

2. FRONT AND REAR PANELS

2.1 Front Panel

1) LED Indication

The following LEDs will be on when:

HDD: HDD is reading or recording

HDD Full: HDD is full.

ALARM: Once the alarm is triggered

TIMER: When timer recording is turned on

PLAY: Under playing status

REC: Under recording status

2) MENU

Press this button to enter / exit the DVR menu mode.

In the sub-layer of the DVR menu, press this button to confirm the settings and go back to the upper layer.

3) ENTER

Confirm the password entering.

4) REC

Press this button to activate manual recording.

5) LIST (Event List Search)

To quick search the recorded files by event list, press this button to show all types of the event lists.

Select one of the event list and press "ENTER" button to playback the selected file.

MANUAL: List the information of the manual-recorded files. The DVR will save one recorded file once any recording setting is changed

SYSTEM: List the information of the system-recorded files. The DVR system will save one recorded file every one hour.

MOTION: List the information of the motion-trigger-recorded files.

TIMER: List the information of the timer-recorded files.

6) SLOW

Under the playback mode, press this button to slowly playback the recorded file (by 1/4 speed or 1/8 speed).

7) ZOOM

In the live mode of the DVR, press this button to enlarge the image of the selected channel.

8) 田 / -

Press "田" button to show the 4 channel display modes.

Press "-" button to change the setting in the menu.

9) SEQ / +

Press "SEQ" button to activate the call monitor function, and press again to quit.

Press "+" button to change the setting in the menu.

10) Power

Press this button long enough to turn on/off your DVR.

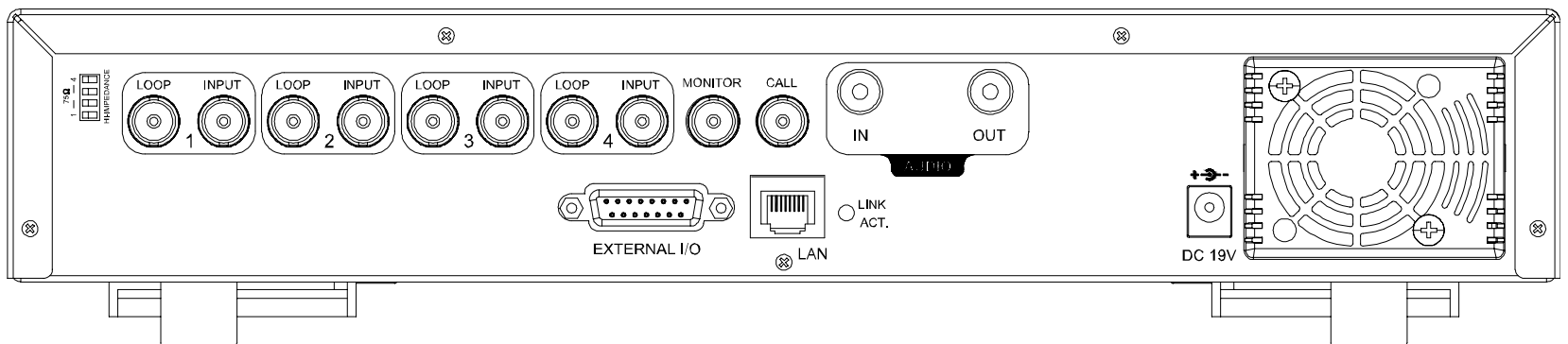
Note: Under the recording mode, please stop recording before turning off your DVR.

11) 1/2/3/4

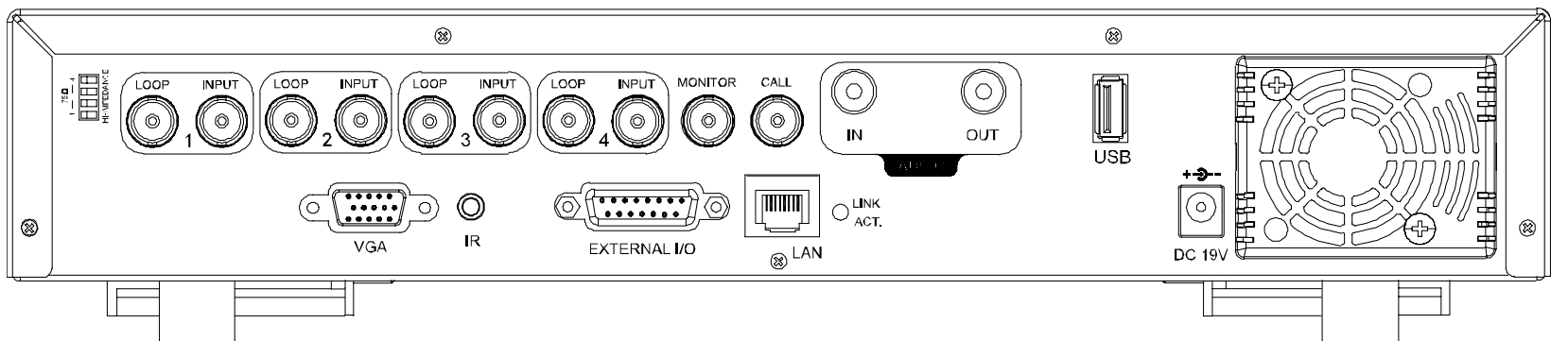
Press one of these buttons to show the channel display of CH1 ~ CH4 on the monitor.

2.2 Rear Panel

- DVMR-N4e2



- Not Stocked



1) 75Ω / HI-IMPEDANCE

When using LOOP function, please switch to HI-IMPEDANCE. Otherwise, please switch to 75Ω.

2) LOOP / INPUT (For channel 1~4)

LOOP: Video output connector.

INPUT: Connect to video sources, such as cameras.

Note: If you want to playback the video with audio, please connect an audio camera to INPUT 1 on the DVR rear panel.

3) MONITOR

Connect to MAIN monitor.

4) CALL

Connect to CALL monitor to show the channel display one by one.

When any alarm is triggered, CALL monitor will show the image of the triggered channel for a period of time.

5) AUDIO IN

Connect to audio sources, such as cameras equipped with the audio function.

When users start recording, the audio input will also be recorded.

6) AUDIO OUT

Connect to a monitor or speaker with 1 mono audio output.

7) USB (Model 2 only NOT STOCKED)

To quickly backup or upgrade firmware/OSD, you can insert a compatible USB flash drive into this USB port.

Before using the USB flash drive, please use your PC to format the USB flash drive as "FAT32" first.

Note: For the list of compatible USB flash drives, please refer to "APPENDIX 2 COMPATIBLE USB FLASH DRIVE BRAND" at page 56.

8) IR (Model 2 only NOT STOCKED)

Connect the IR receiver for remote control.

9) EXTERNAL I/O

Insert the supplied 15PIN DSUB to this port for connecting external devices (external alarm, PTZ camera, etc).

For detailed I/O port PIN configuration, please refer to "APPENDIX 1 PIN CONFIGURATION" at page 55.

10) LAN

Connect to Internet by LAN cable.

11) LINK ACT.

When your DVR is connected to the Internet, this LED will be on.

12) DC 19V

Connect to the supplied adapter.

3.2 Camera Connection

The cameras must be connected and power-supplied **BEFORE** the DVR is turned on. The DVR will automatically detect the video system of the connected camera(s) (NTSC / PAL), and switch itself to the correct system.

Connect the camera with the indicated power supply, and connect the camera video output to the DVR video input port with a coaxial cable or RCA lines with BNC connectors.

Note: For detailed DVR video input / output ports, please refer to "2.2 Rear Panel" at page 5.
For detailed camera operation, please refer to its own manual.

Note: If you want to make a video backup with audio, please connect audio camera to the CH1 which support the audio function

3.3 Power Setup

This device should be operated only with the type of power source indicated on the manufacturer's label. Connect the indicated AC power cord to the power adapter, and plug into an electrical outlet. The power LED "Ⓛ" will be on as green. It takes approximately 10 to 15 seconds to boot the system.

3.4 Date and Time Setting

Before operating your DVR, please set the date and time on your DVR first.

Press the "MENU" button and enter the password to go to the menu list. The default admin password is 0000. Move the cursor to "DATE" and you can set the date / time / daylight saving in the "DATE" menu list.

3.5 Password Setting

Press the "MENU" button and enter the password to go to the menu list. Then, move the cursor to "ADVANCE" to enter the advanced setting menu.

In the "ADVANCE" menu, move the cursor to "SYSTEM". Select "PASSWORD" and press the "ENTER" button to enter the submenu to set the password (four digits). The default admin password is 0000.














ADVANCE
CAMERA
DETECTION
REMOTE
DISPLAY
ALERT
SYSTEM
NETWORK
BACKUP
HDD INFO

SYSTEM	
SERIAL TYPE	RS485
BAUDRATE	2400
HOST ID	0
PASSWORD	XXXX
RESET DEFAULT	RESET
CLEAR HDD	HDD-MASTER-1
UPGRADE	START
AUTO KEYLOCK	NEVER
LANGUAGE	ENGLISH
VIDEO FORMAT	NTSC
VERSION	1160-1012-1021-1014-M3-6C1B

4. BASIC OPERATION

4.1 Live Page


In this live page of the DVR, you can see the following icons:

Icon	Function	Icon	Function	Icon	Function
	Key lock		Digital zoom mode		Alarm
	Key unlock		Digital zoom unselected		Recording
	Live audio channel		Timer recording		Motion
	Playback audio channel		PTZ control mode		
	Audio channel unselected		Full screen sequence mode		


4.2 Recording

When the recording and the pre-alarm function are activated, this device will overwrite 8GB data from the oldest for continuous recording without notice.


1) Continuous Recording Icon

When the DVR is properly connected with camera, you can see the icon “” (recording) on the monitor.

2) Motion Recording Icon

When the motion / alarm detection is activated, once motion or external alarm happens, you will see the icon “” (motion) on the monitor.

3) Timer Recording Icon

When the timer record is activated, you will see the icon “” (timer) on the monitor

Note: The audio source connected to the “Audio 1” will be recorded with the video of the “CH1”.

4.3 Playback

Press the “PLAY” button on the DVR control panel, and the device will playback the latest recorded video.

Note: There must be at least 8192 images of recorded data for playback to work properly. If not, the device will stop playback. For example, if the IPS is set to 30, the recording time should be at least 205 seconds (8192 images / 40 IPS) for the playback to work properly.

1) Fast Forward / Fast Rewind

You can increase the speed for fast forward and rewind on this device. In the playback mode:

Press “FF” once to get 4X speed forward and press twice to get 8X speed, etc. And the maximum speed is 32X.

Press “REW” once to get 4X speed rewind and press twice to get 8X speed, etc. And the maximum speed is 32X.

Note: During playback, the image size of the recording (CIF) will be shown on the screen.

2) Pause / Image Jog

Press "PAUSE" button to pause the playback.

In the pause mode:

Press "▶" button once to get one frame forward.

Press "◀" button once to get one frame rewind.

3) Stop

Pressing "STOP" button under playback mode, the screen of this device will return to live monitoring mode.

4) Slow Playback

Press "SLOW" button to get 1/4X speed playback and press twice to get 1/8X speed playback.

5) Audio Playback

Use these two buttons to select the live or playback sound of the audio channels.

Icon " " (blue) means: Live audio of the 1st audio channel / Icon " " (yellow) means: Playback audio of the 1st audio channel

Note: If you want to make a video backup with audio, please connect audio camera to CH1 which supports the audio function.

4.4 Key Lock and Unlock

1) Key Lock On:

Press "MENU" + "ENTER" buttons at the same time on the DVR control panel to lock keys.

Or set the time-out after which the key lock function is activated (Never / 10 SEC / 30 SEC / 60 SEC). Please refer to "7.5 SYSTEM" at page 21.

2) Key Lock Off:

Enter the DVR password to exit "Key Lock" mode.

Note: For the password setting, please refer to the section "3.5 Password Setting" at page 8.

4.5 Upgrade

• Firmware / Multilanguage OSD Upgrade

1) Use USB flash drive to upgrade firmware or OSD:

Step 1. Format the USB memory device as FAT32 format first.



Step 2. Get the upgrade files from your distributor and save the upgrade files in your USB flash device (do not change the file name).

Step 3. In the "SYSTEM" menu, move the cursor to "UPGRADE", and press "ENTER" button.

Step 4. Select "YES", and press "ENTER" button again to confirm upgrade.

2) Use the supplied software AP to remotely upgrade firmware or OSD:

Step 1. Save the upgrade files at your PC (do not change the file name) and then login to the AP software.

Step 2. Press " " (Miscellaneous Control) button to show the miscellaneous control panel. In the miscellaneous control panel, press " " (Tools) button on the miscellaneous control panel to enter the AP upgrade window.

Step 3. Enter the user name, password, IP address and port number of the DVR.

Step 4. Press "Firmware" or "Language" tab as needed, and press "Add" to select the firmware or OSD files to upgrade.

Step 5. Press “Update Firmware” or “Update Language” button to start the upgrade.

Note: For remote upgrade details, please see “Tools” at page 47.

4.6 Search

1) Search by List



Press “LIST” button on the DVR control panel to show the list for all types of the recorded files. Choose the list you want to view and press “ENTER” button to start playback.

ALARM	List the information of the alarm-trigger-recorded files.
MANUAL	List the information of the manual-recorded files. The DVR will save one recorded file once any recording setting is changed.
MOTION	List the information of the motion-trigger-recorded files.
SYSTEM	List the information of the system-recorded files. The DVR system will save one recorded file every one hour.
TIMER	List the information of the timer-recorded files.

2) Quick Search by Time

Press the “MENU” button to enter the menu list, move the cursor to “QUICK SEARCH”, and press “ENTER” button to enter the quick time search menu. You can search any specific events by time (Year / Month / Day / Hour / Min) and directly play the file you find.

3) Search the Record Event by Log on the AP Software

Press “” (Miscellaneous Control) button to show the miscellaneous control panel. In the miscellaneous control panel, press “” (Status List) button to enter the “Status List” page. In this page, you can see the list of three different types of recording (User / Motion / Alarm) and press “Play” button to directly playback the file.

5. MENU CONFIGURATION

MAIN MENU	QUICK SEARCH	DATE
		SEARCH HDD
	RECORD	IMAGE SIZE
		QUALITY
		MANUAL RECORD ENABLE
		EVENT REOCRD ENABLE
		TIMER RECORD ENABLE
		MULTIPLEX MODE
		MANUAL RECORD IPS
		EVENT RECORD IPS
		TIMER RECORD IPS
	TIMER	RECORD TIMER
		DETECTION TIMER
	DATE	DATE
FORMAT		
DAYLIGHT SAVING		
ADVANCE		
ADVANCED MENU	CAMERA	TITLE
		BRIG
		CONT
		SATU
		HUE
		COV.
	DETECTION	TITLE
		DET
		AREA
		LS
		SS
		TS
		RE
		ALARM
	REMOTE	TITLE
		DEVICE
		ID
		PROTOCOL
		RATE
	DISPLAY	DE-INTERLACE
		FULL SCREEN DWELL DURATION (SEC)
		CHANNEL TITLE
		EVENT STATUS
	ALERT	DATE DISPLAY
		EXT. ALERT
		INT. BUZZER
		KEY BUZZER
		VLOSS BUZZER
		MOTION BUZZER
		ALARM BUZZER
	ALARM DURATION (SEC)	
	SYSTEM	SERIAL TYPE
		BAUDRATE
		HOST ID
		PASSWORD
		RESET DEFAULT
CLEAR HDD		
UPGRADE		
AUTO KEYLOCK (SEC)		
LANGUAGE		
VIDEO FORMAT		
VERSION		

	NETWORK	NETWORK TYPE
		IP
		GATEWAY
		NETMASK
		PRIMARY DNS
		SECONDARY DNS
		PORT
	BACKUP	START TIME
		END TIME
		AVAILABLE SIZE
	HDD INFO	HDD NUM
		HDD SIZE (GB)
	EVENT LOG	EVENT
		TIME
		COMMENT

6. QUICK START MENU

Press the “MENU” button and enter the password to go to the quick-start menu list. The default admin password is 0000. Users can change the password later. Please refer to “SYSTEM” at page 21.

ITEM	FUNCTION
MENU	Enter / exit the quick start menu Under the sub-layer of the advanced setting menu, use this button to confirm the settings and go back to the upper layer.
▲ ▼	Make the selection / Change the setting
◀ ▶	Go to the upper layer or sub-layer / Make the selection
ENTER	Confirm the password entering Go to the sub-layer of the advanced menu
→ NEXT	Move the cursor to this item and press the “ENTER” button to go the next page.
← BACK	Move the cursor to this item and press “ENTER” button to go the previous page.

6.1 QUICK SEARCH

In this menu list, you can search any specific events by time and directly play the file you find.

Move the cursor to “QUICK SEARCH”, and press “ENTER” button.

You will see a similar screen as the following:

MENU	TIME SEARCH
QUICK SEARCH	DATE 2007 / OCT / 10 21 : 30 : 00
RECORD	SEARCH HDD ALL HDD
TIMER	START
DATE	
ADVANCE	
	PLEASE CONSULT YOUR INSTALLER FOR ADVANCE SETTING
	↑↓ SELECT ← BACK → NEXT ↵ ENTER

The submenu items are described below:

- 1) DATE
Select the specific time period (YEAR / MONTH / DAY / HOUR / MIN) that you want to search.
- 2) SEARCH HDD
Change to the HDD you want if there are more than 1 HDD in your DVR.
- 3) START
Move the cursor to “START” and press “ENTER” button to search and directly playback the recorded files.

6.2 RECORD

In this menu list, you can set record settings. Press “MENU” button on the front panel to enter the main menu list. The default admin password is **0000**. Enter the default password, and press “ENTER”. Users can change the password later.

Move the cursor to “RECORD”, and press “ENTER”. The screen will show the following options:

MENU
QUICK SEARCH
RECORD
TIMER
DATE
ADVANCE

RECORD	
IMAGE SIZE	FRAME
QUALITY	BEST
MANUAL RECORD ENABLE	ON
EVENT RECORD ENABLE	ON
TIMER RECORD ENABLE	ON
MANUAL RECORD IPS	30
EVENT RECORD IPS	30
TIMER RECORD IPS	30
PLEASE CONSULT YOUR INSTALLER FOR ADVANCE SETTING	
↑↓ SELECT ← BACK → NEXT ↵ ENTER	

The submenu items are described below:

- 1) IMAGE SIZE
select FRAME or CIF.
- 2) QUALITY
Select one of the 4 quality options: BEST, HIGH, NORMAL and BASIC.
- 3) MANUAL RECORD ENABLE
Start / stop the manual recording function.
- 4) EVENT RECORD ENABLE
Start / stop the event recording function. When this function is enabled, the recording will be triggered by any motion or external alarm.
- 5) TIMER RECORD ENABLE
Start / stop the timer recording function.
- 6) MANUAL RECORD IPS
Select the images per second for MANUAL RECORD.
- 7) EVENT RECORD IPS
Select the images per second for EVENT RECORD (Recording that is triggered by alarm or motion).
- 8) TIMER RECORD IPS
Select the images per second for TIMER RECORD (Recording that is activated according to the scheduled time.).

The IPS options are as following:

NTSC		PAL	
FRAME	30 / 15 / 7 / 3	FRAME	25 / 12 / 6 / 3
CIF	120 / 60 / 30 / 15	CIF	100 / 50 / 25 / 17

6.2 TIMER

Press "MENU" button on the front panel to enter the main menu list. Move the cursor to "TIMER", and press "ENTER". Select to enable (ON) or disable (OFF) the recorder timer and / or detection timer functions.

MENU
QUICK SEARCH
RECORD
TIMER
DATE
ADVANCE

TIMER	
RECORD TIMER	OFF
DETECTION TIMER	OFF
PLEASE CONSULT YOUR INSTALLER FOR ADVANCE SETTING	
↑↓ SELECT ← BACK → NEXT ↵ ENTER	

6.3 DATE

In this menu list, you can set up the system date and time for this device.

Note: When the recording function is activated, please **DO NOT** change the date or time on your DVR.

Press "MENU" button on the front panel to enter the main menu list. Move the cursor to "DATE", and press "ENTER". The screen will show the following options.

The submenu items are described below:

MENU
QUICK SEARCH
RECORD
TIMER
DATE
ADVANCE

DATE	
DATE	2008 / FEB / 15 19 : 15 : 27
FORMAT	Y/M/D
DAYLIGHT SAVING	OFF
PLEASE CONSULT YOUR INSTALLER FOR ADVANCE SETTING	
↑↓ SELECT ← BACK → NEXT ↵ ENTER	

- 1) DATE:
Set the current date and time. The default order is "YEAR – MONTH – DATE HOUR : MIN : SEC".
- 2) FORMAT
Select one date format from the following 3 options: Y-M-D, M-D-Y, D-M-Y.
- 3) DAYLIGHT SAVING
Specify whether to use daylight-saving time (ON / OFF). If it's set to ON, press "ENTER" to go to its submenu for further settings. You will see a similar screen as following.

DAYLIGHT SAVING		
START TIME	1ST - SUN - MAR	24 : 00 : 00
END TIME	LAST - SUN - OCT	24 : 00 : 00
ADJUST		01 : 00
PLEASE CONSULT YOUR INSTALLER FOR ADVANCE SETTING		
↑↓ SELECT ← BACK → NEXT ↵ ENTER		

Set the start time and end time, and adjust the daylight saving time in hour. The above example means during the daylight-saving time period (starting from the 4th Sunday of March and ending on the 4th Sunday of October), the system time will plus one hour.

7. ADVANCED MENU

Press "MENU" button on the front panel to enter the main menu list. Move the cursor to "ADVANCE", and press "ENTER". The screen will show the following options.

MENU
QUICK SEARCH
RECORD
TIMER
DATE
ADVANCE

ADVANCE
CAMERA
DETECTION
REMOTE
DISPLAY
ALERT
SYSTEM
NETWORK
BACKUP
HDD INFO
EVENT LOG

7.1 CAMERA

In this submenu, you can make advanced camera settings, such as changing the camera title, or adjust the brightness. Move the cursor to "CAMERA", and press "ENTER". You will see a similar screen as the following:

ADVANCE
CAMERA
DETECTION
DISPLAY
REMOTE
ALERT
SYSTEM
NETWORK
BACKUP
HDD INFO
EVENT LOG

CAMERA						
TITLE	BRIG	CONT	SATU	HUE	COV	REC
CH1	110	120	128	128	NO	ON
CH2	110	120	128	128	NO	ON
CH3	110	120	128	128	NO	OFF
CH4	110	120	128	128	NO	OFF
PLEASE CONSULT YOUR INSTALLER FOR ADVANCE SETTING						
↑↓ SELECT ← BACK → NEXT ↵ ENTER						

The submenu items are described below:

- 1) TITLE
 You can change the default camera naming here. The default title is the channel number. Move the cursor to the camera title you want to change, and press "ENTER" to access the character selection screen. Assign a new name to the camera up to six characters (letters or symbols).
- 2) BRIG/CONT/SATU/HUE
 You can adjust the brightness/contrast/saturation/hue of each channel here. The default value of BRIG is 110, and others are 128. The value is adjustable from 0 to 255.
- 3) COV.
 Select if you want to mask the selected channel under recording (YES/NO). When this function is activated, the wording "COV." will be shown on the screen.
- 4) REC
 Select if you want to enable recording for the selected channel (YES/NO). When this function is activated, the symbol "📺" will be shown on the channel screen.

7.2 DETECTION

In this submenu, you can set up detection-related functions: DETECTION SETUP and DETECTION TIMER. Move the cursor to "DETECTION", and press "ENTER". The screen will show the following options.

ADVANCE	DETECTION							
CAMERA	TITLE	DET	AREA	LS	SS	TS	RE	ALARM
DETECTION	CH1	ON	SETUP	07	03	02	10	OFF
REMOTE	CH2	OFF	SETUP	07	03	02	10	N.C.
DISPLAY	CH3	OFF	SETUP	07	03	02	10	N.O.
ALERT	CH4	OFF	SETUP	07	03	02	10	OFF
SYSTEM	PLEASE CONSULT YOUR INSTALLER FOR ADVANCE SETTING							
NETWORK	↑↓ SELECT ← BACK → NEXT ↵ ENTER							
BACKUP								
HDD INFO								
EVENT LOG								

The submenu items are described below:

- 1) **TITLE**: Show the camera title of each channel set in "CAMERA".
- 2) **DET**: Select if you want to activate the motion detection function for the selected channel (ON/OFF).
- 3) **AREA**

Press "ENTER" button to set the detection area. You will see similar screens as the following:

Pink blocks represent the area that is not being detected while the transparent blocks are the area under detection.

Note: If the connected video output device is LCD monitor, but the "MONITOR OUT" setting in "DISPLAY" menu is "MAIN", the motion detection area setting will be disabled.



Transparent blocks are the area under detection.



Press "ENTER" button to confirm the start area.



Press "LEFT" / "RIGHT" button to choose the width of the detection area.



Press "UP" / "DOWN" button to choose the height of the area.



You can also set up multi-detection area.



When any movement is detected, you will see the grids are flashing.

4) LS (Level of Sensitivity)

“LS” is to set the sensitivity of comparing two different images. The smaller the value is, the higher sensitivity for motion detection. The highest sensitivity setting is 00, and the lowest sensitivity setting is 15. The default value is 07.

5) SS (Spatial Sensitivity)

“SS” is to set the sensitivity for detecting the size of one object (the number of the grids) on the screen. The smaller the value is, the higher sensitivity for motion detection.

The highest sensitivity setting is 00, and the lowest sensitivity setting is 15. The default setting is 03.

Note: The default setting of SS is 03, which means once an object is detected more than 3 grids, the system will get triggered. So the value of SS must be less than the number of grids that you set up for the motion detection area.

6) TS (Time of Sensitivity)

“TS” is to set the sensitivity regarding how long one object stays in the detection area and triggers the recording. The smaller the value is, the higher sensitivity for motion detection.

The highest sensitivity setting is 00, and the lowest sensitivity setting is 15. The default setting is 02.

7) RE (Reference)

“RE” is to set a reference for detection. The default value is 10, which means the DVR will compare 10 continuous images at one time according to the sensitivity of LS, SS, TS simultaneously.

The bigger the value is, the higher sensitivity for motion detection. The highest sensitivity is 61.

8) ALARM

Select N.C. (Normally Closed) / N.O. (Normally open) / OFF for the alarm polarity. The default alarm value is OFF.

7.3 REMOTE

In this menu list, you can set up remote devices to work properly.

Move the cursor to “REMOTE”, and press ”ENTER”. You will see a similar screen as the following:

ADVANCE
CAMERA
DETECTION
REMOTE
DISPLAY
ALERT
SYSTEM
NETWORK
BACKUP
HDD INFO
EVENT LOG

REMOTE				
TITLE	DEVICE	ID	PROTOCOL	RATE
CH1	PTZ	000	P-D	2400
CH2	CAMERA	000	NORMAL	2400
CH3	CAMERA	000	NORMAL	2400
CH4	CAMERA	000	NORMAL	2400
PLEASE CONSULT YOUR INSTALLER FOR ADVANCE SETTING				
↑↓ SELECT ← BACK → NEXT ↵ ENTER				

The submenu items are described below:

1) TITLE

Show the camera title of each channel set in “CAMERA”.

2) DEVICE

Select the device type (CAMERA / PTZ) according to the connected camera for each channel.

3) ID

Set the ID number (0 ~ 255) for a PTZ camera.

After connecting to a PTZ camera correctly, the default ID of the PTZ camera will be shown on the screen.

4) PROTOCOL

Select NORMAL (our protocol) or P-D (PELCO-D) protocol.

5) RATE

Set the baud rate of each channel (2400 / 4800 / 9600 / 19200 / 57600). For the connected cameras, such as PTZ and speed dome cameras, etc., please make sure their baud rate setting is the same as the setting here.

7.4 DISPLAY

In this menu list, you can check and change some display settings.

Move the cursor to "DISPLAY", and press "ENTER". You will see a similar screen as the following:

ADVANCE	DISPLAY
CAMERA	DE-INTERLACE ON
DETECTION	FULL SCREEN DWELL DURATION (SEC) 03
REMOTE	CHANNEL TITLE ON
DISPLAY	EVENT STATUS ON
ALERT	DATE DISPLAY ON
SYSTEM	
NETWORK	PLEASE CONSULT YOUR INSTALLER FOR ADVANCE SETTING
BACKUP	↑↓ SELECT ← BACK → NEXT ↵ ENTER
HDD INFO	
EVENT LOG	

The submenu items are described below:

1) DE-INTERLACE

Select to enable or disable "DE-INTERLACE" function (ON / OFF).

2) FULL SCREEN DWELL DURATION (SEC)

Set the full screen dwell duration time (3 / 5 / 10 / 15 seconds).

3) CHANNEL TITLE

Select to display the channel title or not (ON / OFF).

4) EVENT STATUS

Select to display the symbols of the event or not (ON / OFF).

5) DATE DISPLAY

Select to display the date or not (ON / OFF).

7.4 ALERT

In this menu list, you can set alerts for different kinds of situations, such as when HDD is full.

Move the cursor to "ALERT", and press "ENTER". You will see a similar screen as the following:

ADVANCE	ALERT
CAMERA	EXT. ALERT ON
DETECTION	INT. BUZZER ON
REMOTE	KEY BUZZER ON
DISPLAY	VLOSS BUZZER ON
ALERT	MOTION BUZZER ON
SYSTEM	ALARM BUZZER ON
NETWORK	ALARM DURATION (SEC) 05
BACKUP	
HDD INFO	PLEASE CONSULT YOUR INSTALLER FOR ADVANCE SETTING
EVENT LOG	↑↓ SELECT ← BACK → NEXT ↵ ENTER

The submenu items are described below:

- 1) EXT. ALERT
Select to enable or disable the sound when any external alarm is triggered (ON / OFF).
- 2) INT. BUZZER
Select to enable or disable the sound (ON / OFF) for all the internal buzzers: KEY BUZZER, VLOSS BUZZER, MOTION BUZZER, ALARM BUZZER, and HDD BUZZER.

Note: When this item is set to OFF, item 3) to item 7) will be disabled even though they are set to ON.

- 3) KEY BUZZER
Select to enable or disable the sound when pressing the buttons on the front panel (ON / OFF).
- 4) VLOSS BUZZER
Select to enable or disable the sound when video loss happened (ON / OFF).
- 5) MOTION BUZZER
Select to enable or disable the sound when any motion alarm is triggered (ON / OFF).
- 6) ALARM BUZZER
Select to enable or disable the sound when any internal alarm is triggered (ON / OFF).
- 7) ALARM DURATION (SEC)
Press "ENTER" or "+" / "-" button to set the duration time of alarm recording in second (5 / 10 / 20 / 40).

7.5 SYSTEM

In this menu list, you can check or change some system settings.

Move the cursor to "SYSTEM", and press "ENTER". You will see a similar screen as the following:

ADVANCE	SYSTEM
CAMERA	SERIAL TYPE RS485
DETECTION	BAUDRATE 2400
REMOTE	HOST ID 0
DISPLAY	PASSWORD XXXX
ALERT	RESET DEFAULT RESET
SYSTEM	CLEAR HDD HDD-MASTER-1
NETWORK	UPGRADE START
BACKUP	AUTO KEYLOCK NEVER
HDD INFO	LANGUAGE ENGLISH
EVENT LOG	VIDEO FORMAT NTSC
	VERSION 1160-1012-1021-1014-M3-6C1B
	PLEASE CONSULT YOUR INSTALLER FOR ADVANCE SETTING
	↑↓ SELECT ← BACK → NEXT ↵ ENTER

The submenu items are described below:

- 1) SERIAL TYPE
Press "UP" / "DOWN" button to set the serial type of the DVR (RS485 / RS232).
- 2) BAUDRATE
Press "UP" / "DOWN" button to set the baud rate of the DVR (2400 / 9600 / 19200 / 57600).
- 3) HOST ID
Press "UP" / "DOWN" button to set the ID of the DVR (0 ~ 255).
- 4) PASSWORD
Press "ENTER" to reset the password for accessing the DVR system (ADMIN PASSWORD or GUEST PASSWORD). You can set the password up to 4 digits.

3) DNS (PRIMARY DNS / SECONDARY DNS)

Key in the IP address of the domain name server obtained from your ISP (Internet Service Provider).

4) PORT

The valid number ranges from 1 to 9999. The default value is 80. Typically, the TCP port used by HTTP is 80. However in some cases, it is better to change this port number for added flexibility or security.

See the example below:

STATIC	
NETWORK TYPE	STATIC
IP	192 . 168 . 001 . 012
GATEWAY	192 . 168 . 001 . 254
NETMASK	255 . 255 . 252 . 000
PRIMARY DNS	168 . 095 . 001 . 001
SECONDARY DNS	139 . 175 . 055 . 244
PORT	0080
PLEASE CONSULT YOUR INSTALLER FOR ADVANCE SETTING	
↑↓ SELECT ← BACK → NEXT ↵ ENTER	

• **PPPOE**

1) NETWORK TYPE

Select the network type as PPPOE.

2) USER NAME / PASSWORD

Set the “username” and “password” subscribed from your ISP supplier

3) DNS (PRIMARY DNS / SECONDARY DNS)

Key in the IP address of the domain name server obtained from your ISP (Internet Service Provider).

4) PORT

The valid number ranges from 1 to 9999. The default value is 80. Typically, the TCP port used by HTTP is 80. However in some cases, it is better to change this port number for added flexibility or security.

See the example below:

PPPOE	
NETWORK TYPE	PPPOE
USER NAME	EMPTY
PASSWORD	EMPTY
IP	000 . 000 . 000 . 000
GATEWAY	000 . 000 . 000 . 000
NETMASK	000 . 000 . 000 . 000
PRIMARY DNS	168 . 095 . 001 . 001
SECONDARY DNS	139 . 175 . 055 . 244
PORT	0080
PLEASE CONSULT YOUR INSTALLER FOR ADVANCE SETTING	
↑↓ SELECT ← BACK → NEXT ↵ ENTER	

Note: The PPPOE function needs to have one “username” and one “password” subscribed from one ISP supplier, and a “DDNS account” to correspond the dynamic IP address to a specific “Hostname”.

• **DHCP**

1) NETWORK TYPE

Select the network type as DHCP.

2) DNS (PRIMARY DNS / SECONDARY DNS)

Key in the IP address of the domain name server obtained from your ISP (Internet Service Provider).

3) PORT

The valid number ranges from 1 to 9999. The default value is 80. Typically, the TCP port used by HTTP is 80. However in some cases, it is better to change this port number for added flexibility or security.

See the example below:

DHCP	
NETWORK TYPE	DHCP
IP	000 . 000 . 000 . 000
GATEWAY	000 . 000 . 000 . 000
NETMASK	000 . 000 . 000 . 000
PRIMARY DNS	168 . 095 . 001 . 001
SECONDARY DNS	139 . 175 . 055 . 244
PORT	0080
PLEASE CONSULT YOUR INSTALLER FOR ADVANCE SETTING	
↑↓ SELECT ← BACK → NEXT ↵ ENTER	

Note: This DHCP function needs to be supported by a router or a cable modem network with DHCP services, and a “DDNS account” to correspond the dynamic IP address to a specific “Hostname”, for this function to work properly.

7.7 BACKUP (Model 2 Only **NOT STOCKED**)

The backup file can be played directly in your PC via the supplied licensed **software AP**, or via other **media players** (ex: Windows Media Player or RealPlayer) after the file is converted to “**AVI**” format.

Note: Before making a video backup with audio, you need to check whether there’s any audio camera connected to the channel which supports audio recording, and there’s any recorded data for the channel.

Move the cursor to “BACKUP”, and press “ENTER”. You will see the following options:

ADVANCE
CAMERA
DETECTION
REMOTE
DISPLAY
ALERT
SYSTEM
NETWORK
BACKUP
HDD INFO
EVENT LOG

BACKUP
USB BACKUP

1) USB BACKUP

Before making USB backup, please check if:

- a) The USB flash drive is supported by your DVR. If not, the message "USB ERROR" will be shown on the screen.

For the list of the compatible USB flash drives, please refer to "APPENDIX 2 COMPATIBLE USB FLASH DRIVE BRAND" at page 56.

- b) The format of your USB flash drive is "FAT 32". If no, please format it to "FAT 32" in your PC.
- c) There is no data in the USB flash drive. If yes, it's recommended to clear all data in the USB flash drive before starting the backup.

Move the cursor to "BACKUP", and press "ENTER". You will see a similar screen as the following:

BACKUP	USB BACKUP	
USB BACKUP	START TIME	2006 - 12 - 01 21 : 35 : 00
	END TIME	2006 - 12 - 01 21 : 45 : 00
	AVAILABLE SIZE	1.460 GB
	HDD NUM	HDD-MASTER-1

The submenu items are described below:

- START TIME
Select the start time of the backup.
- END TIME
Select the end time of the backup.
- AVAILABLE SIZE
Display the available capacity in the inserted USB flash drive.
- HDD NUM
Press "ENTER" to select the HDD containing the data you need.

7.8 HDD INFO

In this menu list, you can view the remaining capacity of all the connected HDDs in this device.

Move the cursor to "HDD INFO", and press "ENTER". You will see a similar screen as the following:

ADVANCE	HDD INFO			
CAMERA	HDD NUM	HDD SIZE (GB)	HDD NUM	HDD SIZE (GB)
DETECTION	HDD-MASTER-1	368	HDD-SLAVE-1	NO HDD
REMOTE	PLEASE CONSULT YOUR INSTALLER FOR ADVANCE SETTING			
DISPLAY	↑↓ SELECT ← BACK → NEXT ↵ ENTER			
ALERT				
SYSTEM				
NETWORK				
BACKUP				
HDD INFO				
EVENT LOG				

7.9 EVENT LOG

In this menu list, you can view all the event information (event type, time and channel) or clear all log records.

Move the cursor to "EVENT LOG", and press "ENTER". You will see the following options:

ADVANCE
CAMERA
DETECTION
REMOTE
DISPLAY
ALERT
REMOTE
SYSTEM
NETWORK
BACKUP
HDD INFO
EVENT LOG

EVENT LOG			
EVENT	TIME		COMMENT
POWER ON	2007 / OCT / 10	20:27:49	16
VLOSS	2007 / OCT / 10	20:05:05	06
VLOSS	2007 / OCT / 10	20:00:11	09
VLOSS	2007 / OCT / 10	16:00:08	14
VLOSS	2007 / OCT / 10	15:09:32	13
VLOSS	2007 / OCT / 10	11:00:08	12
VLOSS	2007 / OCT / 10	10:27:33	11
VLOSS	2007 / OCT / 10	08:05:55	10
RESET TO DEFAULT	2007 / OCT / 10	08:05:26	09
POWER ON	2007 / OCT / 10	08:00:22	08
PREV	NEXT	CLEAN	
PLEASE CONSULT YOUR INSTALLER FOR ADVANCE SETTINGS			
↑↓ SELECT ← BACK → NEXT ↵ ENTER			

8. REMOTE OPERATION

You can also control the DVR remotely via the supplied licensed software AP (hereafter called the “AP”), IE web browser, and Apple’s QuickTime player.

8.1 Supplied Licensed Software AP

8.1.1 Installation & Network Connection





1) Install the software

Place the supplied CD-ROM into your DVD- / CD-ROM drive. The installation process will automatically start. Follow the on-screen instructions to install the application programs.

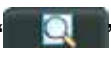


After installation, a shortcut icon “” will be shown on your PC desktop.

2) Network Connection

➤ Local Connection (via LAN)

- a) Connect the DVR to your PC via a RJ-45 network line. The default DVR IP address is “192.168.1.10”, and the default user name and password are both “admin”.
- b) Set the PC’s IP address as “**192.168.1.XXX**” (1~255, except 10) in order to make the PC and DVR under the same domain.
- c) Double-click “” icon on your PC desktop to enter the AP control panel. By defaults, the “Address Book” () panel will be displayed on the right side of the AP control panel.
- d) Click “” (Address Book) → “” (Add) button to key in the default IP address, user name, password, and port number of the DVR you intend to connect.




OR

Click “” (Search) → “” (Refresh) to search the available IP address(es) of other DVR(s) under the same domain as your PC’s IP address. The found address(es) will be listed, and can be added into the address book by clicking “” (Add into address book).

For details, please see “” (Search) at page 33.

- e) Double-click the IP address you just added into the address book to log in. When you’re logged in, the “Event” panel will be shown by defaults.




➤ Remote Connection (via Internet)

- a) Double-click “” icon on your PC desktop to enter the AP control panel. By defaults, the “Address Book” panel will be displayed on the right side of the AP control panel.
- b) Click “” (Address Book) → “” (Add) button to key in the IP address, user name, password, and port number of the DVR you intend to connect.

The default DVR values are as follows:

Item	Default Value
IP address	192.168.1.10
User name	admin
Password	admin
Port	80

OR



Click "  " (Search) → "  " (Refresh) to search the available IP address(es) of other DVR(s) under the same domain as your PC's IP address. The found address(es) will be listed, and can be added into the address book by clicking "  " (Add into address book).

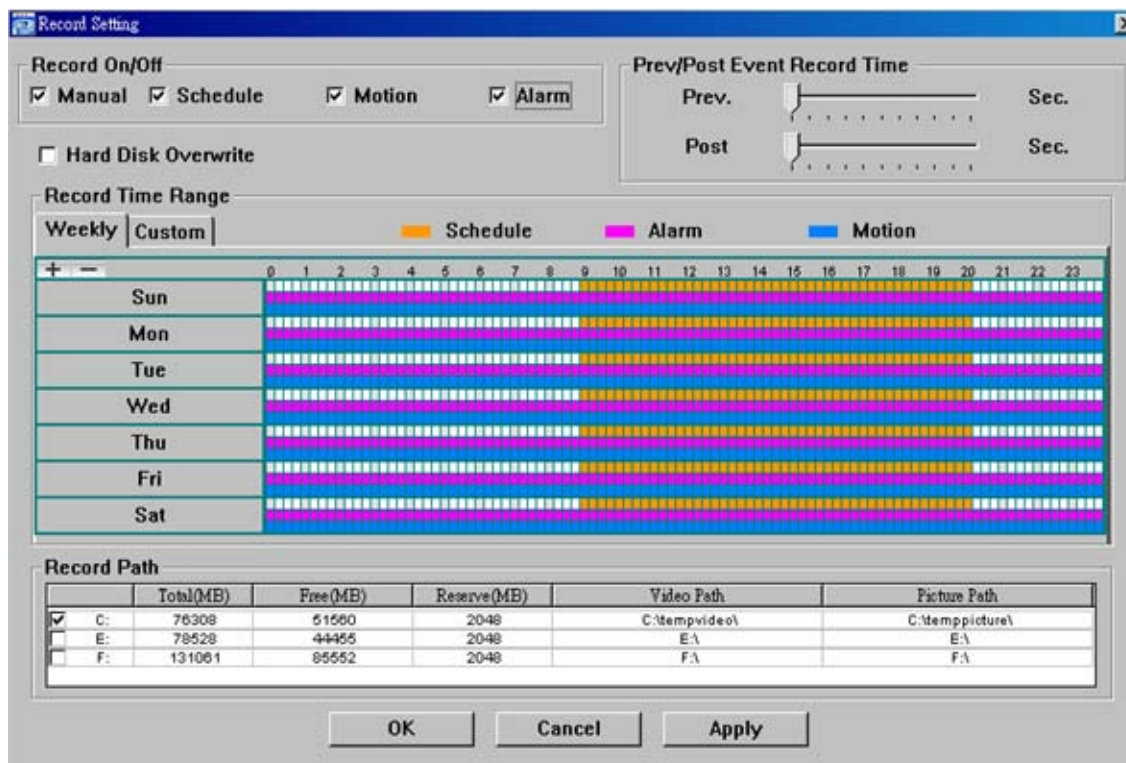
For details, please see "  " (Search) at page 33.

- c) Double-click the IP address you just added into the address book to log in. When you're logged in, the "Event" panel will be shown by defaults.

8.1.2 General AP Operation


Record

To record remotely at the same time when any event alarm is triggered at the DVR side, click "  " (Miscellaneous Control) → "  " (Record Setting) to go to the "Record Setting" page.



In the "Record Setting" page, you can set the following items:



- Record type
- Hard disk overwriting
- Pre- / post-alarm record time
- Record time setting
- Record path

If "Manual" is checked, click  (Record) on the main control panel to start the manual recording immediately, and the recordings will be saved in the specified location. The red text indication "REC" will be shown at the top left corner of the image display view.

If "Motion" and / or "Alarm" are checked, the recording function will also be enabled at the remote side when any event is triggered at the DVR side, and the recordings will be saved in the specified location.

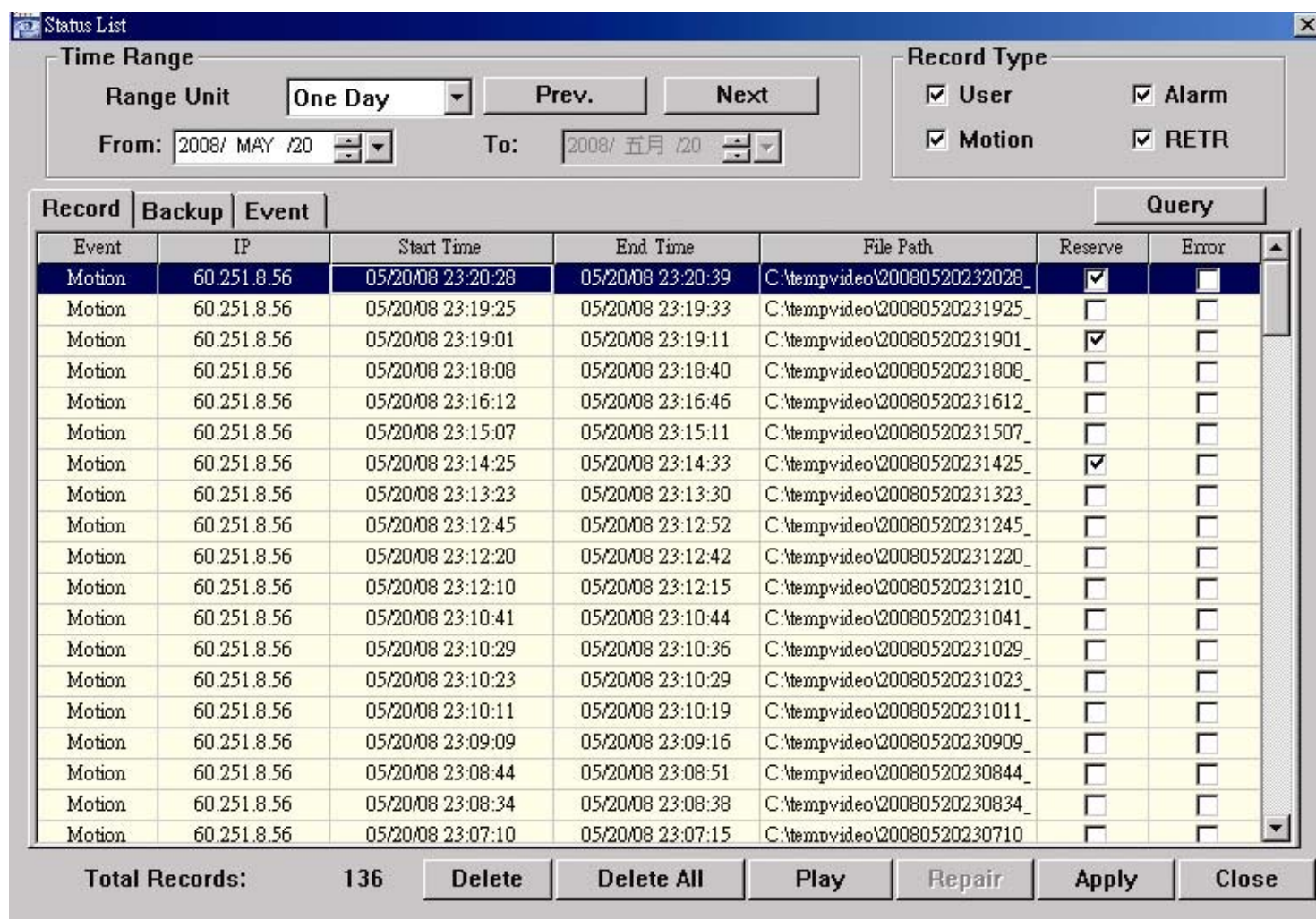
For details, please see "Record Setting" at page 36.

Playback

To play a recording, click  (Miscellaneous Control) →  (Status List), and select the "Record" tab or "Backup" tab. A list of all the recordings will be shown by defaults, and you can also sort out the logs you want to speed up the search time.

For details, please see "Status List" at page 50.

NOTE: You can't select a single channel for video playback. During the playback mode, you can only see the quad view.



The screenshot shows the 'Status List' window with the following details:

- Time Range:** Range Unit: One Day; From: 2008/ MAY /20; To: 2008/ 五月 /20
- Record Type:** User, Alarm, Motion, RETR (all checked)
- Table:**



Event	IP	Start Time	End Time	File Path	Reserve	Error
Motion	60.251.8.56	05/20/08 23:20:28	05/20/08 23:20:39	C:\tempvideo\20080520232028_	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Motion	60.251.8.56	05/20/08 23:19:25	05/20/08 23:19:33	C:\tempvideo\20080520231925_	<input type="checkbox"/>	<input type="checkbox"/>
Motion	60.251.8.56	05/20/08 23:19:01	05/20/08 23:19:11	C:\tempvideo\20080520231901_	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Motion	60.251.8.56	05/20/08 23:18:08	05/20/08 23:18:40	C:\tempvideo\20080520231808_	<input type="checkbox"/>	<input type="checkbox"/>
Motion	60.251.8.56	05/20/08 23:16:12	05/20/08 23:16:46	C:\tempvideo\20080520231612_	<input type="checkbox"/>	<input type="checkbox"/>
Motion	60.251.8.56	05/20/08 23:15:07	05/20/08 23:15:11	C:\tempvideo\20080520231507_	<input type="checkbox"/>	<input type="checkbox"/>
Motion	60.251.8.56	05/20/08 23:14:25	05/20/08 23:14:33	C:\tempvideo\20080520231425_	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Motion	60.251.8.56	05/20/08 23:13:23	05/20/08 23:13:30	C:\tempvideo\20080520231323_	<input type="checkbox"/>	<input type="checkbox"/>
Motion	60.251.8.56	05/20/08 23:12:45	05/20/08 23:12:52	C:\tempvideo\20080520231245_	<input type="checkbox"/>	<input type="checkbox"/>
Motion	60.251.8.56	05/20/08 23:12:20	05/20/08 23:12:42	C:\tempvideo\20080520231220_	<input type="checkbox"/>	<input type="checkbox"/>
Motion	60.251.8.56	05/20/08 23:12:10	05/20/08 23:12:15	C:\tempvideo\20080520231210_	<input type="checkbox"/>	<input type="checkbox"/>
Motion	60.251.8.56	05/20/08 23:10:41	05/20/08 23:10:44	C:\tempvideo\20080520231041_	<input type="checkbox"/>	<input type="checkbox"/>
Motion	60.251.8.56	05/20/08 23:10:29	05/20/08 23:10:36	C:\tempvideo\20080520231029_	<input type="checkbox"/>	<input type="checkbox"/>
Motion	60.251.8.56	05/20/08 23:10:23	05/20/08 23:10:29	C:\tempvideo\20080520231023_	<input type="checkbox"/>	<input type="checkbox"/>
Motion	60.251.8.56	05/20/08 23:10:11	05/20/08 23:10:19	C:\tempvideo\20080520231011_	<input type="checkbox"/>	<input type="checkbox"/>
Motion	60.251.8.56	05/20/08 23:09:09	05/20/08 23:09:16	C:\tempvideo\20080520230909_	<input type="checkbox"/>	<input type="checkbox"/>
Motion	60.251.8.56	05/20/08 23:08:44	05/20/08 23:08:51	C:\tempvideo\20080520230844_	<input type="checkbox"/>	<input type="checkbox"/>
Motion	60.251.8.56	05/20/08 23:08:34	05/20/08 23:08:38	C:\tempvideo\20080520230834_	<input type="checkbox"/>	<input type="checkbox"/>
Motion	60.251.8.56	05/20/08 23:07:10	05/20/08 23:07:15	C:\tempvideo\20080520230710_	<input type="checkbox"/>	<input type="checkbox"/>
- Summary:** Total Records: 136
- Buttons:** Delete, Delete All, Play, Repair, Apply, Close

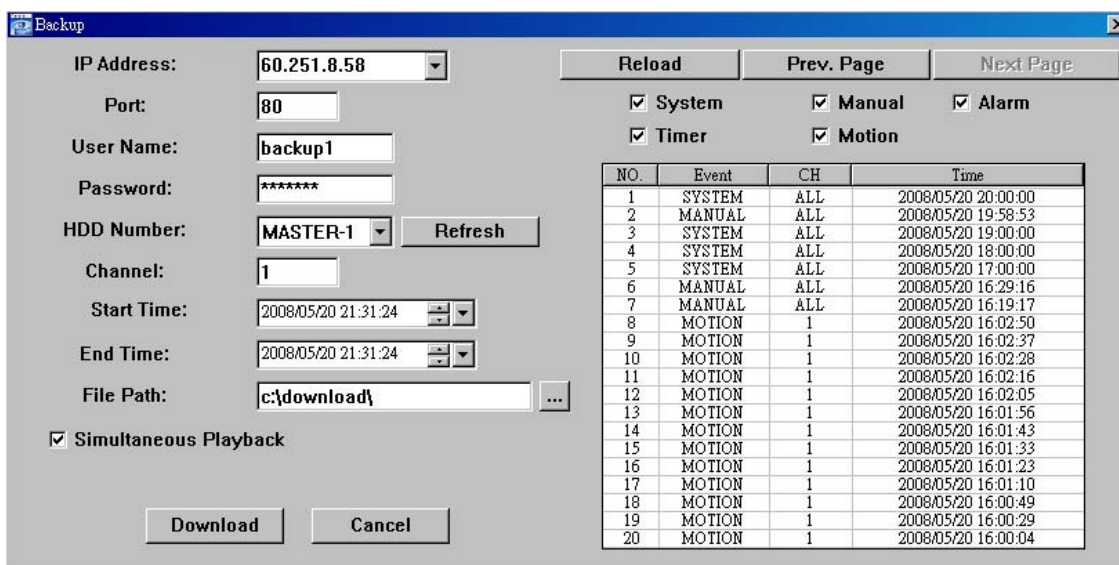
To immediately play a recording, select a log from the list, and click "Play" button, or double-click the selected log. Then, the playback control panel will be shown at the bottom of the main control panel similar to the following.




For the playback control panel details, please see “Playback Screen” at page 50.

Network Backup










Click “” (Miscellaneous Control) → “” (Backup) to go into the “Download” page as follows, and you can select a specific time range or event to make a video backup remotely. For details, please see “Backup” at page 35.



8.1.3 AP Control Panel

After setting up the network information, login user name and password, double-click “” on the PC desktop to open and log into the AP control panel. You will see a screen similar to the following with 7 major sections:



NO.	Button	Function	Description
①	N/A	Image Display	The place where the images are displayed. For details, please see "8.1.4 AP Functions" at page 32.
②		Address Book	Click to show the predefined IP address(es). You can add, remove or search the IP address to log in the DVR remotely. Two sub-functions are available for this button: Address Book and Search. For details, please see "Address Book" at page 32.
③		Miscellaneous Control	Click to show the main operation functions: audio volume control, color setting, backup, DVR setting, upgrade, and find event logs. For details, please see "Miscellaneous Control  " at page 34.
④		Record	Click to start / stop the manual recording.
⑤		Snapshot	Click to take a snapshot of the current view. The snapshot will be saved in the path you specified in "Record Setting". Please refer to "Record Setting" at page 36 for details.
⑥		Information	Click to show the current network connection details. For details, please see "Information  " at page 51.
⑦		DVR Control	Click to go to the DVR control panel to operate the DVR remotely. For details, please see "DVR Control  " at page 51.

8.1.4 AP Functions

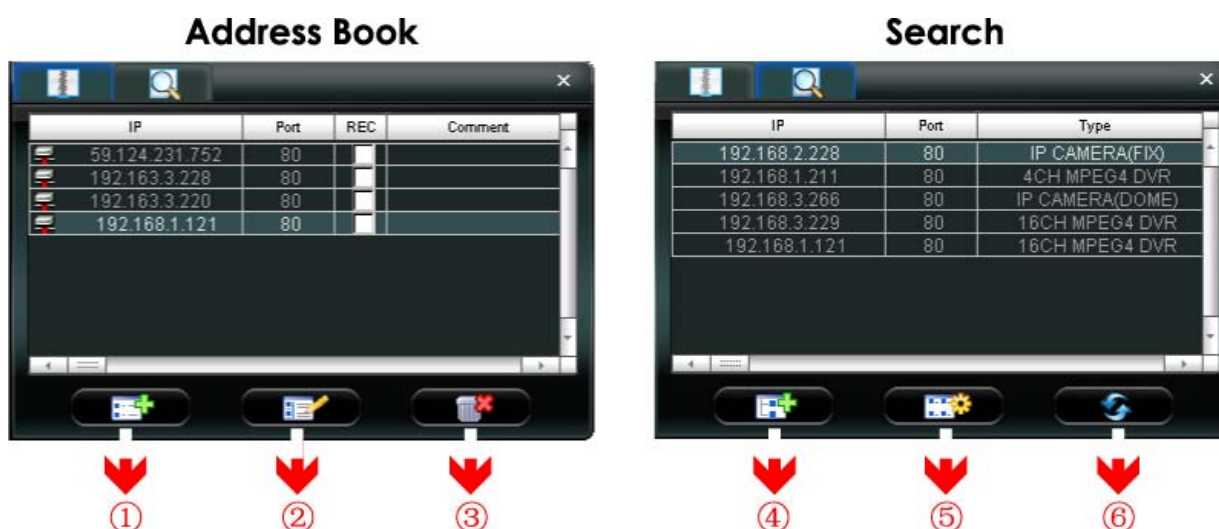
Image Display



NO.	Button	Function	Description
①		Image View Tab	Click the tab to select the view you want..
②		Expand All Views	To see all views in the image display area if you have many views and do not want to switch each view by clicking the blue tab described above, click to choose a proper split view (1-cut / 4-cut / 9-cut / 16-cut) which best suits your needs. The selected view will be indicated with a red frame around it.
③		Full Screen	Click to view the images in the full screen mode. To exit the full screen mode, press "Esc" key on the keyboard.
④		Close	Click to close the current image display view. If the last image display view is closed, you will be logged out automatically.
⑤		Close All Views	Click to close all the image display view and disconnect from the connected device(s).

Address Book

This view is displayed when the AP is activated for you to log in / out the DVR from the current address list, or search the available IP address as follows:




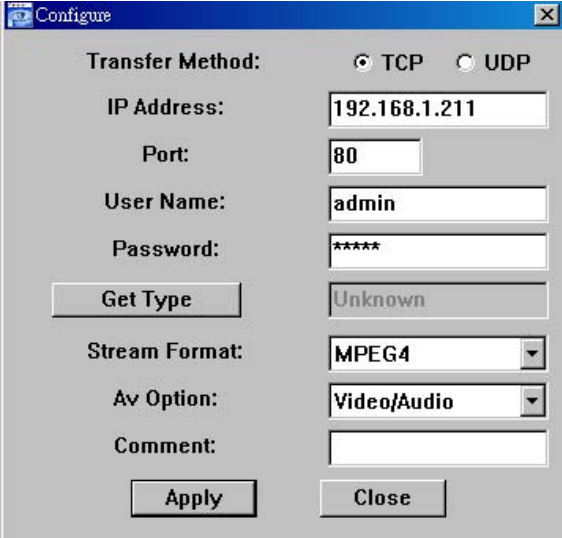

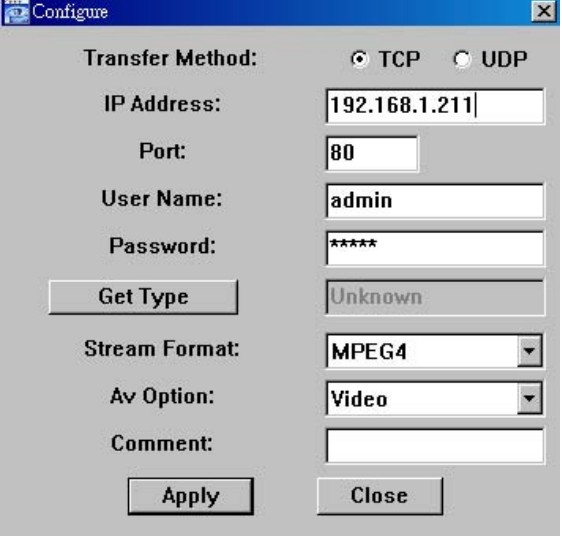

➤  **(Address Book)**

Click to view the pre-defined DVR access details.

To log in, choose one IP address from the address list, and click the address twice; to log out, click the connected IP address twice.


Tip: You can also click "X" or "X" in the image display section to log out (see "Image Display" at page 32).

You can also create new IP address information, or modify or remove the current IP address information.

NO.	Button	Function	Description
1		Add	Click to directly add one IP address for login. Key in the DVR access information needed, and click "Apply" and "Close". 
2		Edit	Select one current IP address from the address list, and click this button to modify the DVR access information as needed. 
3		Remove	Select one IP address from the address list, and click this button to delete it.




REC

When the AP is connected to more than 1 device, and not all devices are necessary to enable the manual record function, check "REC" for the connected device(s), and its manual record function will be on.

Note: When the AP is connected to more than 1 device, click "" will record the live views for all the connected devices. To enable the manual record function for the specific device(s), please set from this view.

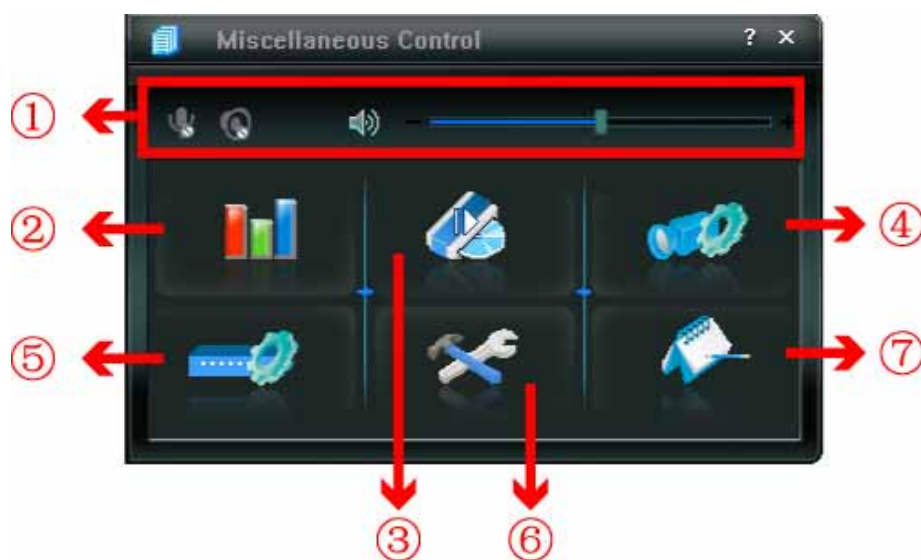
➤  **(Search)**








Click to search and view the available IP address(es) for the DVR connection. You can choose one address to add into the address book, edit the details, or update the address list.

NO.	Button	Function	Description
4		Add into address book	Select from the available IP address list, and click this button to add the selected address to the address book.
5		Setting	Select from the available IP address list, and click this button to edit the setting.
6		Refresh	Click to update the available IP address list.


Miscellaneous Control 

Click "" (Miscellaneous Control) on the AP control panel, and 7 functions are available as follows:



NO.	Button	Function	Description
①		Audio Volume Control	To adjust the volume of the audio channel, press and drag the volume slider.
②		Color Setting	Click this button to adjust the brightness / contrast / hue / saturation for a single channel or the whole channels. For details, please see "Color Setting" at page 34.
③		Backup	To make a video backup remotely, click this button, and you will go to the download setting page. For details, please see "Network Backup" at page 30.
④		Record Setting	Click to go to the detailed record setting. Please refer to "Record Setting" at page 36 for details.
⑤		Server Setting	Click to go into the detailed DVR setting. Please refer to "Server Setting" at page 36 for details.
⑥		Tools	Click to update the firmware version, multilingual OSD and boot display of your DVR remotely. Please refer to "Tools" at page 47 for details.
⑦		Status List	Click to view all event and recording logs, search the desired log(s) by date, or playback the recording of the selected log. For details, please refer to "Status List" at page 50 .

➤ **Color Setting**

Click "" to go into the "Color Setting" page, and you can adjust the brightness / contrast / hue / saturation for a single channel or all channels.



Choose the desired channel from the drop-down list, and click and drag the slider to make adjustment. Click “” to apply the change to the selected channel, or “” to apply to all channels.

To return to the default values, click “” (Default), and click “” to apply the change to the selected channel, or “” to apply to all channels.

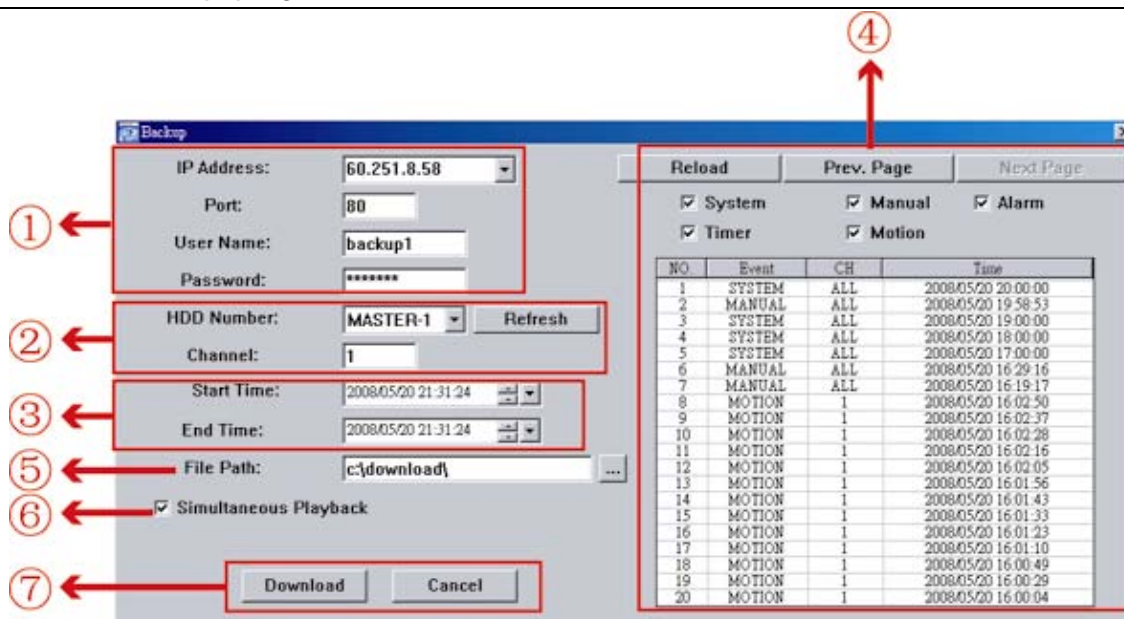
Note: You need to be a supervisor to operate this function. For details, please see “Account” at page 39.

➤ **Backup**

Click “” (Backup) to go into the “Download” page, and you can select a specific time range or event to make a video backup remotely.

Note: You need to be a supervisor to operate this function. For details, please see “Account” at page 39.

Note: Before enabling the network backup function, make sure the DVR is not in the playback mode, or the DVR will stop playback.



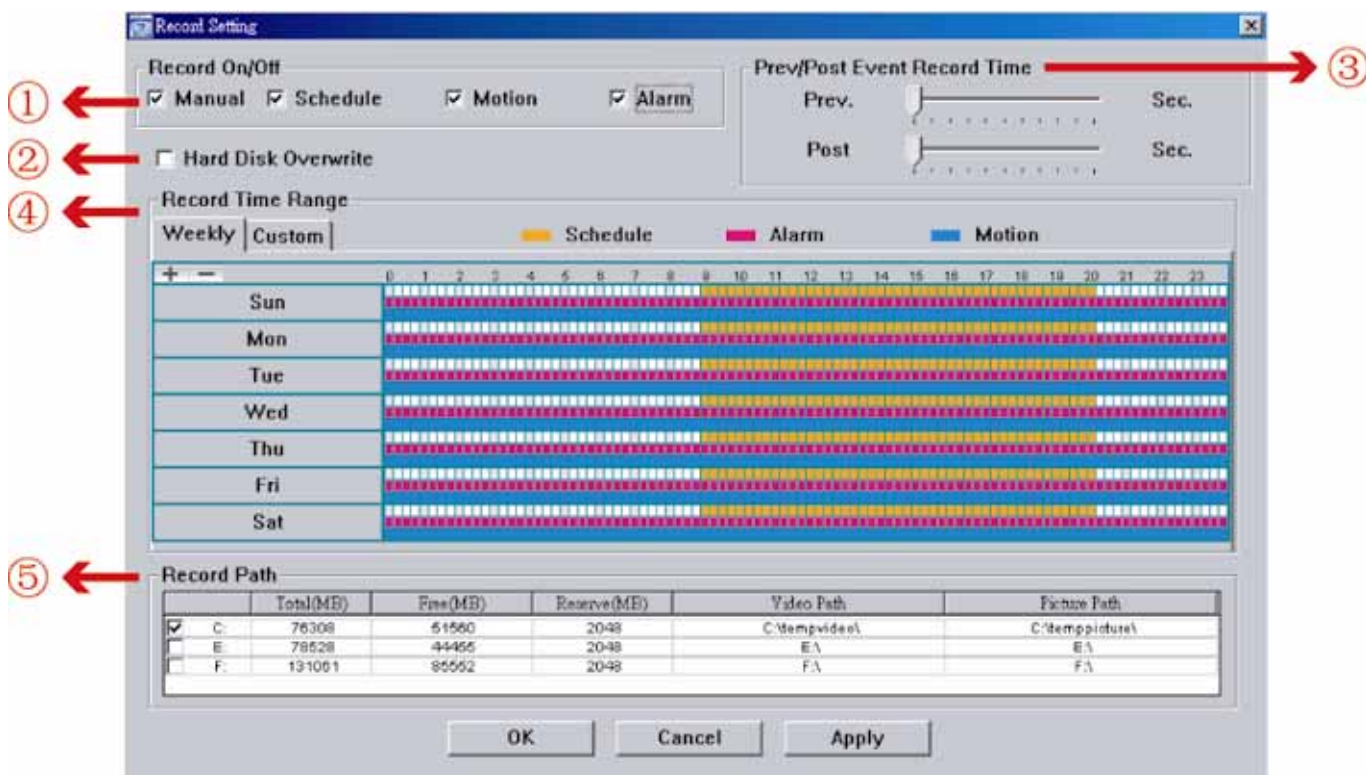
NO.	Function	Description
①	IP Address / Port / User Name / Password	Check if the network connection information of the DVR within which contains the video data you need is correct.
②	HDD Number / Channel	Specify the hard disk (HDD Number) and channel number (Channel) within which have the video data you need.
③	Download by Time	Specify the time range within which has the video data you want in the “Start Time” and “End Time” columns.
④	Download by Event	<p>Select an event log from the event list. This list shows all logs in the specified DVR from the latest to the earliest.</p> <ul style="list-style-type: none"> To quickly find the events you need, check or uncheck the event type “System” / “Manual” / “Alarm” / “Motion”, and select the log you want. To view the earlier or later logs that are not shown in the current page, click “Prev. Page” or “Next Page”. To refresh the event list, click “Reload”.

NO.	Function	Description
⑤	File Path	Assign the location where the backup files are saved.
⑥	Simultaneous Playback	To view the backup images simultaneously when the download process is in progress, select the checkbox "Simultaneous Playback". You will see the backup images while the images are being downloaded to the PC or notebook. To simply backup images without previewing, deselect the checkbox "Simultaneous Playback". You will only see a message box indicating the total time needed, the current status and the saving location.
⑦	Download / Cancel	Click "Download" to start or "Cancel" to discard the video backup.

➤ **Record Setting**

Press "🔗" to go into the "Record Setting" page, and you can set the following items:

- Record type
- Hard disk overwriting
- Pre- / post-alarm record time
- Record time setting
- Record path



Record type

In this section, you can select which type of the recording will be enabled. There are 4 options: Manual / Schedule / Motion / Alarm.

Hard disk overwriting

To overwrite the recorded data from the earliest to the latest when the hard disk is full, check "Hard Disk Overwrite" checkbox.

Pre- / post-alarm record time

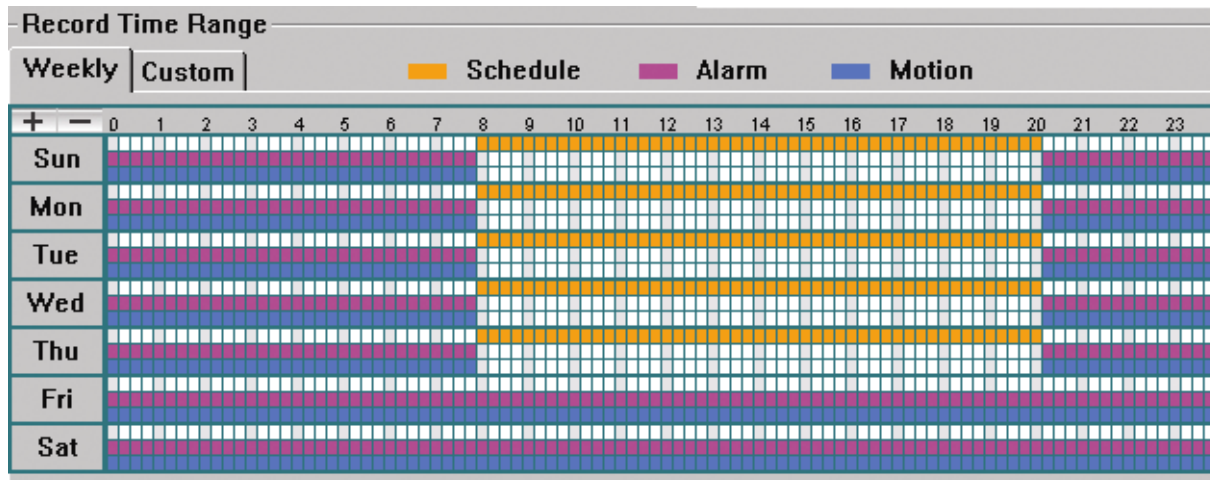
Select the pre-/post-alarm recording time from 0 sec. to 60 sec.

Record time setting

There are two ways to set the record time: Weekly and Custom.

◆ Weekly

Click “Weekly” tab, and you will see a weekly time table indicating the week days (Mon ~ Sun) and hours (0 ~ 24), similar to the figure below:



X axis: 0 ~ 24 hours. Each time interval within a square is 15 minutes.

Y axis: Monday ~ Sunday.

Operation: You can set the record schedule for 3 record types as needed in this time table:

- 1st timeline -- Schedule record, indicated in yellow,
- 2nd timeline -- Alarm record, indicated in magenta, and
- 3rd timeline -- Motion record, indicated in cyan.

Click and hold the start time point, and drag to the end time point to set the record time range.

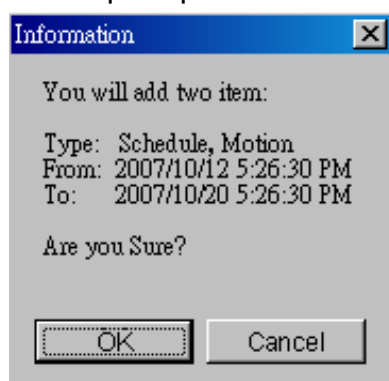
◆ Custom

Click “Custom” tab, and you can set a more specific record time range for the 3 record types: Schedule, Motion, and Alarm.

The figure shows the 'Record Time Range' window in 'Custom' mode. There are checkboxes for 'Schedule' (checked), 'Motion' (checked), and 'Alarm' (unchecked). Below these are 'From:' and 'To:' fields with time pickers. To the right is a table with columns 'Type', 'Start Time', and 'End Time'. Above the table are 'Add', 'Delete', and 'Update' buttons.

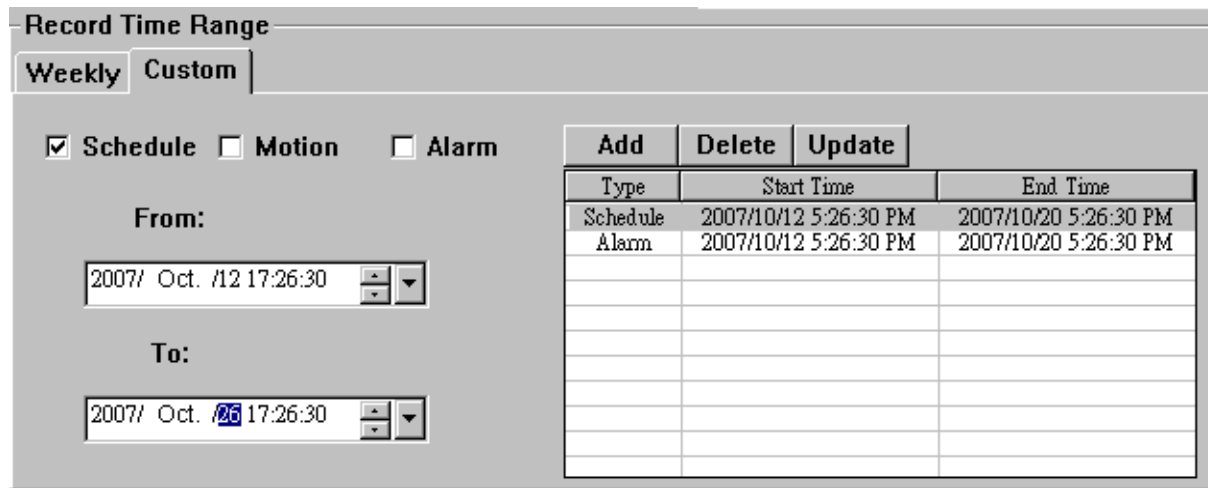
How to add a new time setting:

- i. Check the record type you want to schedule the recording.
- ii. Set the start time (From) and end time (To).
- iii. Click “Add” to add the time range you just set into the schedule table. Before adding the time range, you will be prompted to confirm as follow:



- iv. Check if the information shown is correct. Click “OK” if the information is correct. Click “Cancel” if the information is wrong.

How to modify / delete a current time setting:




1. Select the schedule setting you want to modify from the schedule table. The setting will be displayed in the left setting panel.
2. Modify the setting in the left setting panel, and click "Update".
3. You will be prompted to confirm the setting. Click "OK" if the information is correct. Click "Cancel" if the information is wrong.
4. To delete one schedule setting, select it, and click "Delete".

Record Path

Select and view the location for saving the recorded video and snapshot pictures.

To change the saving path for the recorded video clips or snapshots, check the drive you want, click the cell of "Video Path" or "Picture Path" twice, and select a new path for saving the video clips or snapshots.

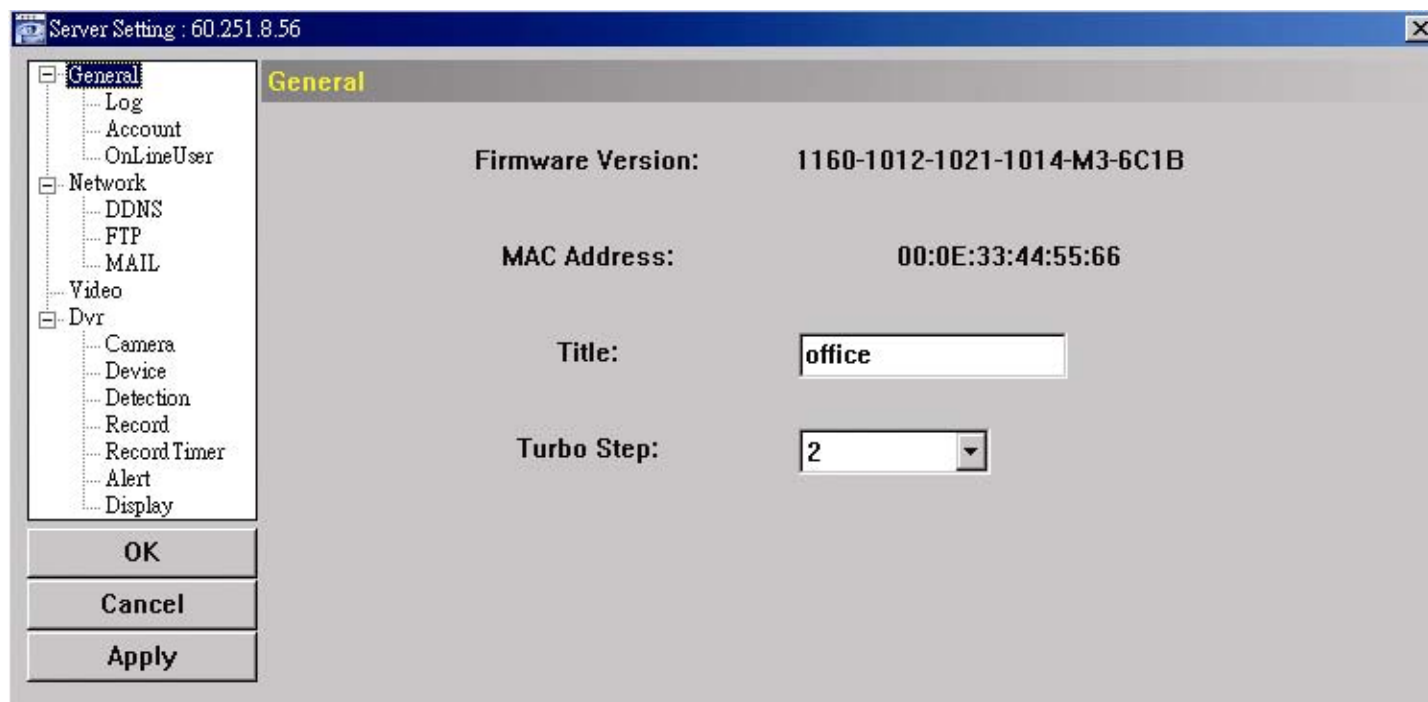
➤ **Server Setting**

Click  to view, set or modify the DVR setting. All the changes you make here will be applied to the connected DVR.

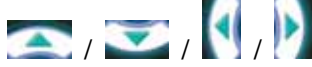
Note: You need to be a supervisor to operate this function. For details, please see "Account" at page 39.

General



In "General" and its sub-menus, "Log", "Account" and "OnLineUser", you can view and set some common settings, such as the turbo step, make account setting, check the information for all current on-line users, and search the server logs.



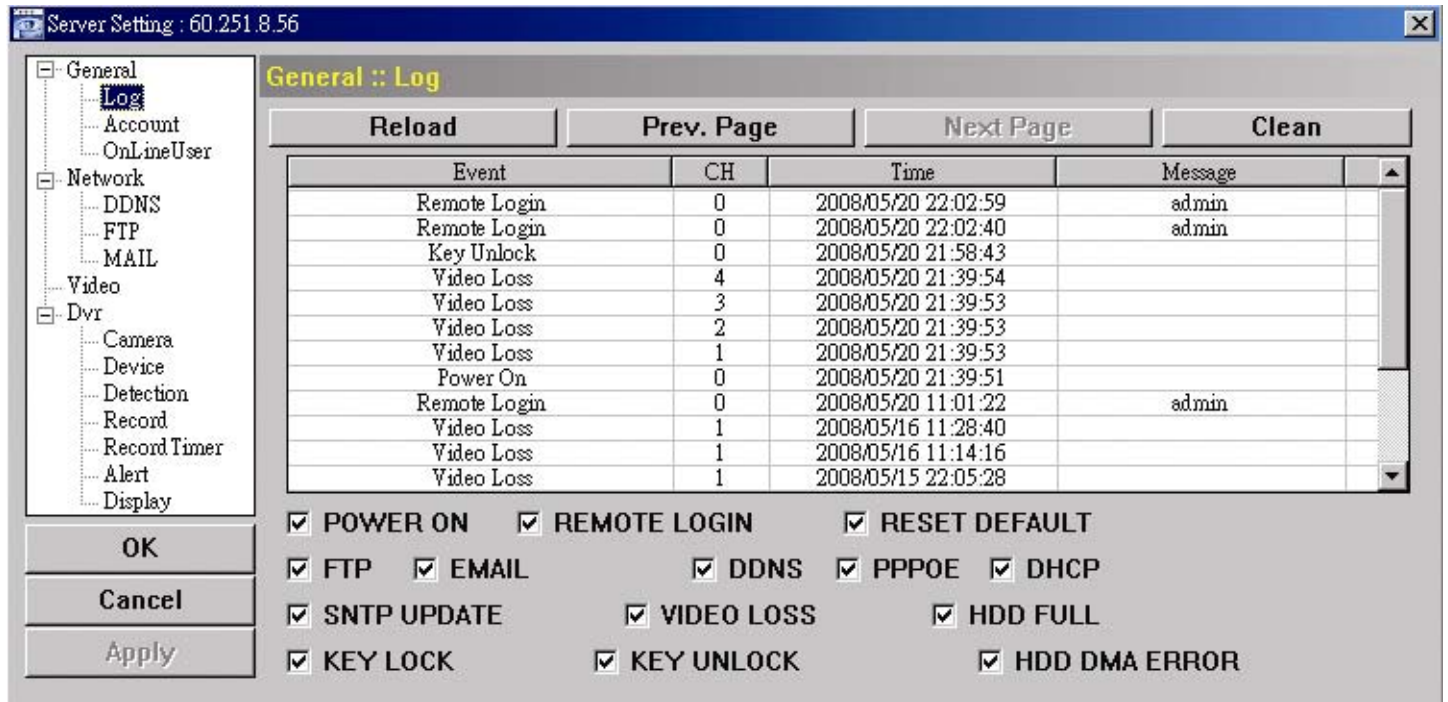
In “General”, you will see the following items:

Item	Description
Firmware Version	Display the current firmware version of your DVR.
MAC Address	Display the MAC address.
Turbo Step	Speed up the menu selection under the AP from 1 to 10. Ex: If the value of the turbo step is set to 5, one mouse-click will function as 5 mouse-clicks when you click one of the buttons  in the DVR control panel.
Title	Provide a title for this DVR. Only 15 characters are allowed.

◆ Logs

Click “” (Miscellaneous Control) → “” (Server Setting) → “General” → “Log” to go into the “Log” page. In the “Log” page, you can see all the logs for the network camera, such as “Power On”, “Reset Default”, “Net Login” and “SNTP Update” ... etc.

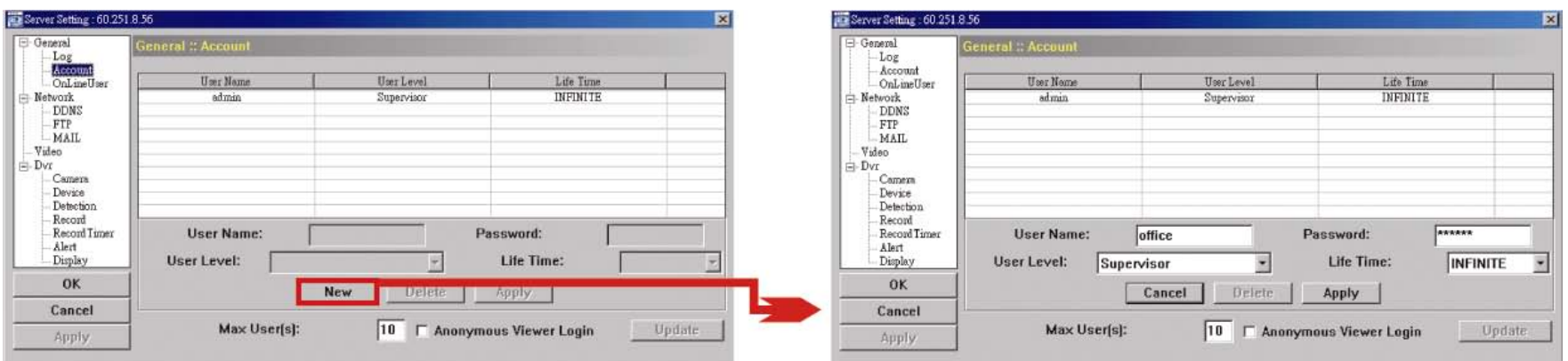
- To refresh the logs, click “Reload”.
- To view the earlier or later logs that are not shown in the current page, click “Prev. Page” or “Next Page”.
- To clear all the logs, click “Clean”.



◆ Account

In “General” → “Account”, you can create a new account for login, or delete or modify the existing account setting.

- To add an account, click “New”, and fill in the following columns. Then, click “Apply” to save your setting and create a new account.



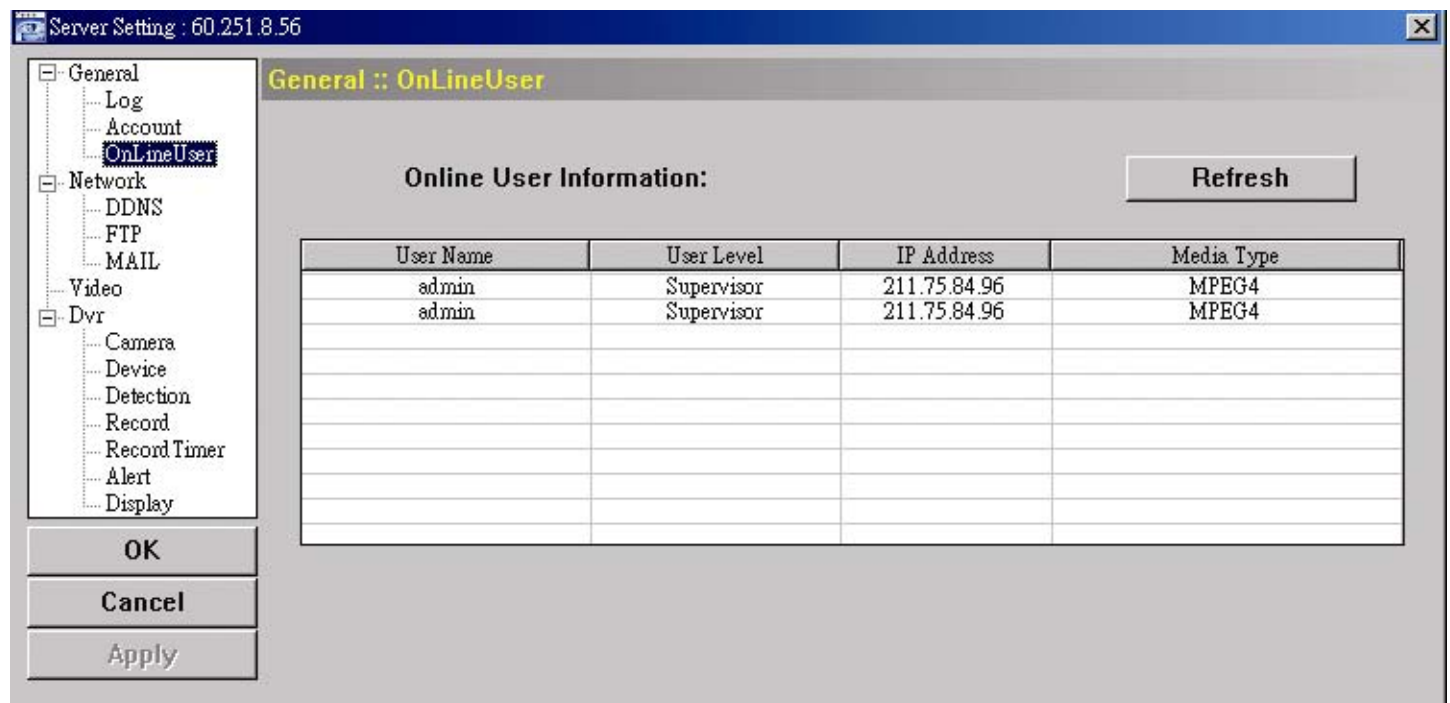
Column	Description
User Name	Set a user name that will be used for remote login. The user name allows up to 10 characters.

Column	Description
Password	Set the password that will be used for remote login. The password allows up to 8 characters.
User Level	Set the security level of an account to give the permission to control different AP functions. There are 4 user levels: Supervisor, Power User, Normal User and Guest.
Life Time	Select how long this account is allowed to stay online (1 MIN / 5 MIN / 10 MIN / 1 HOUR / 1 DAY / INFINITE)

- To modify an existing account, select the account you want, change the setting, and click “Apply”.
- To remove an existing account, select the account you want, and click “Delete”.
- To save your changes, click “Apply”.
- To define the maximum account creation number, key in the number in “Max User(s)” column from 1 to 20, and click “Update”.

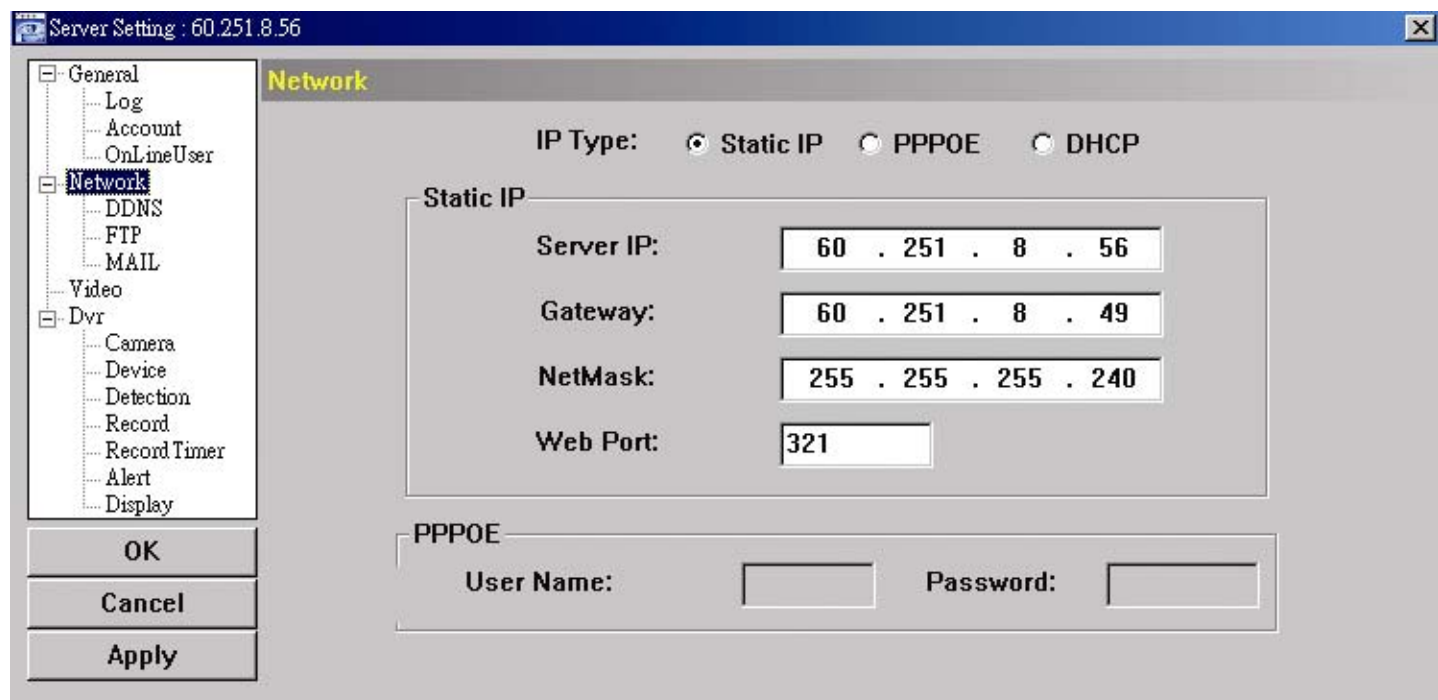
◆ OnLineUser

In “General” → “OnLineUser”, you can check all the online user information. To update the user information, click “Refresh”.



Network

In “Network” and its sub-menu, “DDNS”, you can set the DVR network configuration. The network configuration allows the DVR to connect to the LAN or Internet.



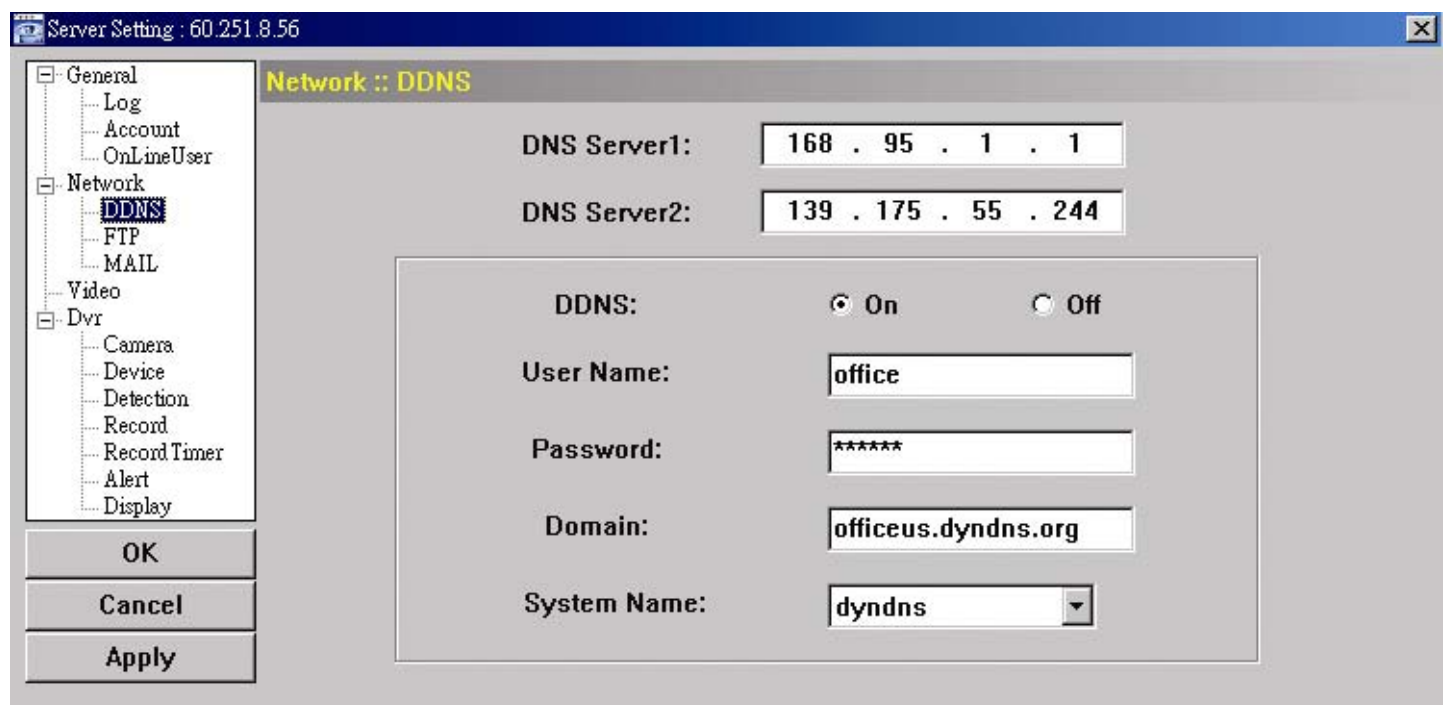
Select the network type you will be using for DVR connection. There are 3 network connection types: Static IP, PPPOE and DHCP.

Note: PPPOE and DHCP network connection types are required to apply the DDNS service to get a "Hostname" to correspond to a dynamic IP address. Please refer to "DDNS" at page 41 for details.

Function	Description
Web Port	Typically, the default TCP port used by HTTP is 80. However, in some cases, it is better to change this port number for added flexibility or security. The valid web port number ranges from 1 to 9999.
Static IP	Computers are communicated and recognized by their own unique IP addresses over the Internet. "Static IP" provided by your ISP (Internet Service Provider) means the IP address of the computer is fixed. Key in the server IP address, gateway and network information provided by your ISP provider to configure a static IP network connection.
PPPOE	PPPOE stands for Point-to-Point Protocol over Ethernet. Users can easily have the Internet service as long as they're ready for the following things: 1) Insert an Ethernet card into the PC. 2) Obtain the ADSL service via any ISP. 3) Obtain and install the PPPOE software CD. When everything is ready, choose the "PPPOE" IP type, and key in the user name and password provided by your ISP. Then, select "Network" → "DDNS" to set DDNS settings. For detailed DDNS settings, please refer to "DDNS" at page 41.
DHCP	This DHCP function needs to be supported by a router or cable modem network with the DHCP service. Choose the "DHCP" IP type, and select "Network" → "DDNS" to set DDNS settings. For detailed DDNS settings, please refer to "DDNS" at page 41.

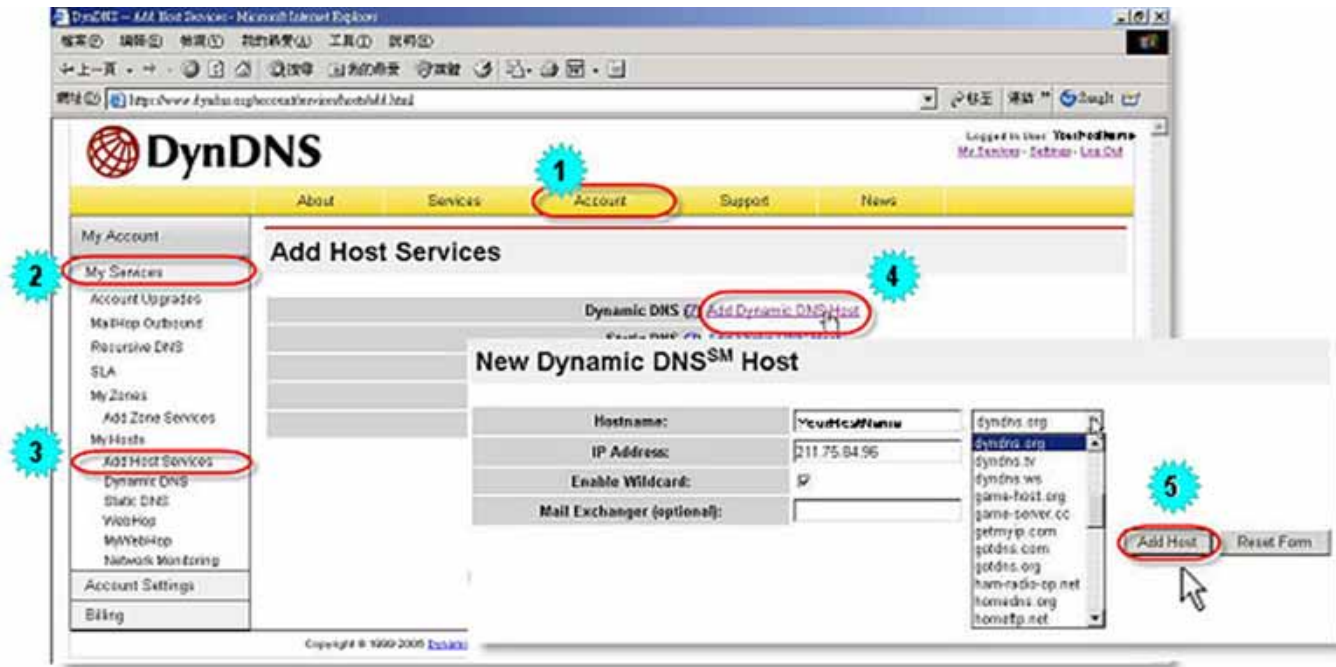
◆ DDNS

You need to apply a DDNS account before setting PPPOE or DHCP connection. DDNS is a service for transforming the dynamic IP corresponding to a specific "host name". Go to a website which provide free DDNS services and apply a host name.



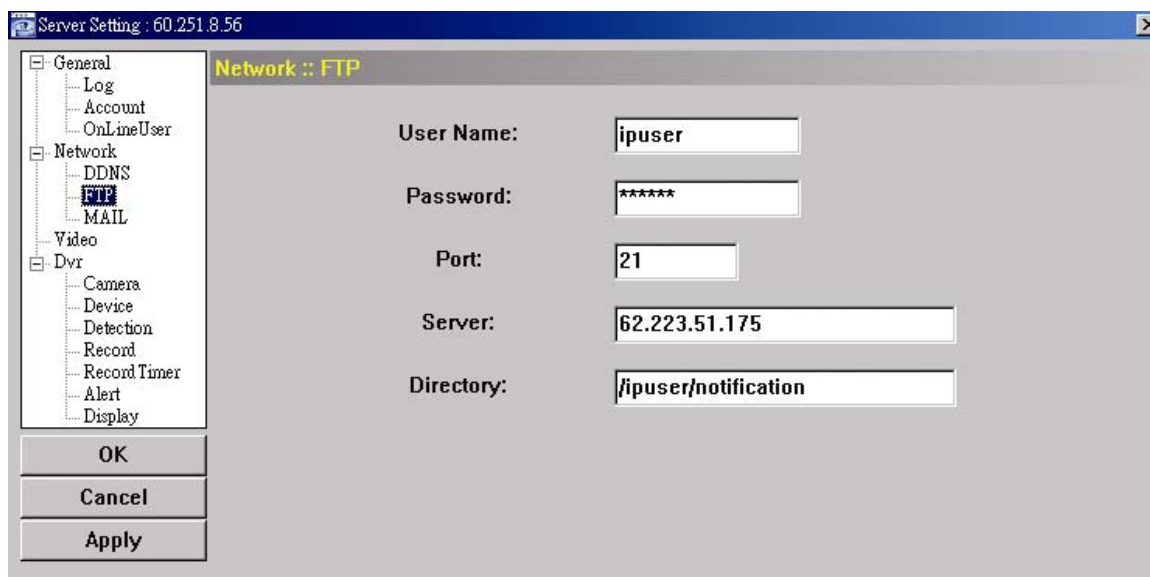
DDNS Apply:

- a). Go to a website which provide the free DDNS service, for example, <http://www.dyndns.org>.
- b). Create an account in DynDNS.
- c). After creating one account, users will receive a confirmation E-mail within a few minutes. To complete the registration, please follow the instructions received.
Users must complete these steps within 48 hours to complete the registration. If the confirmation E-mail was not received within an hour, request "password reset" (<http://www.dyndns.org/account/resetpass/>).
- d). Use the DDNS username and password to log into the DynDNS.
- e). Create a host name:
After login, click "Account" → "My Service" → "Add Host Services" → "Add Dynamic DNS Host". Enter and choose a host name, and click "Add Host". Then, your DDNS host name is created.



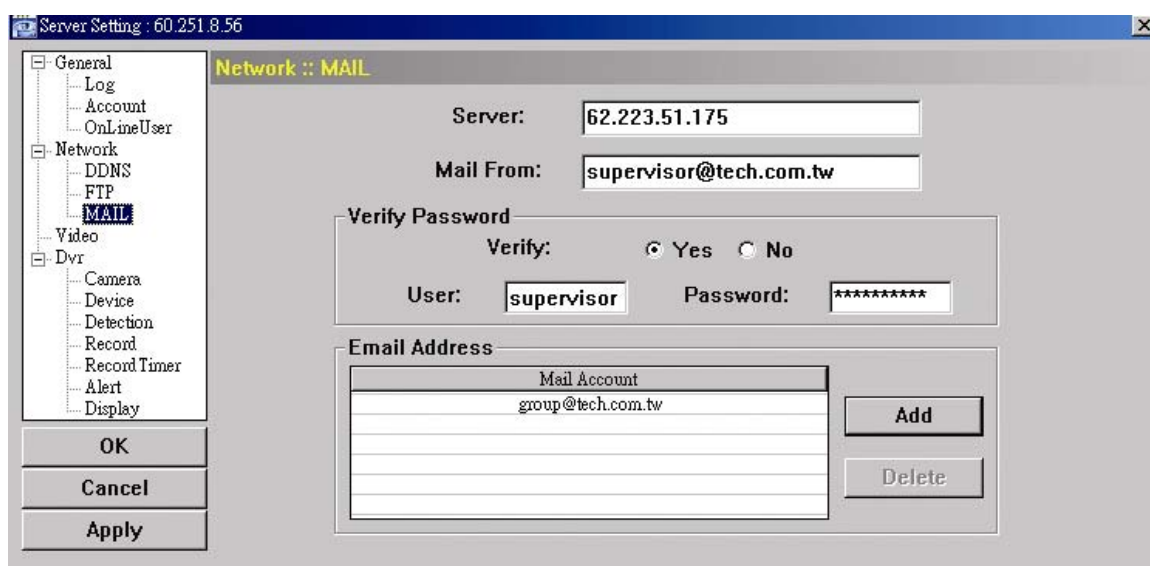
◆ FTP

Click “” (Miscellaneous Control) → “” (Server Setting) → “Network” → “FTP” to go into the “FTP” page. Enter the detailed FTP information and press “Apply” to confirm. The information you set here will be applied when the function of FTP notification is enabled in the "Alert" menu.



◆ MAIL

Click “” (Miscellaneous Control) → “” (Server Setting) → “Network” → “MAIL” to go into the “MAIL” page. Enter the detailed E-mail information and press “Apply” to confirm. The information you set here will be applied when the function of E-mail notification is enabled in the "Alert" menu.

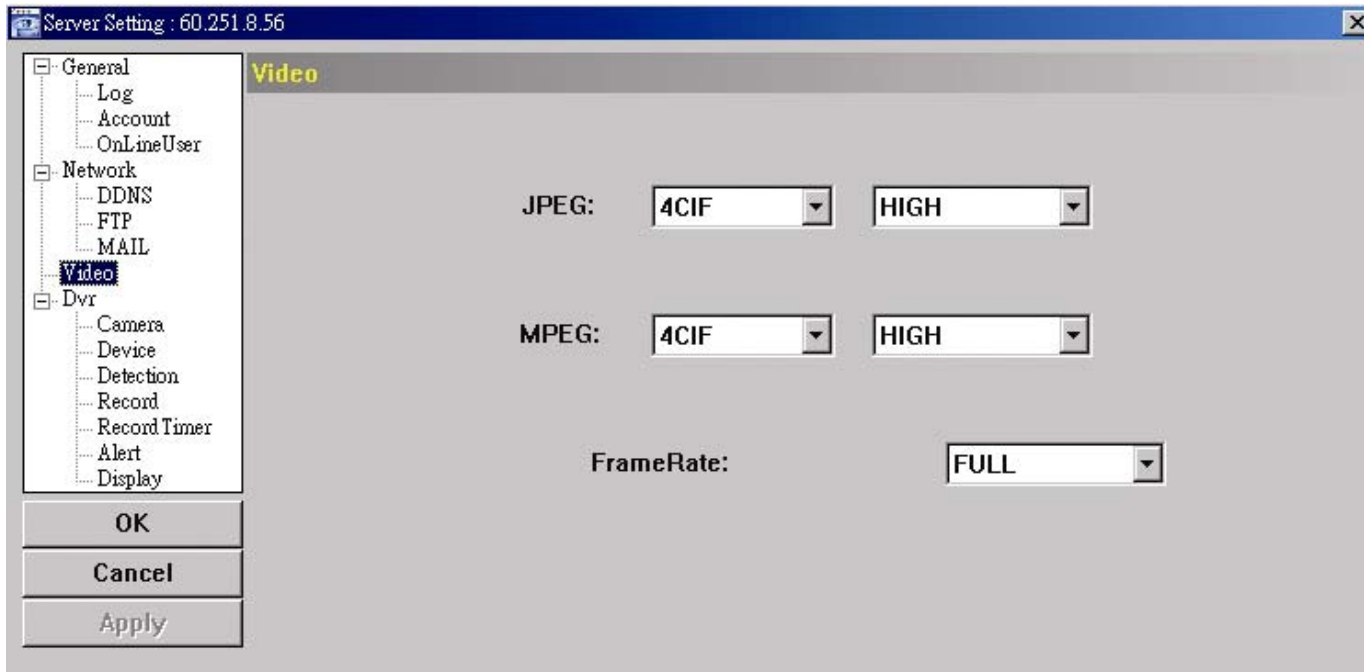


Function	Description
Server	Enter the SMTP server address provided from your e-mail system supplier.
Mail From	Enter the entire mail address to ensure E-mails will not be blocked by SMTP.
Verify Password	Some mail servers are required to verify the password. Please enter the "user name" and "password".
Email Address	Add the E-mail address(s) of the assigned recipient(s).

Note: Users can assign up to 4 mail accounts for E-mail notification.

Video

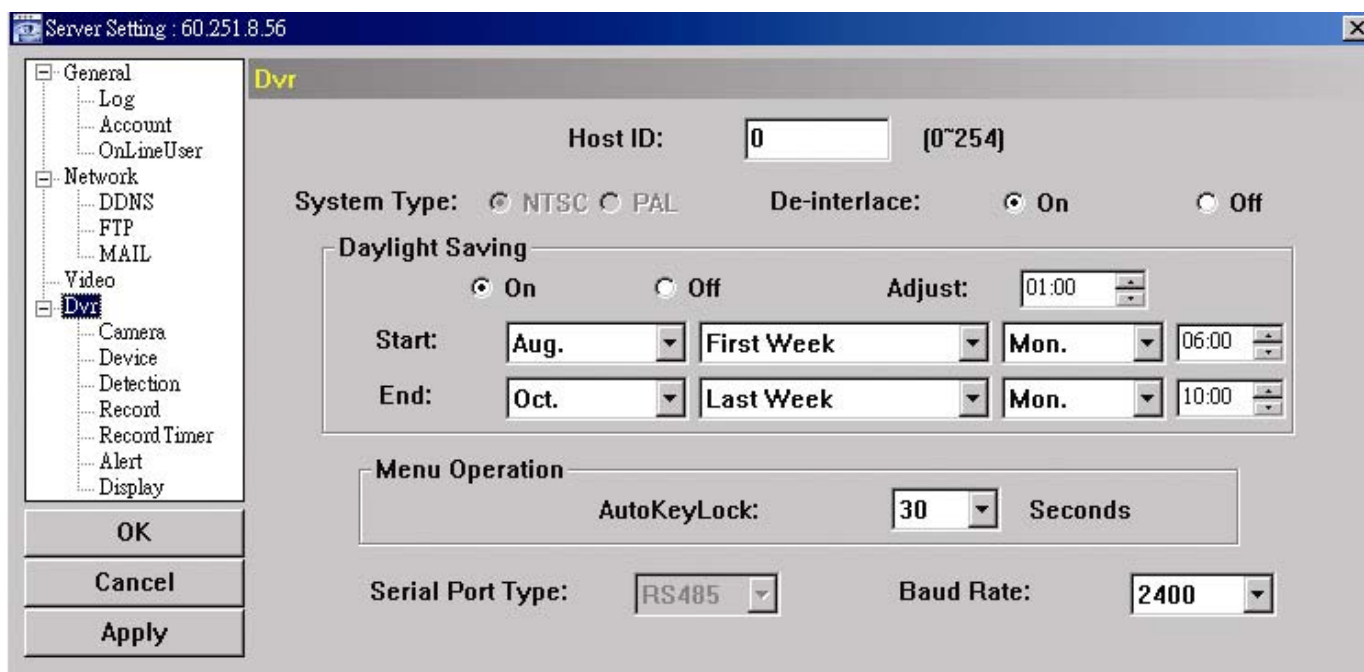
In "Video", you can set the video web transmission size and quality, and the frame rate for transmitting.



Function	Description
JPEG	Choose the image size (4CIF / CIF) and picture quality (BEST / HIGH / NORMAL / BASIC) when the web transmission format is JPEG.
MPEG	Choose the image size (4CIF / CIF) and picture quality (BEST / HIGH / NORMAL / BASIC) when the web transmission format is MPEG.
FrameRate	Choose the frame rate for transmitting (FULL / HALF / ONE THIRD / QUARTER / FIFTH).

Dvr

In "Dvr" and its sub-menus, "Camera", "Detection", "Record", "Record Timer", "Alert" and "Display," you can set DVR general functions, such as the host ID, the record schedule, alerts, motion detection, and text or icon display, etc.

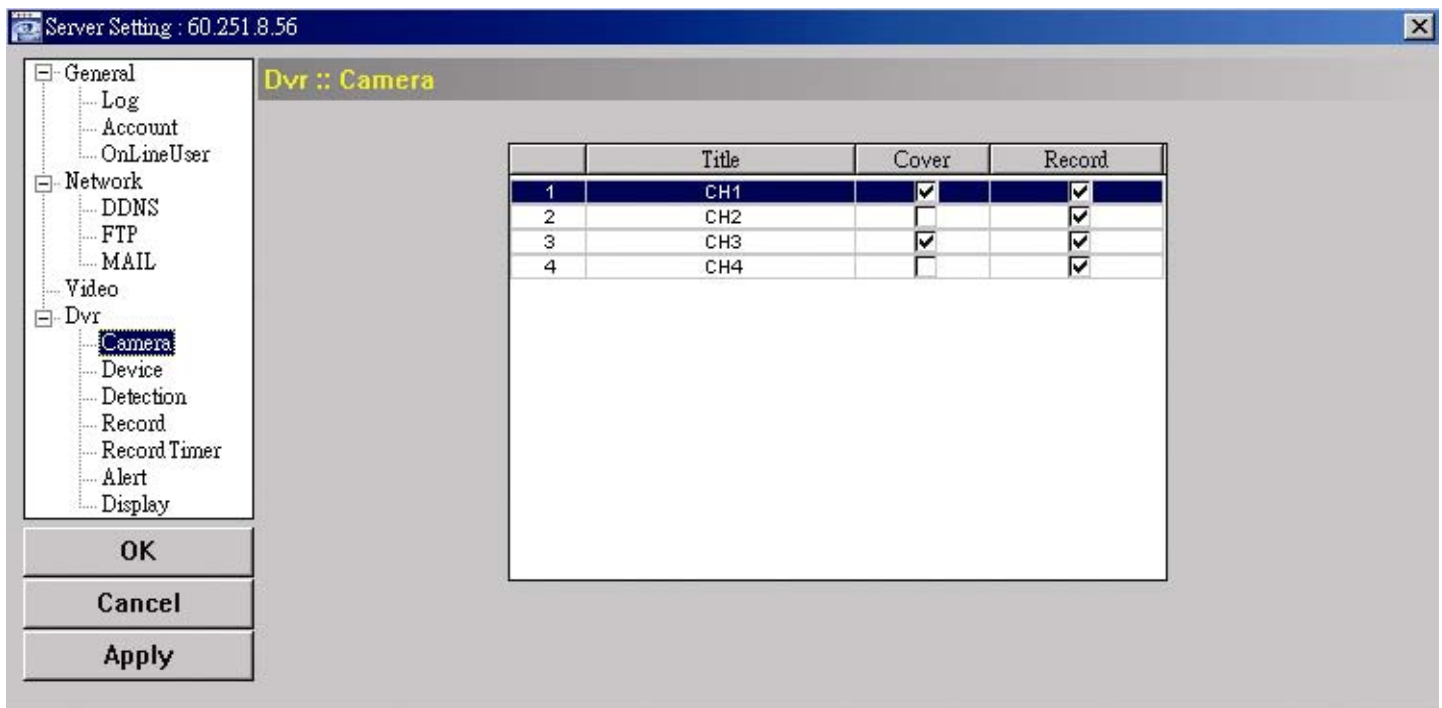


In “Dvr”, you can see the following items:

Function	Description
System Type	Display the current system type (NTSC / PAL). It's automatically detected.
De-interlace	Select to enable or disable the de-interlace function (ON / OFF).
Daylight Saving	Specify whether to use daylight saving time (ON / OFF). If this function is enabled, set the time period (START / END), and adjust the daylight saving time in hours (ADJUST).
Menu Operation	Select the time-out in seconds after which the DVR keys will be automatically locked when no one is operating the DVR for a period of time (0 / 30 / 60 / 120). The default value is 30.
Serial Port Type	Display the serial type (RS485) used by this DVR. It's automatically detected.
Baud Rate	Set the baud rate of the DVR (2400 / 9600 / 19200 / 38400 / 57600).

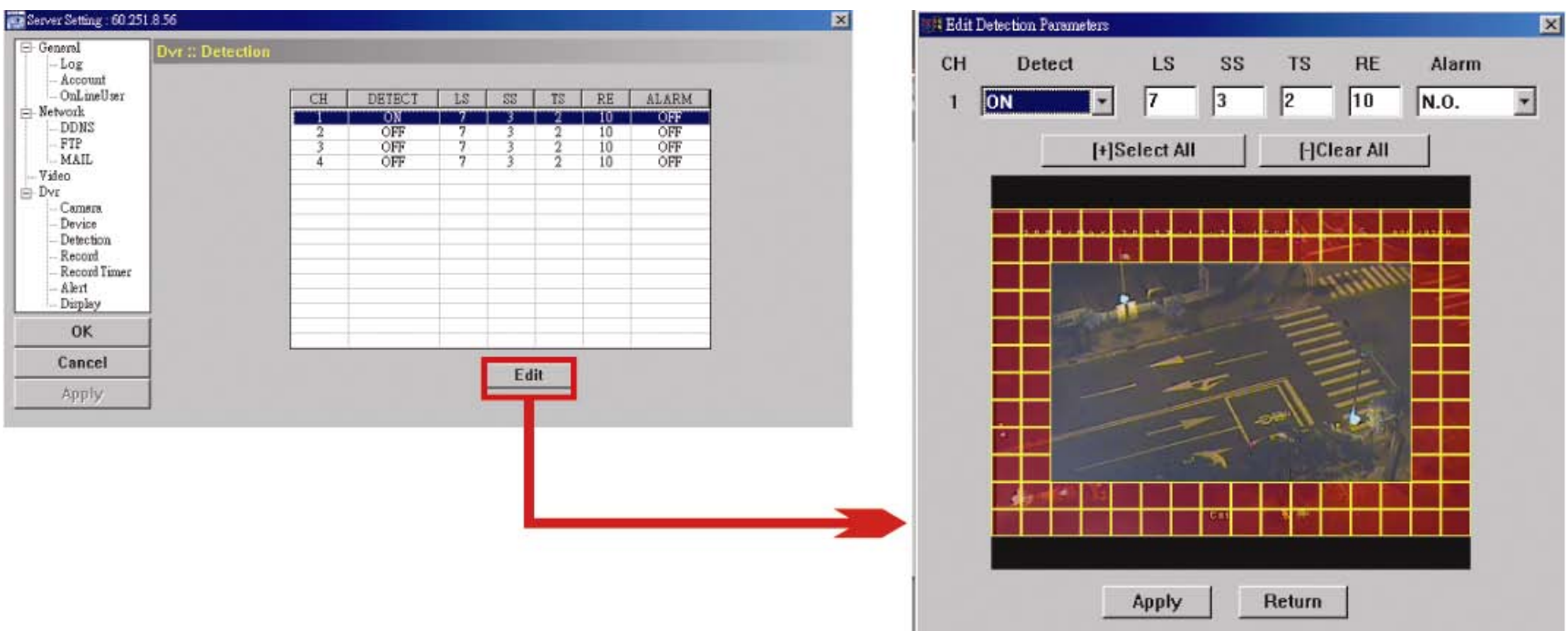
◆ Camera

In “Dvr” → “Camera”, you can specify a channel to enable the recording function by selecting the check box “Record”, choose to activate the “Covert Recording” function by selecting the check box “Cover”, and rename the channel title which will be displayed in the live view screen by double-clicking the channel title.



◆ Detection

Select the desired channel, and click “Edit” to enter the motion detection sensitivity and area-setting page.

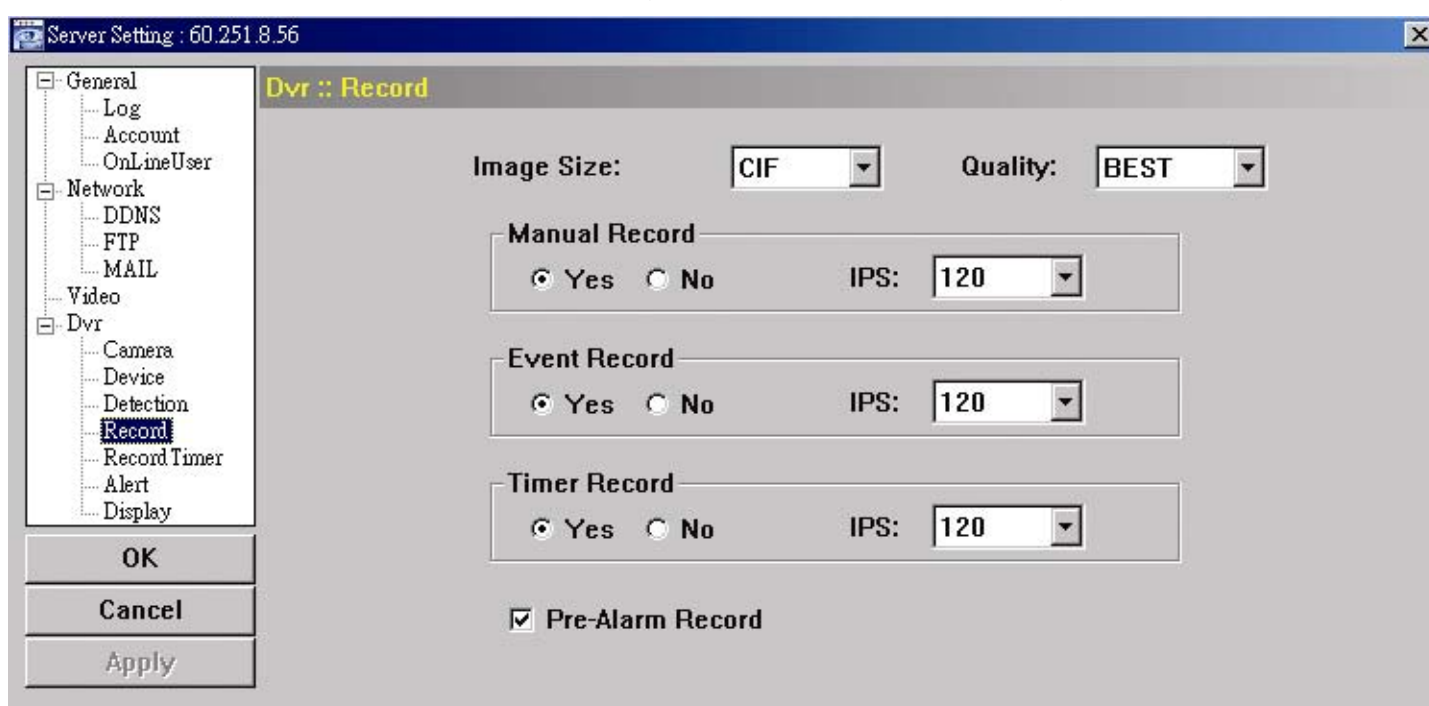


Please see the description below for each function:

Function	Description
DETECT	Enable (ON) or disable (OFF) the function of "Motion Detection". If this function is enabled, you might need to set the motion detection sensitivity or simply keep the default values. For details, please see the description below.
Motion Detection Sensitivity (LS / SS / TS / RE)	Set the detection sensitivity in 4 different adjustable factors (LS / SS / TS / RE). LS "Level of Sensitivity", is to set the sensitivity of comparing two different images. The smaller the value is, the higher sensitivity for motion detection. The highest sensitivity setting is 0, and the lowest sensitivity setting is 15. The default value is 7. SS "Spatial Sensitivity", is to set the sensitivity for detecting the size of one object (the number of the grids) on the screen. The smaller the value is, the higher sensitivity for motion detection. The highest sensitivity setting is 0, and the lowest sensitivity setting is 15. The default setting is 3. TS "Time of Sensitivity", is to set the sensitivity regarding how long one object stays in the detection area and triggers the recording. The smaller the value is, the higher sensitivity for motion detection. The highest sensitivity setting is 0, and the lowest sensitivity setting is 15. The default setting is 2. RE "Reference", is to set a reference for detection. The default value is 10, which means the DVR will compare 10 continuous images at one time according to the sensitivity of LS, SS, TS simultaneously. The bigger the value is, the higher sensitivity for motion detection. The highest sensitivity is 61.
Alarm	Select N.C. (normal closed) / N.O. (normal opened) / OFF for the alarm polarity. For N.C. / N.O. contact details, please refer to "APPENDIX 2".
Motion Detection Setting Area	Set the motion detection area by selecting the area grids with your mouse. Pink grids represent the area that is not being detected while the transparent grids are the area under detection. You can set multiple areas under detection. Click "-" (Clear All) to set the whole area undetected. Click "+" (Select All) to set the whole area under detection.
Apply / Return	To save the setting, click "Apply" and return to "Server Setting" window. To discard the setting, click "Return" to directly return to "Server Setting" window without saving.

◆ Record

In "Dvr" → "Record", you will see the following items for DVR record settings.

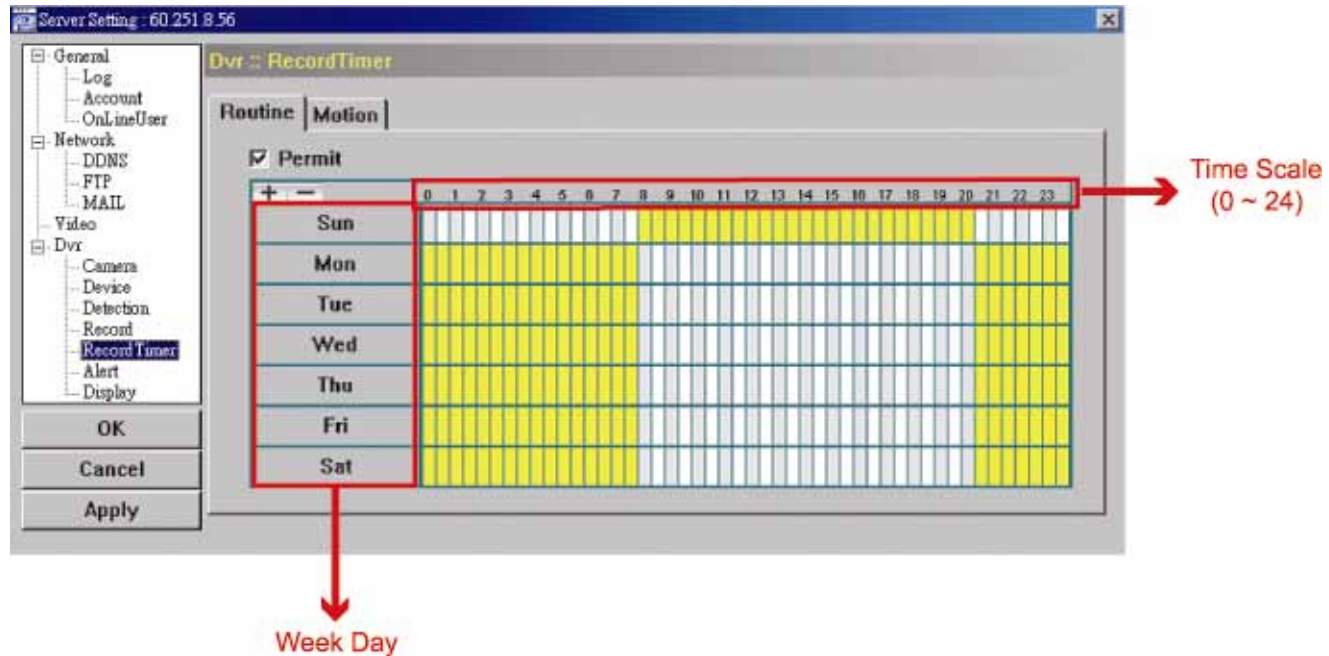


Function	Description
Image Size / Quality	Choose the image size (FRAME / FIELD / CIF) and quality (BEST / HIGH / NORMAL / BASIC).
Manual Record / Event Record / Timer Record	Select the record type that the DVR will take recording (Yes / No), and select the IPS setting (120 / 60 / 30 / 15) for the selected record type.

Function	Description
Pre-Alarm Record	Check this option if you want to enable the pre-alarm recording function. When any alarm is triggered, the DVR will record 8MB video data before the alarm event is actually happened.

◆ Record Timer

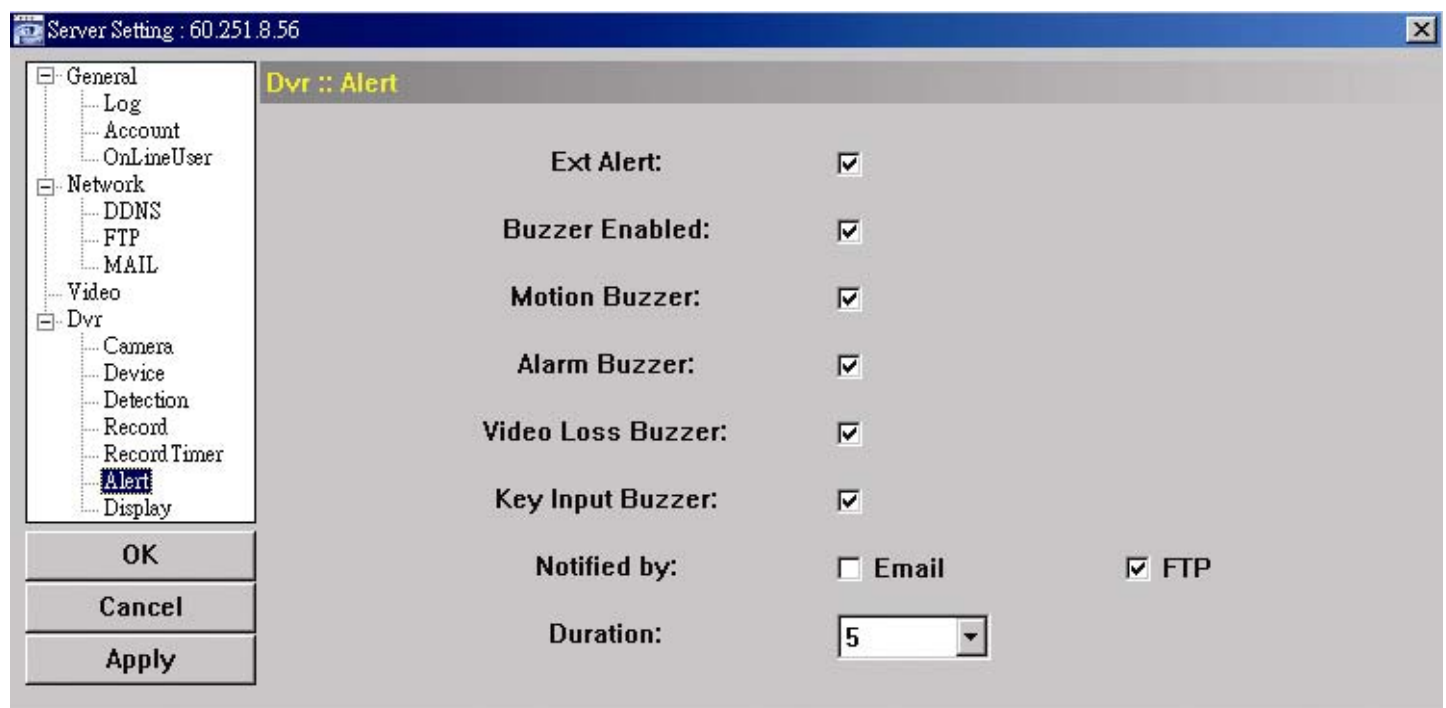
In this menu list, you can set the record schedule for normal recording or motion recording.



- Routine / Motion
Click "Routine" tab to select the time range for continuous recording, or "Motion" tab to select the time range within which the recording will be on when any movement is detected.
- Time Table
Find the day and time you want to enable the recording. Then, click to select the time interval(s). Each interval represents 30 minutes.
To enable the recording all the time, click "+"; to clear the record timer setting, click "-".

◆ Alert

In "Alert", you can set the DVR to beep for notification when there's any alert happened. Check the buzzer option you want, and set how long the beep sound will be lasted.

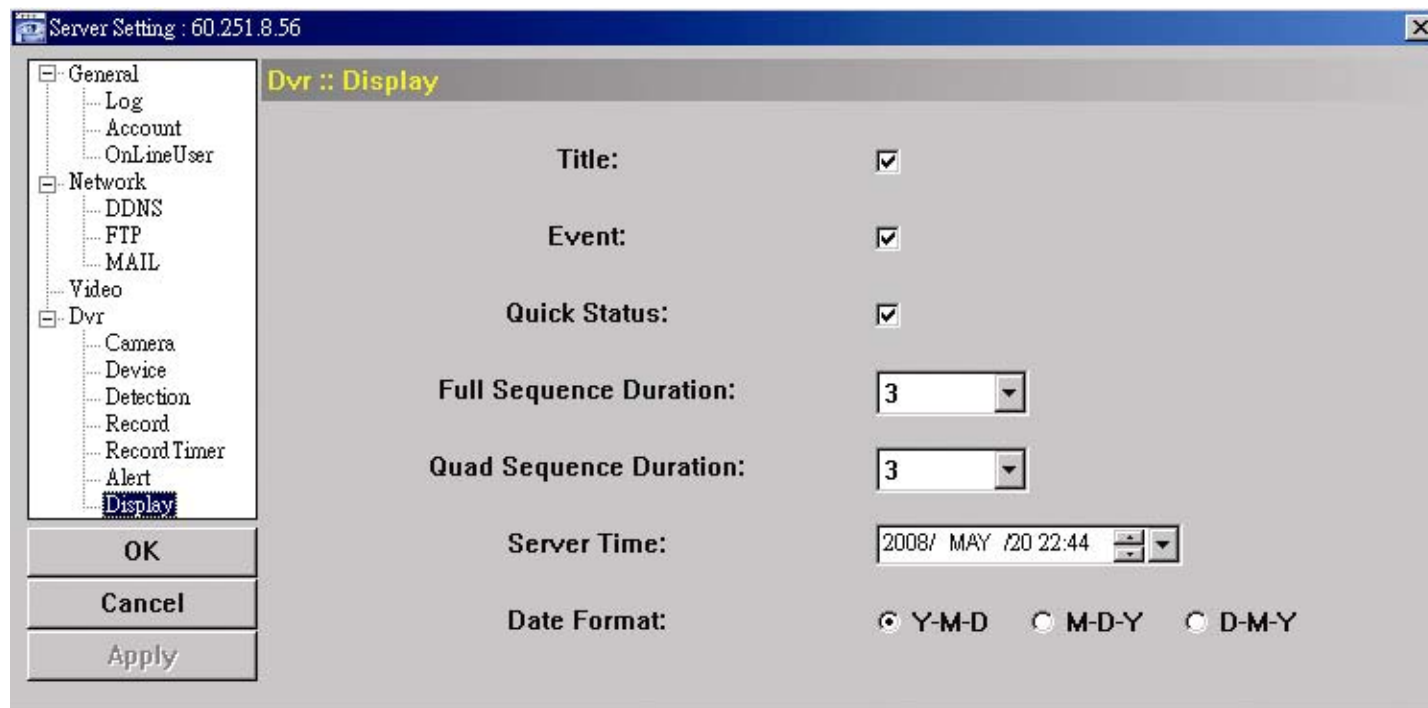


Function	Description
Ext Alert	Check this option to enable the external alert.
Buzzer Enabled	This option must be checked for "Motion Buzzer", "Alarm Buzzer" and "Video Loss Buzzer" to take effects.

Function	Description
Motion Buzzer / Alarm Buzzer / Video Loss Buzzer / Key Input Buzzer	Check one of these 4 options, and you will hear the beep sound when any movement is detected / the alarm is triggered / video loss occurs / any DVR key is pressed.
Notified by	Select the notification method when any event occurs: Email or FTP.
Duration	Set the alert and buzzers to beep for 5 / 10 / 20 / 40 seconds.

◆ Display

In “Display”, you can choose whether to display some text indication or icons, set the channel display switch time-out, set the DVR time remotely, and select the date format (Y-M-D / M-D-Y / D-M-Y).



Function	Description
Title	Select to display the channel title in the live view.
Event	Select to display the event symbol in the live view.
Quick Status	Select to display the quick status in the live view.
Full Sequence Duration / Quad Sequence Duration	Set the time-out in seconds (3 / 5 / 10 / 15) after which the channel display will be switched by one channel (Full Sequence Duration) / by 4 channels (Quad Sequence Duration)..
Server Time	Set the DVR time remotely.
Date Format	Choose the date display format appropriate to your location (Y-M-D, M-D-Y and D-M-Y).

➤ Tools



Click “” to upgrade the firmware version, multilingual OSD and boot display of your DVR (Update Server).

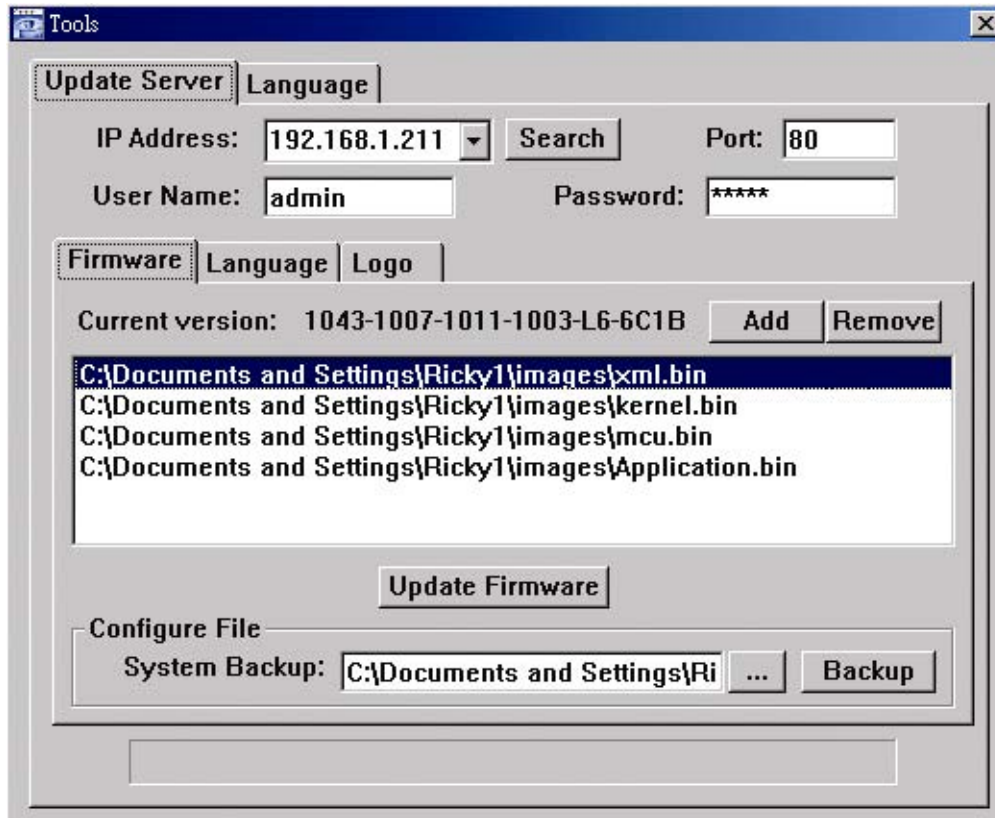
Note: You need to be a supervisor to operate this function. For details, please see “Account” at page 39.

◆ Update Server

3 update options are available for this function: Firmware, Language and Logo.

Before performing any update, finish the following settings first:

- 1) Choose the IP address of the DVR whose firmware needs to be updated from the drop-down list, or click “Search” to find.
- 2) Key in the user name, password and port number used to access your DVR remotely.
- 3) Select the update option (Firmware / Language / Logo) you want. For details, please see the description below.



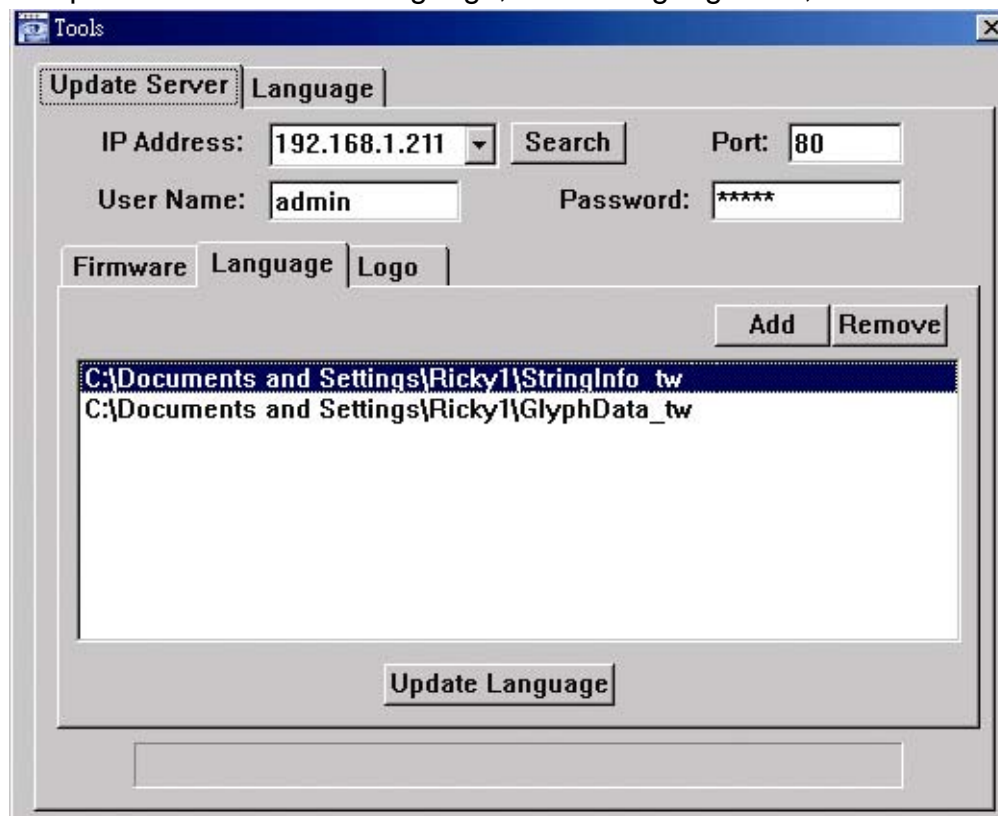
• **Firmware**

To upgrade your DVR firmware remotely, click “Firmware” tab, and follow the steps below:

- a). In the “Firmware” section, you will see the current firmware version. To upgrade the firmware version of your DVR, click “Add” to locate and select the firmware file. The file will be shown in the firmware list.
- b). If you want to backup your system before upgrading the firmware version of your DVR, select “System Backup” in the “Configure File” section, click “...” to specify the location for saving system backup, and click “Backup” to start the backup process.
- c). To start upgrading the DVR firmware, choose the file from the firmware list, and click “Update Firmware” to start the upgrade process.

• **Language**

To update the DVR OSD language, click “Language” tab, and follow the steps below:

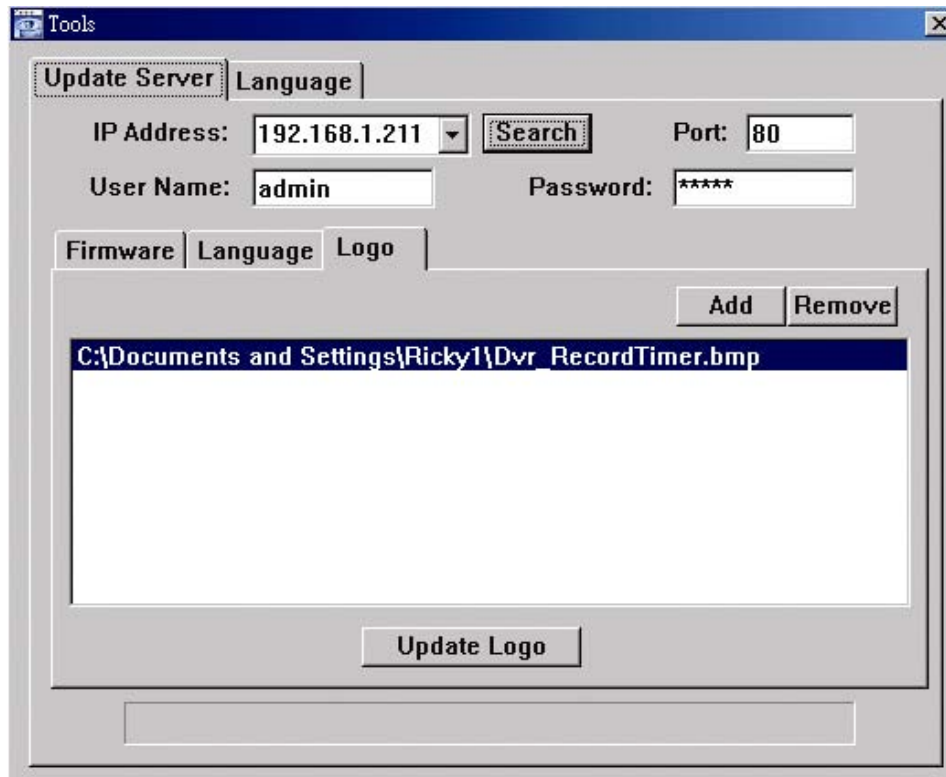


- a). Get the language files you want to update from your distributor.
- b) Click “Add” to locate and select the files needed. The files will be shown in the list. If you add the wrong file, select it and click “Remove”.

c). To start updating the OSD language, choose the files from the list, and click “Update Language” to start the upgrade process.

• **Logo**

To replace the logo shown in the DVR boot display, click “Logo” tab, and follow the steps below:



a). Prepare a graphic file in the “BMP” format for replacement.

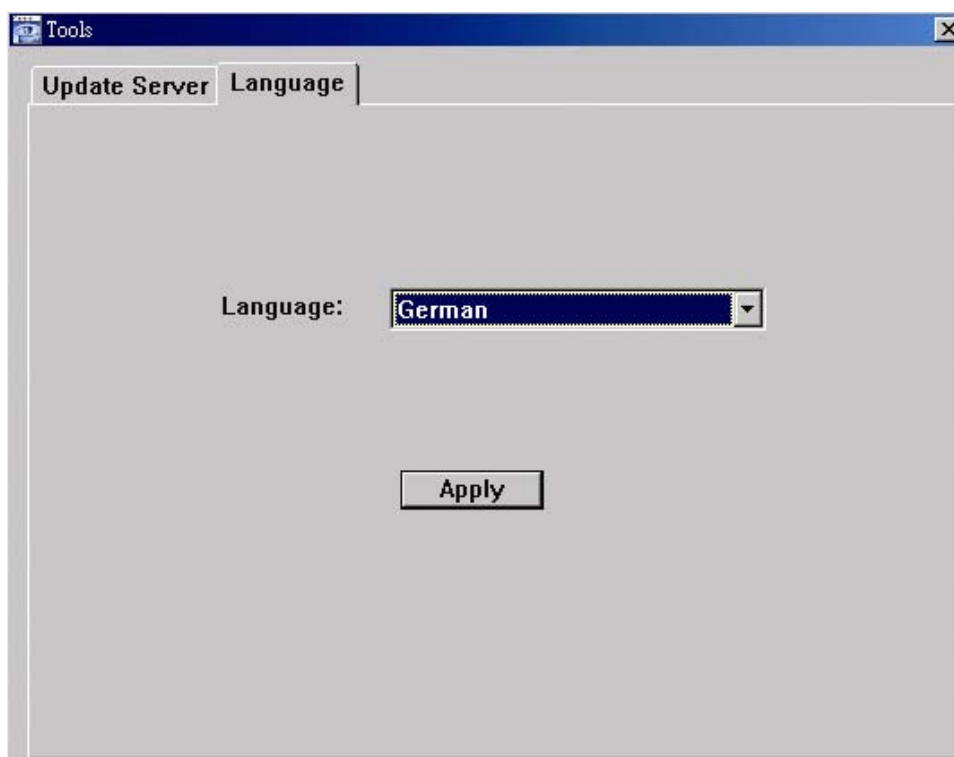
Note: Use the image software to set the image size to 320 * 240, and save the image as an 8-bit (64-color) image in the “BMP” format.

- b) Click “Add” to locate and select the graphic file. The file will be shown in the list. If you add the wrong file, select it and click “Remove”.
- c). To start updating the logo, choose the file from the list, and click “Update Logo” to start the upgrade process.


◆ **Language**

This software is available in English / Chinese / French / German / Portuguese / Spanish / Japanese. Select a language from the drop-down list, and press “Apply”. You will be prompted to restart the application for this change to take effect.

Note: The default language is English.

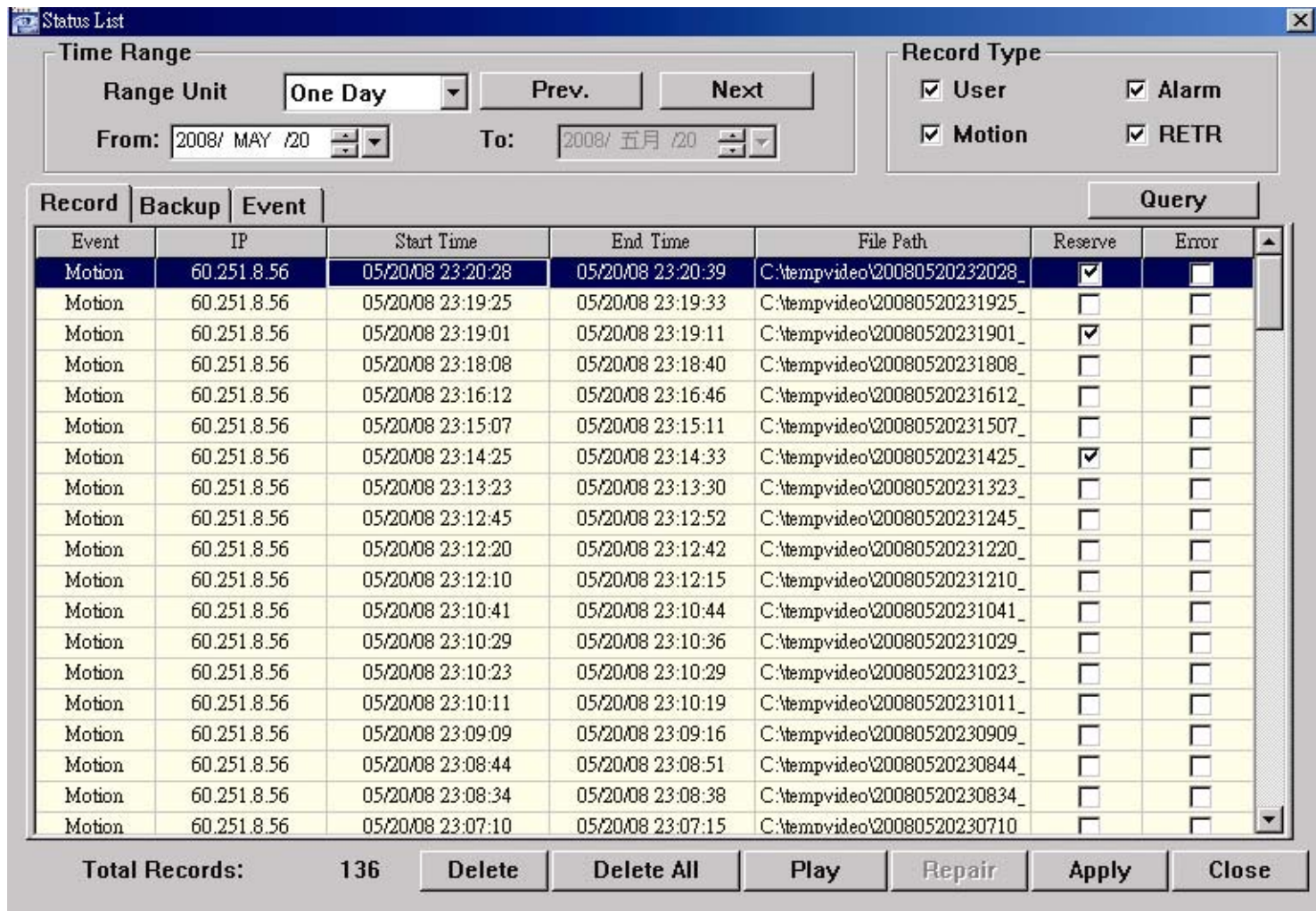


➤ **Status List**

Click  to view all the event and record logs (All), or search for the specific log(s) by date or by record type (Condition).


There are three types of logs: Record, Backup and Event. To playback the recorded data for a specific record or backup log, select the log, and double-click to start the video playback.

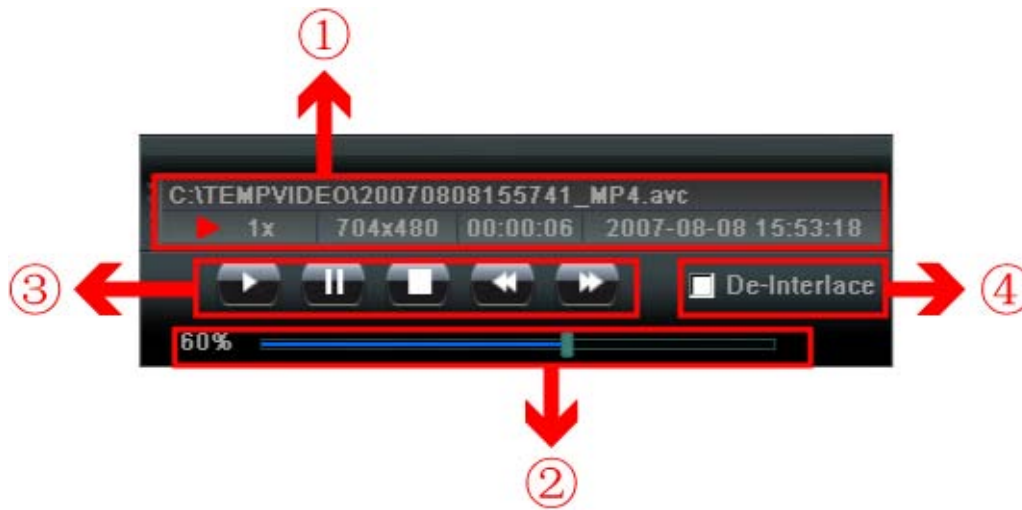
For detailed playback operation, please refer to “Playback” at page 50.



Button	Description
Time Range	To find the specific logs, set the time range (From / To), and the range unit here.
Record Type	Select the record type you want to search (User / Alarm / Motion / RETR).
Query	Click to start sorting the logs specified.
Delete / Delete All	Click “Delete” to remove the selected log(s), or click “Delete All” to clear the current log list. Tip: To select more logs all at once, press and hold the “Ctrl” key on your keyboard, and click to select the logs you want to remove.
Play	Click to play the selected record log. The playback panel will be shown for your further operation. For playback details, please see “Playback Screen” at page 50.
Repair	Click to fix the log with errors.
Close	Click “Close” to quit this window.

◆ **Playback Screen**

When you select and play the recorded data for a specific log in  (Log) → “Record” or “Backup”, you will immediately go into the playback mode, and the following playback panel appears. For the function of each part on the panel, please refer to the following description.



NO.	Function	Description
①	Playback / Download Info Display	This area shows the detailed playback / download information, such as the file name, record date and time, and the speed, etc.
②	Playback Progress Bar	This area shows the playback progress and the progress percentage.
③	Playback Operation	This area is enabled only when the playback is started. ◀ (Rewind) / ▶ (Forward) / ■ (Stop) / ⏸ (Pause) / ▶ (Play) Rewind / Forward Click once to get 2X fast rewind / forward, twice to get 4X, three times to get 8X, and four times to get 16X the highest.
④	De-Interlace	Click to reduce the vibration of the paused picture.

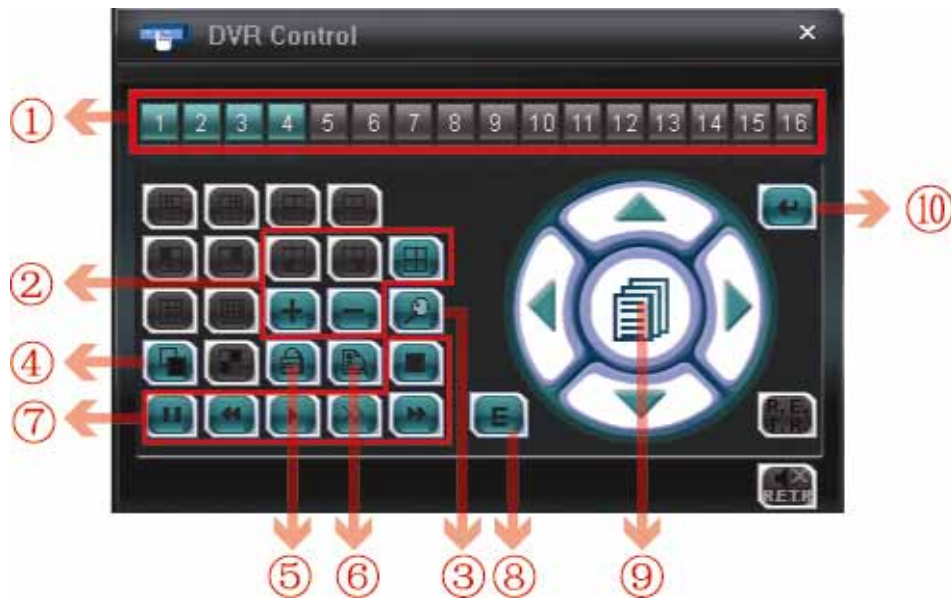
Information 

















To view the current network connection details, click this button.



DVR Control 

When the AP is connected to the DVR, this DVR control panel will be enabled, and you can control the DVR remotely. For the function of each button, please refer to the following description.



NO.	Function	Description
1	Channel Selection	Click the channel No. (CH1 ~ CH16) to see the live view of the selected channel.
2		Click the view mode you want to see. There are 10 modes for your choice:  Select to display the quad view. You can also click “+” or “-” to go to the previous / next channel of the selected channel.
3	Digital Zoom	Click  to zoom in / out the selected channel image.
4	Full Sequence	Full Sequence  Click to display each channel one by one, starting from CH1. When CH4 is displayed, it will start from CH1 again. To exit from this display mode, click any other channel display button.
5	Key Lock	Click  to enable the DVR key lock function. To unlock the DVR, key in your password, and click  .
6	Search	Click “  (Stop) /  (Pause) /  (Rewind) /  (Play) /  (Slow Playback) /  (Forward) Rewind / Forward Click once to get 4X fast rewind / forward, twice to get 8X, three times to get 16X, and four times to get 32X the highest. Slow Playback Click once to get 4X slow playback and twice to get 8X slow playback.
8	Event	Click “  /  : Move the cursor up / down to select the previous / next menu or sub-menu function, or change the setting.  /  : Move the cursor left / right to the previous / next sub-menu items.
10	Enter	Click “  <p>~52~</p>

8.2 IE Web Browser

You can view the live images only via IE web browser.

Note: The supported PC operation systems are Windows 2000 and Windows XP.

Step 1: Key in the IP address used by your DVR in the URL address box, such as 60.121.46.236, and press Enter. You will be prompted to enter the user name and password to access the DVR.

If the port number your DVR used is NOT 80, you need to key in the port number additionally. The format is **ipaddress:portnum**. For example, for IP address 60.121.46.236 and port No. 888, please key in "http://60.121.46.236:888" into the URL address box, and press "Enter".

Step 2: Enter the user name and password, the same as the ones used at AP login, and press "OK". You will see a similar screen as the following when the login information is correct.



NO.	Function	Description
1	Main Menu	<p>Channel Selection Select to view a single channel (Channel 1 / Channel 2 / Channel 3 / Channel 4), or a 4-cut view (4 Cut).</p> <p>Web Transmission Format Select the web transmission format: MPEG4 or Quick Time. QuickTime is Apple Inc.'s multimedia software. You need to have QuickTime installed in you operation system first. When "QuickTime" is selected, you will be promoted to enter the user name and password to access the server of the DVR.</p>
2	Network	View and set the network configuration as described in "Network" at page 40.
3	DVR	View and set the DVR color, motion detection, time, record timer, and alert. For details, please refer to "Color Setting" at page 34, "Detection" at page 44, "Record" at page 45, "Record Timer" at page 46, and "Alert" at page 46.
4	General	View and set the DVR language & accounts, check the server logs, and upgrade the DVR firmware. For details, please refer to "40" at page 39, "Logs" at page 39, and "Tools" at page 47.

8.3 QuickTime Player

You can also use the QuickTime player to remotely log into the DVR and check the live view only.

Note: QuickTime is Apple’s multimedia software. You need to have QuickTime installed in you operation system first, and you can access the DVR to see the live view.

If you have installed QuickTime, please skip Step 1.

Step 1: Go to Apple’s official website to download QuickTime. The website address is as follows:

<http://www.apple.com/quicktime/win.html>

- a). Click “Download” to go into the download page, and select to download the free player.
- b). Leave your Email address, and press “Free Download Now” to download the latest QuickTime player.
- c). When the download is completed, execute the “QuickTimeInstaller.exe” file, and follow the on-screen instructions to finish the installation procedure.

Step 2: Open your QuickTime player. Select “File” → “Open URL”, and key in the URL address.

The URL format is “rtsp://ipaddress/live/mpeg4” (For example, “rtsp://59.124.231.75/live/mpeg4”).

Click “OK” to continue.



Step 3: A pop-up window will appear and prompt you to enter the authentication information. Key in the user name and password for accessing your DVR. The user name and password are the same as the ones you use to log into the AP.

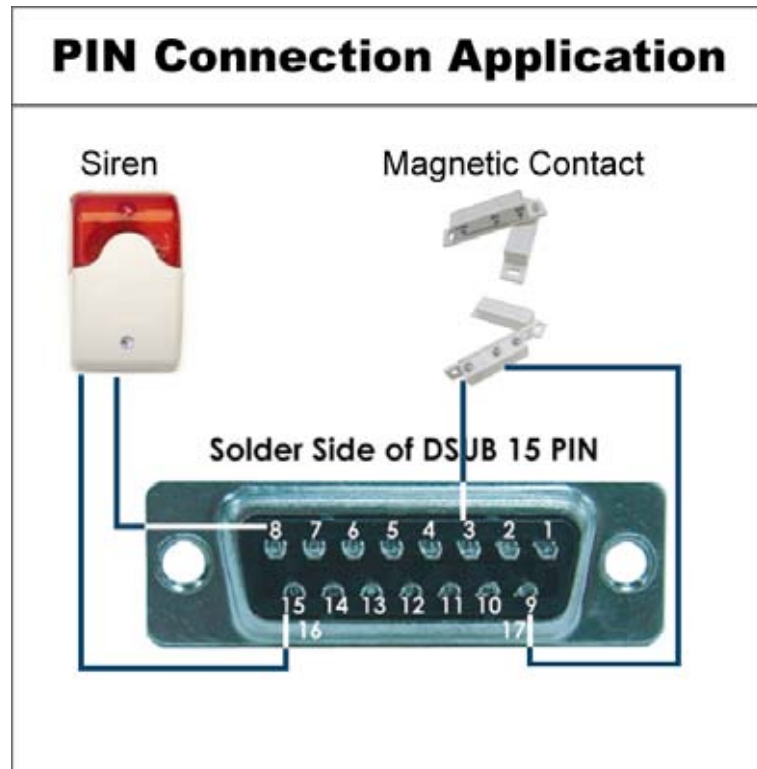
If the information is correct, press “OK” to go on. If not, press “Cancel” to quit the accessing.



Step 4: When the login is successful, you will see a similar screen as the following.



APPENDIX 1 PIN CONFIGURATION



Siren: When the DVR is triggered by alarm or motion, the COM connects with NO and the siren with strobe starts wailing and

Magnetic Contact: When the magnetic contact is opened, the alarm will be triggered and the recording is on.

PIN	FUNCTION	DESCRIPTION
1	PIN OFF	
2	PIN OFF	
3 ~ 6	ALARM INPUT	To connect the wire from ALARM INPUT (PIN 3 -- 6) to GND (PIN 9) connector, DVR will start recording and the buzzer will be on. * "MENU -> ADVANCE -> DETECTION -> DETECTION SETUP -> ALARM" is set to "Low": When the alarm input signal is " Low ", the unit starts to record and buzzer. * "MENU -> ADVANCE -> DETECTION -> DETECTION SETUP -> ALARM" is set to "High": When the alarm input signal is " High ", the unit starts to record and buzzer.
7	EXTERNAL ALARM NC	Under the normal operation, COM connects with NC and disconnects from NO. But when any alarm is triggered, COM disconnects with NC and connects with NO. Attention: The voltage restriction is under DC24V 1A.
8	EXTERNAL ALARM NO.	Under the normal operation, COM disconnects with NO. But when any alarm is triggered, COM connects with NO. Attention: The voltage restriction is under DC24V 1A.
9	GND	Signal GND
10	RS485-B	DVR can be controlled remotely by the keyboard of PC by using RS-485 serial communication signals.
11	RS485-A	DVR can be controlled remotely by the keyboard of PC by using RS-485 serial communication signals.
12 ~ 14	PIN OFF	
15	EXTERNAL ALARM COM	Under the normal operation, COM disconnects with NO. But when any alarm is triggered, COM connects with NO. Attention: The voltage restriction is under DC24V 1A.
16 ~ 17	GND	Earth GND