANCE

8	Search Button	Bring up Search Screen.
9	Setup Button	Bring up Setup Screen.
10	Log Window	Show DVR status.
12	Brightness/Contrast	Allow user to adjust brightness and contrast.
11	Sound Button	<p>Allow user to turn on/off and control the sound.</p> <p>Right click on sound button will show the sound selection option as below.</p> 
13	Camera Control Panel	Allow user to control a selected camera.

3.2 SCREEN DIVISION SETUP

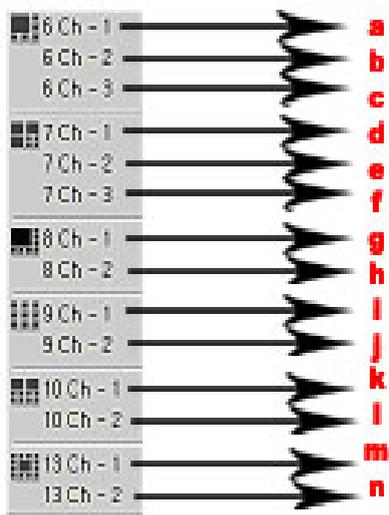
 <p>[BASIC DIVISION</p>	A	Show 4 division screens of camera 1~4.
	B	Show 4 division screens of camera 5~8.
	C	Show 4 division screens of camera 9~12.
	D	Show 4 division screens of camera 13~16.
	E	Show camera 1~16.
	F	Show other division screens.

3. SURVEILLANCE

MENU]	G	Show full screen of image. (To exit this mode, right click on the screen)
	H	Switch camera images using the mode on. (This function only on 1/4/8division mode)

NOTE:

If user press [ETC] button, user can select more types of the split-screen – 6/7/8/9/10/13.



a	Show 6 division screens of camera 1~6.
b	Show 6 division screens of camera 6~11.
c	Show 6 division screens of camera 11~16.
d	Show 7 division screens of camera 1~7.
e	Show 7 division screens of camera 5~11.
f	Show 7 division screens of camera 10~16.
g	Show 8 division screens of camera 1~8.
h	Show 8 division screens of camera 9~16.

3. SURVEILLANCE

i	Show 9 division screens of camera 1~9.
j	Show 9 division screens of camera 8~16.
k	Show 10 division screens of camera 1~10.
l	Show 10 division screens of camera 7~16.
m	Show 13 division screens of camera 1~13.
n	Show 13 division screens of camera 4~16.

NOTE: When using DVRX-1000, user can use Light On/Off function in the [ETC] button. In case of using this function, you can control the light connected with DVRX-1000.

3.3 RECORDING STATUS



A	CAMERA NAME
B	RECORDING STATUS

B Recording Status

While recording or using audio, some characters will be presented as below.

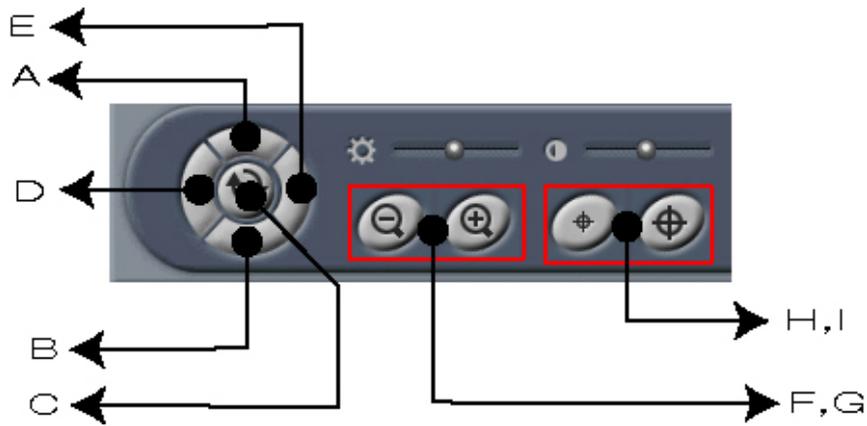
- A : Set the Audio function.
- C : Continuous recording
- M : Motion recording
- S : Sensor recording

3. SURVEILLANCE

3.4 CAMERA CONTROL

Follow these steps to control the PTZ camera. (Only when a PTZ camera is connected.)

1	Select a camera by pressing Camera Button or double-click desired video from the Monitoring Screen.	
2	The selected Camera Button will be indicated pressed.	
3	Using Camera Control Panel, user can move the selected camera and also can adjust the lens.	
4	Each function of the Camera Control Panel is as bellow.	

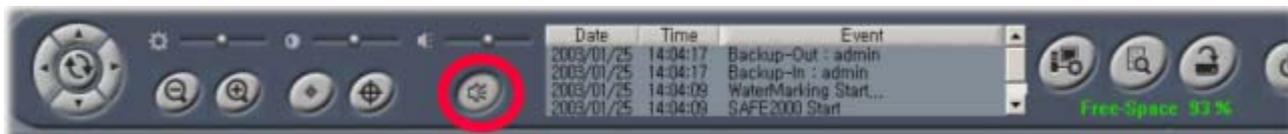


A	Move the selected camera up.
B	Move the selected camera down.
C	Auto-panning Button
D	Move the selected camera left.
E	Move the selected camera right.
F	Zoom in
G	Zoom out
H	Focus on a near object.

3. SURVEILLANCE

- 1 Focus on a far object.

3.5 REAL TIME AUDIO



- 1 Press the Audio button 'on' on the monitoring screen.
- 2 Control the volume by setting the slide bar on top of the Audio button.

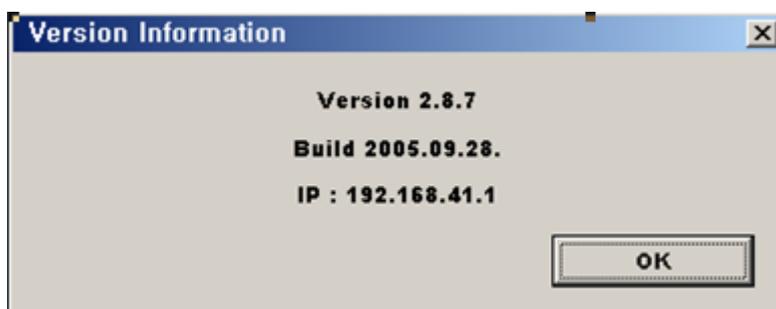
NOTE:

User can hear the audio only when the audio is set as 'ON' in the audio setup
(Please refer to p.16 - '2.9 Audio Setup')

3.6 DVR INFORMATION WINDOW

You can see the version and kind of the DVR you have, by pressing [Ctrl + V].

You can see the version, the build date and IP of the DVR.



3. SURVEILLANCE

3.7 LOG WINDOW

Every event occurred in a DVR program is shown on the log window and recorded in a log file. The entire event can be also shown on the event log window.

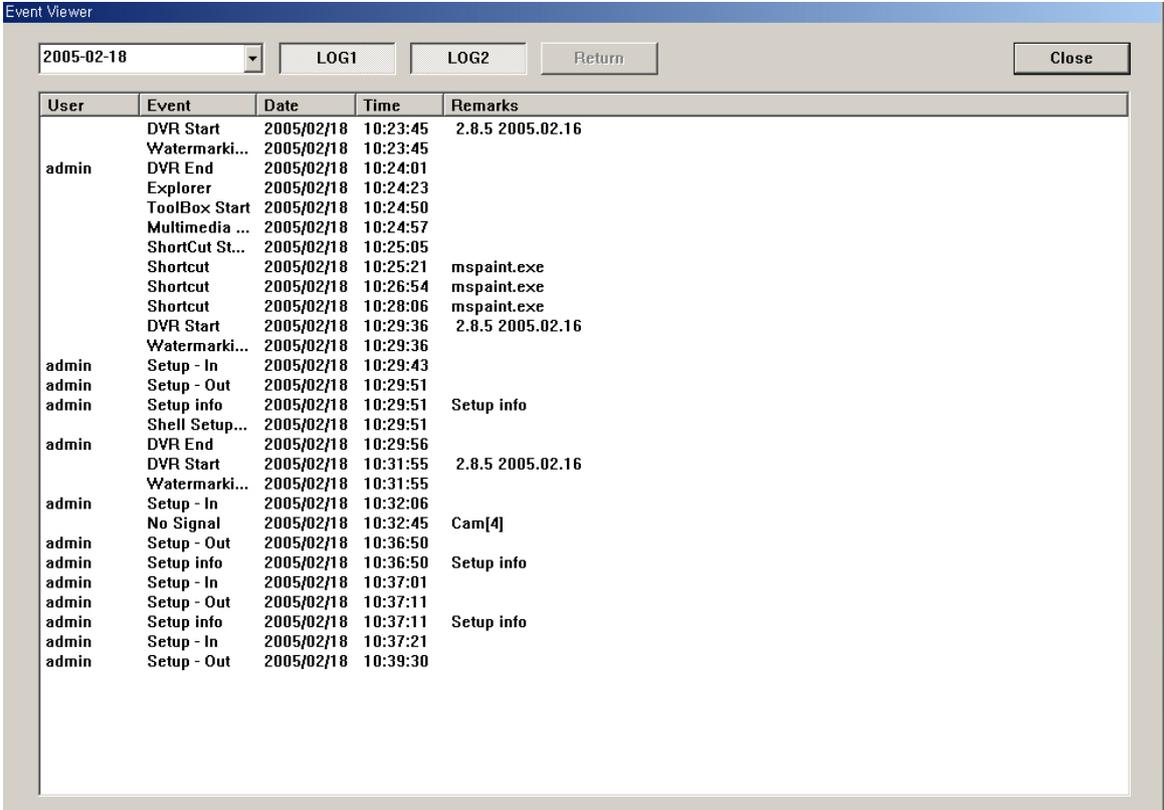
Below events are shown on the log window.

- 1. System Start and Stop
- 2. Setup Operation
- 3. Sensor Input and Output Activation
- 4. Motion Detection and Sensor Output Activation

3.8 EVENT & LOG HISTORY WINDOW

Every important operation will be written in the log file. Follow these steps to trace the log history.

1	Holding down [Ctrl] key, press [E]. Event and Log History Window will appear.
2	Double-click the Setup information then you can see the Setup history.
3	Press [OK] Button to close this window.



3. SURVEILLANCE

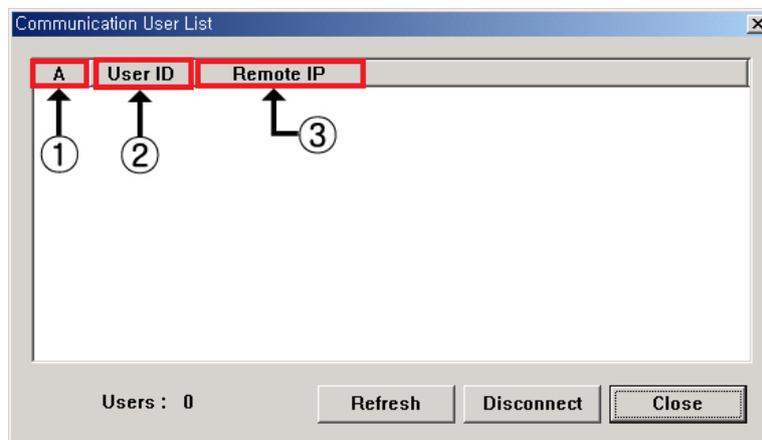
Below messages are shown on the event log window.

DVR Start	Show that the DVR has started.
DVR Exit	Show that the DVR has ended.
Setup-In	Show that user has entered the setup page.
Setup-Out	Show that user has exited the setup page.
Search-in	Show that user has entered the search page.
Search-Out	Show that user has exited the search page.
Save-in	Show that user has entered the save page in Multi Search.
Save-Out	Show that user has exited the save page in Multi Search.
Motion Detection	Show that there was motion detection.
Sensor	Show that the sensor has activated.
Water marking On	Show that the Watermarking is started.
Water marking Off	Show that the Watermarking is ended.
Remote login	Show that there is a remote login on the system.
Remote logout	Show that the remote login has ended.
Remote login : User Failure	Show that an expelled user ID has tried to log in to the system.
Remote login : Password Failure	Show that a user has entered a wrong password.
Diet mode On	Show that the Diet mode has started.
Diet mode Off	Show that the Diet mode has ended.

3. SURVEILLANCE

3.9 CONNECTED USER STATUS

You can check the connected user state from remote sites by pressing [Ctrl+U].



1. Present state
2. User ID
3. Remote site(IP)

[Refresh] button: Refresh the present status of connected users.

[Disconnect] button: Disconnected the selected user from the system.

[Close] button: Close the window.

4. SEARCH

4. SEARCH

4.1 INTRODUCTION

Follow these steps to enter the search screen



1	Press 'Search' button on the monitoring screen.	
2	Select a User ID and enter its password.(The default password is '1')	
3	Press the [OK] button to enter the Search Screen.	

4. SEARCH

4.2 SEARCH SCREEN FORMATION



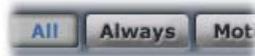
1	Calendar	Allow user to select a date to search.
2	Camera Button	Allow user to select a camera to search.
3	Recording Mode Button	Allow user to filter the recorded video by its recording mode.
4	Indexed List	Show user the recorded video list fit to option A ~ C. User can select a video to replay from the list.
5	Load Button	Load a selected video.
6	Search by Time Button	Allow user to find recorded video included in the selected time range.
7	Exit Button	Exit to the Monitoring screen.
8	Multi Search	Display the Multi Search Screen
9	Print Button	Print sequential images out from a loaded video.

4. SEARCH

10	Save Button	Save a still image of a loaded video into a floppy disk.
11	Play Controls	Allow user to view a loaded video in various speed.
12	Zoom Button	Allow user zoom in and out.
13	Video Information	Show user the information of a loaded video.
14	Play Status	Show user the play progress. Using slide bar, user can jump to specific section of a loaded video.
15	Video Display	Display a loaded video.

4.3 VIDEO SEARCH

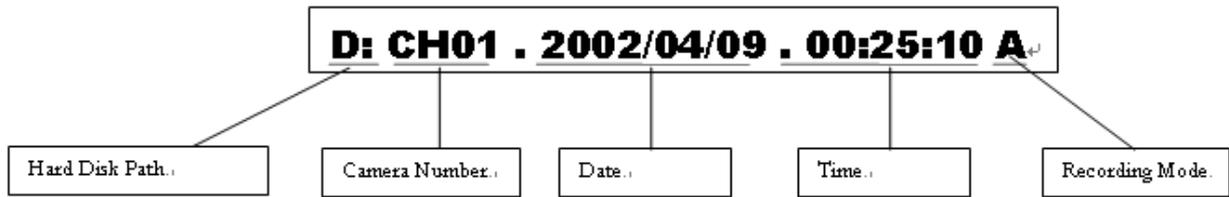
Follow these steps to search and find video files.

1	Select a date to search using calendar. (The color of the date with recorded images are in blue)	
2	Select a camera to search	
3	Select a recording mode for filtering. (All, Always, Motion, Sensor) The meaning of each buttons is as belows.	

All	Search all video regardless to their recording modes.
Always	Search only videos recorded in Continuous recording mode.
Motion	Search only videos recorded in Motion Detection recording mode.
Sensor	Search only videos recorded in Sensor Detection recording mode.

4. SEARCH

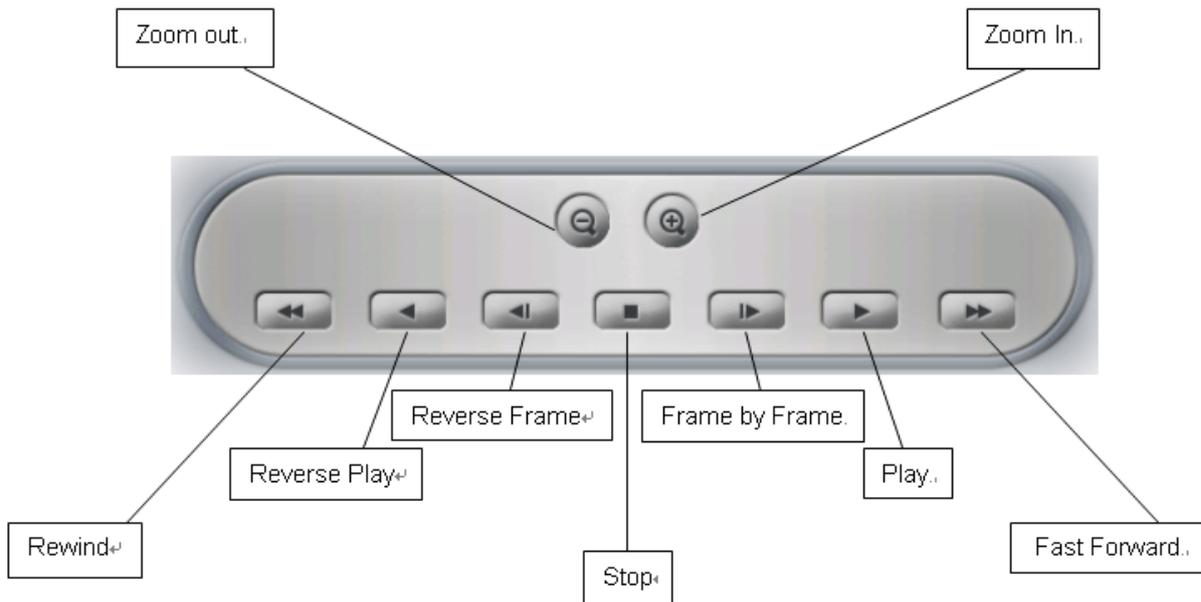
4	Enter a time range to search by pressing [Search by Time] button. When there is no time range selected, show all video of the selected day.	
5	Select a video and press [Load] button.	



6	The selected video will appear.
---	---------------------------------

4.4 PLAY CONTROLS

You can control playing by using Play Control buttons.



4. SEARCH

4.5 AUDIO PLAY

The followings are how to play a recorded file with audio.



1	Select video file recorded with audio.
2	Load selected data.
3	Turn on or turn off the audio by press "audio button"
4	Adjust audio volume with slide bar.

4. SEARCH

4.6 IMAGE SAVE

Follow these steps to save a specific image of the loaded video into a floppy diskette.

1	Press the [Stop] button at the desired frame during play.	
2	Insert floppy disk into the FDD.	
3	Press [Save] button.	
4	Select a graphic format.	
5	Pressing [OK] button will save the selected image into the floppy disk.	

4.7 IMAGE PRINT

User can print out consecutive 8 images from the loaded video.

Follow these steps to print out images.

1	Press [Stop] button at the desired frame during play	
2	Press [Print] button.	
3	Adjust the number of frames to print out.	
4	Press [OK] button will print out the selected image(s).	

5. MULTI - SEARCH

5. MULTI – SEARCH

5.1 MULTI - SEARCH

Press the Multi Search button on the bottom of the search screen.

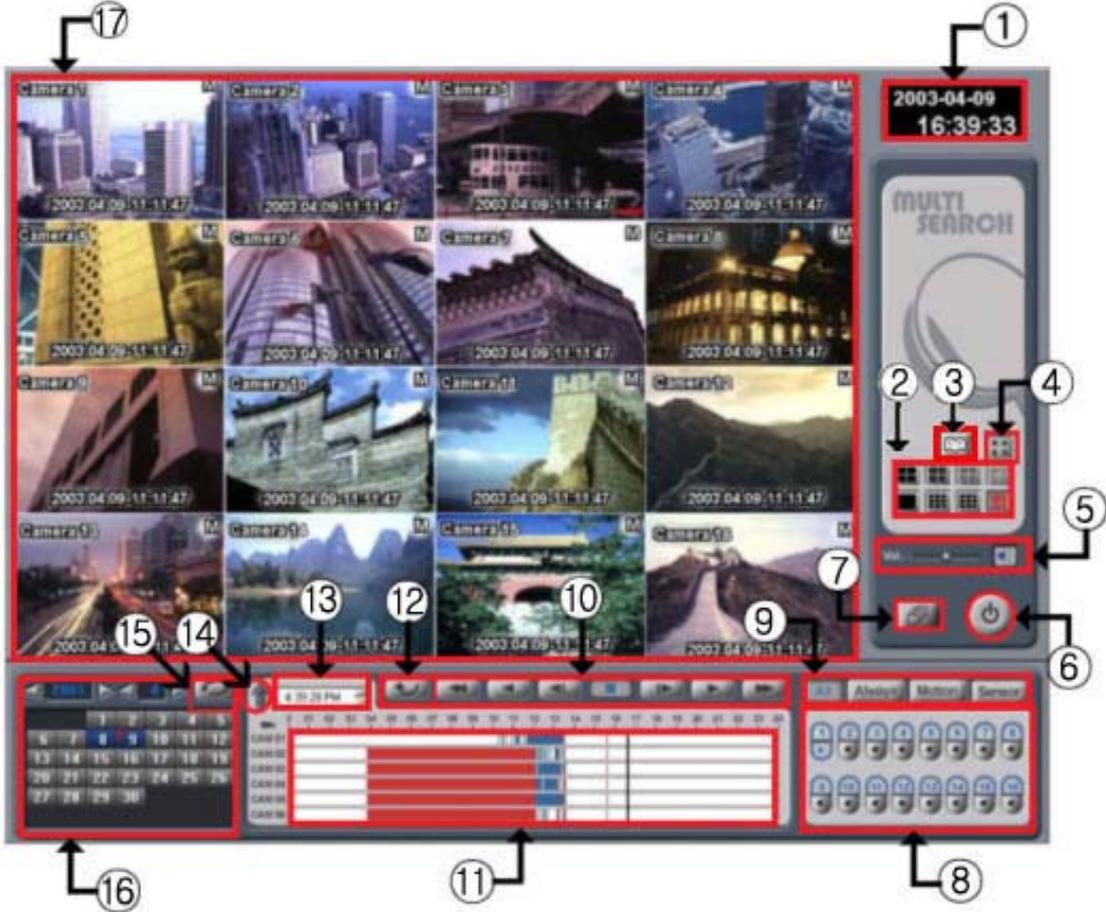


Press this button to move to the multi-search screen.

5. MULTI - SEARCH

5.2 INTRODUCTION

You can search the images of not only 1 channel but for up to 16 channels simultaneously.



1	Time display window	Display current date and time.
2	Split function Button	Load video data according to each split buttons. From upper left end, [1~4ch], [5~8ch], [9~12ch], [13~16ch], [Selected 1ch], [1~9ch], [8~16ch], [All 16ch].
3	Bookmark	You can add, delete and find the bookmark frame.
4	Full screen	Show the video image on full screen.

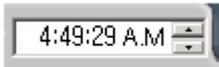
5. MULTI - SEARCH

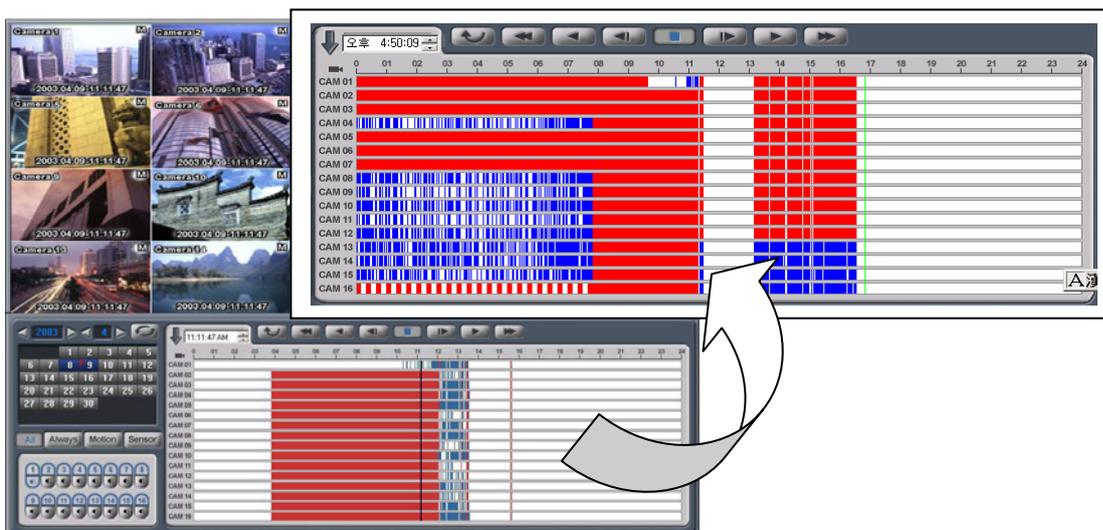
5	Sound control	Move the slide bar to control the volume. You can also turn on/off the sound.
6	Exit button	Exit to Monitoring Screen.
7	Panoramic view button	After several pictures loaded, user can select specific channel which is wanted to panoramic view. Selected channel is noticed with red outline. Then press this button to enter Panoramic view screen of selected channel.
8	Camera	Select the camera no. to search then press the load button. You will see the loaded image on the screen ready for play.
9	Recording mode select button	Show 3 types of recording files on the screen ('All' shows all types of recording files).
10	Play control	You can control the video display.
11	Search	The recoding situation on selected date which is selected in Calendar is displayed by recoding mode with specific colors.
12	Load button	Allow user to load video data.
13	Search time	User can select time to search. Click [Time], [Minute], [Second] and [AM/PM] to adjust a specific time to search.
14	Enlarge search	You can enlarge the search screen. This is digital zoom.
15	Update	By clicking this button, you can search for files that have been not updated on this function.
16	Calendar	Allow user to select a date to search.
17	Play screen	Display a loaded video.

5. MULTI - SEARCH

5.3 MULTI - SEARCH

Follow these steps to use the multi search function.

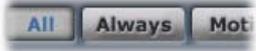
1	Select a date to search using calendar. (The date with recorded images turns to blue.)	
2	Select a time to search using up-down buttons.	
3	Also user can select a time to search by clicking the graph. Selected time is displayed as black vertical line.	

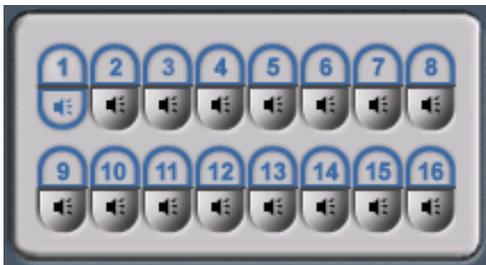


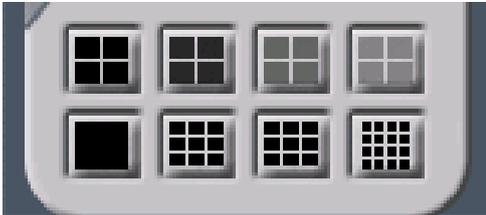
You will see this information on the search screen.

Selected Time	Black vertical line.
Always	Red zone (Continuous recording mode).
Motion	Blue zone (Motion Detection recording mode).
Sensor	Green zone (Sensor recording mode).

5. MULTI - SEARCH

4	Select recording mode, SAFE-DVR offers next 4 options.	
All	Search all video regardless to their recording modes.	
Always	Search only video recorded in Continuous recording mode.	
Motion	Search only video recorded in Motion Detection recording mode	
Sensor	Search only video recorded in Sensor Detection recording mode.	

5	<p>Now select the video channel which will be loaded. Press the video channel, and then selected buttons are activated. Press again, and then selected buttons are deactivated. And User can also select 1 audio channel to play with. User must set up same audio channel which is set in Setup screen.</p>	
---	--	--

6	<p>Another way to select video channel is using split buttons. Split button allows user to load split view type in selected time. Split buttons don't need [Load] action. Pressing split button, selected video data will be loaded at once.</p>	
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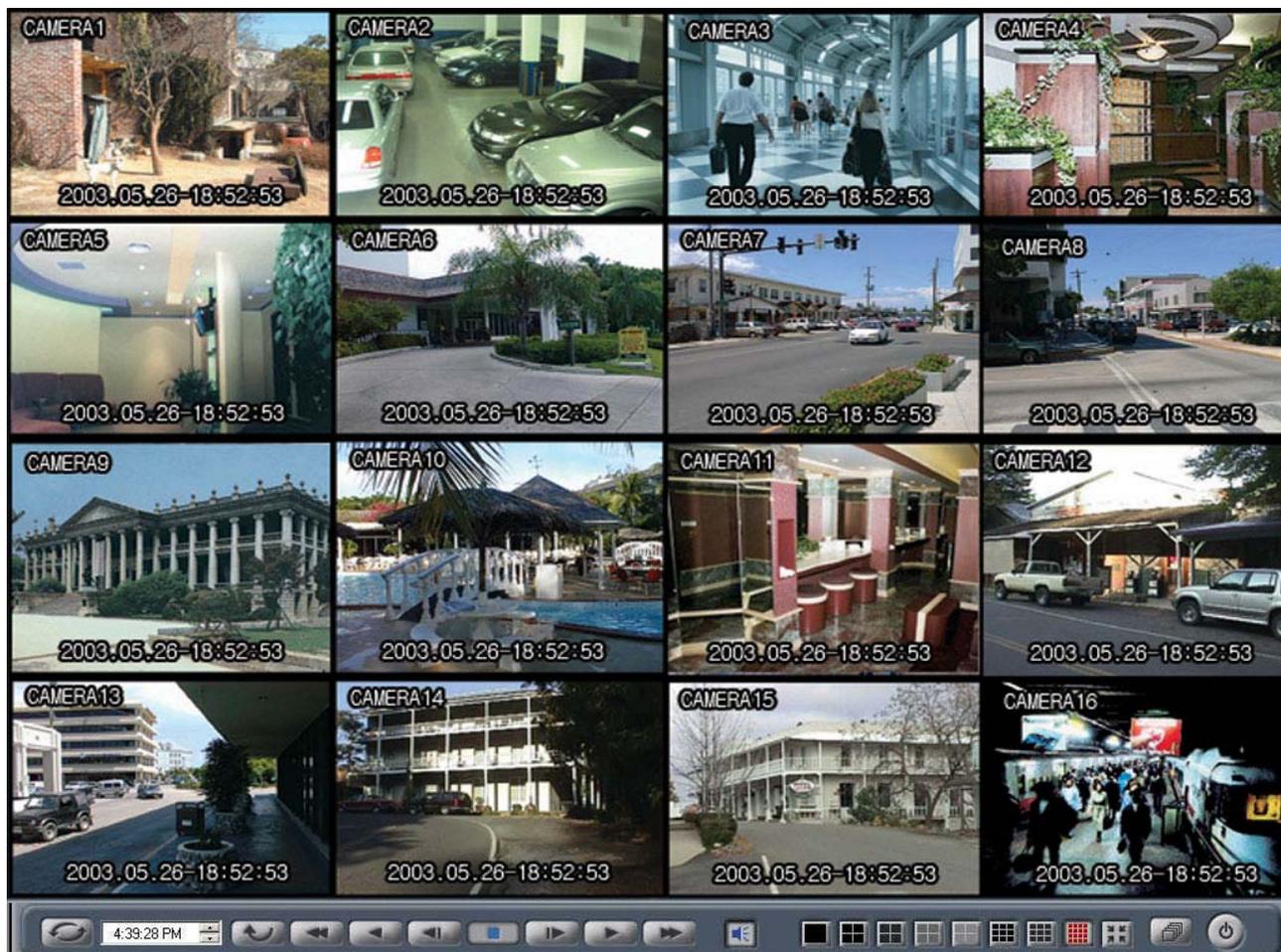
7	<p>After selecting date, time and channel, press [Load] button.</p>	
---	---	---

8	<p>Selected video data will be appeared like next picture. How to play is same with Search screen.</p>	
---	--	--

9	<p>To load a different image, press the [Stop] button and select another image for loading.</p>	
---	---	--

5. MULTI - SEARCH

5.4 ZOOM IN MODE



Most of button functions are same. You only shall learn below functions.

	Return	Return to the multi search screen.
	Panorama	Turn over to the Panorama zoom screen.
	Exit	Exit this mode and go back to the monitoring screen.

5. MULTI - SEARCH

5.5 BOOKMARK



1	Add	<p>Add the desired frames on the bookmark list.</p> <p>Please refer to the right picture.</p>	
2	Delete	Delete items on the bookmark list.	
3	Go To	Select one on the bookmark list and go to the appointed frame.	
4	Close	Close the bookmark menu.	

6. PANORAMA SEARCH

6. PANORAMA SEARCH

6.1 PANORAMA SEARCH SCREEN

Panorama search is most advanced searching program. This will help user searching more efficiently by showing maximum 18 frames at once and before and after frames with present frame.



[PANORAMA SEARCH] SCREEN

Follow these steps to enter the Panorama Search Screen.

1	In the multi-search screen, load a video data, and select one channel which is entered panoramic view screen.	
2	Press 'Panoramic view' button from the Multi-search screen.	

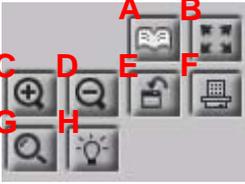
NOTE:

- 1. A panoramic view screens allows user to search 1 channel only. To search various channel, user can use Multi-search screen. To search in detail, user can use panoramic view screen.
- 2. Panoramic view search process is same with Multi-search process. Refer to Multi-search process.

6. PANORAMA SEARCH

6.2 INTRODUCTION



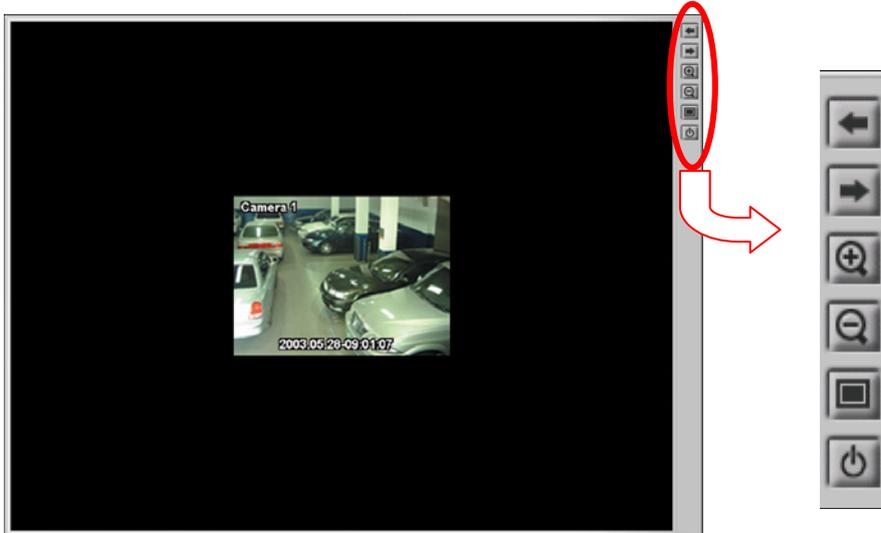
1	TIME	Show present time.																
2	ADDITIONAL FUNCTIONS	 <table border="1"> <tr> <td>A</td> <td>bookmark</td> <td>B</td> <td>Entire screen</td> </tr> <tr> <td>C</td> <td>Enlarge the play screen</td> <td>D</td> <td>Reduce the play screen</td> </tr> <tr> <td>E</td> <td>Image save</td> <td>F</td> <td>Image print</td> </tr> <tr> <td>G</td> <td>Advanced search</td> <td>H</td> <td>Smart search</td> </tr> </table>	A	bookmark	B	Entire screen	C	Enlarge the play screen	D	Reduce the play screen	E	Image save	F	Image print	G	Advanced search	H	Smart search
A	bookmark	B	Entire screen															
C	Enlarge the play screen	D	Reduce the play screen															
E	Image save	F	Image print															
G	Advanced search	H	Smart search															
3	VOLUME	Control volume or on/off the sound.																
4	EXIT	Stop panorama searching and go back to multi search.																
5	PLAY CONTROL BUTTONS	Control the play of images.																

6. PANORAMA SEARCH

6	CAMERA	Same function as in the multi search. Only 1ch of audio and video are available.
8	ENLARGE SCREEN	Enlarge the screen and shows all the recording screens.
11	SEARCH TIME	Select the time period to search. Select hour/minute/second/am/pm for search.
12	LOAD	Load video file meet the conditions of camera and time.
7	SEARCH SCREEN	Show the selected files from the left calendar in different color modes.
9	CALENDAR	Select the date.
13	PLAY SCREEN	Display the loaded images.
10	FILE UPDATE	Update the recorded files on the list in panorama screen.
7	SEARCH SCREEN	Show the selected files from the left calendar in different color modes.

6. PANORAMA SEARCH

6.3 ADVANCED SEARCH

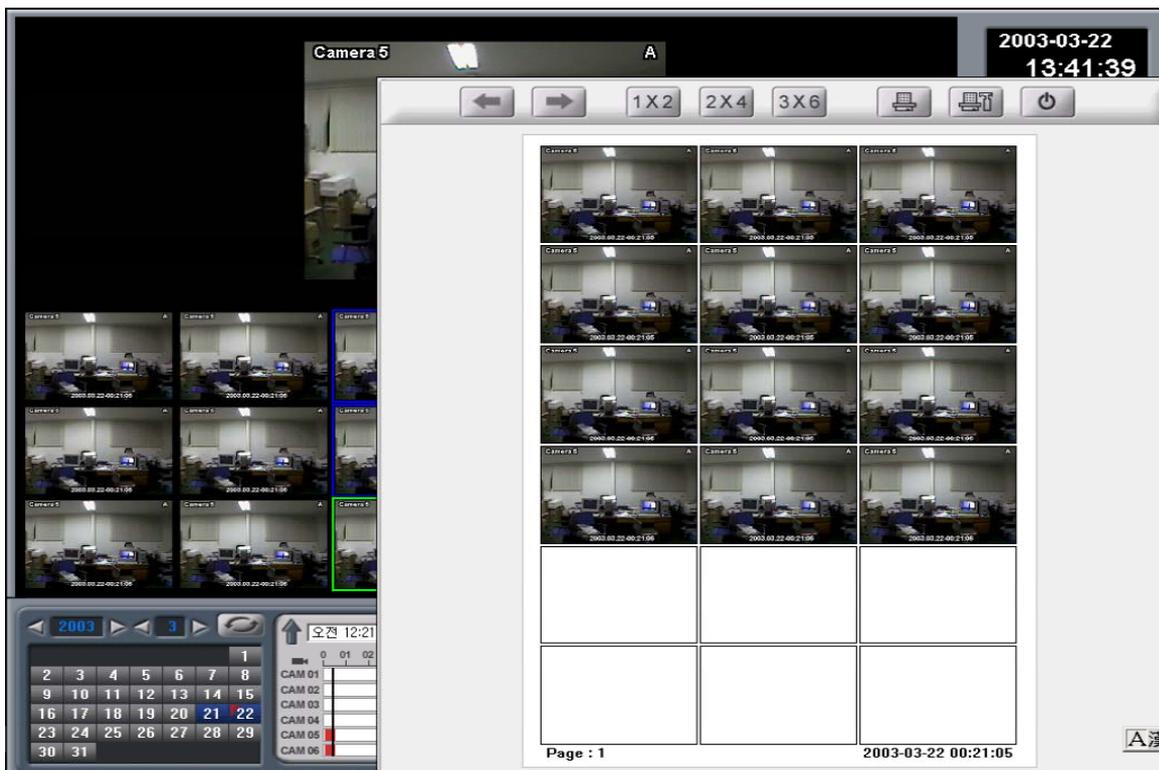


A		Go to the next frame. You can move to the frame you want.
B		Zoom in/out the screen. The more you click, the more it zooms.
C		Return to normal screen size.
D		Exit this mode.
E	Zoom screen	Drag a part in the screen then click to zoom in that part.

6. PANORAMA SEARCH

6.4 IMAGE PRINT

In the panorama mode, user can print desired frames by his/her preference in various mode – 1X2, 2X4, 3X6. First, click frames user want to print out in the panorama search screen. Then the selected frames are outlined with blue. After that, press [Print] button to open the print window. And then, select the desired print mode and print the frames.



You can also print in various modes.



6. PANORAMA SEARCH

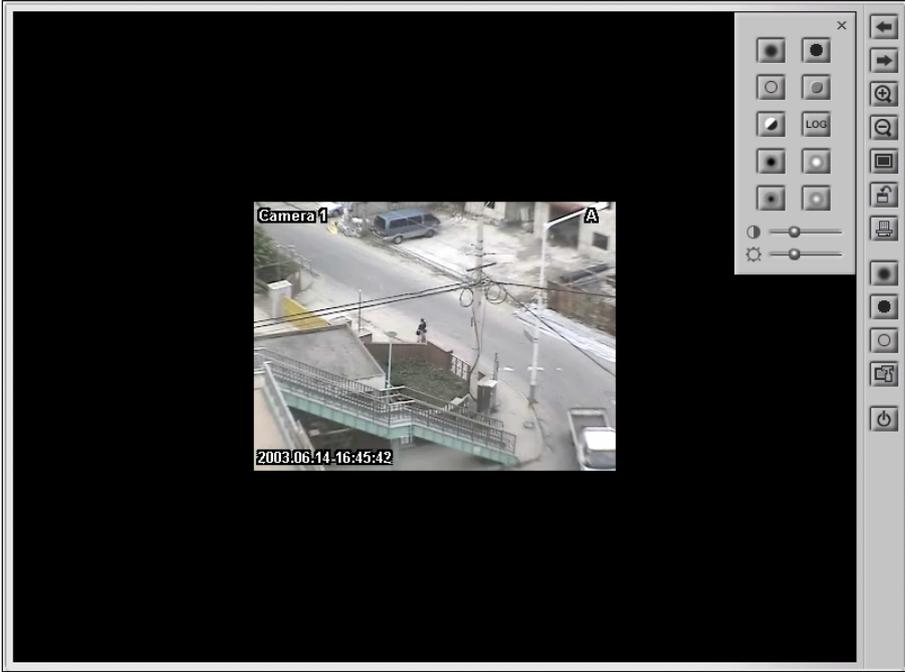
6.5 PANORAMA SCREEN ZOOM

You can also use the zoom in function in the panorama screen. You can see the panorama search screen in full screen mode and go back to original screen.



6. PANORAMA SEARCH

6-6.IMAGE ADJUSTMENT



<IMAGE ADJUSTMENT>

A		BLUR	Soften the selected image.
B		SHARPEN	Focus blurry images by increasing the contrast of adjacent pixels.
C		EDGE DETECT	Focus the color boundary line.
D		EMBOSSING	Make the image appear raised or stamped by converting its fill color to gray and tracing the edges with the original fill color.
E		GRAY	Turn the image to gray-color.
F		LOG	Detect the boundary line.
G		EROSION	Enlarge the background and reduce the object
H		DILATION	Enlarge the object and reduce the background

6. PANORAMA SEARCH

I		OPENING	Remove the noise and keep the previous size.
J		CLOSING	Soften the boundary line and remove the little holes.
K		BRIGHTNESS / CONTRAST	Control the brightness and contrast of images.

6.7 SMART SEARCH

Smart search can detect movements in consecutive frames. This function is useful for lots of recorded frames of zones with little movements



A	In the panorama search screen, press 'smart search' button.
B	Set the zones (up to 5 zones) for motion detecting as motion detecting recording. While playing the images, the DVR stop playing when it detects movements.
C	Right click the smart search button to set the sensitivity. And with [Default zone] button, user can cancel the appointed zones.

7. FILE BACKUP

7. FILE BACKUP

7.1 ENTERING THE BACKUP SCREEN



1	Press [Backup] button from the monitoring screen.	
2	Select a User ID and enter its password. (The default password is '1')	
3	Press [OK] button to bring up Backup Screen.	

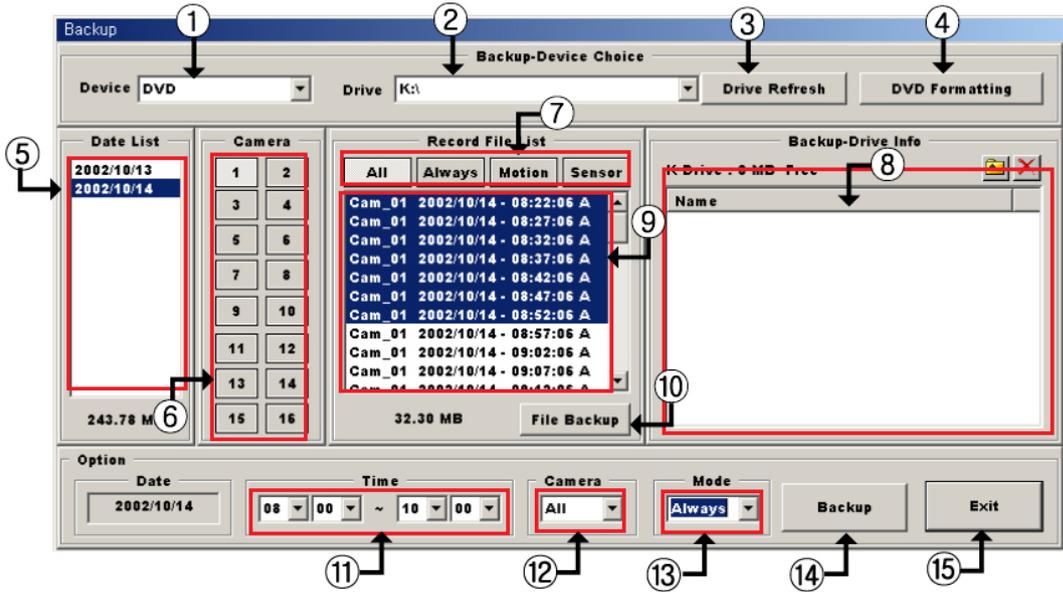
7. FILE BACKUP

7.2 INTRODUCTION

User can back up recorded video to a CD-RW, an External HDD, and a DVD.

*To back up recorded video to CD-RW, any kind of CD Writing program will be needed – Ahead Nero, CD creator or etc.

*please refer to its manual for further information.

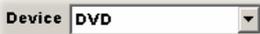
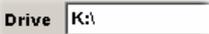


1	Backup Device	Allow user to select a backup media to use among DVD / CD-RW / External HDD.
2	Path	Allow user to select a path to which back up the recorded file.
3	Refresh Button	Refresh a file list of the selected backup media.
4	DVD Format Button	Format a DVD-ROM.
5	Date List	Show user the dates which have recorded video. Select one from the list and all files of camera 1 in the selected date will be shown by default. Note that user cannot back up video of current date.
6	Camera Button	Allow user to select a camera to back up.
7	Recording Mode Button	Allow user to select a recording mode to filtered list of video.

7. FILE BACKUP

8	Backup Media Status	Show user the list of video that the selected backup media currently has.
9	File List	Show user the list of video fit to option 5,6,7. User can select video to back up from this list.
10	File Backup	Allow user to back up selected video to the associated backup media.
11	Time Select	This option allows user to back up video using time range.
12	Camera Select	Allow user to select a camera to back up. (This option is associated with [Time Select] option.)
13	Recording Mode Select	Allow user to select a recording mode of video to back up. (This option is associated with [Time Select] option.)
14	Backup Button	Back up video fit to option 11,12,13. .
15	Exit Button	Exit to Monitoring Screen.

7.3 BACKUP SELECTED FILE

1	Select a backup media to use.	
2	Select a path for backup.	
3	Select a desired date to back up from [Date List].	
4	Select a camera to back up.	
5	Select a recording mode and select video to back up from [Record File List]	

7. FILE BACKUP

6	Press [File Backup]. In a while, backup process will be completed. To exit to Monitoring Screen, press [Exit] button after backup.	
---	--	---

To use HDD or DVD for backup, user must specify the [Drive]. If the media is not formatted please format that using [HDD FORMAT] or [DVD FORMAT] button prior to backup process.

7.4 BACKUP BY TIME

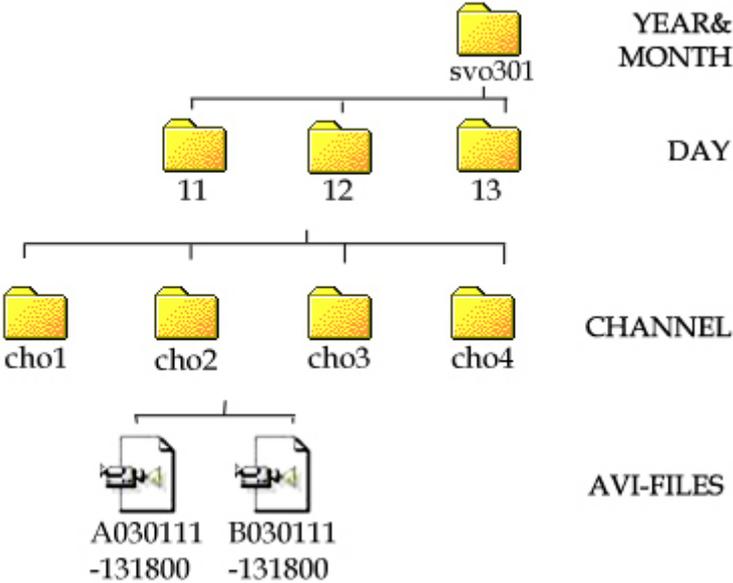
Follow these steps to back up video using time range.

1	Select a backup media to use.	
2	Select a drive letter of the backup media.	
3	Select a desired date. Using Time Option, select time range.	
4	Select a camera to back up. (Selecting [ALL] allows user to back up all cameras.)	
5	Select a recording mode.	
6	Pressing [Backup] button will start backup process.	

7. FILE BACKUP

7.5 FILE SAVING STRUCTURE OF SAFE-DVR FOR BACKUP

User is able to get the system to back-up as DVD or CD-RW type. In this case, hardware for the recording time should be setup and installed by software. (for example, user need to setup CD-RW hardware and install the software, 'Easy CD Creator' to back-up as CD-RW.) The tree-structure of recorded image will be helpful for users to back-up recorded image files as DVD or CD-RW type. The structure made on D or E driver is as follows;



To back-up the recorded images from your HDD to other types of media, DVD or CD-RW, please turn off the DVR program to avoid any troubles. (Recorded images are in D or E drive.)

8. APPENDIX 1

8. APPENDIX 1

8.1 OPEN PROTOCOL

Open Protocol (user setup) is a function which enables user to customize and edit P/T/Z cameras' protocols. It will make the user feel safe when he/she gets new P/T/Z cameras which is not embedded in DVR.

8.2 STARTING OPEN PROTOCOL

User can start the open protocol from the Setup Screen. Follow these steps to edit P/T/Z cameras' protocols

1	Enter the Setup Screen by pressing [Setup] button on the Monitoring Screen.	
2	Press the [Protocol] button on the Setup Screen to bring up the Open Protocol Window.	

8. APPENDIX 1

8.3 OPEN PROTOCOL SETUP

Open Protocol Window is as below.

A	Product Name and Product List	Enter the product name of the P/T/Z camera to add. Once added, it will be stored and shown in the list box.
B	Serial Communication	User must adjust Baud Rate / Byte Size / Parity Bit / Stop Bit for proper communication between DVR and P/T/Z camera. Refer to P/T/Z camera manual to get exact values.
C	Commands Set	User must input each command values. Please note that user should calculate each value with the P/T/Z camera manual.
D	Camera ID	Select a P/T/Z camera ID to work for. To set multiple cameras up, user must input each different value for each camera ID. (Ex: When there are 5 P/T/Z camera named A, user might need to input 5 different Commands Set for each camera ID from 1 to 5.)
E	Timer	Check this option when the installed cameras use Timer. (To discern whether the camera needs this, please refer to P/T/Z camera manual or contact the

8. APPENDIX 1

		manufacturer.)
F	Confirm Buttons	User can add, delete or modify the values.

8.4 OPEN PROTOCOL EXAMPLE

When there is a P/T/Z camera named A, user can set the camera up as following.

1. Request P/T/Z protocol manual to the manufacturer
2. Calculate the values for Up / Down / Left / Right commands and Zoom in /Zoom out /Focus Near/Focus Far commands with the manual.
3. Press the [New] button to create a new command set.

Set User RxDrv

Pan/Tilt Model-Name

Serial Communication Info

Baud-Rate 9600 Byte-Size 8 Parity-Bit no Stop-Bit 1

Command Info

Left Command

Right Command

Up Command

Down Command

Stop Command

Zoom-In Command

Zoom-Out Command

Focus-Near

Focus-Far Command

Rotate Command

Camera ID

Camera 1

Timer

On/Off

Menu

New ADD Modify Delete Exit

4. Select the values for Serial Communication. (The most common values is 9600 / 8 / No / 1.)
5. Select a camera ID. (4 channel DVR user checks 1~4 camera IDs).
In this example, we will check camera no.1
6. Enter the calculated command.

8. APPENDIX 1

7. Each P/T/Z camera has its own protocol commands format but most P/T/Z cameras use hex values for its commands. So user needs to calculate hex code to get right P/T/Z command values. For example, when there is a P/T/Z camera which uses 3 bytes P/T/Z commands.

ITEM 1	ITEM 2	ITEM 3
Camera ID	Command Code	Checksum*

☐ Checksum is a value which is used for checking if the transmitted value is proper.

Checksum value will be calculated by each unique numerical formula.

Suppose that the left move command of P/T/Z camera A is '0x81' and its ID is '0x01'.

And its checksum formula is '100 - (ITEM 1 + ITEM 2)'. Then the value for left command is as belows.

[01 (Camera ID)]+ [81('0x' must be removed.)]+ [100 - (01 + 81) (Checksum)] =01, 81,7e

(Each value should be separated by ', '.)

Refer to [8.5 Hexadecimal Numeration System] to calculate this in easy way.

8. Repeat step 7 until all the commands needed are filled.

When finished press the [ADD] to save the values.

9. When there is another P/T/Z camera to set up, choose a different Camera ID with the P/T/Z protocol.

And repeat step 6~8.

Press the [Modify] key to apply changed values.

10. To edit, select the model and change the value and press [Modify].

To delete the information, select the model and press [Delete].

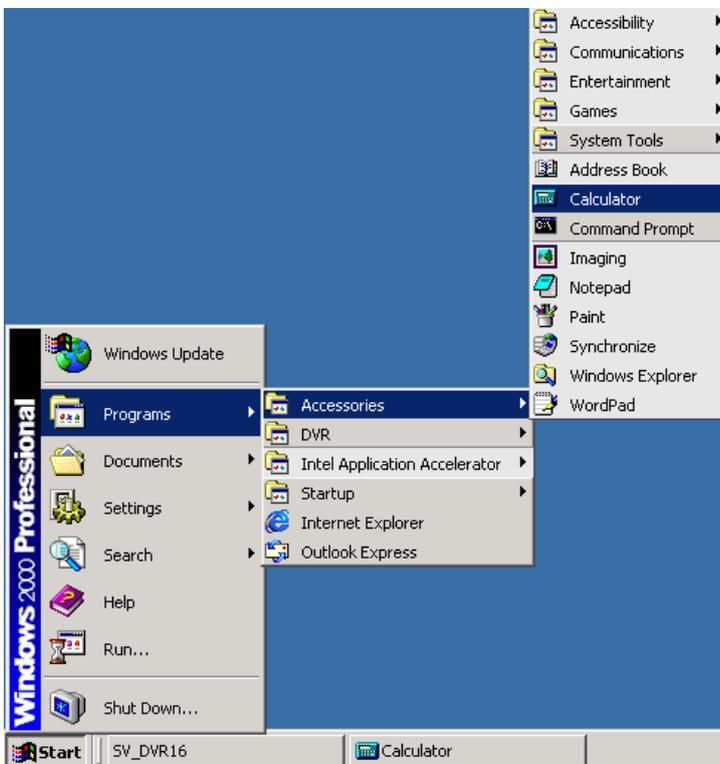
11. When finished, press the [Exit] key to close the Open Protocol Window and select the P/T/Z protocol in the Setup Screen.

8. APPENDIX 1

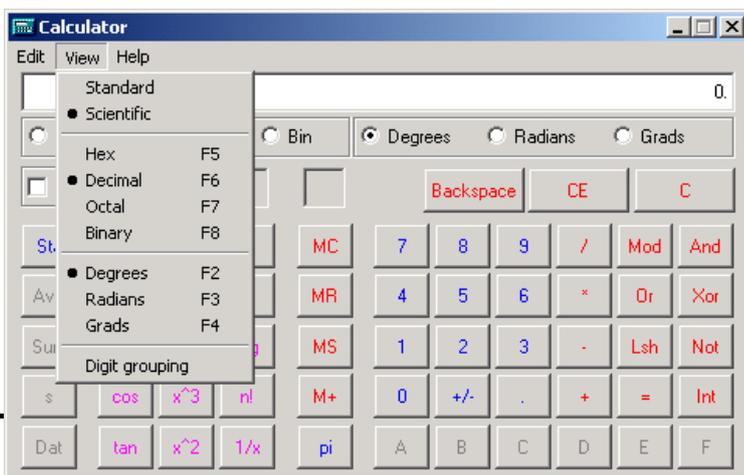
8.5 HEXADEMICAL NUMERIC SYSTEM

User can calculate hexadecimal numbers using a calculator provided with window.

1. Select [Start] → [Program] → [Accessories] → [Calculator].



2. Select [View] -> [Scientific] to expand the default calculator.



8. APPENDIX 1

3. Check [Hex] and [Byte] to calculate hexadecimal byte numbers.

9. APPENDIX 2

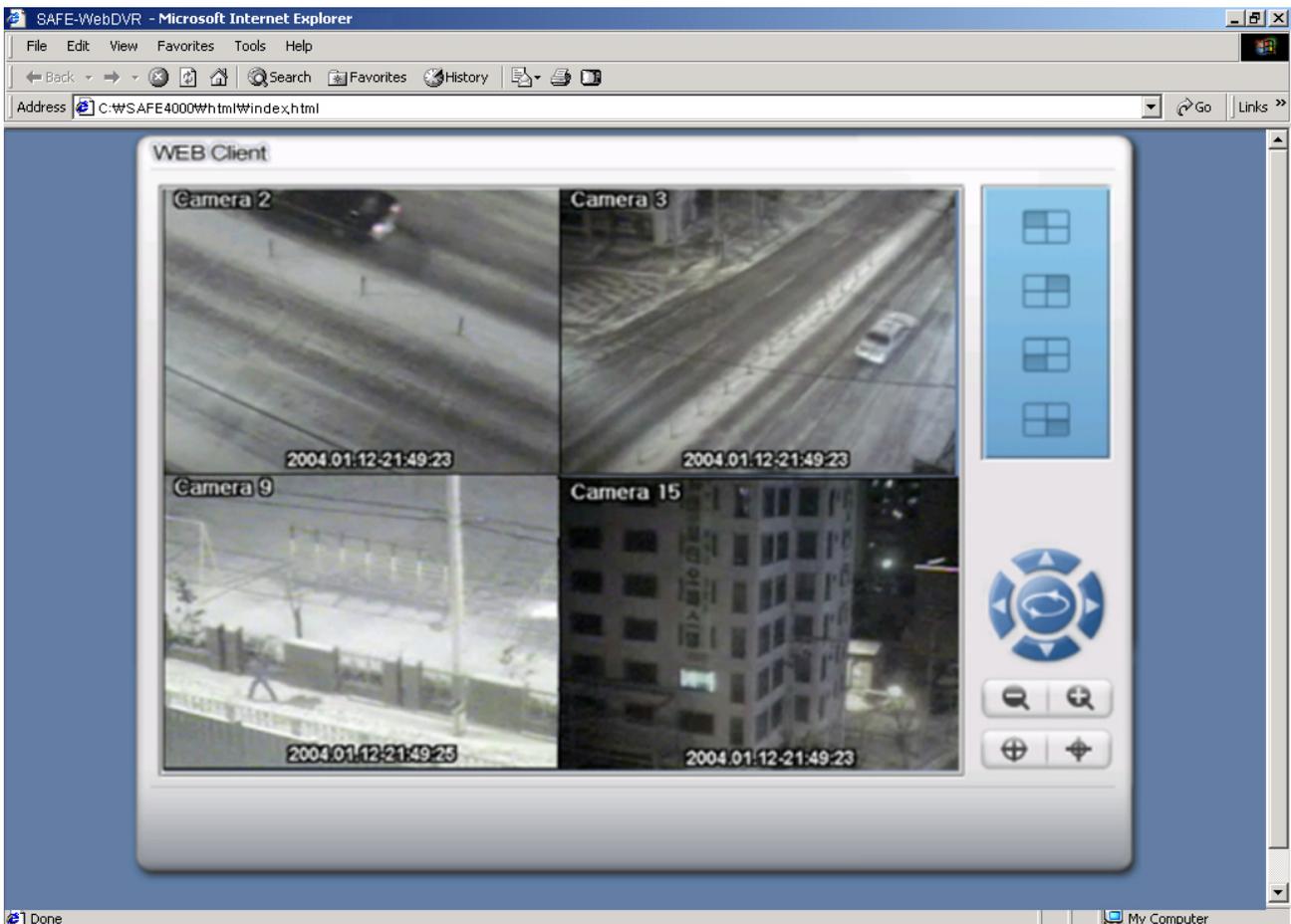
9. APPENDIX 2

9.1 DVR WEB WERVICE

Web service of DVR is for remote monitoring without program in user's PC.

It properly works under Internet Explorer ver. 5.0 over. Type the DVR IP in the address window of internet explorer and below window will appear.

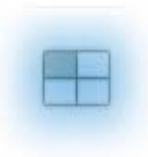
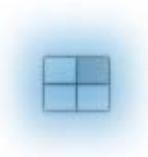
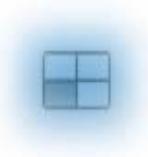
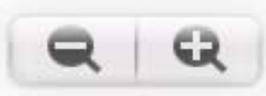
9.2 WEB VIEWER



WEB VIEWER is very accessible because it is receiving images using a web server function. WEB VIEWER provides easy-access and control instead of search for recorded images and audio function.

WEB VIEWER provides below functions.

9. APPENDIX 2

A		Show the images of camera No. 1 ~ 4.
B		Show the images of camera No. 5 ~ 8.
C		Show the images of camera No. 9 ~ 12.
D		Show the images of camera No. 13 ~ 16.
E		Control the P/T/Z camera – Pan/Tilt/Zoom and auto panning.
F		Control the zoom of selected camera. To use this function, auto zoom lens should be installed first.

9. APPENDIX 2

G	 A close-up image of a control panel featuring two buttons. The left button has a plus sign (+) inside a circle, and the right button has a minus sign (-) inside a circle. Both buttons are set against a light, slightly blurred background.	<p>Control the focus of selected camera.</p> <p>To use this function, auto zoom lens should be installed first.</p>
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9. APPENDIX 2

10.1 TCP / IP filtering

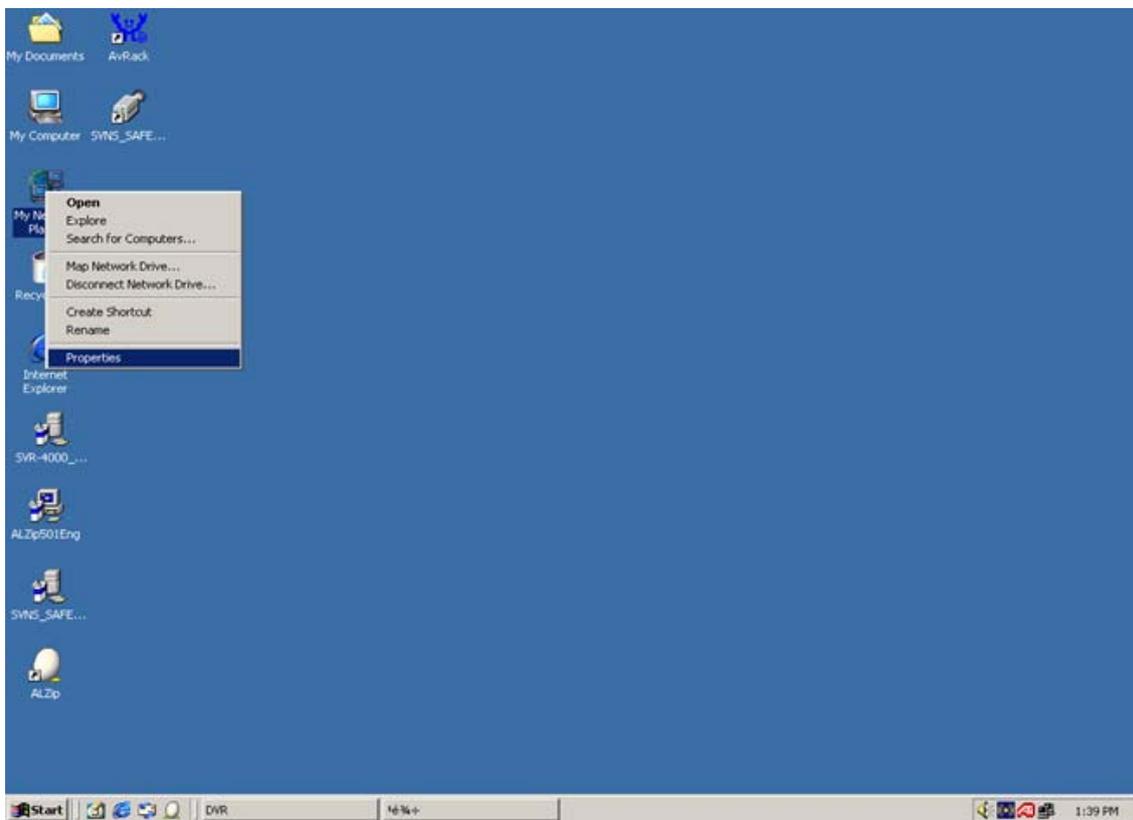
What's 'TCP/IP filtering'?

'TCP/IP filtering' function invests all packets coming into a computer and only accept authorized of them.

(It's only for a DVR system, not for a PC.)

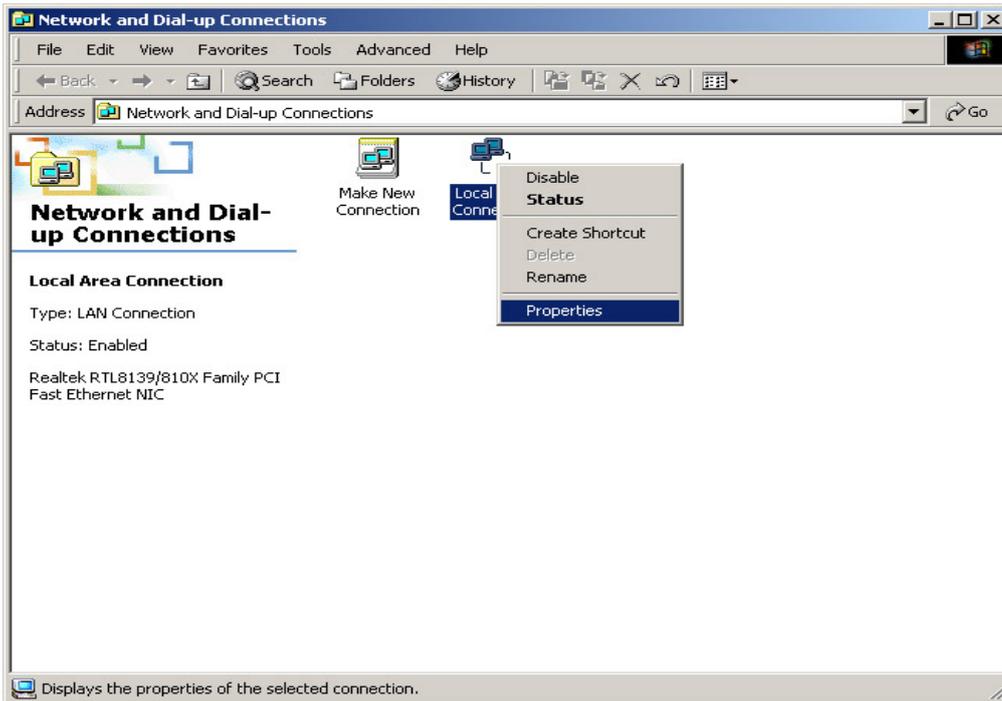
10.2 TCP/IP setup for 'TCP/IP filtering'

1. Right-click [My network places] icon and click [Properties].

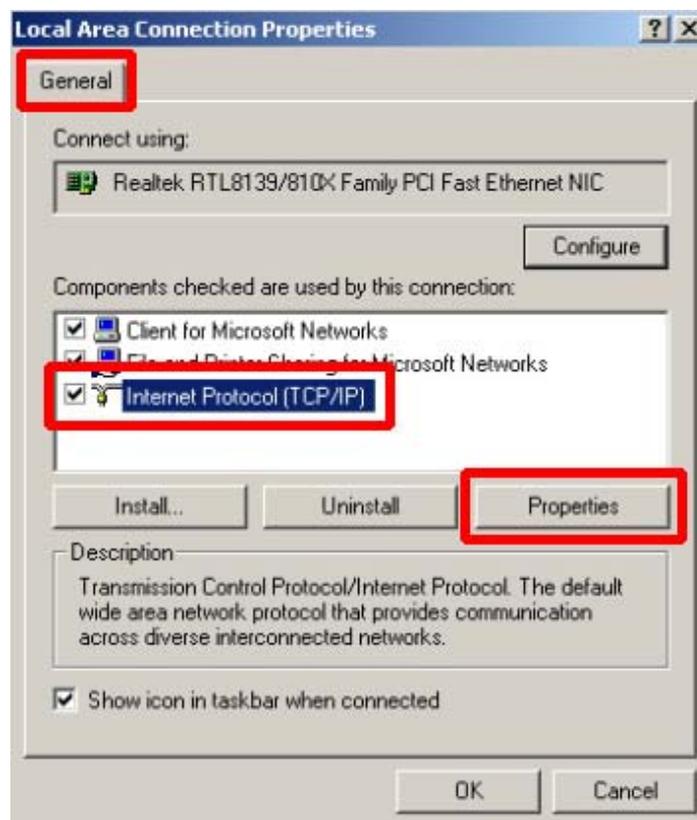


2. Right-click [Local Area Connection] or other connection to setup and click [Properties].

9. APPENDIX 2

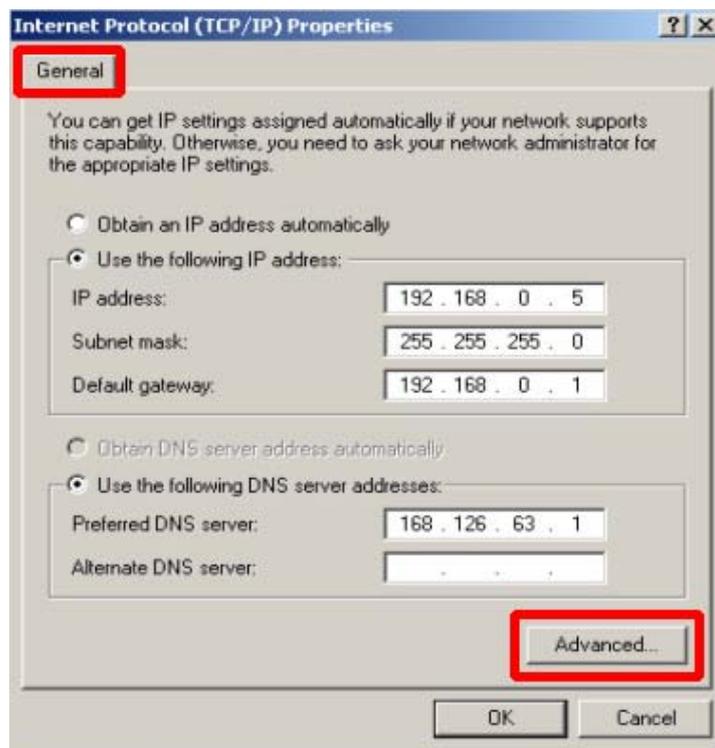


3. In [General] tab (in case you selected 'Local Area Connection') or another network tab (in case you selected another connection' in previous step), select [Internet Protocol (TCP/IP)] and click [Properties].



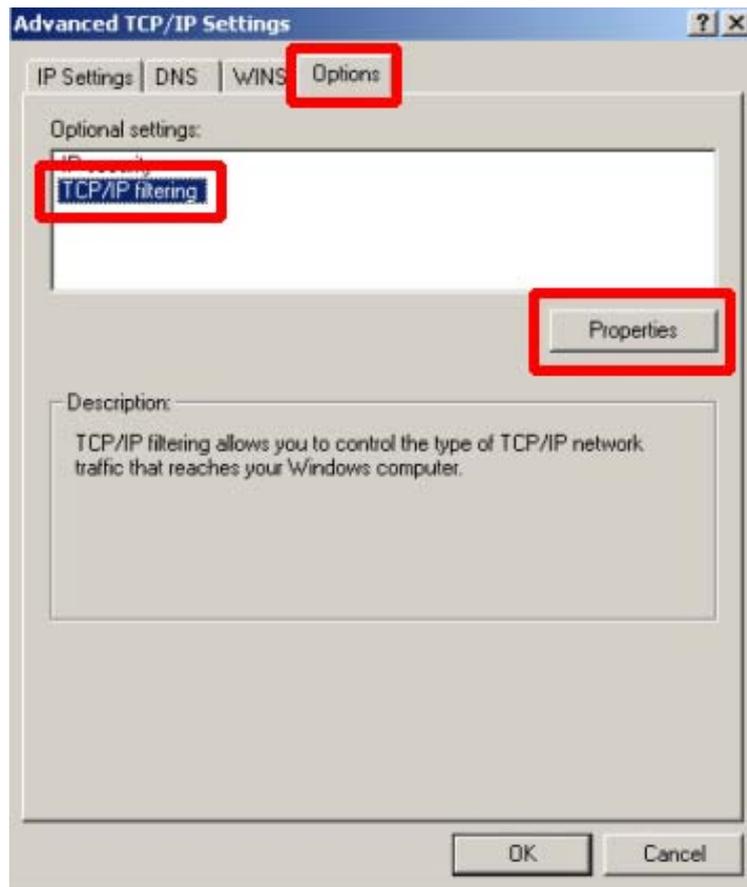
9. APPENDIX 2

4. Click [Advanced].



5. In [Option] tab, select [TCP/IP filtering] and click [Properties].

9. APPENDIX 2

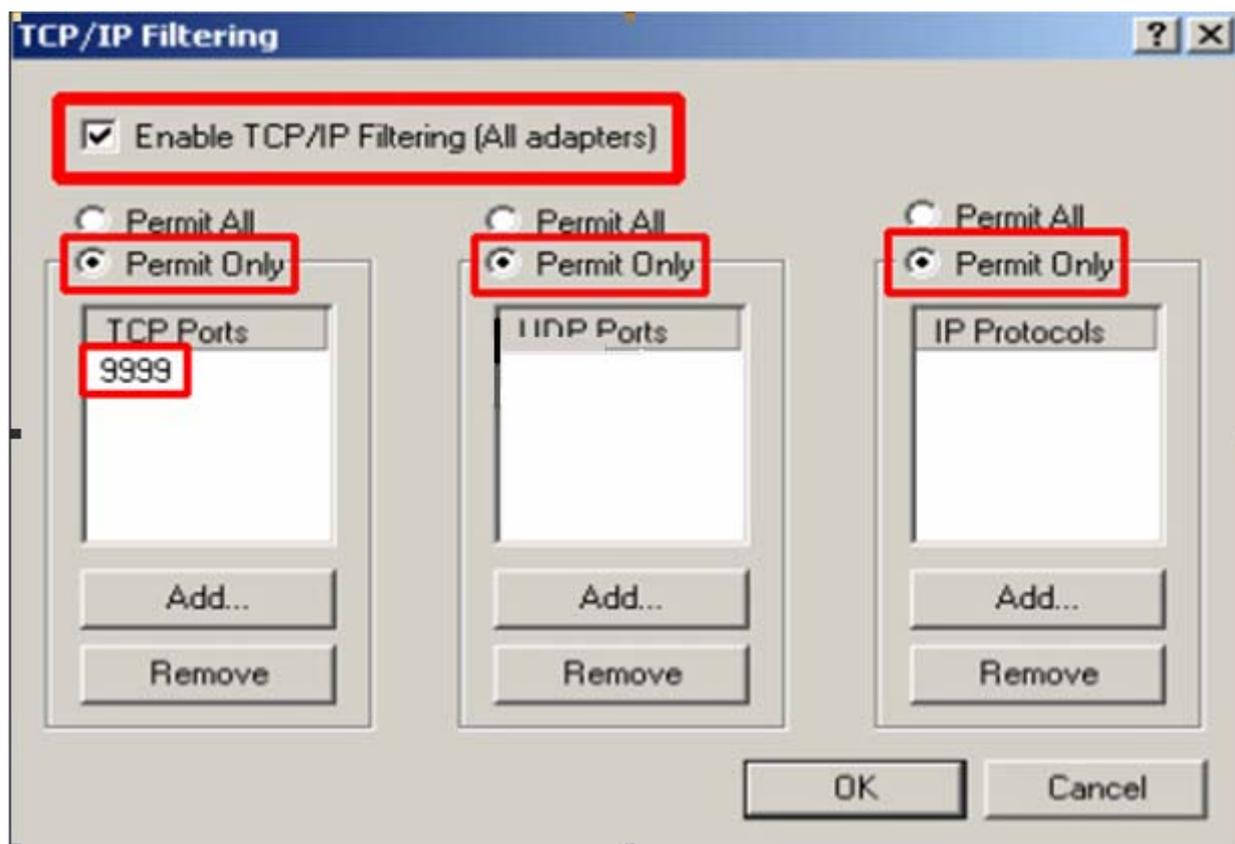


6. Follow one of below steps.

- 1) If you want to use [TCP/IP filtering] over the entire adapters, select [Enable TCP/IP Filtering (All adapters)].
- 2) If you don't want, deselect [Enable TCP/IP Filtering (All adapters)].

7. Set [TCP Ports] for allowed traffic in accordance with the requirements of 'TCP/IP filtering'

9. APPENDIX 2



In case of SAFE-DVR, it only uses '9999', '9995' and '80' for [TCP Ports] . So, add '9999', '9995' and '80' for [TCP Ports], and select [Permit Only].

If you do so, the access by 'Telnet' or 'FTP' is denied. Accordingly, you can set DVR systems more safely against viruses or hacking.

* Caution

This [TCP/IP filtering] is only for DVR system.

If you use [TCP/IP filtering] on your PC, it cannot access to the internet.