Lite H.264 DVR

User's Manual

Version 1.5

Caution and Preventive Tips

- Handle with care, do not drop the unit
- Mount the unit in an equipment rack or place it on a solid, stable surface
- Indoor use only. Do not place the unit in a humid, dusty, oily, or smoky site
- Do not place it in an area with poor ventilation or in an area close to fire or other sources of heat. Doing so may damage the unit as well as cause fire or an electric shock
- When cleaning is necessary, shut down the system and unplug the unit from the outlet before uncovering the top cover. Do not use liquid cleaners or aerosol cleaners. Use only a damp cloth for cleaning
- Always shut down the system prior connecting or disconnecting accessories, with the exception of USB devices

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⚠	**CAUTION** RISK OF ELECTRIC SHOCK DO NOT OPEN	⚡
	CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSIONNEL.	
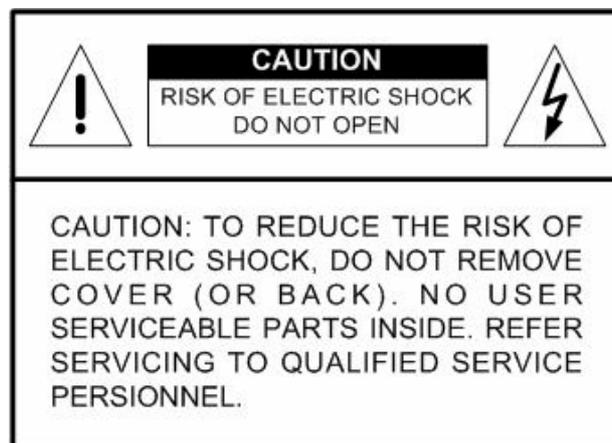
⚠   This symbol intends to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

⚡   This symbol intends to alert the user to the presence of unprotected "Dangerous Voltage" within the product's enclosure that may be strong enough to cause a risk of electric shock.

Important Information

Before proceeding, please read and observe all instructions and warnings in this manual. Retain this manual with the original bill of sale for future reference and, if necessary, warranty service. When unpacking your unit, check for missing or damaged items. If any item is missing, or if damage is evident, DO NOT INSTALL OR OPERATE THIS PRODUCT. Contact your dealer for assistance.

Rack Mounting

Consult with the supplier or manufacturer of your equipment rack for the proper hardware and procedure of mounting this product in a safe fashion. Avoid uneven loading or mechanical instability when rack-mounting units. Make sure that units are installed to get enough airflow for safe operation. The maximum temperature for rack-mounted units is 40 °C. Check product label for power supply requirements to assure that no overloading of supply circuits or over current protection occurs. Mains grounding must be reliable and uncompromised by any connections.

Table of Content

1.   Overview

Lite H.264 DVR is an integrated digital video recorder that combines the features of a time-lapse audio / video recorder, a multiplexer, and a video server to create a single security solution.

Its outstanding triplex operation enables users to view live video, search and playback any recorded video by date/time or event, and remotely monitor the unit via internet on PC, MEANWHILE the recording of the DVR unit is ongoing simultaneously.

Lite H.264 DVR is enhanced to provide H.264 compression mode. Moreover, a marvelous implementation is the brand-new experience of Graphical User Interface (GUI) that optimizes the monitoring controls of the unit.

Lite H.264 DVR is pre-installed with remote viewing and configuration software, which is a Web-browser plug-in allowing users to view live or recorded video images, and enables remote configuration. The remote software is stored in Lite H.264 DVR and deployed over a LAN, WAN or Internet connection to remote Windows-based computers. This simplifies the installation and maintenance of the software components so all remote users are using the same software coming from the unit.

2. System Setup

The notices and introduction on system installation will be described particularly in this chapter. Please follow the description to operate the unit.

In order to prevent the unit from data loss and system damage that caused by a sudden power fluctuation, use of an Uninterruptible Power Supply (UPS) is highly recommended

2.1 Position the DVR

First, note to position / mount the DVR in a proper place and be sure to power off the unit before making any connections. The placed location should avoid hindering or blocking the unit from airflow. Enough airflow is needed to protect the unit from overheating. The maximum allowable temperature of operating environment is 40°C.

The unit utilizes heat-conducting techniques to transfer internal heat to the case, especially to the bottom side of the unit.

⚠️ **NOTE:** Be sure the rubber feet are not removed, and always leave a space for air ventilation on the unit's bottom side.

2.2 Select Video Format

The DVR is designed to operate under either NTSC or PAL video formats. The switch is on the rear panel.

2.3   Connect Devices to the DVR

This section lists some important notices that should be read before making any connection to the DVR.

Connecting Required Devices

Before power up the unit, cameras and a monitor should be connected to the unit for basic operation. If needed, connect a call monitor for displaying full screen video of all installed cameras in sequence.

Connecting Short-term Device

If any short-term devices shall be installed to the DVR as parts of the unit system, such as USB ThumbDrive® or any USB devices, etc, make sure those devices are connected only after the unit is powered up. The reason is because the DVR can recognize the external devices only after the power-up process is done completely.

2.4   Rear Panel Connections

There are various connectors on the rear panel for the DVR installations. The following shows the detailed description of each connector.

Main Monitor (BNC/ VGA)

BNC and VGA output connectors are offered for connecting to a main monitor. The main monitor displays live image and playback recorded video in either full-screen or split-window format. VGA output connector is optional.
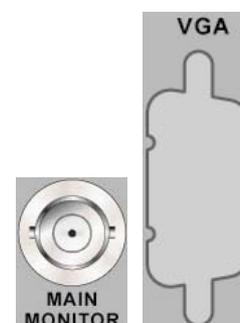
Call Monitor (8CH and 16CH models only)

The call monitor is used to display full screen video of all installed cameras in sequence. The BNC call monitor connector allows users to connect the DVR with an optional call monitor.

Video In

A group of BNC connectors is offered for video input streams from installed cameras. The number of connectors is equal to the number of channels.
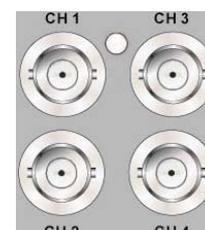
Alarm I/O & RS485

A D-Sub connector is provided to offer users the flexibility to connect the DVR to Alarm I/O and RS-485 devices. Refer to *Setup Guide* for detailed pin definitions.
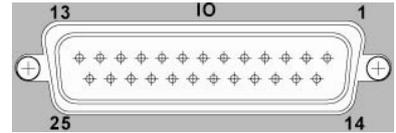
LAN Connector (RJ-45)

The DVR is capable of networking. Once the unit is connected to the LAN network, users can remotely access the unit through the remote software on a PC.
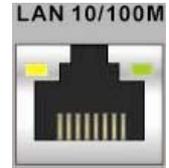
USB Connector (x1)

There is one USB port provided to allow users to connect a PS/2 mouse via a USB converter.

Power Jack

The DVR has a free voltage DC power connection jack. Please connect the power adapter shipped with the unit.

Audio In

Audio In connectors are offered for connecting audio source devices to the unit. 4CH models offer RCA connectors while 8CH and 16CH models offer a D-Sub connector.
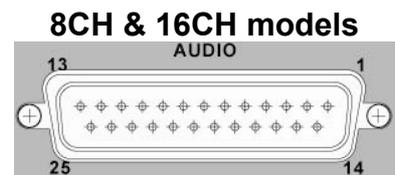
Audio Out – Main & Call

Main & Call Audio Out RCA connectors are provided for connecting the DVR to audio output devices (e.g. amplified speakers). "Main" will output audio from the main monitor, whereas "Call" will output audio form the call monitor.

⚠ **NOTE:** Call Audio Out RCA connector is only available for 8CH and 16CH models.

3. General System Setup

Before operating the DVR, some general configuration should be setup first. The following subsections will introduce function keys on the front panel and general configuration of the DVR.

The regular displayed OSD information and its displayed positions are shown as following figure. Title of the channel will be displayed on the top-left corner of the window, either in full screen mode or in multiple channel mode. The current operating mode, including Call mode, Dome Control mode, Playback mode, Freeze mode and Sequence mode, will be displayed on the bottom-left corner of the screen. The date/ time information will be display on the bottom-right corner of the screen. On the upper-right corner will show the authority level of login account. Under logout condition, the icon will show "N".

```
Ch1                                                N




►*1                              2008/05/09   PM04:31:22
```

3.1 Front Panel Introduction

The front panel controls enable users to control the unit and preset the programmable functions.

3.1.1 LED Definition

The LEDs on the front panel of the DVR are described as follow.

Power LED
The LED lights up when the correct power is connected to the unit.

REC LED
The LED blinks while the DVR is recording.

Alarm LED
The LED lights up when an alarm is triggered.

Network LED
The LED lights up when the DVR is connected to a network and blinks when the data is being transferred.

3.1.2 Function Keys

This section describes the functional keys on the front panel of the DVR. Refer to the *Setup Guide* for the graphical illustration of functional keys.

<u>CHANNEL</u>
- In both Live and Playback modes, press the CHANNEL key to view the corresponding video in full screen. The number of the CHANNEL keys corresponds to the number of cameras supported by the unit.
- In Dome Control mode, the key "1" is used to access the Set/Go preset menu; the key "2" is used to hide or display the hint screen.
- In OSD virtual keyboard, press keys 1~9 to input number 1~9, and press key 10 to input number 0.

<u>DOME</u>
- Press the key to enter dome control mode. Please refer to Section **<u>Dome Control</u>** for detailed controlling operation.
- In OSD virtual keyboard, press this key to go backspace.

<u>MODE</u>
Press repeatedly to select for wanted monitor display format. The available view modes includes: full-screen, 4-window (2×2), 9-window (3×3) and 16-window (4×4). Refer to Section **<u>View Modes</u>** for detailed information.

<u>SEQ (Sequence)</u>
Press to start automatic sequence display of video from all installed cameras.

<u>MENU</u>
Press this key to enter the OSD setup menu.

<u>COPY</u>
In Playback mode, press COPY to select the start and end time of the export video. Refer to Section **<u>Video Export</u>** for detailed information.

<u>CALL (8CH and 16CH models only)</u>
- In Live mode, press this button to enter call monitor control mode.
- In Dome Control mode, press CALL in association with ENTER to enter the OSD setup menu of the dome camera.
- In OSD virtual keyboard, press this key to input a period mark ".".

PLAY/STOP

Press this key to switch between live image and playback video.

⚠️ **NOTE:** According to record setting, part of the latest video cannot be played back because the video is still saved in the buffer.

FREEZE

- Press FREEZE while viewing live image, the live video will be frozen. The date / time information shown on the monitor will continue updating. Press FREEZE again to return to live mode.
- Press FREEZE while playing the recorded video, the playback video will be paused. Press LEFT / RIGHT to move the recorded video reverse / forward by single step. Press FREEZE again to continue playing video.

SEARCH

In both Playback and Live mode, press SEARCH to enter the Search menu for searching and playing back recorded video by date and time or events.

ESC

- Press to cancel or exit from certain mode or OSD setup menu without changing the settings made previously.
- If password protection has been enabled, press ESC for five seconds to lock up functions of certain keys, including **PLAY**, **MENU**, **SEARCH**, **DOME** and **CALL**. Once users lock up the functions of these keys, enter proper username and password to unlock.

⚠️ **NOTE:** Please go to the <System Setup> → <User Management> menu to enable or disable the password protection.

Direction Keys

- In Zoom mode, these keys function as Direction keys.
- In the OSD setup menu, the LEFT/ RIGHT keys are used to move the cursor to previous or next fields. To change the value in the selected field, press UP/ DOWN.

ENTER / ZOOM

- In OSD setup menu or selection interface, press this key to make the selection or save settings.
- In live full screen view mode, press this key to view a 2× zoom image; press it again to exit Zoom mode.

3.2   Entering OSD Setup Menu

The configuration of the DVR can be customized by entering the intuitive Graphical User Interface (GUI) OSD setup menu. Collaborating with a USB mouse, setting up the DVR can be easy as operating on a PC. Press MENU and input a valid username. There are two preset accounts: "admin" and "user". "admin" can be inputted via pressing the hot key MENU, while "user" can be inputted via pressing the hot key SEARCH. Move to <OK> and press ENTER to proceed.

```
                      Input Username


      A  B  C  D  E  F  G  H  I  J  K  L  M
      N  O  P  Q  R  S  T  U  V  W  X  Y  Z
      a  b  c  d  e  f  g  h  i  j  k  l  m
      n  o  p  q  r  s  t  u  v  w  x  y  z
      0  1  2  3  4  5  6  7  8  9  .  !  @
      #  −  _  ,  "  +  =  *
             ◄    ►    Backspace    Delete
                 Cancel    OK
```
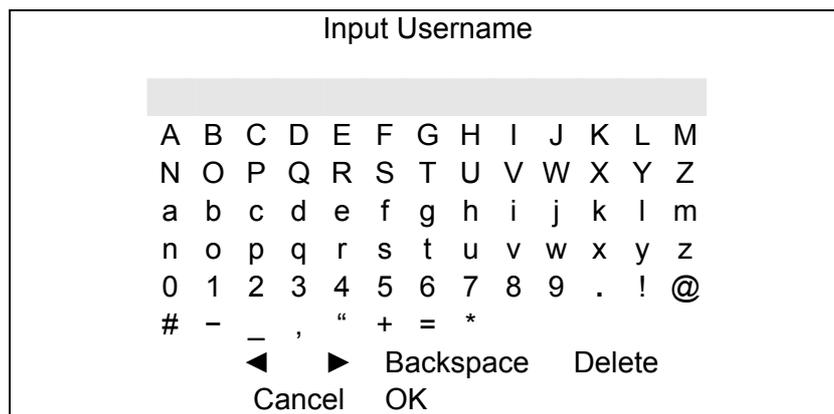
The next step is to enter a corresponding password. The preset password for "admin" is "1234", and the password "4321" is for "user".

```
                 Password Verification
                     _____
         Press Channel Keys To Enter Password
                    (4-8 Digits)
              Press ◄ Key To Delete
```

NOTE: It is strongly suggested to change the preset password to prevent unauthorized access to the unit.

An icon displayed at the upper-right corner of the screen will show the authority level of the account. Under logout condition, the icon will show "N". When an account is logged in, its authority level number (1~8) will be shown.

Before completely logout, other functions can also be accessed without having to login again. There are two ways to logout: manually logout by pressing ESC key at Live mode, or auto logout when keys are not pressed for 5 minutes at Live/ Menu mode.

3.2.1   User Management

The DVR provides the option to create up to seven sets of usernames and passwords with customized authority, excluding the preset "admin" account. From the Main Menu, select <System Setup> → <User Management> and the menu is as the following:

User Management	
Password Protection	ON
Account Setup	
Authority Setup	
Load Default Setting	No

Password Protection
Select <ON> to request for username and password for accessing functions listed in Authority Setup menu, or select <OFF> to allow free access.

Account Setup
Setup customized username, password, and authority level in this menu. The username is case sensitive. The authority level is ranked from level 1~8, and level 8 has highest authority. Alternatively, select <Disable> to suspend the account.

NOTE: The username and authority level of the preset "admin" account cannot be changed.

Authority Setup
Setup the allowed authority level for accessing the functions listed in this menu. The functions include: Playback/Search, Dome Control, Call Control, Export Data, Menu Access, System Setup, Monitor Setup, Camera Setup, Record Setup, Sequence Setup, Event Setup, Database Setup, Configuration and Shutdown. The authority level is ranked from level 1~8, and level 8 has highest authority. Alternatively, select <Disable> to allow free access.

NOTE: The "Menu Access" cannot be set to <Disable>.
When the account does not have authority to access certain functions, an error message will be displayed on the screen.

Load Default Setting
Select <Yes> to load the default setting.

3.3   Power Up / Shutdown the DVR

If the DVR must be shutdown for any reason, please use the proper shut down and power up procedures to avoid damaging the DVR.

Power Up the Unit

Simply plug in the power adapter that came with the package and the DVR will start to boot.

The color bar and system checking information will be shown on the monitor and then disappear when the unit has been completely powered up.

Restart / Shutdown the Unit

Press MENU and input the username and password that has sufficient authority to access the OSD setup menu. Select <Shutdown> in Main Menu and press ENTER to enter the Shutdown menu, which displays as follows.

Shutdown	
Power Off	Execute
Reboot	Execute

\<Power Off\>

Select this item to shut down the unit. Do not remove the power during shut down until the message "You can safely turn off DVR now!" displays.

\<Reboot\>

Select this item to reboot the unit. The color bar and system checking information are displayed on the monitor until the unit is completely restarted.

3.4　　　System Date / Time Setting

Users can set the current date, time and other OSD parameters in Date/Time menu (under System Setup menu). The login account should have authority to access the System Setup menu. In OSD setup menu, select <System Setup> and press ENTER, then select <Date/Time> to access the Date/Time menu; the menu displays as follows.

```
                        Date/Time
   Date                             2008/02/21
   Time                             PM10:39:26
   Time Zone                               OFF
   Date/Time Display                     1  Row
   Date Display Mode                     Y/M/D
   Time Display Mode                     12  HR
   Date/Time Order                   Date  First
   Daylight Saving Time Setup
   Network Time Protocol Setup
```

3.4.1　　Set Date / Time

Set Date / Time

Select <Date> / <Time> and press ENTER to adjust the settings. LEFT / RIGHT keys are used to move the cursor to previous or next field, ENTER is for selecting, and UP / DOWN are used to change the value in the selected field.

⚠️　**NOTE:** The new date / time setting applies to record new video. The date and time of previously recorded video will not be changed.

⚠️　**NOTE:** If time settings have to be changed in any case, it is strongly recommended to format the HDDs to avoid database corruption.

Date / Time Display

Users are allowed to set the time OSD displays in 1 or 2 rows. Use the UP / DOWN keys to change the setting.

Date Display Mode

This function allows users to set the OSD display type of the date. There are three options to select from: <Y/M/D>, <M/D/Y> or <D/M/Y>. "Y" represents "Year", "M" represents "Month" and "D" represents "Day".

Move to the item and press ENTER, the option starts blinking. Use UP / DOWN keys to change the setting.

Time Display Mode

Users can set the time format to <12 hour> or <24 hour>. Use the UP / DOWN keys to change the format.

Date / Time Order

The item is used to set the order of date / time display to <Date First> or <Time First>. Use UP / DOWN keys to change the setting.

3.4.2   Daylight Saving Time

Daylight Saving Time

The item is for those people who live in certain regions to observe Daylight Saving Time. Select <ON> to enable, or <OFF> to disable the function.

If the function is disabled, the DST Start / End time and DST Bias will be grayed out and cannot be accessed.

> **NOTE:** If this function is enabled, the date/ time information will be shown on the screen with a DST icon when playing back recorded video or searching video in the event list. "S" indicates summer time and "W" indicates wintertime.

DST Start / End

The items are used to program the daylight saving duration. Use LEFT / RIGHT keys to move the cursor to the next or previous field, UP / DOWN to change the settings in the selected field.

DST Bias

The item allows users to set the amount of time to move forward from the standard time for daylight saving time. The available options are in minutes.

3.4.3   Network Time Protocol Setup

Time Zone

Select <**Time Zone**> to enter the time zone. To find out the correct local time zone, please visit www.greenwichmeantime.com or refer to the following figure.
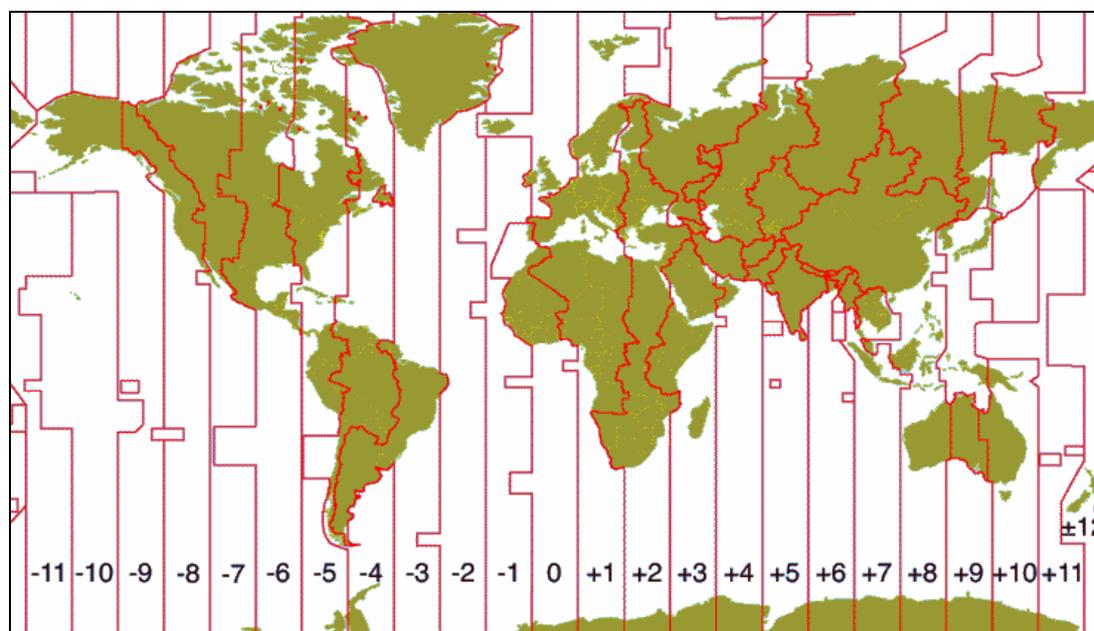
⚠️ **NOTE:** The <**Time Zone**> must be set to the correct local time zone or the <**Network Time Protocol Setup**> will not be accessible.

Network Time Protocol Setup

After entering the time zone, the <**Network Time Protocol Setup**> option will appear. Select the <**Network Time Protocol Setup**> to set the time server. The default time server is time.nist.gov, but the user can change it to other time servers when desired. A list of IP addresses of the time servers is listed below.

129.6.15.28	129.6.15.29	132.163.4.101
132.163.4.102	132.163.4.103	128.138.140.44
192.43.244.18	131.107.1.10	69.25.96.13
206.246.118.250	208.184.49.9	64.125.78.85
207.200.81.113	64.236.96.53	68.216.79.113

After the time server is set, select <**Manually Time Sync**> to sync the time. The time sync can also be updated periodically. Select <**Automatically Time Sync**>, and the time will be automatically synced once an hour.

3.5 Record Schedule / Quality Setting

The Record Setup menu allows users to set recording quality, recording schedules, and other recording parameters. Login with a proper account to access Record Setup menu. In the Main menu, move the cursor to <Record Setup> and press ENTER; the following menu is displayed.

```
                        Record Setup
     Record Mode Setup
     Schedule Setup
     Preset Config                          Best  Quality
     Per Camera Config
     ezRecord Setup
     Data Lifetime                              0  Days
     Circular Recording                            ON
     Audio Recording                               ON
     Purge Data
```

3.5.1 Schedule Setup

The Schedule Setup is used to set the day and night time, or weekend recording schedule. Select <Schedule Setup> from the Record Setup menu and press ENTER; the following menu is displayed.

```
                        Schedule Setup
     Day Time Start                         AM  06:00
     Day Time End                           PM  06:00
     Night Time Start                       PM  06:00
     Night Time End                         AM  06:00
     Weekend Schedule                              ON
     Weekend Start                          Fri   18:00
     Weekend End                            Mon  06:00
```

- Make appropriate changes of the start time of Day and Night Time using Direction keys.
- Press ENTER to confirm the settings or ESC to cancel.
- If a weekend record is required, select <ON> to enable the Weekend Schedule in advance and then set the Weekend Start/End time.
- Press ESC to return to previous page.

3.5.2 Preset Record Configuration

The <Preset Config> is used to select the preset recording quality and frame rate. In normal circumstances, it is strongly recommended to set the preset configuration as <Best Quality>. Below table shows the PPS and picture size under <Best Quality> in Half-D1 mode. Please refer to OSD Setup Manual, Section **Preset Record Configuration** for more detailed information.

Halfl-D1 mode (NTSC: 720x240@120PPS; PAL: 720x288@100PPS)			
Normal PPS	**Normal Size**	**Event PPS**	**Event Size**
7.5 NTSC (6.25 PAL)	10 KB / PIC	30 NTSC (25 PAL)	10 KB / PIC

3.5.3 Per Camera Configuration

This function is used to set the Day / Night / Weekend PPS (Picture per Second) and Quality for each channel. The Preset Configuration must be set to <OFF> for accessing these schedules. The menu is displayed as below (Record Mode: 720×240@120PPS in NTSC / 720×288@100PPS in PAL).

```
                  Per Camera Config
Cameral Select                              CH1
                      Day      Night    Weekend
Normal PPS            7.5      7.5       7.5
Normal Size          Mid      Mid       Mid
Event Max PPS        30       30        30
Event Size           Best     Best      Best
Event Active         Both     Both      Both
```

- Firstly, select a Camera for setting its record configuration. The image and recording settings from the selected camera will be displayed on the screen.
- Move the cursor using Direction keys and press ENTER to select an item.
- Change the value using UP / DOWN keys.
- Press ENTER to confirm the settings or ESC to abort.
- Press ESC to return to Record Setup menu.

Please note that the total normal PPS for all channels cannot exceed 120 NTSC (720×240@120PPS) / 100 PAL (720×288@100PPS). To increase one channel's PPS, you may have to reduce others' first. Event PPS is not restricted to this rule, since a smart event scheduler will handle the total PPS with a correct weighting.

3.5.4   Record Event Video Only

If the DVR shall start recording only when alarms are triggered, follow the steps below:

- Enter the OSD setup menu with correct password.
- In the OSD setup menu, select <Record Setup> menu. Move the cursor to the item <Preset Config>, and select <Event only>.

Refer to OSD Setup Manual, Section **Preset Record Configuration** for more detailed information.

3.5.5   ezRecord Setup

This item aims to ease the complicated record settings, and to make the setup much easier. Note that the item can be reached only when <ezRecord> is selected as the option for <Preset Config>.

Select <ezRecord Setup> from <Record Setup> and press ENTER, the sub-menu appears as below figure:

```
┌─────────────────────────────────────────────┐
│                 ezRecord Setup               │
│  How Many Days To Record            2 Days   │
│  Daytime Record                        Yes   │
│  Night Record                          Yes   │
│  Weekend Record                        Yes   │
│  ─────────────────  Record Info  ─────────   │
│  Average Normal PPS                    7.5   │
│  Average Normal Quality               Best   │
└─────────────────────────────────────────────┘
```

Follow these steps to Setup ezRecord:

- Select <How Many Days To Record> and press ENTER, then press UP/DOWN to choose an option. The average normal PPS & Quality will be adjusted automatically. The maximum of days depends of the size of the installed HDD. In other words, the larger the size of the HDD installed, the more days the unit can record.
- Move to <Daytime Record> and press ENTER. This item will determine whether the DVR will record during daytime. If yes, use UP/DOWN to select <Yes> as to enable daytime recording; or select <No> to disable.
- Repeat the same procedures through the 3rd and 4th item, respectively. Note that <Weekend Record> will be inaccessible if <Weekend Schedule> in <Schedule Setup> is set to <No>.

- Select <Average Normal PPS> and press ENTER, then press UP/DOWN to make a choice. The <How Many Days To Record> will be computed automatically.

- Select <Average Normal Quality> and press ENTER, then press UP/DOWN to make a choice. The <How Many Days To Record> will be computed automatically.

> ⚠ **NOTE:** The current number of connected cameras will affect the recording quality automatically calculated through the <ezRecord Setup>. Therefore, once the number of connected cameras is changed, the <ezRecord Setup> should be reset.

3.5.6   Data Lifetime

Data Lifetime indicates the duration that a video is saved and recallable in the HDD. Only those video recorded within Data Lifetime can be displayed on the screen and played back.   The video exceeded Data Lifetime will be hidden and cannot be retrieved for playback.

Press ENTER to select this item in Record Setup menu, and then use UP / DOWN keys to set the data lifetime. The value ranges from <1> to <365> days, or select <0> to disable the function.

> ⚠ **NOTE**: To play back a video exceeding the data lifetime, please extend the duration until the recording data / time of the video is included.

3.5.7   Circular Recording

Users can choose to record video in circular mode or in linear mode. If circular mode is selected, the DVR will stores new video into the HDD spaces while overwrite the oldest recorded video. Alternatively, if linear mode is selected, the DVR will stop recording when the HDD is full. In the meantime, the internal buzzer will start beeping and a message will be shown on the screen informing users that the disk is full.

From the Record Setup menu, move the cursor to <Circular Recording> and press ENTER, then select <ON> / <OFF> using UP / DOWN keys.

3.5.8   Audio Recording

When an audio source device is connected, it will be automatically set to <ON>, audio input is recorded and saved with the video. When no audio source device is connected, it will be automatically set to <OFF>.

3.5.9   Purge Data

This item is used to delete the Normal or Event recording video. In Record Setup menu, move the cursor to <Purge Data> and press ENTER; the Purge Data menu is displayed.

Purge Data	
Purge All Data	No
Purge All Event Data	No
Purge Event Before	2008/01/01
Start to Purge	No

Purge All Data

The item is used to delete all recorded video from the database. Set this item to <Yes using UP / DOWN keys, and start the deletion by setting <Start to Purge> to <Yes>.

Purge All Event Data

The item is used to delete all event video from database(s). Using UP / DOWN keys to select <Yes> and start the deletion by setting <Start to Purge> to <Yes>.

Purge Event Before

The item is used to delete event video before a specific date. Use LEFT / RIGHT keys to move the cursor to next or previous field, ENTER to select the item and UP / DOWN to adjust the value.

Start to Purge

After the video or data to be deleted are selected, set this item to <Yes> to start the deletion or choose <No> to cancel.

3.6 Event Setting

This menu allows users to determine the DVR's behavior in response to alarm events. In the Main menu, move the cursor to <Event Setup> and press ENTER. The following menu is displayed. Items in the Event Setup menu are described in the following subsections.

Event Setup	
Internal Buzzer	ON
Event Icon	ON
Email Notice	OFF
Email Attachment	OFF
Event Full Screen	None
Event Duration	20 Sec
Per Channel Config	

3.6.1 Internal Buzzer

This item allows users to enable / disable internal buzzer of the DVR. If <ON> is selected, the buzzer is activated in response to alarm events. If <OFF> is selected, the buzzer is not activated.

3.6.2 Event Icon

This item enables (ON) / disables (OFF) the display of event icons on the monitor when alarm events occur. The event icons are represented by a character according to the event types respectively. Refer to the following table for association of event icons and event types.

Event Icon	Event Type
A	Alarm in event
M	Motion detection event
L	Video loss event

3.6.3 Email Notice

The item enables (ON) / disables (OFF) the Email notification of an event. When an alarm event is triggered and <Email Notice> is enabled, an e-mail concerning the alarm event will be sent.

NOTE: In order to send an event notification e-mail successfully, ensure that the DVR is connecting to the internet.

3.6.4   Email Attachment

The function allows the DVR to send out a brief AVI video regarding the event. The number of the attached AVI video will be equivalent to the number of cameras connected to the DVR. For example, if the DVR has been connected with 8 cameras, then 8 videos will be attached to the notice email. The total size of the video will be about 2 MB. Select <ON> to enable this function; or <OFF> to disable it.

⚠️   **NOTE:** The video clips of the Email Attachment will ONLY be in *.avi format. Please download the Divx Player from www.divx.com to play the *.avi files.

3.6.5   Event Full Screen

This function allows the DVR to display the alarm channel in full screen size when an alarm is triggered. Select <None> to disable this function; select <Main> to display the alarm channel on Main Monitor when an alarm is triggered; select <Call> to display the alarm channel on Call Monitor; and select <Both> to display the alarm channel on both Main Monitor and Call Monitor.

3.6.6   Event Duration

This item determines the duration of the buzzer and Alarm Out relay function after an alarm is triggered. The available event duration range is from 5 second to 999 seconds.

3.6.7   Per Channel Config

This menu is used to configure the <Video Loss Detect>, ‹Motion Detect›, <Alarm In> and <Alarm Out> settings for each channel. The menu is displayed as below.

Per Channel Config	
Channel Select	CH1
Video Loss Detect	OFF
Motion Detect	OFF
Motion Detect Indicator	ON
Detection Config	
Alarm In	OFF
Alarm Out	ON

3.6.7.1   Channel Select

The item is used to select a desired channel for setting the parameters. Move the cursor to <Channel Select> and press ENTER, then select a channel using UP / DOWN keys. Press ENTER again to confirm the selection.

3.6.7.2   Video Loss Detect

This item allows users to enable or disable Video Loss as an alarm event. Select <ON> to enable Video Loss alarm events, or <OFF> to disable.

3.6.7.3   Motion Detect

This item allows users to enable or disable motion detection function of the DVR. Select <ON> to enable Motion Detect alarm events, or <OFF> to disable. If motion detection function is enabled, it is required to define motion detection parameters such as detection area and sensitivity settings in <Detection Config>.

3.6.7.4   Motion Detect Indicator

This item allows users to display/ hide the motion detection indicators. Select <ON> to display the indicators, or <OFF> to hide them.

3.6.7.5   Detection Configuration

If motion detection function is enabled, it is required to define the motion detection parameters such as detection area and sensitivity settings. Select a channel for setting the parameters, move the cursor to <Detection Config> and press ENTER. The Detection Configuration menu displays as follows.

Detection Config	
Detected Area Setup	
Sensitivity	88%
Block Threshold	4

Detected Area Setup

After selected this item, the detected area is displayed as follows. The detection area consists of 192 (16×12) detection grids.
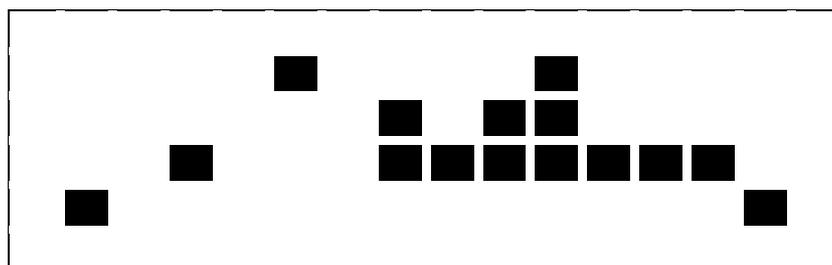
Use the Direction keys to move the cursor and press ENTER to select or de-select a grid. Press MODE to select all of the grids for detection; press MODE again to de-select all of the grids.

Sensitivity

This item is used to set the sensitivity of detection grids for the camera. A greater value indicates more sensitive motion detection. A motion alarm will be triggered once the amount of motion detected exceeds the Threshold value.

Move the cursor to <Sensitivity> and press ENTER, and then use UP/ DOWN keys to adjust the value. The value is increased by 4% increment.

Block Threshold

<Block Threshold> indicates the motion alarm triggered level; select from <1> to <16>. Selecting <1> means the DVR will trigger the alarm when one grid is detected; and selecting <16> means the DVR will trigger the alarm when 16 grids are detected. Move the cursor to <Block Threshold> and press ENTER, and then use UP / DOWN keys to adjust the value.

3.6.7.6   Alarm In

This item allows users to enable/ disable alarm input detection. According to users' application, select <N/O> (Normal Open) or <N/C> (Normal Close) to enable the alarm input detection, or select <OFF> to disable the detection.

If <N/C> is selected without installing any device, an alarm will be triggered and the Event Icon will always display on the monitor until the selection is changed to <N/O> or <OFF>, or when a device is installed.

3.6.7.7   Alarm Out

This item allows users to enable/ disable the alarm output on the selected channel to activate the relay. The signal can be a light or siren to caution an alarm event. Select <ON> to enable the alarm output, or <OFF> to disable.

4. Basic Operation

The DVR allows users to access some general operations through the front panel easily. The following sections introduce the general operations of the unit.

4.1 View Live / Playback Video

The general functions in live and playback mode are described in the following sections.

4.1.1 Viewing Modes

The DVR provides users versatile ways of viewing both live and recorded video. Following presents these view formats.

<u>Viewing in Full Screen</u>

Press any CHANNEL key directly to view the corresponding camera image in full screen format.

<u>Viewing in Multi-window</u>

Various multi-window view formats are offered for selection. To switch between available viewing formats, press MODE repeatedly.

The available view formats are illustrated as the following figure.
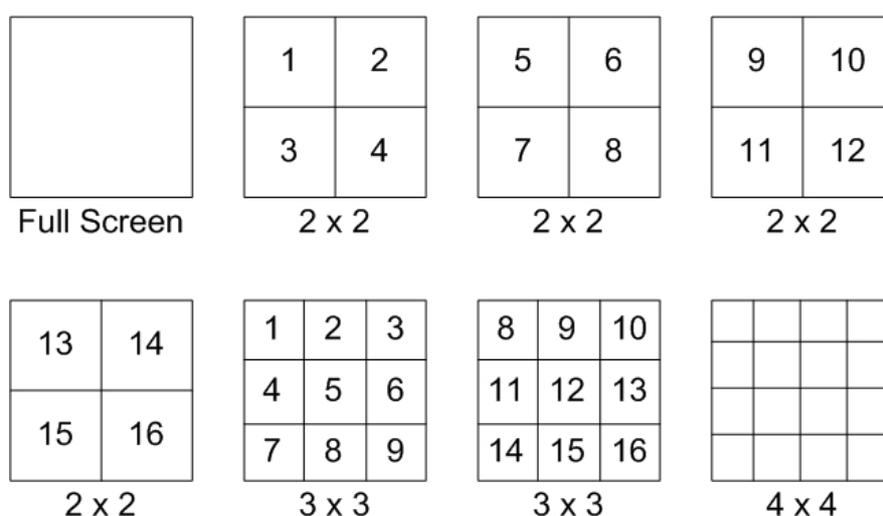
NOTE: 3x3 viewing mode is only available in 8-ch and 16-ch models, whereas 4x4 viewing mode is only available in 16-ch models.

4.1.2　　Digital Zoom

Users are able to view a 2× full screen in live mode. To view the 2× full screen, follow the steps.

- Press any CHANNEL key to view the corresponding camera in full screen.
- Press ENTER to view 2× zoomed screen of the selected camera.
- To view a specific area in 2× zoomed screen, use Direction keys to pan / tilt the zoomed screen.
- Either press ENTER again or ESC to leave the Zoom mode.

4.1.3　　View Live Cameras

Users are allowed to view live camera in versatile viewing modes, including full-screen, 2×2, 3x3 and 4×4. The general operation under live mode is described as follows.

Freeze Live Image

Press FREEZE while viewing live image, the image pauses but the date / time information does not, and the system clock continues running.

Press FREEZE to pause the live image; press FREEZE again to resume the live camera view.

4.1.4　　View Recorded Video

To view recorded video, users can press PLAY key directly. When press the PLAY key, the unit starts to continue playing back the recorded video from the suspended point of record. If it is the first time to use the PLAY key, the unit will playback from the very beginning of the record. Alternatively, users can select records from the Search menu to play specific video. Refer to section **Searching Recorded Video** for more information.

⚠ **NOTE:** When playing back videos with mass motion recorded in D1 mode (resolution=720x480), press SEQ key to switch on "deflicker function" to avoid gleaming of images. Press SEQ again to switch "deflicker off" and the image will return to real D1 resolution.

The Forward or Reverse speed indicator will be shown on the bottom-left corner of the screen, when in the playback mode.

The general operations in playback mode are described as follows.

Key Usage in Playback

The key usage is slightly different in playback mode. Following is the key usage found in playback mode.

- **LEFT** (Reverse Playback)

  The key is used to reverse the recorded video while the unit is playing back. Press the key repeatedly to increase the speed of reverse playback by 1×, 2×, 4×, 8×, 16×, or 32×.

- **RIGHT** (Forward Playback)

  The key is used to play the recorded video fast forward. Press the key repeatedly to increase the speed of forward playback by 1×, 2×, 4×, 8×, 16×, or 32×.

- **FREEZE**

  Press FREEZE to pause the playback video. When the recorded video is paused, press LEFT / RIGHT to resume playback video single step reverse / forward, respectively. Press FREEZE again to continue playing video.

- **PLAY**

  Press it to start playing back video, exit current mode, or stop playing back video and return to live mode.

Pause Playback and Single Step Forward

To pause and resume recorded video, follow these steps.

- Press any CHANNEL key to view the corresponding camera in full screen.
- Press FREEZE to pause the current playback image.
- Press LEFT / RIGHT Direction keys to move the video single step reverse / forward. Press and hold LEFT / RIGHT keys to repeatedly reverse / forward the video single step.
- Press FREEZE again to resume the playback operation.

4.2   Sequence

This section introduces the way to view sequence mode with both Main Monitor and Call Monitor, if connected. Sequence function can avoid manual backtracking and provides more flexibility while monitoring surveillance.

4.2.1   Sequence with Main Monitor

Automatic sequence function can be observed in any view mode. Select certain view format and press SEQ to toggle the automatic sequence; press ESC to stop sequencing. The figure below displays the 4-camera and 9-camera sequencing view modes.

4-camera:

9-camera:

(for 16ch models only)
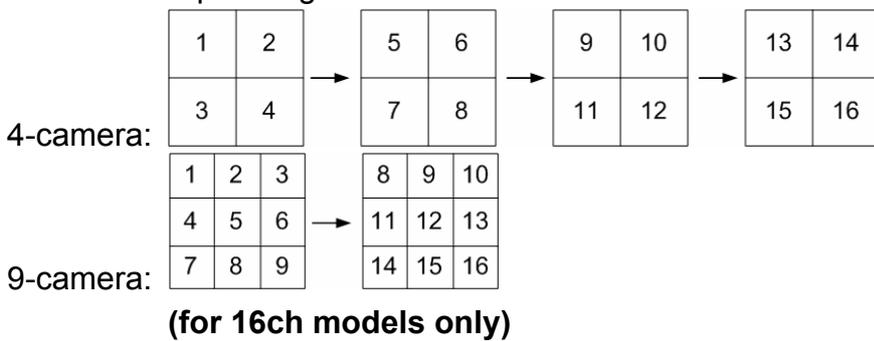
4.2.2   Sequence with Call Monitor(8CH & 16CH models only)

Users are allowed to use the DVR front panel to control a call monitor display without having to access the Main menu. Two viewing modes can be displayed on call monitor: Sequence display and Single camera display. To program the call monitor sequence, see OSD Setup Manual, Section **Sequence Setup**.

Follow the steps to control the call monitor.

- Press the CALL key on the front panel to enter Call Monitor Control mode. The message "Call Mode" will be shown on the bottom-left of the screen.

> Press 1-16 Key To Select Channel
> Press SEQ To Enable Sequence
> Call Mode

- Press CHANNEL key to display the associated camera on call monitor.
- Alternatively, press SEQ repeatedly to display the sequence of cameras previously programmed in Call Monitor Schedule menu.
- Press ESC to return the front panel to Main Monitor Control mode.

4.3 Search Recorded Video

The DVR is capable of searching and playing back recorded video by time or by events. To search by time, select a specific date and time of the wanted video or enter Calendar Search. To search by event, select channels to display the event list.

In live or playback mode, press SEARCH to enter the Search menu, shown as below.

```
                           Search
--------------------------Search By Time--------------------------
From:                                  2008/01/01   00:00:00
End:                                   2008/05/01   00:00:00
Select:                                2008/01/01   00:00:00
                                       Begin  Playback
                                       Calendar  Search
--------------------------Search By Event--------------------------
Select Channel:                     CH1   CH2   CH3   CH4
                                              Event  List
```

4.3.1 Search by Time

Follow the steps to search video by date and time.
- Press SEARCH to enter the Search menu.
- Move the cursor to "From" and press ENTER will start playing recorded video from the specified "From" time.
- Move the cursor to "End" and press ENTER will start playing recorded video from the specified "End" time.
- Move the cursor to "Select" and press LEFT/RIGHT keys to choose date/ time. Press ENTER and adjust the values by UP/DOWN keys.
- Press ENTER to confirm the settings or ESC to abort.
- Move the cursor to <Begin Playback> and press ENTER to start playing back the selected video.
- Press PLAY again to return to live video.

NOTE: If there is no available recorded video that matches the specified time and date, the unit starts playback from the next available video.

NOTE: The date/time information will be shown on the screen with a DST icon if the Daylight Saving Time function is enabled. "S" indicates summer time and "W" indicates winter time.

4.3.2   Calendar Search

Follow the steps below to search recorded video via Calendar Search.

- Press SEARCH button to enter the Search menu.
- Move the cursor to <Calendar Search> and press ENTER. A calendar will be shown as below.

```
                    Calendar Search
                   🗓  2009 / 03
          S    M    T    W    T    F    S
          1    2    3    4    5    6    7
          8    9   10   11   12   13   14
         15   16   17   18   19   20   21
         22   23   24   25   26   27   28
         29   30   31
    --------------------  ⌛  Search By Time  ---------------------
                                         ↓
    [orange time ruler bar]
    0         4         8         12        16        20        24
    Select:                        2009/03/13 PM06:03:02  ▶
```
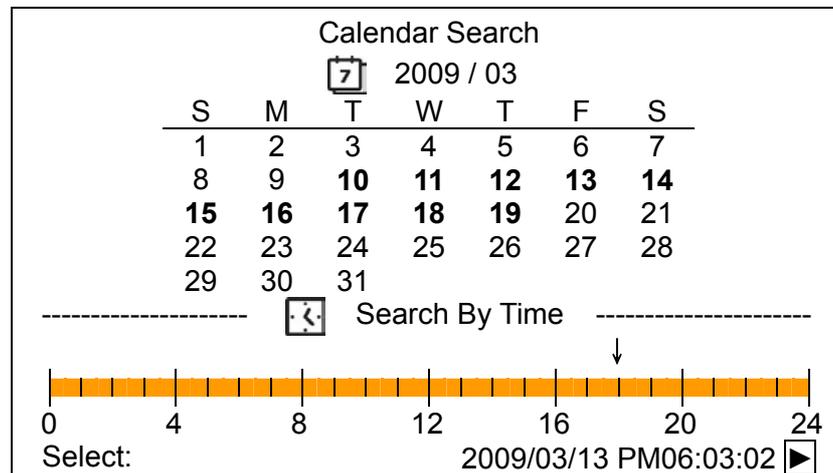
- Move the cursor to year/ month and press ENTER. Then press UP/DOWN keys to adjust the value and press ENTER again to confirm.
- Move the cursor to select any day shown in bold font, and a time ruler will be displayed.
- Press ENTER and an arrow will show up above the time ruler. Press LEFT/RIGHT keys to select a desired time. Alternatively, move the cursor to the time shown at the bottom. Press ENTER and adjust the values of hour/ minute/ second via UP/DOWN keys.
- Note that the time blocks highlighted in red represent events occurred.
- Move the cursor to the playback icon (▶) and press ENTER to start playing back the video.

4.3.3   Search by Event

"Event List" allows users to search wanted video by event. The Event List is displayed as below figure:

```
                         Event List
        First Page
           Date        Time        Ch.        Type
        2008/03/17    11:26:50      2         Motion
        2008/03/17    09:53:03      5         Alarm
        2008/03/16    16:14:42      3         Alarm
        2008/03/15    03:45:31      1         Motion
        2008/03/12    22:27:56      1         Alarm
        2008/03/12    10:09:29      7         Motion
        2008/03/11    12:18:20      6         Motion
        2008/03/10    05:16:00      4         Alarm
        2008/03/08    17:11:37      2         Motion
        2008/03/08    16:29:10      8         Motion
        2008/03/08    03:22:17      2         Alarm
```

The list displays events by date, time, triggered camera and alarm type. As some events are deleted, others are displayed. The latest recorded event video will be listed on the top.

Follow these steps to search event video through Event List:
- Press SEARCH to enter the Search menu.
- To search event video that has been recorded on a specific camera, use LEFT / RIGHT to move the cursor and press ENTER to select or de-select a channel.
- Move the cursor to <Event List> and press ENTER to list the event video of the selected channels. The Event List displays.
- To exit the event list, press ESC.

Follow the steps to playback video from Event List.
- Press and hold UP / DOWN to scroll through the Event List.
- Press ENTER to play back the selected event record.
- Press PLAY to return to live mode.

4.3.3   Search by Event

4.4 Video Export

The unit allows users to export wanted video to the built-in DVD+RW or an external device, such as a USB ThumbDrive, and the exported video will be saved as *.drv file.

If the video is to be exported to an external device, make sure the device is connected to the DVR unit and the port has been set appropriately for video export.

⚠️ **NOTE:** Once an external device is connected to the DVR unit, the device has priority over the built-in DVD+RW. That means the video will be exported to the external device instead of the built-in DVD+RW.

According to the size of video, the export may take about 10 minutes to 1 hour.

4.4.1 ezBurn Introduction

Built with the ezBurn technology, ezBurn function provides users the easier way to export desired video with built-in DVD+RW or to an external device, such as an USB ThumbDrive®.

TWO keys (SEARCH and COPY) and THREE touches are all what's needed for completing the export. The entire exporting process will be done through the front panel, without needing to enter the OSD setup menu.

The ezBurn exporting process is illustrated as below figure:
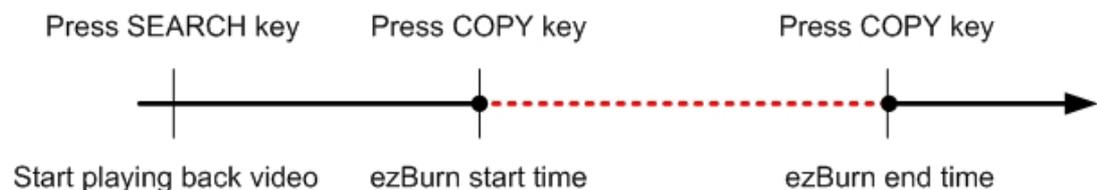
The entire process is described step by step in the following sections.

⚠️ **NOTE:** The file exported using ezBurn will be in .drv file format, and it can only be played using the remote player software.

4.4.2   Export Normal Video

To Export normal video to external device, follow these step:

- Press SEARCH and play wanted normal video by entering date and time. Note if the screen is showing in multiple channel mode, please make sure there is no window displaying in Live mode, or the export will not work.
- After entering playback mode, play the video and press COPY once to mark the starting point of the export video. The playback continues.
- Press COPY again to mark the ending point of the export video. Then the "ezBurn" window will display as below figure. The information shown on the window is "read only".

<div style="border:1px solid">

ezBurn confirmation

Selected Device: Built-in DVD+RW
All data on the disc will be erased.
Exported Required Size = 11 MB
Real Export Range:
From: 2008/06/07   AM10:41:13
To: 2008/06/07   AM10:41:21
Enter: YES   ESC: NO

</div>

- Press ENTER to start the export; or, press ESC to abort.
- If there is no any exportable device connected to the DVR unit, then a warning message will be shown on the screen, as below figure:

<div style="border:1px solid">

No exportable device detected.
Please install the target device/media
to the DVR.
Enter: Retry   ESC: Exit

</div>

4.4.3 Export Event Video

To export event video, follow these steps:

- Press SEARCH and play wanted event video. To play event video, refer to Section **Searching Recorded Video**.

- After entering the playback mode, press COPY. The "ezBurn" window will display as below figure. The information shown is "read only".

ezBurn confirmation
Selected Device: Built-in-DVD+RW
All data on the disc will be erased.
Exported Required Size = 11 MB
Export Event Info:

Data	Time	Ch	Type
2008/06/07	AM10:42:35	13	Motion

Enter: YES   ESC: NO

- If there is no any exportable device connected to the DVR unit, a warning message will be shown on the screen

- Press ENTER to start the export the whole event video to the connected device; or, press ESC to abort.

4.5 Dome Control

The DVR allows users to control a dome camera by the front panel. In Live mode, users can press CHANNEL key to display the desired dome camera in full screen. To enter Dome Control mode, press the DOME key and press channel key 2 to display the hint screen. To exit the Dome Control mode and return to live mode, press ESC or DOME.

In dome control mode, press CALL + ENTER to open the OSD setup menu of the dome camera. To traverse the menu, press CALL + UP/DOWN keys to move up/down, CALL + RIGHT/LEFT to change value or to move left/right, and CALL + ENTER to select or enter submenu.

4.5.1 Dome Connection

Follow the steps to install dome cameras.

- See *Setup Guide* for RS-485 port pin definition.

- Connect the R+, R- terminals on the dome camera to the D+, D- terminals on the RS-485 port by RS-485 cable respectively. Refer to the connection figure illustrated in *Setup Guide*.

4.5.2   Dome Protocol Setup

The Dome Protocol item lists the available dome protocols for communicating with dome cameras connected to the DVR. From the Main menu, select <Camera Setup> and press ENTER. The following menu is displayed.

```
                        Analog Camera
     Analog Camera Select                    CH1
     Dome Protocol                           None
     Dome ID                                 0
     Camera Title
     Covert                                  No
     Brightness                              0
     Contrast                                0
     Saturation                              0
     Hue                                     0
     Audio Association                       Yes
```

To configure dome protocol, select a camera first and set the communications protocol associated with dome camera using the Direction keys and ENTER.

⚠ **NOTE:** The settings become effective after saving the changes and exiting from the menu.

4.5.3   RS485 Setup

The DVR controls the domes via RS-485 communication protocol. The RS-485 parameters in the DVR must be set to the same parameters set in dome camera.

Users are allowed to change the RS-485 settings of the DVR. Select <System Setup> in Main menu, then select <RS485 Setup> from the System Setup menu and press ENTER. The following menu is displayed.

```
                        RS485 Setup
     Unit ID                                 224
     Baud Rate                               9600
     Bits                                    8
     Stop                                    1
     Parity                                  None
```

The ID number must match the ID address set by the dome. The Unit ID is in the range of 1 to 255. Note that there cannot be any two devices on the same bus given the same ID address, or a conflict may occur.

NOTE: The settings become effective after saving the changes and exiting from the menu.

4.5.4   Dome Controlling Keys

The functions of some keys in Dome Control mode are totally different from normal status function. Please refer to *Setup Guide* for the graphical illustration of functional keys.

Set / Go Preset
This key is used to enter the Dome Preset menu to set up certain position as a preset and go to the predetermined preset positions for viewing.

Toggle Hint Screen
This function is used to avoid viewing the dome parameter information while controlling dome cameras. Press this key to hide the screen. Press it again to redisplay the screen.

Iris Open
Use to open the Iris on the dome camera.

Focus Near
Use to focus the dome camera near.

Zoom In
Use to zoom in the dome camera. This function enables users to enlarge a certain area.

ESC
Use to leave Dome Control mode and return to live and full-screen viewing mode.

Auto / Enter

- In OSD setup menu interface, the key is used to make selection.
- In Dome Control mode, this key is used to activate automatic focus and iris function.

Iris Close

Use to close the Iris on the dome camera.

Focus Far

Use to focus the selected dome camera far.

Zoom Out

Use to zoom out the dome camera. This function enables users to shrink the current image and view a larger area.

Pan / Tilt

Use to pan and tilt dome camera.

4.5.5   Setting Preset Points

The DVR allows users to set preset positions. The amount of preset points depends on the dome manufacturer.

Follow the steps to set preset points.
- Press a Channel key to view the corresponding camera in full screen.
- Then press DOME to enter Dome Control mode. A Hint Screen shown as below figure displays on the screen.
- Press 2 to hide the Dome Control Hint Screen; press 2 again to toggle the Hint Screen.
- Use Direction keys to position the dome camera to desired position.

```
                    Hint Screen
          DOME / ESC: Exit
          MODE / PLAY: Iris Open / Close
          SEQ / FREEZE: Focus Near / Far
          MENU / SEARCH: Zoom In / Out
          ENTER: Auto Focus / Iris
          ◄▲▼►: Pan / Tilt
          CH1: Set / Go Preset
          CH2: Hint Screen On / Off


      Dome Control
```
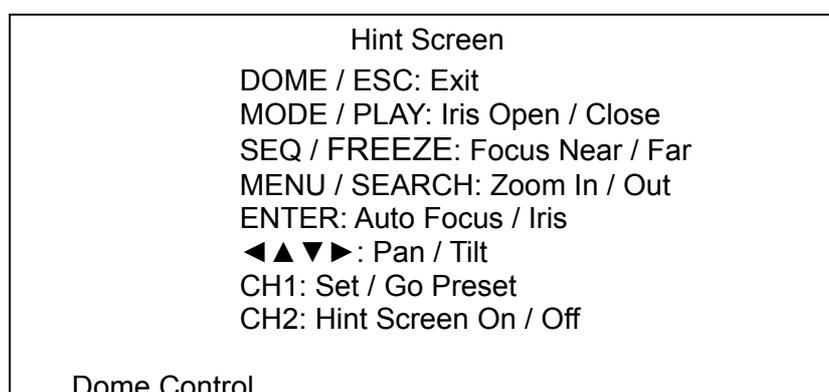
- Press 1 to access the Set/Go Preset function. The Dome Preset menu is displayed.

Dome Preset		
First Page		
Index	Set Preset	Go Preset
1	No	No
2	No	No
3	No	No
4	No	No
5	No	No
6	No	No
7	No	No

- Use UP / DOWN keys to select the desired preset number from the menu.
- Set the <Set Preset> of the selected preset number to <Yes>, and press ENTER to save the position. Now the preset is set and ready to be called.

4.5.6　Calling Preset Points

Follow the steps to call preset points.
- Press a Channel key to view the corresponding camera in full screen.
- Then press DOME to enter dome control mode. A Hint Screen shown as below figure will be displayed on the screen.
- Press 2 to hide the Dome Control Hint Screen; press 2 again to toggle the Hint Screen.
- Press 1 to access the Set/Go Preset function.

Dome Preset		
First Page		
Index	Set Preset	Go Preset
1	No	No
2	No	No
3	No	No
4	No	No
5	No	No
6	No	No
7	No	No

- Use UP / DOWN keys to select the desired preset number from the menu.
- Set the <Go Preset> of the selected preset number to <Yes>, and press ENTER to call the preset point.
- Now the selected dome camera rotates to the preset position automatically.

5. Remote Monitoring Software

The remote monitoring software is a remote browser-based software application designed to operate with the DVR products. Using the software, users are allowed to view live and recorded video, and configure the DVRs remotely via a LAN, WAN or Internet on a personal computer.

The connected PC will automatically download the remote monitoring software plug-ins from the DVR when the DVR is connected by entering its IP address in the address bar on the browser.

Due to the setting items are similar to those listed in the DVR's OSD setup menu, please refer to the sections above for setting configuration of the remote monitoring software.

The tasks can be performed with the remote monitoring software are listed below:

- Remote viewing of live/ recorded video
- Remote setup of the DVR
- Remote control of dome cameras
- Alarm notification from the DVR
- Up to three connections to one DVR using the remote monitoring software, including the preset "admin" and two other accounts

5.1 Remote Monitoring System Requirements

Items	Minimum Requirements
Personal Computer	**Minimum:** Intel® Pentium® M CPU 1.40GHz RAM 512 MB
	Recommended: Intel® Core™2 Quad CPU Q6600 @ 2.4GHZ RAM 2 GB
Hard Disk Drive	Requires 20 MB for software installation
Operating System	Windows XP, Windows Vista
Web Browser	Microsoft Internet Explorer version 6.0 or above
Monitor Resolution	Minimum 1024 x 768 with 16-bit color
Network Card	10Base-T (10 Mbps) or 100Base-TX (100 Mbps) operation; must match the network configuration

5.2 Installation of Software

Refer to the following description to install the remote monitoring software.

5.2.1 Change Internet Settings

The PC operating with the remote monitoring software should be set to accept ActiveX plug-ins. Please follow the steps to set the Internet security settings appropriately.

- Before operating the remote monitoring software, please check the IP address of the DVR. To check the IP address, press MENU key on the unit and enter password to access OSD setup menu. Select <System Setup>, <Network Setup>, then <LAN Setup> to check the IP.
- Start the IE; it can be started either by clicking on the desktop icon, or by using the Start menu to access it.

> ⚠ **NOTE:** Windows IE provides the ActiveX component that is required when using the remote monitoring software.

- Select <Tools> from the main menu of the browser, then <Internet Options>, and then click the <Security> tab.
- Select <Trusted sites> and click <Sites> to specify its security setting.
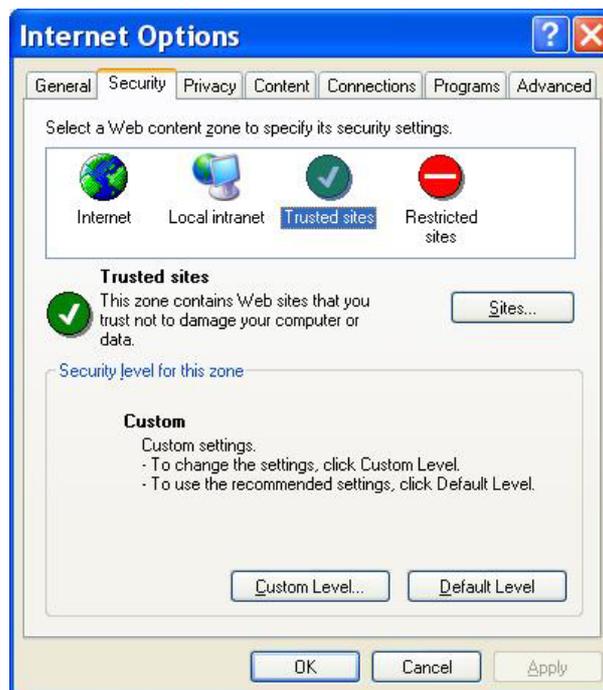
- Uncheck "Require server verification (https:) for all sites in this zone". Type the IP address of the unit in field and click <Add> to add this web site to the zone.
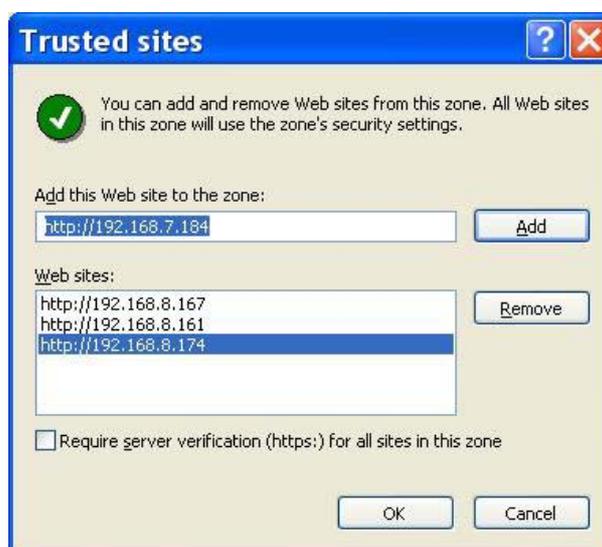
- Click <OK> to confirm the setting and close Trusted sites dialog.
- In the Security Level area, click <Custom Level>. The Security Settings screen is displayed.
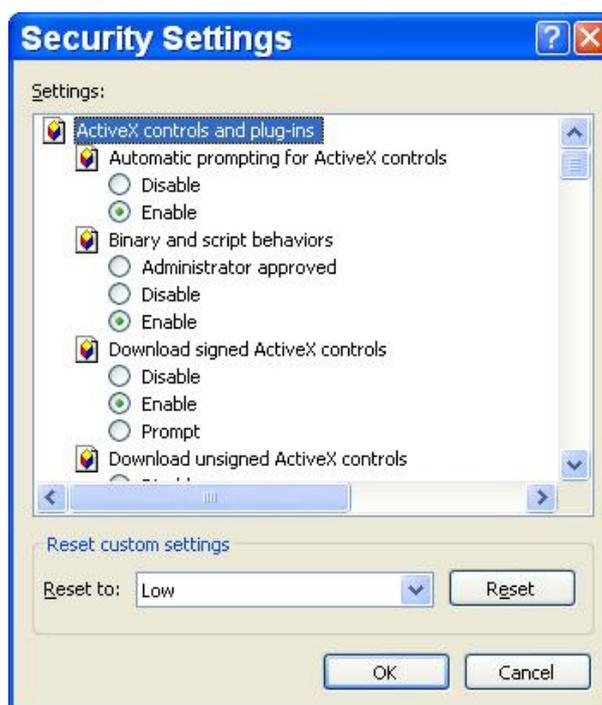
- Under <ActiveX controls and plug-ins>, set all items to <Enable> or <Prompt>.
- Click <OK> to apply the setting and close the <Security Settings> screen.
- Click <OK> to close Internet Options dialog.

Now the installation can continue to the next step.

5.2.2   Install the Remote Monitoring Software

Start the browser to initiate the installation of the remote monitoring software on the PC. The IP address of the DVR can be saved as a Favorites item in the web browser to enable easy access in the future.

- Start the IE; it can be started either by clicking on the desktop icon, or by using the Start menu to access it.
- Enter the IP address of the DVR in the address bar at the top of the browser.
- The ActiveX controls and plug-ins dialog will show twice for confirmation; click <Yes> to accept ActiveX plug-ins. The remote monitoring software plug-ins will be downloaded and installed on the PC automatically when the connection is successfully made.

> ⚠ **NOTE:** Do not enter any leading "0" characters in the address, for example, "192.068.080.006" should be entered as "192.68.80.6". If the default trigger port 80 is changed into another one, take port 81 for example, the IP address should be entered as "192.68.80.6:81".

- A version check starts to verify whether the remote monitoring software was installed already, and also check if the version is the same as that stored in that particular DVR. This process may take up to 30 seconds.
- When the software is completely downloaded and installed, the Login Screen is now displayed.

5.2.2.1   Login / Logout

Login using the same accounts setup in the DVR. The authority is also the same as setup in the DVR.

One preset account "admin" and up to two other accounts can access a DVR at the same time. Nevertheless, if the "admin" account is currently accessing the unit's OSD setup menu via front panel of the unit, then the "admin" account at the remote monitoring site cannot change the settings at the same time. The "admin" account of the DVR has priority.

The following steps demonstrate procedures to view video from remote unit:

- Start the remote monitoring software by entering the IP Address of the DVR in the Address bar of the browser. Alternatively, click on the Favorite entry for the unit (if the IP address of the unit has been set).
- Enter the Username and password. The login username and password can be saved to ease future login. The default username and password is **admin** / **1234**.
- Click <OK> to login to the DVR. The process may take a few seconds.
- If the connection is made successfully, the main window will display live video of the attached cameras.

If the IE browser is closed, the remote system is logout and disconnected from the DVR at the same time.

5.2.2.2   Software Upgrades

If a new version of the remote monitoring software is available on the DVR, upgrade will be prompted while accessing the unit. Follow the steps to upgrade the software.

- The message as the above figure will be prompted. Click <Yes> to accept version upgrade.
- Start the IE again and enter the IP address of the DVR in the Address bar of the browser; or if the unit address is set as a Favorite site, click the Favorites entry for the unit.
- When the software is completely downloaded and installed, the Login Screen will be displayed.

5.3   Basic Operation

When a DVR is successfully connected, the main window of the remote monitoring software will be displayed. Please refer to the **Setup Guide** for the graphical illustration of functional items.

The functions on the remote monitoring software will be described in the following sections.

5.3.1   View Live Video

View live video from the cameras attached to the DVR by clicking <Live> button on the main window toolbar. Choose desired display mode – full-screen, 2x2 windows, 3x3 windows, and 4x4 windows – after the live images of the DVR are displayed on the main window. When a dome camera is connected and viewed in single channel full-screen mode, the dome camera control operation can be accessed. To choose desired display mode and to operate dome camera control, refer to the following sections.

5.3.1.1 Select Display Mode

Choose the number of windows to be displayed on the main window. Click one of the display buttons in MODE section. Available selections are 4, 9 and 16 camera displays. To view certain window in full screen, either double-click on the wanted window, or click on the corresponding CAMERA button.

5.3.1.2 Operating Cameras with Dome Control

The remote monitoring software allows users to control and configure a dome camera remotely.

Click on any CAMERA button displayed with a dome icon to view the camera in full screen. The Dome Control Panel will be displayed on the main window. The items on the dome control panel are described as follows.

Set Preset (•)

Set Preset is used to set up preset positions. The remote monitoring software allows its user to set up to 255 preset positions with DynaColor, American Dynamics, Fastrax, JVC, Panasonic (C & N), and Pelco (Pelco P & Pelco D) domes.

Use Direction buttons to move dome camera to an appropriate position, and then click the button and choose wanted number from the pull-down list. The preset position is named as the selected number.

Go Preset (•←)

Go Preset is used to call the camera preset point, which was set up with the set preset point function. Click and choose a number to call the preset point for viewing.

Auto Focus (A.F.)

Click on it and the focus of the camera will be automatically adjusted to show a clearer image.

Dome ID (ID)

Click for changing the dome ID and protocol. Proper authority is required to access this function.

Focus +/−

Use to adjust the camera lens to focus on objects for a clear view. Click on <Focus +> to focus near or <Focus −> to focus far.

Iris +/−

This item is used to open and close the iris to let more or less light into the camera. Click on <Iris +> to open iris or <Iris −> to close iris.

Zoom +/−

Users are allowed to zoom-in or zoom-out using the adjusting buttons. Zoom-in to enlarge a certain area and zoom-out to view more area.

Direction Button

This button is used to pan and/or tilt the dome camera. Click the arrows in the directions to be viewed.

5.3.2   Instant Recording

The Instant Recording function allows users to record video quickly to the PC.

⚠ **NOTE:** The Audio function is set to OFF as the default setting.

5.3.2.1   Record Video Instantly

Follow the steps to start recording instantly:

- Click on the <Instant Recording> button.
- Select the destination folder to save the video.
- Click on the button again to stop recording.

⚠ **NOTE:** The instant recording video will be saved as *.drv file.

5.3.2.2   Playback Instant Recorded Video

Follow the steps to playback a video recorded by "Instant Recording".

- Click <Play> on main window toolbar and click <Local Playback> tab.
- Click <Open> to choose a recorded file.
- Click <OK> to start playing the recorded video.

5.3.3   Playback Video

The remote monitoring software allows users to view recorded video either from the DVR, or from the hard disk drive of the PC

To access the Playback screen, click <Play> button on the main window toolbar. There are three tabs in the Playback screen: <Remote Playback>, <Local Playback>, and <Verify> tabs. <Remote Playback> allows users to play back from the DVR. <Local Playback> enables users to playback a recorded video file stored on the hard disk drive of the PC. <Verify> is provided for users to authenticate if the exported video is altered.

The DVR continues recording while playing back recorded video on the PC, either remote playback or local playback.

5.3.3.1   Playback Remote Video

To view remote video, click <Play> on the main window toolbar, and then <Remote Playback> tab. The <Remote Playback> screen will be displayed.

The <From> and <To> in the <Available Record Video> display the date and time from which recorded video is available for playback.

To playback remote video segments, follow these steps:
- Choose <Playback> in <Select> field for playback recorded video.
- In <Start> field, users can change the date and time either by typing desired numbers directly or using the arrow buttons.

    To type directly:
    Click on day, month and year of date field respectively, and type the desired numbers directly. Follow above steps to adjust the hour, minute and second of time field.

    To use the arrow buttons:
    Click on the arrow button next to the date field to display the calendar; then click the left and right arrow at the top of the calendar to change the date. Use up and down arrow next to the time field to change to the wanted time.

- The other way to select date and time is by moving the blue sliding bar.
- Click <OK> to start the playback, or click <Close> to abort.

- The other option <Download (.DRV)> in <Select> field enables users to download the video segment of selected date and time to the PC. The selection of time duration is the same as described above. Files downloaded will be in *.drv format.

5.3.3.2   Playback Local *.drv Files

The <Local Playback> tab allows users to playback *.drv video files stored in the PC's hard drive.

Follow below steps to playback a downloaded *.drv file with the remote monitoring software.

- Click <Open> and the file selection screen is displayed.
- Select the *.drv video file for playback and click <OK>.
- Click <OK> in the <Local Playback> Screen to start the playback, or click <Cancel> to abort.
- View the video playback using the Playback controls.
- To end the playback, click <Live> to return to live video.

5.3.3.3   Playback Controls

When the local or remote video is being played, the remote monitoring software is in Playback Mode. The playback controls toolbar will emerge on the main window toolbar. The Playback controls and indicators are described as below.

Icon	Name	Description
◁◁	**Fast Backward / Step Backward**	1. Click to play the recorded video in backward direction. Click repeatedly to select the backward playback speed: $1\times$, $2\times$, $4\times$, $8\times$, $16\times$, or $32\times$. 2. When playback is paused, click repeatedly to move backward step-by-step.
▷ / ❙❙	**Play / Pause**	1. While playing, click to pause the playback. 2. When paused, click to resume the playback.
▷▷	**Fast Forward / Step Forward**	1. Click to play the recorded video in forward direction. Click repeatedly to select the forward playback speed: $1\times$, $2\times$, $4\times$, $8\times$, $16\times$, or $32\times$. 2. When playback is paused, click repeatedly to move forward step-by-step.

5.3.4   Verify Digital Signature

The digital signature aims to authenticate a video file exported from the unit. Follow the description to verify the digital signature.

- Click <Play> on the main window toolbar.
- Click <Verify> tab to display the Verify window.
- Click <Browse> to select the *.gpg, *.avi, *.sig files respectively, which belong to the exported video to be authenticated.
- Click <Verify> to start verifying digital signature.
- The result of verify shows in the <Status Log> field. It returns a GOOD or BAD signature result. A GOOD signature indicates the exported clip has not been altered.

5.3.5   Search from Event List

Click SEARCH, the Event List appears. The List contains information about the alarm events that the unit recorded and saved. Up to 1024 events can be listed in the Event List.

The Event List displays each event by its number, the date and time of the event, the type of the event (including Alarm In, Motion Detection, Video Loss, and Over Speed), and the camera channel where the event occurred.

To view an event video, follow these steps:
- Click SEARCH button positioned in the main window toolbar. The Event List appears.
- Scroll through the Event List and highlight the interested events.
- Double-click on the desired event to view the event video.

5.3.6   Take a Snapshot

Snapshot is a simple screen capture tool. When users click on the SNAPSHOT button, it will capture the screenshot of the window that is currently showing on the screen. Each click captures one screenshot to be saved as a JPEG file on the desktop. The snapshot file will be named as "Snapshot-*".

5.3.7   Health Status

This function verifies the HDD status of the DVR. The information items in the status chart are described as below.

Device Name

This item shows the model name of the HDD.

Int./Ext.

This item indicates whether the HDD is an internal or external device.

Total Size

This item indicates the total size of the HDD.

State

This item indicates whether the HDD is active or non-active.

Temperature

This information item is currently not available.

5.3.8   Remote Monitoring Software Trouble Shooting Guide

What happened if the server requests to upgrade the software every time the DVR is connected? If the following screen displays repeatedly, please follow the steps to delete the temporary internet files.

- Select <Tools> from the main menu of the web browser, then <Internet Options>, and then click the <General> tab.
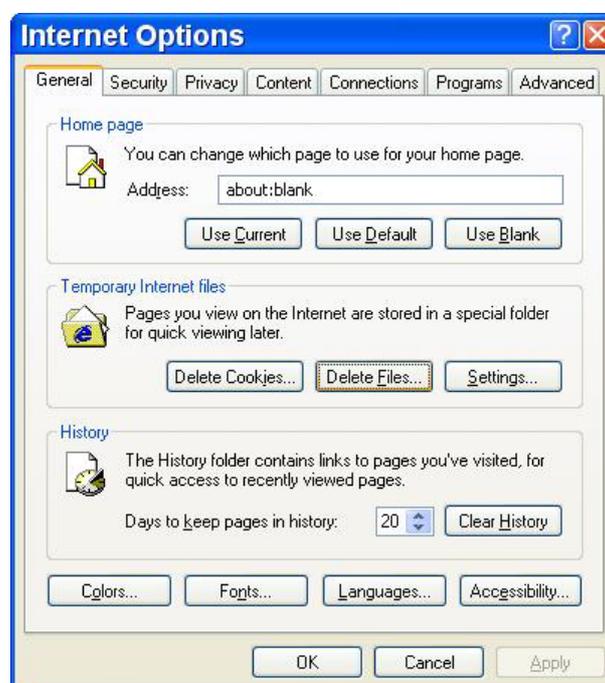
- Click the <Delete Files> button in the <Temporary Internet Files> field; the <Delete Files> screen displays as below.

- Check the <Delete all offline content> box and click <OK>.
- Now, enter the IP address of the DVR to make the connection again.

Appendix A: Recommended HDDs

Refer to the following list for some recommended HDDs to be used in the DVR.

Brand	Model Name	Model Number	Size
Seagate	Barracuda ES.2	ST3500320NS	500G
	Barracuda 7200.11	ST3500320AS	500G
	Barracuda 7200.11	ST3750330AS	750G
	Barracuda 7200.11	ST31000340AS	1000G
HITACHI	DeskStar	HDP725032GLA360	320G
	DeskStar	HDP725050GLA360	500G
Maxtor	DiamondMax 22	STM3500320AS	500G
Western Digital	WD AV	WD1600AVJS	160G
	WD AV	WD2500AVJS	250G
	WD AV	WD3200AVJS	320G
	WD AV	WD5000AVJS	500G
	WD AV	WD7500AVVS	750G

Appendix B: Remote Controller

The operational function keys on the remote control are listed as below figure:
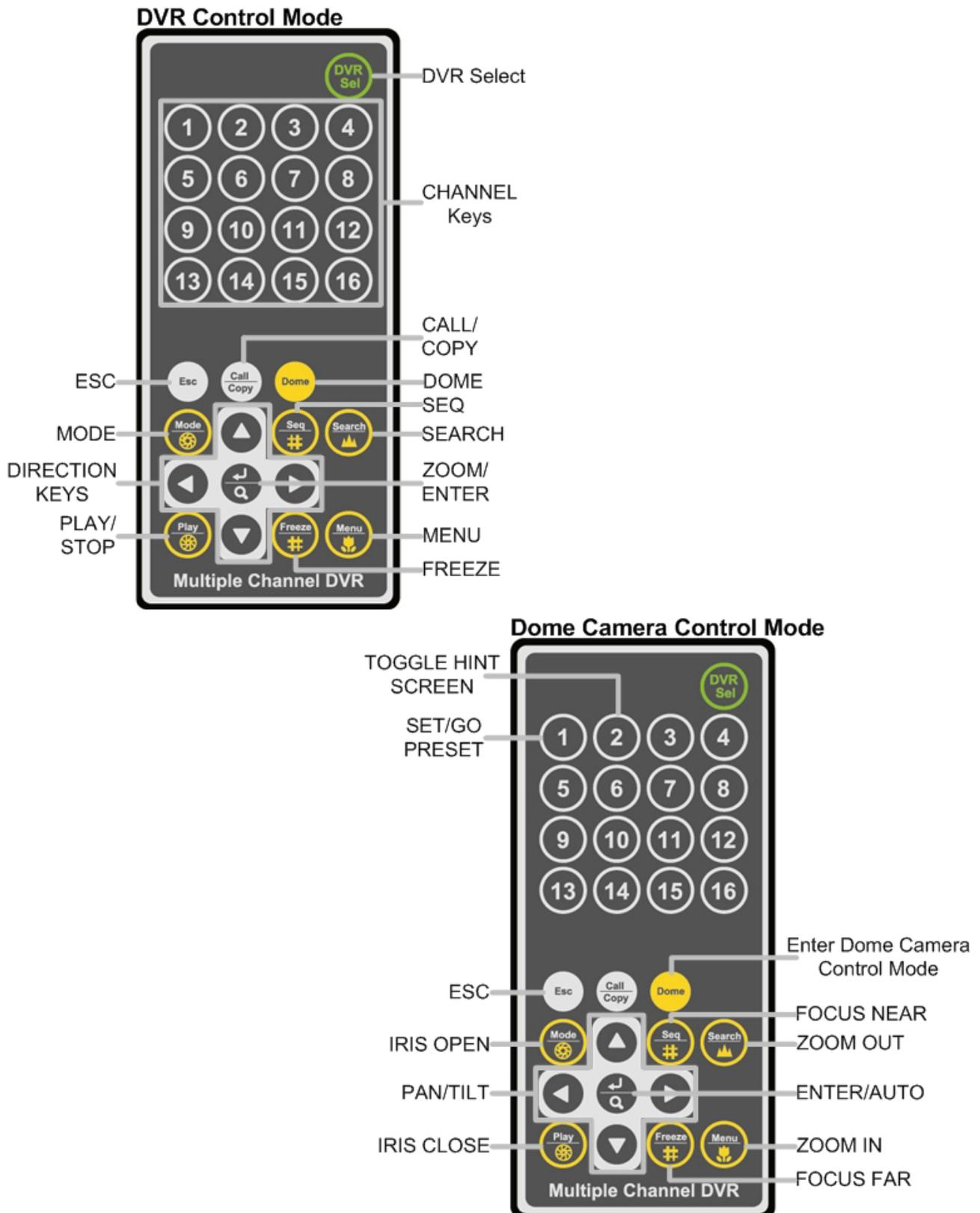
The keys of the remote control function as the keys of the front panel of the DVR. The only difference between the remote control and the front panel keys is the "DVR SEL" key. The DVR Selection key is used to switch control between each DVR.

The remote control can be used to control up to 16 DVRs. To setup the remote control, the first thing is to assign a unique DVR Unit ID to each DVR.

Use the front panel of the DVR, and follow this path to change the DVR Unit ID, <Main Menu> → <System Setup> → <RS485 Setup> → <Unit ID>. Change the DVR Unit ID to any number between 224 and 239, and exit the menu.

The ID Table is listed below for reference.

DVR Unit ID	224	225	226	227	228	229	230	231
Remote Control #	1	2	3	4	5	6	7	8

DVR Unit ID	232	233	234	235	236	237	238	239
Remote Control #	9	10	11	12	13	14	15	16

After the DVR Unit ID is changed, setup the "DVR SEL" of the remote control. Press "DVR SEL", and then press the Remote Control # immediately to select the DVR. For example, assuming the DVR Unit ID is set to 225, press "DVR SEL" and then press "2" immediately. Now, the remote control will only be able to control the specified DVR. Press "DVR SEL", and then press the Remote control # to switch between DVRs.

To exit the single DVR Control mode, press "DVR SEL", and then press "ESC" to do so.

Appendix C: Setting up a DVR behind a Router

This appendix describes how to set up a router if the DVR connects to the internet via a router.

To properly operate a web server, e.g. a DVR, users have to set up both the IP and port of the DVR, which are essential for data and command transmission. The port setting is adjustable in OSD setup menu of the DVR and only one port is needed to do remote operation. Typically and by the default, the DVR operates on port 80, which is well known as the http port. Please make sure that port 80 is not blocked by the ISP. Otherwise, a different available port shall be reset and the setting of the DVR shall be changed.
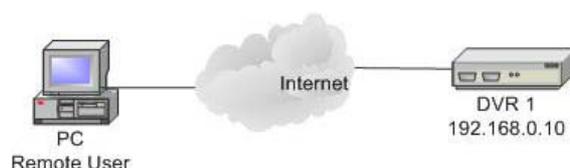
In case a router or sometimes a DSL modem is in place, the real IP is now assigned to the router instead of the DVR. The DVR is located behind the wall (router) and operates on virtual IP. In most cases, virtual IP starts with 192.168.x.x. The router has two IP: one is real IP (WAN IP); the other is virtual IP (LAN IP). The virtual IP would be 192.168.x.1. When the remote users want to operate the DVR, they will have to send command to the real IP, i.e. the router. Then the router has to map (forward) the command to the DVR. Thus, it is required to set up the router for port mapping (forwarding) before images from the DVR can be remotely viewed on a PC.
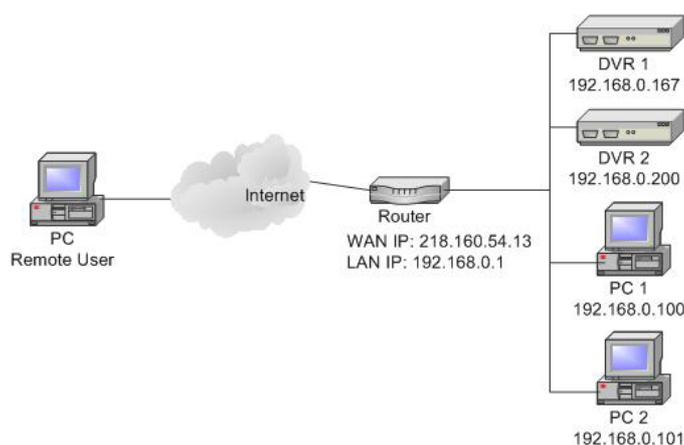
See the router manufacturer's websites for more instructions on port mapping.

Following is an example of how the router should be set.

Router (D-Link DI-724P+) WAN IP: 218.160.54.13 LAN IP: 192.168.0.1	PC IP: 192.168.0.100	DVR 1 IP: 192.168.0.167 Trigger port: 80	DVR 2 IP: 192.168.0.200 Trigger port: 81

- To change the setting of the router, a PC with web browser is required.
- Connect to D-Link DI-724P+ from PC via IE. The setup screen will be shown after entering the correct username and password.
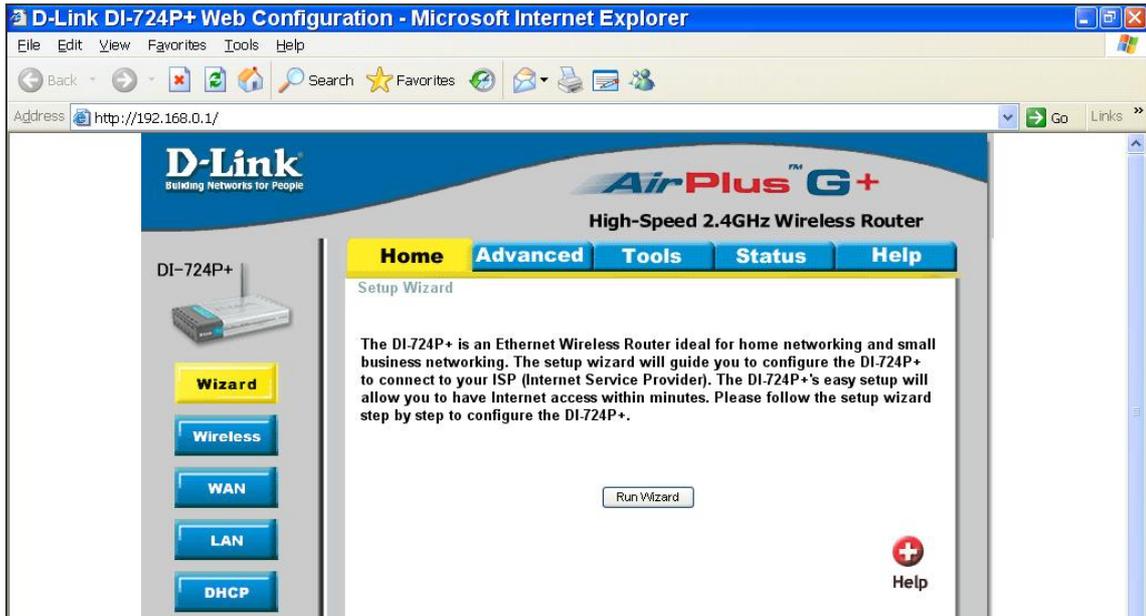
- Click the <Advanced> tab and follow the steps to set up web port forward to DVR 1.
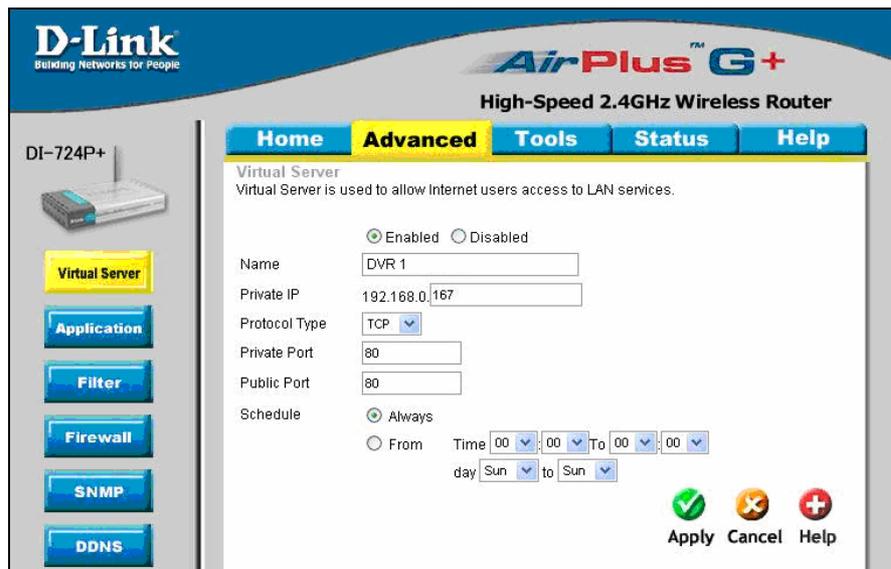
    A. Select <Enabled> to set up the service.

    B. Enter the name of the setting in the Name field: DVR 1.

    C. Enter Private IP: 167

    D. Choose <TCP> as the Protocol Type.

    E. Enter Private Port: 80.

    F. Enter Public Port: 80.

    G. Click <Always> for the Schedule setting.

    H. Click <Apply>.

- Click <Continue> to go on when the following screen displays.
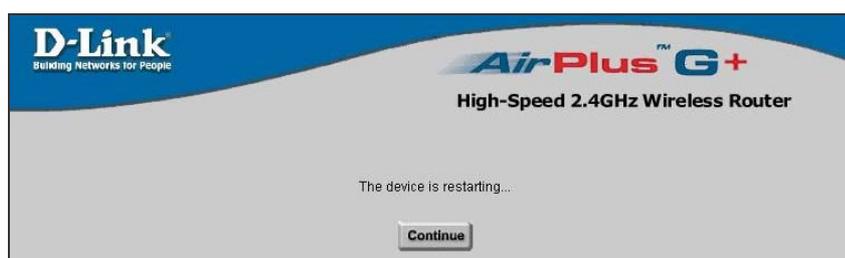
- Follow the steps to set up web port forward to DVR 2.

    A. Click <Enabled> to set up the service.

    B. Enter the name of the setting in the Name field: DVR 2.

    C. Enter Private IP: 200

    D. Choose <TCP> as the Protocol Type.

    E. Enter Private Port: 81.

    F. Enter Public Port: 81.

    G. Click <Always> for the Schedule setting.

    H. Click <Apply>.

- Now DVR 1 can be connected via http://218.160.54.13:80 and DVR 2 can be connected via http://218.160.54.13:81.

- If there are more than one DVR behind the router, repeat the steps for port mapping setting.

Central Management Software

User's Manual

Version 3.20

Table of Contents

1.   Overview

Central Management Software (CMS) is a powerful and professional centralized monitoring system designed for all range of applications and projects. With CMS, accessing and monitoring multiple surveillance equipments such as DVRs, and Mega-Pixel IP Cameras is just a few clicks away. The feature-packed intelligent surveillance offers the professional users with complete and enhanced surveillance experiences.
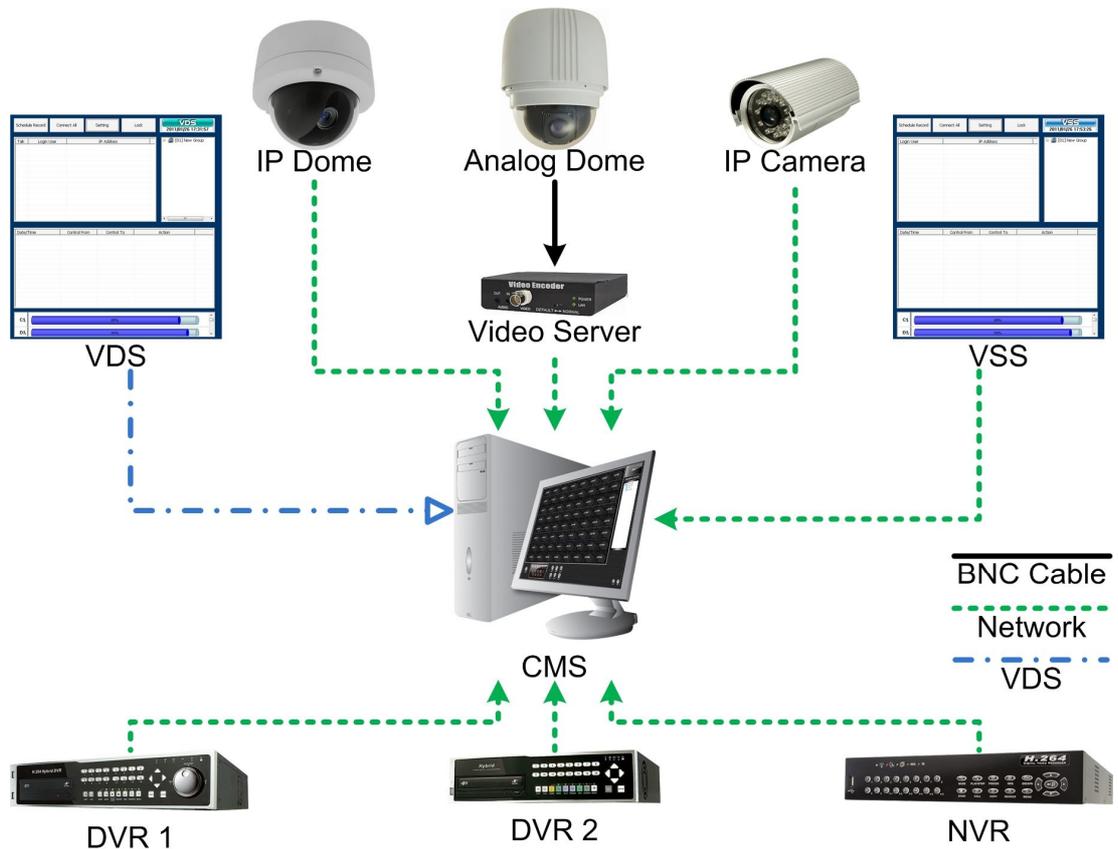
Features

- ● **PC-based recording and monitoring software**
- ● **Manages up to 1024 channels**
- ● **Simultaneously up to 64 channels Live view**
- ● **Supports 5 Megapixel IP Camera**
- ● **Supports Fisheye IP Camera**
- ● **Supports multi-screens**
- ● **Instant / scheduled recording**
- ● **Event playback and alert notification**
- ● **SSL E-mail notification**
- ● **Dual Streams: main stream for recording / sub stream for preview**
- ● **Supports remote playback**
- ● **Remote PTZ control**

- **Remote IP Camera configuration**
- **Supports multi-layers E-Map**
- **Supports ePTZ function**
- **Supports multiple languages**

1.1 System Requirement

The following chart shows recommended computer system:

Operating Systems	Windows XP, Windows Vista, Windows 7	
CPU	Minimum: Intel® Core™ 2 Duo 2.4 GHz	Recommended: Intel® Core™ i7-2600 8MB Cache 3.4 GHz
RAM Memory	Minimum: 1GB	Recommended: 4GB
HDD	Minimum: 80GB	Recommended: 1TB
Video Card	Minimum: Graphics card with more than 64MB RAM	Recommended: GeForce GTS450 1GB PCI-E 16X
Ethernet	Minimum: 100 BaseT	Recommended: Gigabit LAN
Tested Setup	CPU: Intel® Core™ i7-2600 (8MB Cache, 3.4 GHz); RAM: DDR3 4GB; OS: Windows 7 Professional; Ethernet: Gigabit LAN; Mainboard Chip: Intel H6X	

⚠️ **NOTE:** For Live viewing of more than 16 IP devices, users need to lower the camera resolution and change the compression method to MPEG4 or MJPEG.

⚠️ **NOTE:** If the operating system is Windows Vista or Windows 7, some functions (such as Record, Auto Reboot, etc) will not work properly due to User Account Control (UAC). Follow steps below to solve this problem.

Step 1. If a previous version of CMS is installed, export setting files of CMS servers (1~4) before installing the new version CMS.

Step 2. Due to UAC, user accounts in Windows Vista and Windows 7 cannot properly run applications that will write in "C:\Program Files\" folder. Therefore, CMS will be installed in "C:\" folder instead.

Step 3. Once the new version CMS is installed, import the setting files back to CMS servers (1~4).

2.   Software Installation

Follow the steps below to install CMS to the local computer.

Step 1. There are 2 ways to start the installation.

Option 1. Download the compressed file and extract CMS_Setup.rar
it. Click on the CMS_Setup.exe file to start CMS_Setup.exe
the installation.

> ⚠ **NOTE:** Some antivirus software might report false alarm when users move the mouse cursors over the CMS_Setup.exe file. Right click and select <Always ignore> in order to continue the installation.
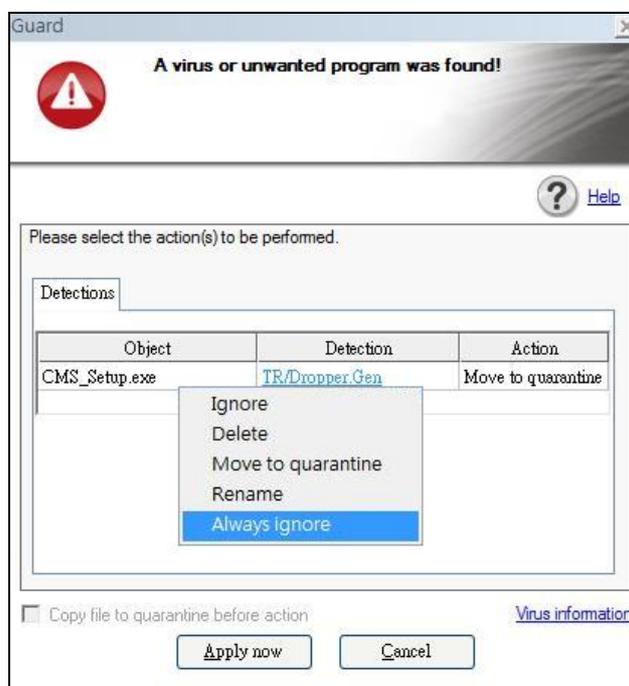
Option 2. If CMS will be installed via a CD, the installation will startup automatically when the CD is inserted into the CD-Rom. The <CMS Setup Menu> window will be displayed. Choose <INSTALL CMS> to start installing CMS. Choose <CMS USER'S MANUAL> to open the user's manual. Choose <EXIT> to exit the <CMS Setup Menu>.

> ⚠ **NOTE:** If an older version of CMS had been installed in the local computer, a message box will be prompt. Click <OK> to uninstall the previous version.

> **NOTE:** After clicking <OK>, a un-installation confirmation dialog will be displayed. Click <Uninstall> to uninstall the older version and continue with the next step.

Step 2. Select the components that are going to be installed. It is strongly recommended to select the <Start Menu Shortcuts> to create shortcuts in the Start Menu and on the Desktop. Otherwise whenever the program is to be opened, it will have to be found under the path: "\CMS\EXE\CMS.exe". Click <Next> to go to next step.
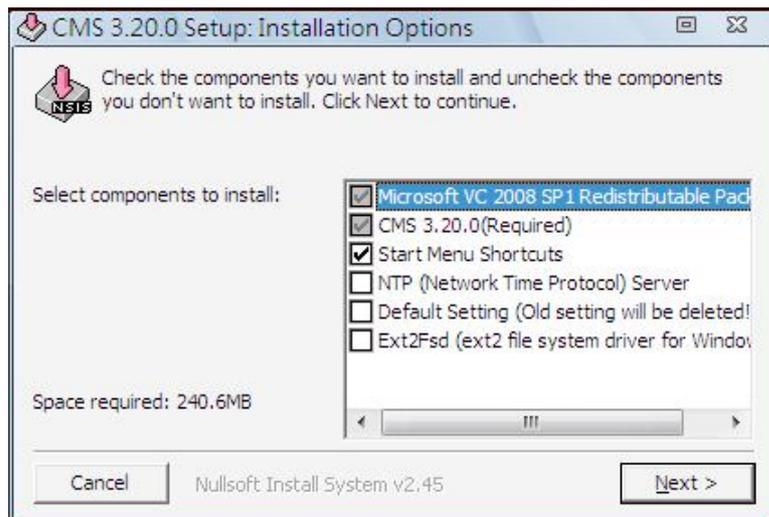
The components of CMS Installation Setup are:

a. Microsoft VC 2008 SP1 Redistributable Package: This is an upgrade package required for correctly running CMS.

b. CMS 3.20.0(Required): CMS main program must be installed.

c. Start Menu Shortcuts: Check the box to create shortcuts in the Start Menu and on the Desktop.

d. NTP (Network Time Protocol) Server: Check the box to install the NTP server.

e. Default Setting (Old setting will be deleted!): Check the box to load default setting, or uncheck it to load the old setting of previous installed CMS.

f. Ext2Fsd (ext2 file system driver for Windows): Check the box to install driver in order to be able to read raw files in DVR HDD.

> **NOTE:** The EXT2IFS driver also works for reading ext3 file systems. If users have already installed the EXT2IFS driver and software, please uninstall it beforehand, for there might be confliction occurs while installing Ext2Fsd driver during CMS installation.

Step 3. CMS main program will be the first program to be installed. Choose a folder to install CMS or it will be installed to a default destination folder "\CMS\". Click <Install> to start the Installation; or click <Back> to go back to the previous step.

Step 4. The NTP Server will be the next program to be installed. The NTP Server enables the local computer, which is running CMS, to become a central NTP Server for the connected DVR(s) so the time for the local computer and the connected DVR(s) is synchronized. When the confirmation window popup, click <OK> to start installing the NTP Server.

Step 5. When the Software Installation is completed, click <Close> to exit.

NTP Service (Server)

The NTP Service (Server) enables the local computer, which is running CMS, to become a central NTP server for the connected DVR(s) so the time for the connected DVR(s) and the local computer is synchronized.

To do so, the IP address of the local computer is needed.

Go to **Start** menu, select **Run**.
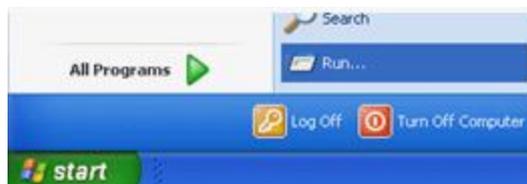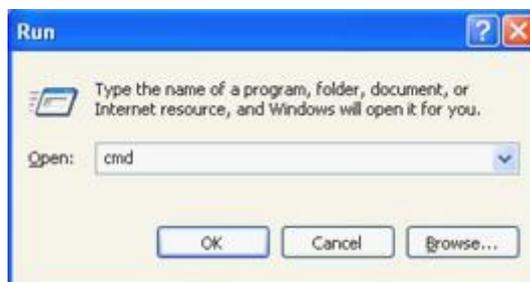
Type in **cmd** and click OK.

Type in **ipconfig** to get the IP Address of the local computer. Write down the IP address on a piece of paper for later use.
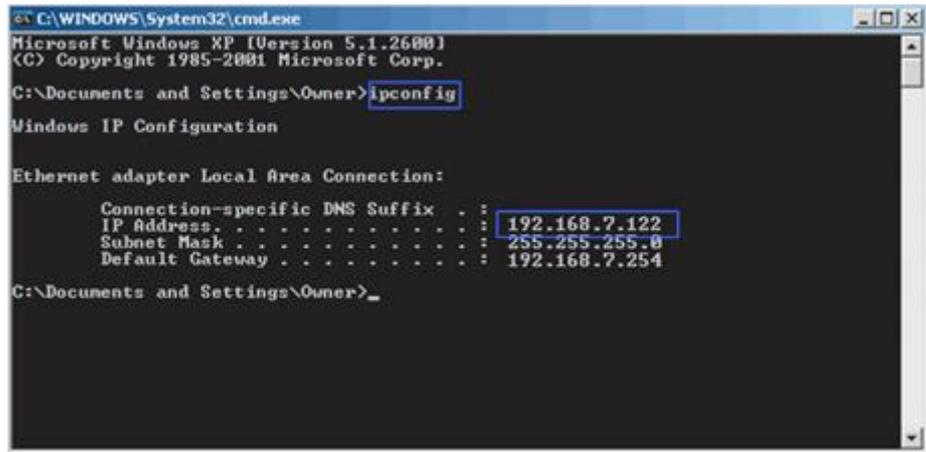
After the IP address is found, setup the connected DVR(s).

First, go to <Main Menu> → <System Setup> → <Date/Time> → <Time Zone> to setup time zone. To find out the local time zone, please visit www.greenwichmeantime.com

NOTE: <Time Zone> must be set or <Network Time Protocol Setup> will not be accessible.

After entered the local time zone, <Network Time Protocol Setup> menu will be accessible. Go to <Main Menu> → <System Setup> → <Date/Time> → <Network Time Protocol Setup>, and the following menu will be displayed.

Network Time Protocol Setup	
NTP Server	time.nist.gov
Automatically Time Sync	On
Manually Time Sync	No

In this example, the NTP server should be set to "192.168.7.122" which is the IP address of the local computer. After the NTP server is set, select <Yes> for <Manually Time Sync> to immediately sync the time with the local computer. The time sync can also be updated periodically. Select <On> for <Automatically Time Sync> and the time will be automatically synced once an hour.

2.1   Start Menu Add-ons

Click on the Start menu and find CMS.
There are several add-ons, as shown below.

Joystick

Go to the Joystick submenu and users will be granted with two pictures for brief instructions of joystick controls. Refer to subsection **_Joystick Control_** under section **_PC System Info_** for more details about joystick usages.

Multi-CMS

Access the Multi-CMS submenu and it provides four CMS server applications. Users can select to startup any preferred CMS server.

CMS

Select this item to startup CMS server.

Digital Signature Verifier

Digital Signature Verifier allows users to verify exported video files with digital signatures. As shown below, pick up all required files and click on <Verify>. A GOOD signature indicates the exported clip has not been altered, whereas a BAD signature means the video might be changed at some point.
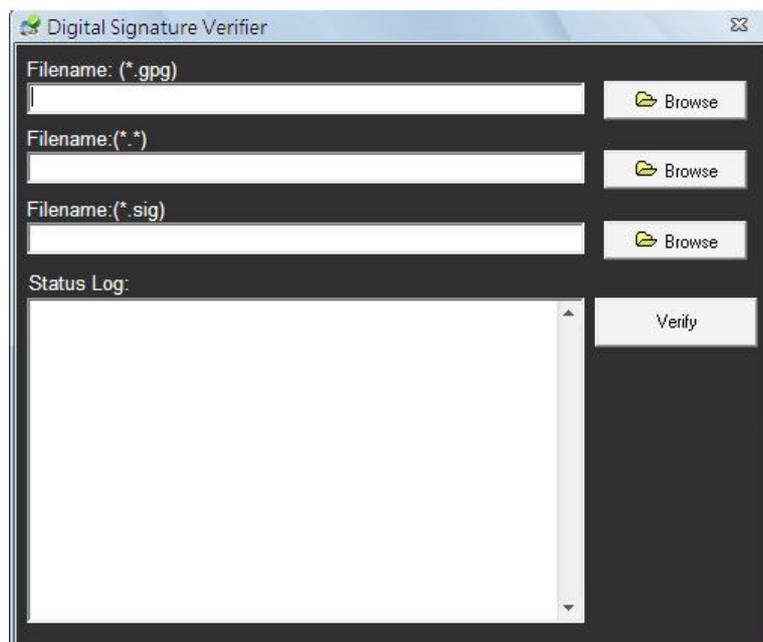
Help

This item links to the PDF file of User's Manual.

Install Ext2Fsd

For users who need to read raw files directly from the DVR HDDs, select this item to install the driver for ext2 and ext3 file systems.

Install VC2008 Redistributable Package

Select this item and the system will begin to install VC2008 Redistributable Package. This is required in order to correctly run CMS.

Load Default Setting

If users need to restore the default setting, click on this item and a command window will be prompted for confirmation. As shown below, answer "Y" to the questions and the default setting shall be loaded.
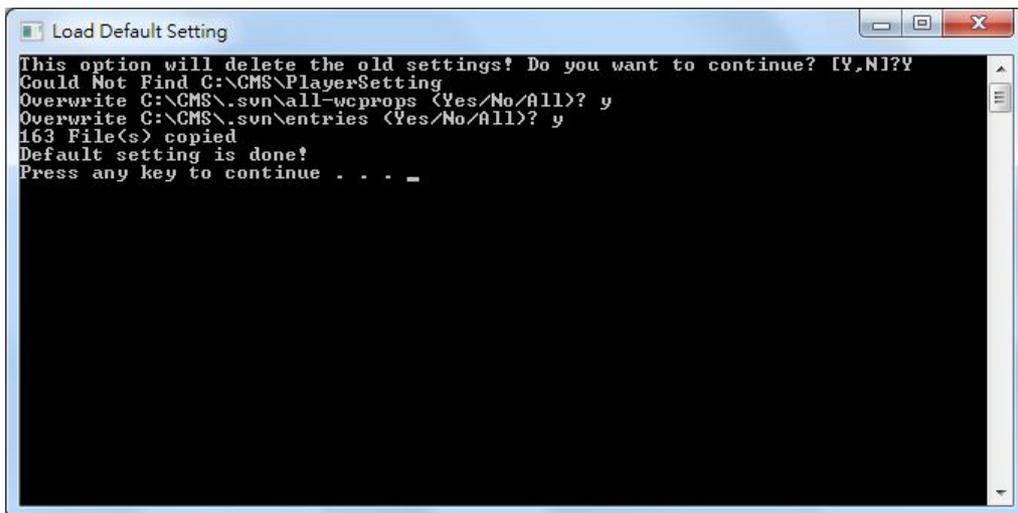
Select Language

This item allows users to change the system language for selected CMS server. Choose a CMS server and its new language, then click on <OK> to confirm.
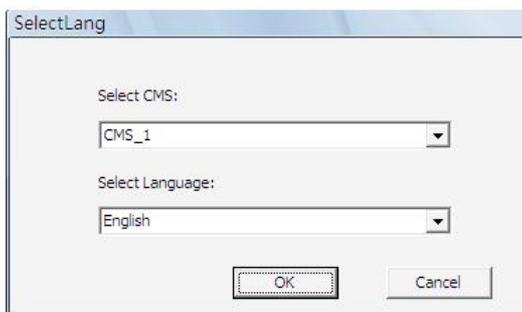
Start NTP Server

If users wish to sync the PC's time with a Network Time Protocol (NTP), select this item and a command window will be prompted. Confirm to add NTP register and let the command window run the rest works. After the NTP is started, users can press any key to finish the process.

2.2   Software Upgrade

CMS software can be upgraded to new released version automatically or manually. The upgrade process will be performed in CMS main window.

Please refer to section ***About CMS*** for more information about automatic and manual software upgrade.

3.   Start Up CMS

Before starting up CMS, PRO version users have to insert the USB Dongle. Otherwise the intelligence functions especially designated for PRO version will not be available.

⚠ **NOTE:** If the version of USB Dongle is an older version comparing to CMS, an error message will be displayed to request users to insert the correct version of USB Dongle.

⚠ **NOTE:** If USB Dongle is unplugged while running CMS, a warning message will be displayed. Users have to re-insert the USB Dongle or CMS will be automatically shutdown in 10 seconds.

There are 3 ways to start CMS. Note that method A and B are only available if the "Start Menu Shortcuts" component is installed. Please see section ***Software Installation*** for more information.

Method A: Click Start menu and select Programs; find "CMS" from the listed programs.
Method B: Double click on the shortcut icon on the desktop.
Method C: Go to "\CMS\EXE\" and double click on CMS icon.

3.1   Starting Up

If CMS is started for the first time, select a desired language for the interface. The available languages are listed in the scroll box. Click <OK> to confirm the selection.

⚠ **NOTE:** If the system memory or CPU frequency is less than the requirement, the error message will be displayed.

3.2   Login

The default username & password are: "**admin**" and "**1234**". Enter the default username and password, then check <Save user name and password> to save time from entering username and password every time CMS starts. Click <OK> to login.

Username and password accounts can be added or removed under the <CMS User> tab in <Setting> configuration window. Refer to the ***CMS User*** section for more information.

NOTE: If the wrong username or password is entered for 3 times, an error message will be displayed, and CMS will be closed automatically after <OK> is clicked. Restart CMS to enter the correct username and password.

4.   CMS Main Window

After started up CMS, the main window of CMS will be shown as the figure below. The name of each button is indicated as follows.
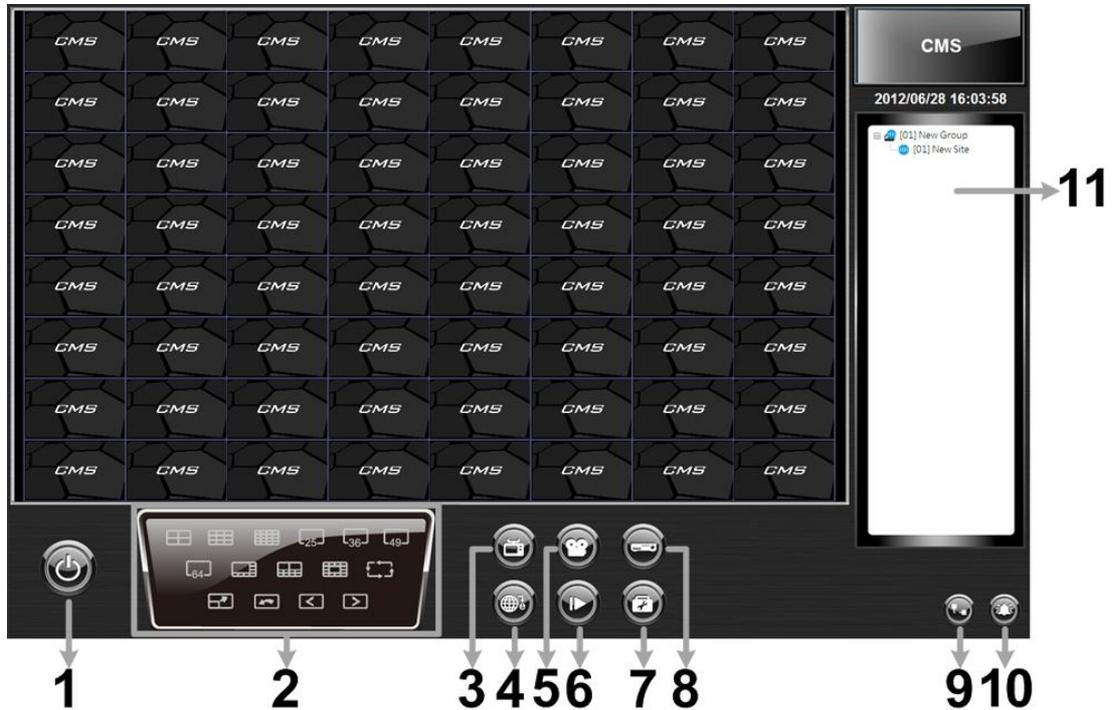
1	Power Button
2	Display Mode: 4-windows, 9-windows, 16-windows, 25-windows, 36-windows, 49-windows, 64-windows, 8-windows, 10-windows, 13-windows, Sequence, Full screen, Last mode, Page up, Page down
3	View Operator
4	Emap
5	Record
6	Playback
7	Setting
8	System information
9	Disconnection Log
10	Alert Log
11	Site Tree

The usage and function of each button will be briefly described as follows. Their detailed instruction will be in later sections.

Power Button

Click on the Power button and the pull-down menu includes: <Lock>, <Exit> and <Minimize>. Users can lock CMS system, exit CMS system, or minimize CMS main window.

Display Mode

Click on any icon to view the connected camera images in multiple window modes. The available viewing modes are 4-windows, 9-windows, 16-windows, 25-windows, 36-windows, 49-windows, 64-windows, 8-windows, 10-windows and 13-windows. In addition, icons Sequence, Full screen, Last mode, Page up and Page down give users variable options in monitor surveillance.

View Operator

Click on the <View Operator> icon and the pull-down menu are <Live all>, <Re-sort>, <Snapshot>, <Video preview>, and <Sequence Setting>. Select <Live all> to switch all sites to Live mode. <Re-sort> allows users to reset the displaying layout to the listed orders in the site tree. Choose <Snapshot> to save a snapshot of current window. <Video preview> is for preview and selection of display mode. <Sequence Setting> is for setup of sequence order list and sequence dwell time.

Emap

Click on the <Emap> icon to open up Emap program. Emap is a program that allows users to illustrate positions of cameras on self selected images.

Record

Click on the <Record> icon and the pull-down menu includes: <Instant record> and <Schedule record>. Users can initiate instant video record or configure schedule record settings.

Playback

Click on the <Playback> icon and the pull-down menu are <Local Playback> and <Remote Playback>. Selecting <Local Playback> will bring up CMS Player window, for users to playback video data stored in the local computer. On the other hand, <Remote Playback> allows users to playback recorded video stored in the HDD of the connected DVR. Please refer to **Appendix A** for more information about CMS Player.

Setting

Click on the <Setting> icon and users can configure <CMS Setting> and <Device Setting>.

System information

Click on the <System information> icon and the pull-down menu includes: <Device Health>, <PC system info.>, <About CMS>, <CMS operator log> and <Device operator log>. Select any menu item to display the related information.

Disconnection Log

Click on the <Disconnection Log> icon to see the log that listed all abnormally disconnected sites. When abnormal disconnection occurred, the icon will blink to capture users' attention.

Alert Log

Click on the <Alert Log> icon to see a list of triggered alert events. When an alert event is triggered, the icon will blink to remind users.

Site Tree

Site tree displays sites that are currently being viewed. If the connection to a certain camera is failed, there will not be image displayed on its assigned grid. Right click on the "site" and click <ReConnect> to try to establish the connection to the site. The <DisConnect> option allows users to only disconnect a certain site.
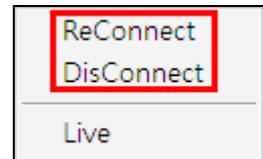
Select <Live> after right click on a site and CMS will retrieve Live monitoring image(s) of the site.

By right clicking on the group icon, the options shown as on the right allows users to expand or hide the site tree at once.
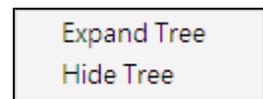
If the group is connecting to a VDS, the right click options are as shown on the right. Select <Reconnect> to re-establish the connection to VDS. Select <Talk> to initiate two-way communication between CMS and VDS.

5.   Configure CMS

CMS supports up to 10 groups, with at most 64 IP devices added in each group. The following sections will guide users to setup CMS step by step.

Click on the <Setting> icon and select <CMS Setting>. The following window will be displayed.
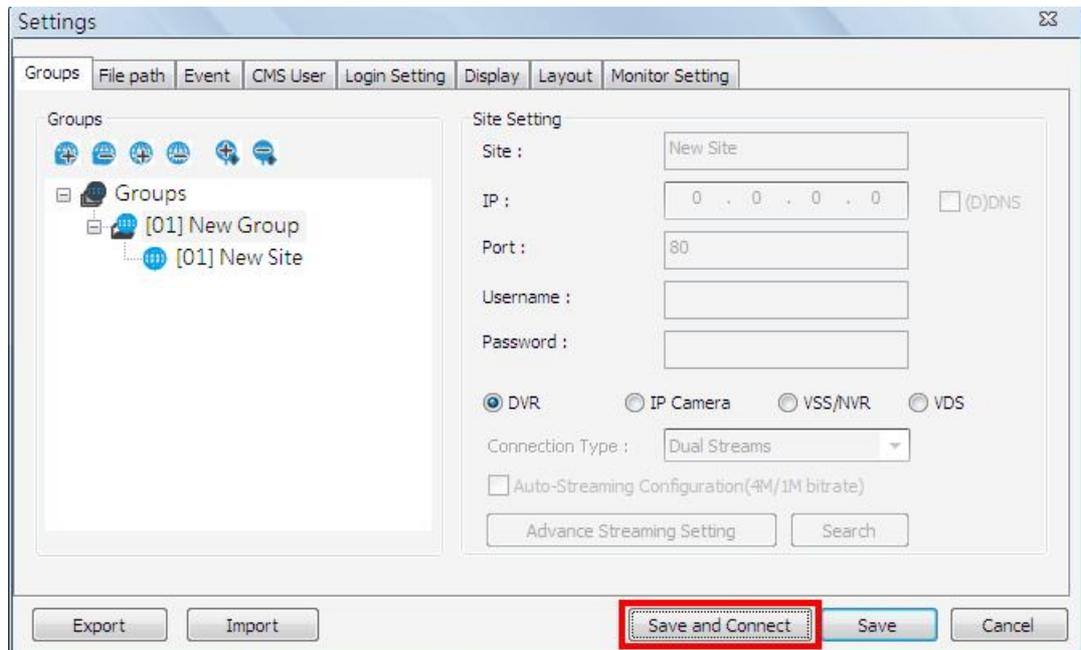
⚠️ **NOTE:** The configuration in "Groups" tab and "Import" function will be unable to be saved when CMS is detecting network connection or is connecting to some sites. Error messages will be shown to inform users.

⚠️ **NOTE:** When the setting of connecting group and sites is completed, users can directly click on <Save and Connect> to connect the sites.

5.1   Setup Groups

Up to 10 groups can be set in CMS. This section guides users to add or remove a group, and also shows users how to set "Start Group".

<u>Add a group</u>

Click on 🔵 button to add a group. The other way to add a group is to right click on <Groups>, and select <Add a group>.
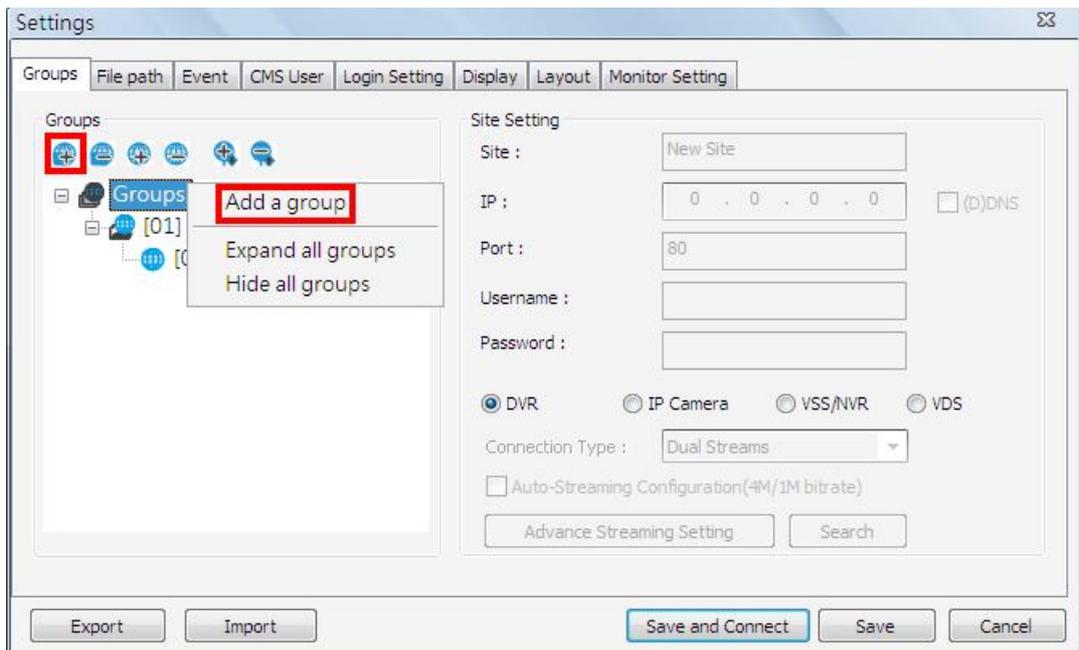
Set Start Group

"Start Group" is the group that will be connected after started up CMS.

Right click on the group to be set as "Start Group", and select <Set as start group> from the pull-down menu.
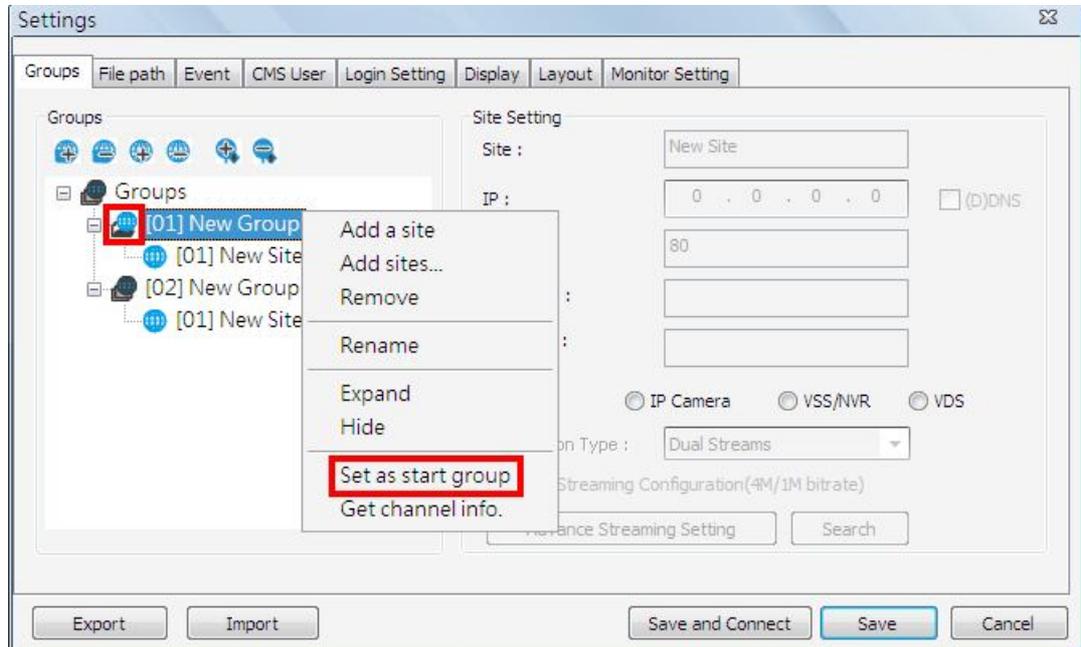
NOTE: If a group is set as the "Start Group", the icon will be changed as shown in the figure above.

Expand / Hide a Group

There are two ways to expand or hide a group. One way is to use the 🔍 🔍 buttons; the other way is to right click on the group and select <Expand> or <Hide> from the pull-down menu.
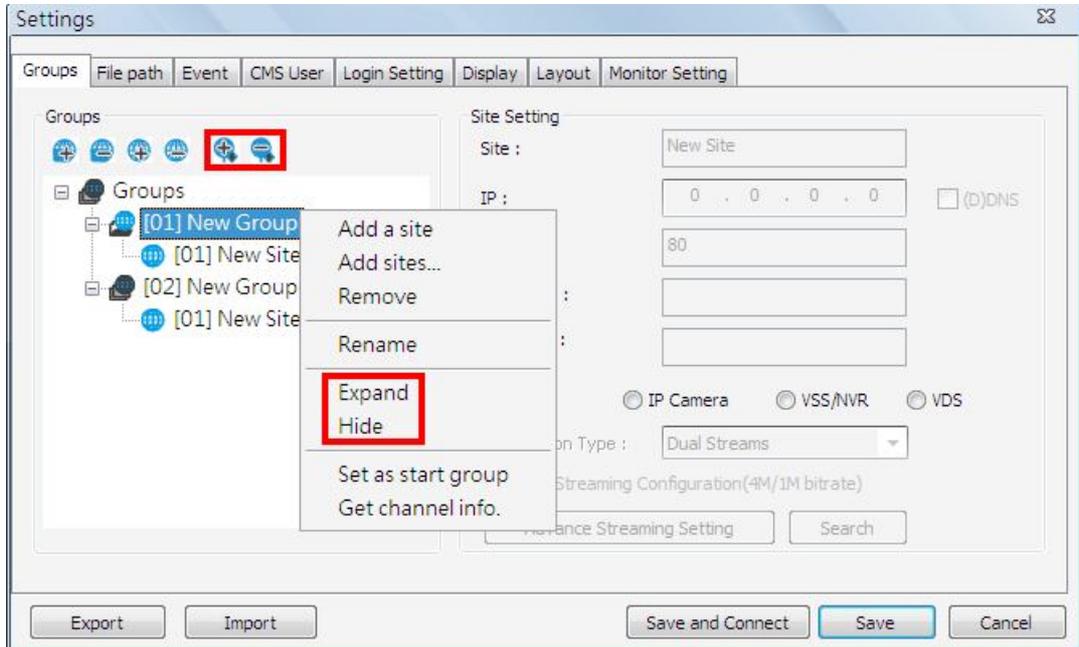
Remove a Group

To remove a group, click on the group to be removed, and then click on the 🌐 button directly to remove the group. The other way to remove a group is to choose <Remove> after right clicked the group.
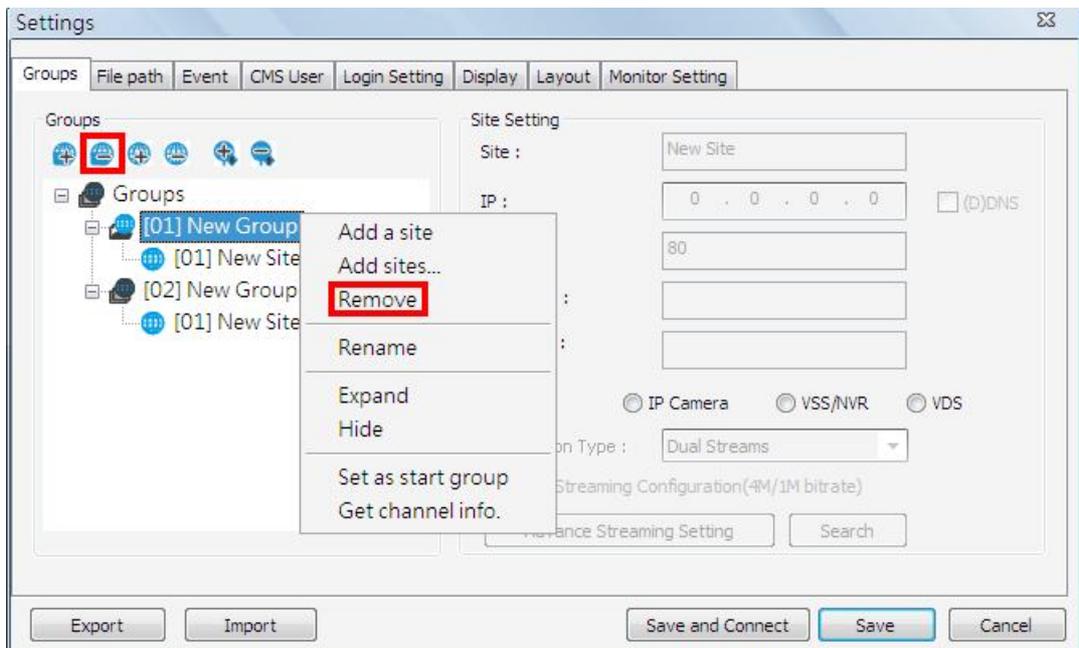
5.2 Manage the Sites

The following sections are instruction of the management of the sites, including add or remove sites and configuration.

5.2.1 Add/Remove a Site

This section describes how to add or remove a site. CMS supports at most 64 IP devices to be added to each group. If more than 64 IP devises are added, error message will be displayed.

Add a site

Choose a group to add a new site. Click on the 🌐 button to add a site to this group. The next section will show how to setup the site step by step.
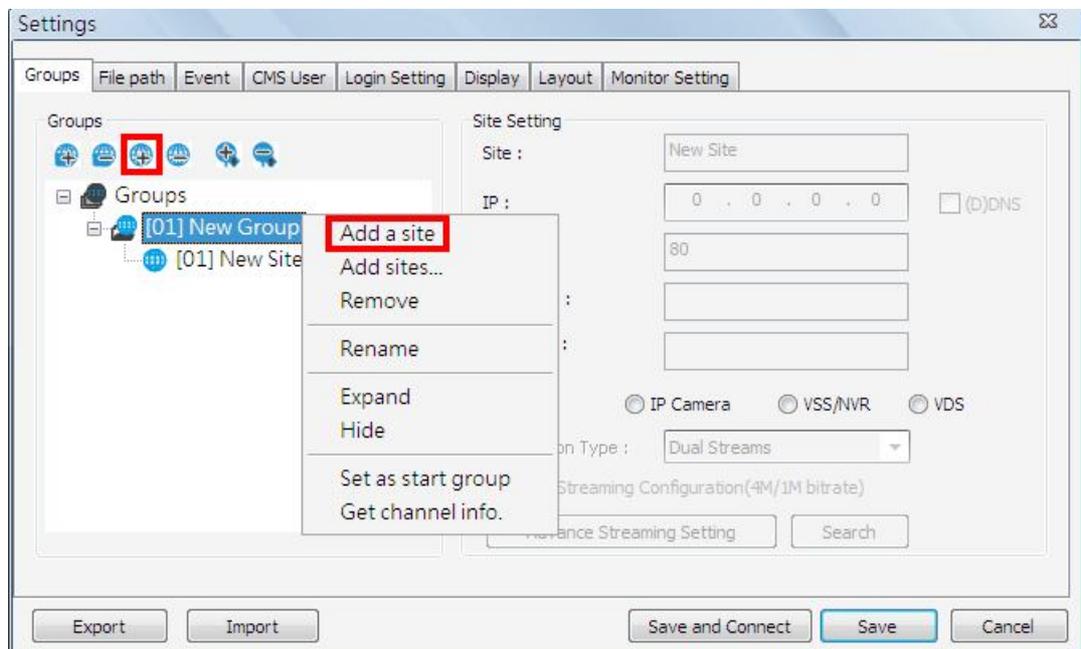
The other way to add a new site to a group is to right click on the group, and select <Add a site>.

Add Multiple Sites

Right click on a group, and select <Add sites…> to add multiple sites at once.
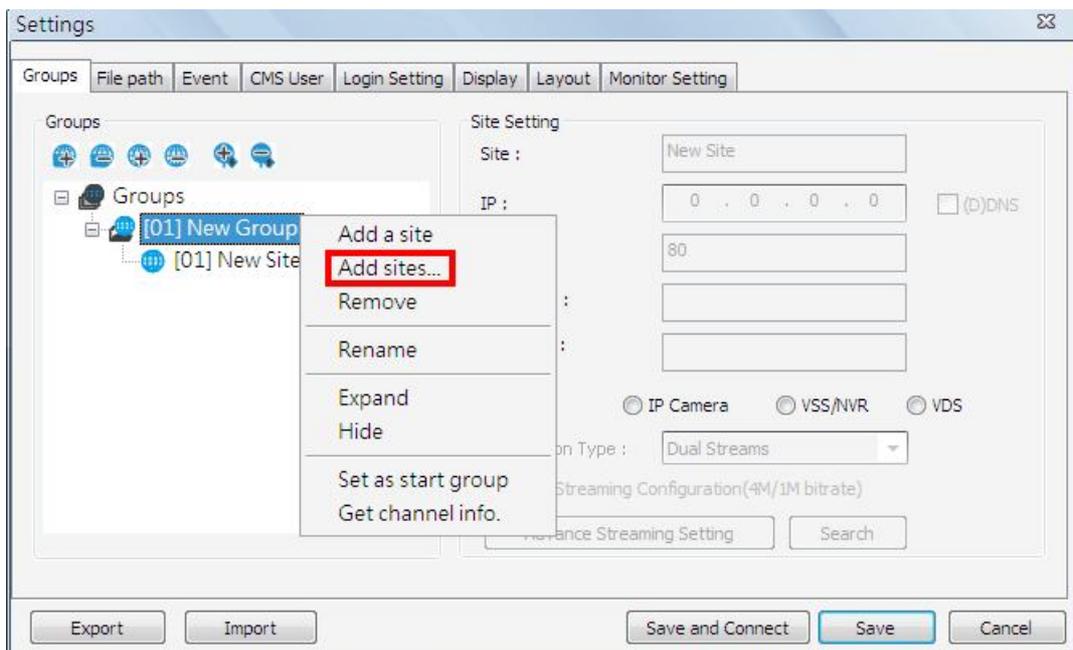
Then a device search window will be displayed as below. Press and hold Ctrl key to select more than one site. After sites are selected, click <Add> to add the selected sites. Please jump to relative sections coming after to complete site setup.
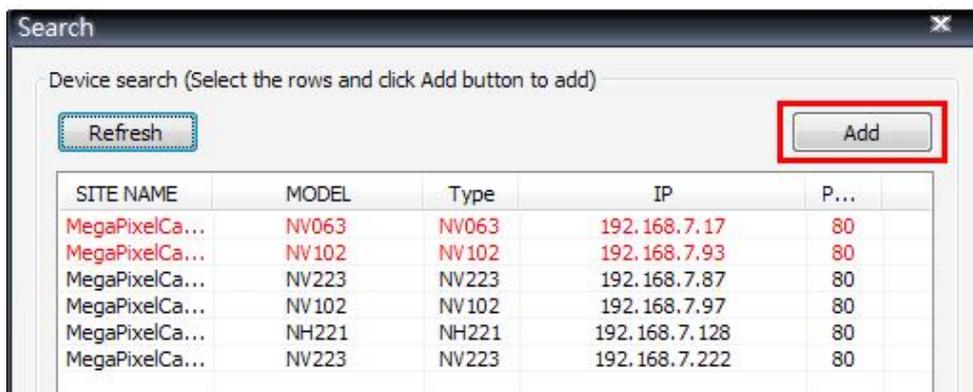
NOTE: The sites that are already added in this group will be shown in Red in the device search window.

Remove a site

To remove a site, click on the site that is to be removed, and click on the ⊕
button directly to remove the site.
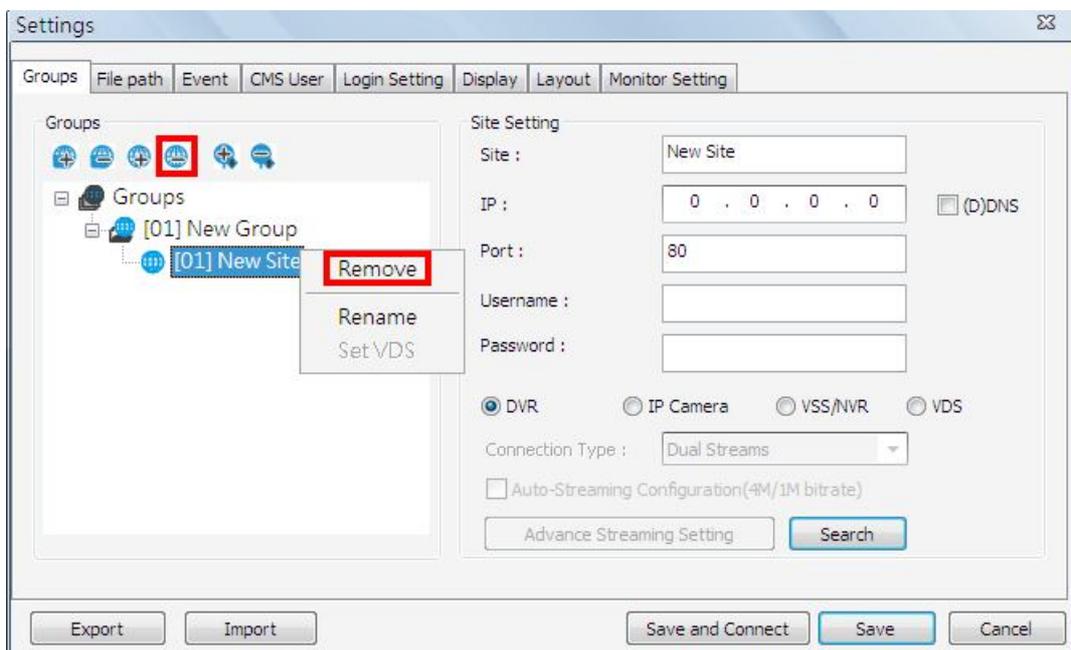
The other way to remove a site is to right click on the site, and select
<Remove> from the pull-down menu.

A new site can be a DVR, an IP camera, a VSS/NVR, or a VDS. The number
of sites equals to the total number of the DVRs, IP Cameras, and VSS/NVR.
However, the VDS can only be individually added to a new group all alone by
itself. The following sections will show how to setup configuration of the sites.

5.2.2   Setup the Site via Device Search

There are two ways to setup a site. The simple way is via Device Search.

CMS is able to search for IP addresses of DVRs, IP Cameras, VSS/NVR, and VDS connected to the PC's LAN network. The ports used for device search are 6666 and 6667. Please make sure that these two ports are not in-use nor blocked by firewall or virus scan software.

Follow steps below to search for DVR(s), IP Camera(s), VSS/NVR, or VDS.

Step 1. If there are DVRs, IP Cameras, VSS/NVR, and/or VDS installed in the LAN network, CMS can search for IP addresses of the installed devices. Click the Search button (**on the bottom right**) to open the Search window.
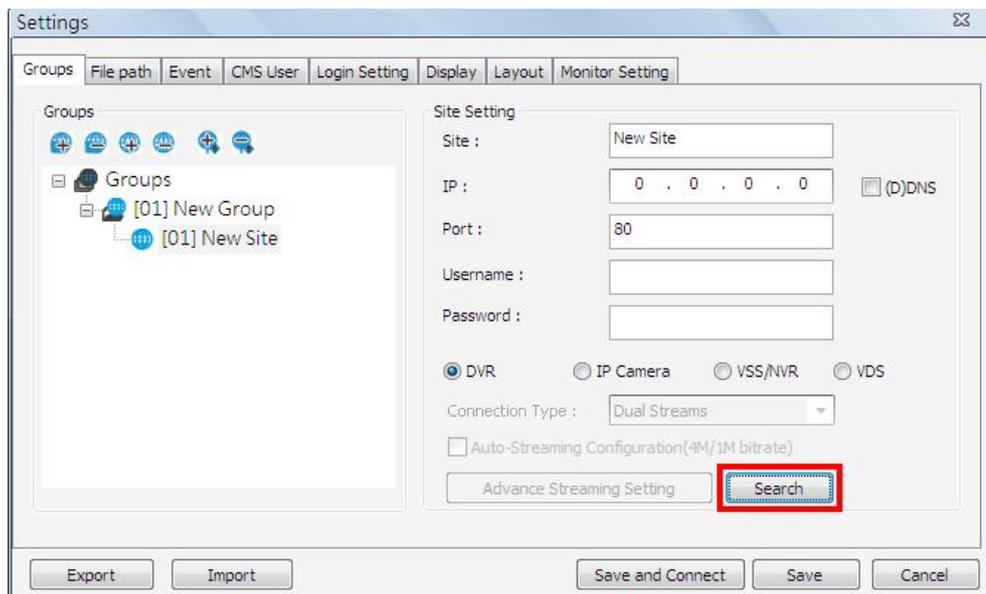
Step 2. The list will show the IP addresses of DVR(s), IP Camera(s), VSS/NVR, and VDS available in the LAN network. Select from the list and **Double Click** on the IP address to add it to a site. Then enter username and password of the selected DVR, IP Camera, or VSS/NVR. For VDS, refer to section ***Setup the VDS Site Manually*** for further configurations. Note that if the sites are already added in this group, they will be shown in Red.

NOTE: The Device Search function can only be used to search for addresses within the same LAN. For example, if the local computer uses an IP address of 192.168.**1**.5, and a connected DVR has an IP address of 192.168.**1**.7, CMS will be able to find the IP address of the DVR. However, if there is another DVR connected to another LAN network such as 192.168.**3**.6, CMS (whose IP is 192.168.**1**.5) will not be able to find the IP address of the DVR in another LAN network.

5.2.3   Setup the DVR Site Manually

If the detailed information (IP address, port, username, and password) of the connected DVR is provided, a site can be setup manually.

Add a new site and enter the Site name, IP address, Port, Username, and Password. Select <DVR> and click <Save> to complete the setting.
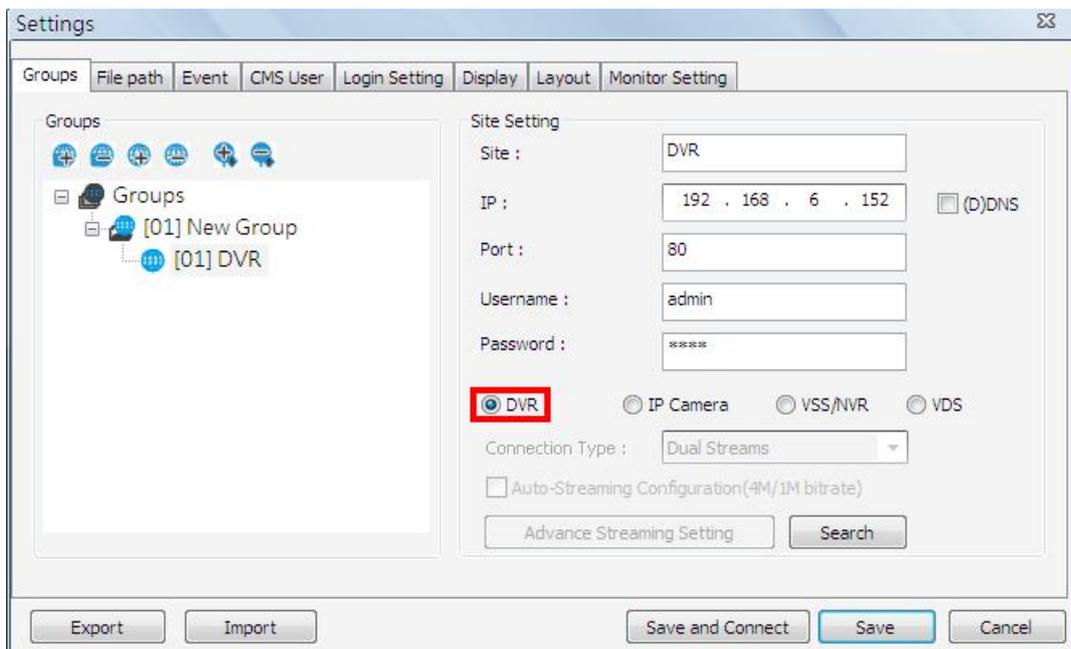
NOTE: If the entered Username and Password is a user account instead of an administrator account, the same DVR account restriction will be applied. When a user account accessed a function that is restricted, a warning message will be displayed.

If the DDNS information of the DVR is known, the DDNS data can be used to setup a site. Check the box <(D)DNS> circled below, and type in the DDNS data. Click <Save> to complete the setting. An example of the DDNS address looks like: *********.ddns.iview-ddns.com**.
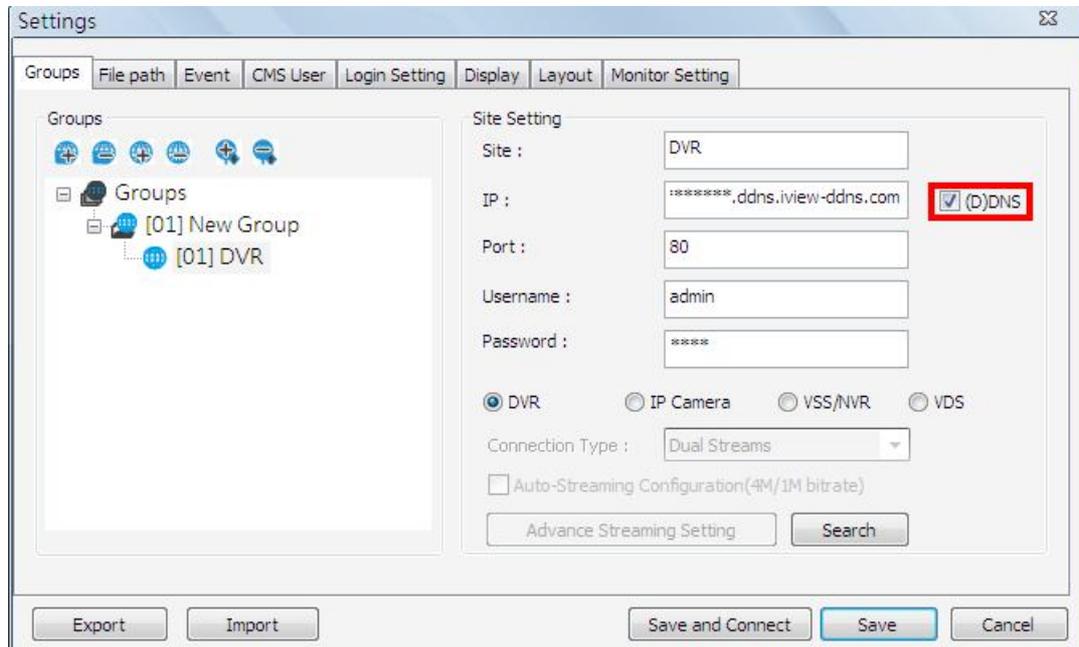
5.2.4   Setup the IP Camera Site Manually

If an IP Camera is to be added to CMS, the required information includes the IP address, port, username, and password of the IP Camera. Enter the data and select <IP Camera> as circled below.
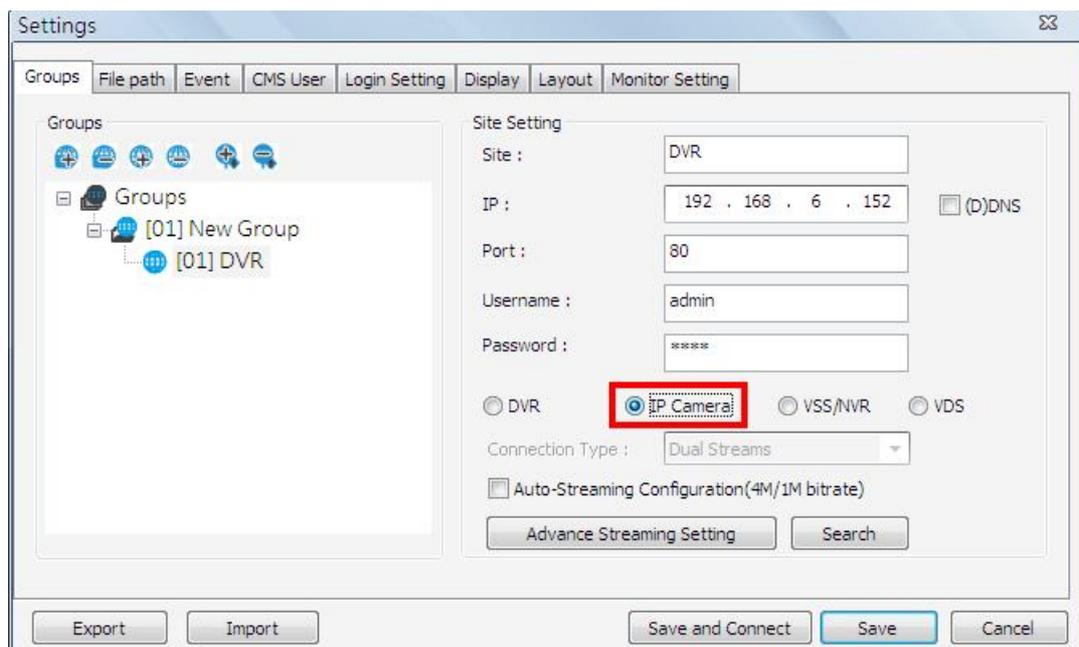
Auto-Streaming Configuration

For users who wish to enable auto-streaming, check the box in front of <Auto-Streaming Configuration(4M/1M bitrate)>. CMS will logon to the IP Camera twice to retrieve two different types of video streams. The main stream is H.264 with largest resolution and 4096 bit rate, which will be the recording format. On the other hand, the sub stream is H.264 with smallest resolution and 1024 bit rate, which will be the live display format.
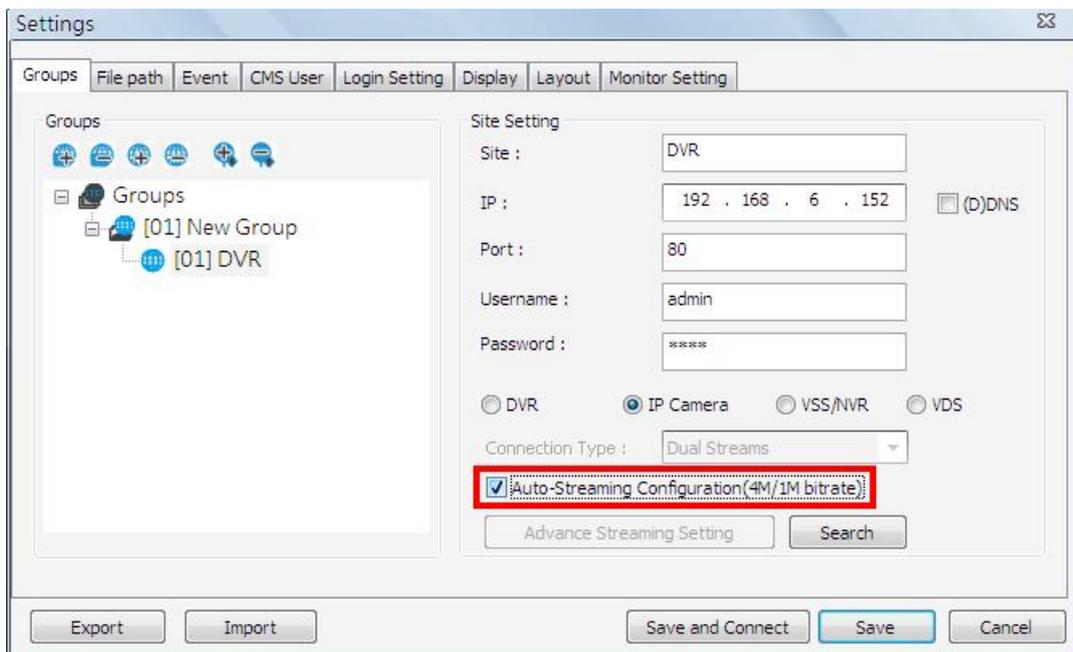
⚠ **NOTE:** When Auto-Streaming Configuration is enabled, <Advance Streaming Setting> will be disabled in the mean time.

Advance Streaming Setting

Users can also manually setup dual streaming function via clicking on <Advance Streaming Setting>. If users wish to connect to the IP Camera's webpage via a browser, click <Link to WebPage> at the bottom.
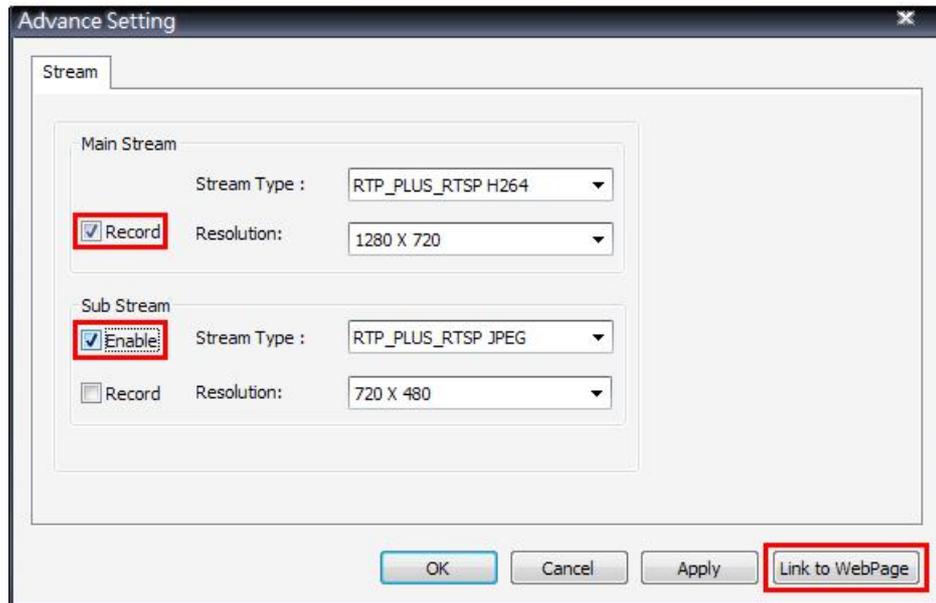
NOTE: Auto-Streaming Configuration has to be disabled in order to be able to setup <Advance Streaming Setting>.

Step 1. Check the box in front of <Enable> under Sub Stream section to enable dual streaming. Otherwise, uncheck to disable dual streaming function.

Step 2. Select preferred stream type and resolution for both the main stream and the sub stream.

Step 3. Check the box in front of <Record> under Main Stream section **OR** Sub Stream section to select the recording format at CMS site.

Step 4. Click on <OK> to confirm and save the setting. A popup window will be displayed to notify users that the setting is changed. Clicking on <Apply> will allow users to check the effect of the setting via the live display window immediately.

NOTE: If sub stream is not enabled, users will not be able to change dual streaming options during Live display at the main window. It will be preset as <Display: Main Stream>.

5.2.5   Setup the VSS/NVR Site Manually

When users are adding a VSS/NVR site, select <VSS/NVR> as marked below. Then enter IP address, port, username, and password of the VSS/NVR site.
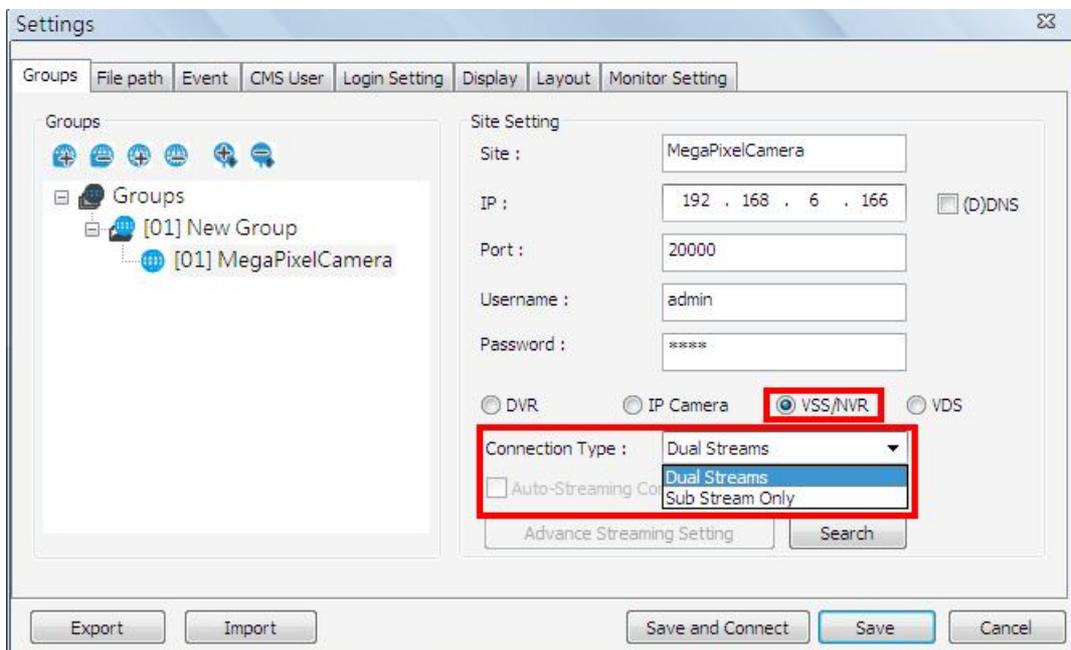
The next step is to setup connection type. Users can select <Dual Streams> or <Sub Stream Only>. The recording/displaying scenarios are as follows.

When <Dual Streams> is selected:
1. **VSS**: The recording/displaying streams will follow rules of dual streaming option selected with predefined main/sub streams at VSS sites.
2. **NVR**: The recording streams will be whatever streams come in. The displaying streams will follow rules of dual streaming option selected.

When <Sub Stream Only> is selected:
For both VSS and NVR sites, both recording and displaying streams will be the sub stream. The dual streaming options will not be available.

Click <Save> to complete the setting.

5.2.6 Setup the VDS Site Manually

If users want to add a VDS site, it has to be the only site in the group. Select <VDS> as circled below. The site name will be automatically changed to "VDS" and it cannot be renamed.
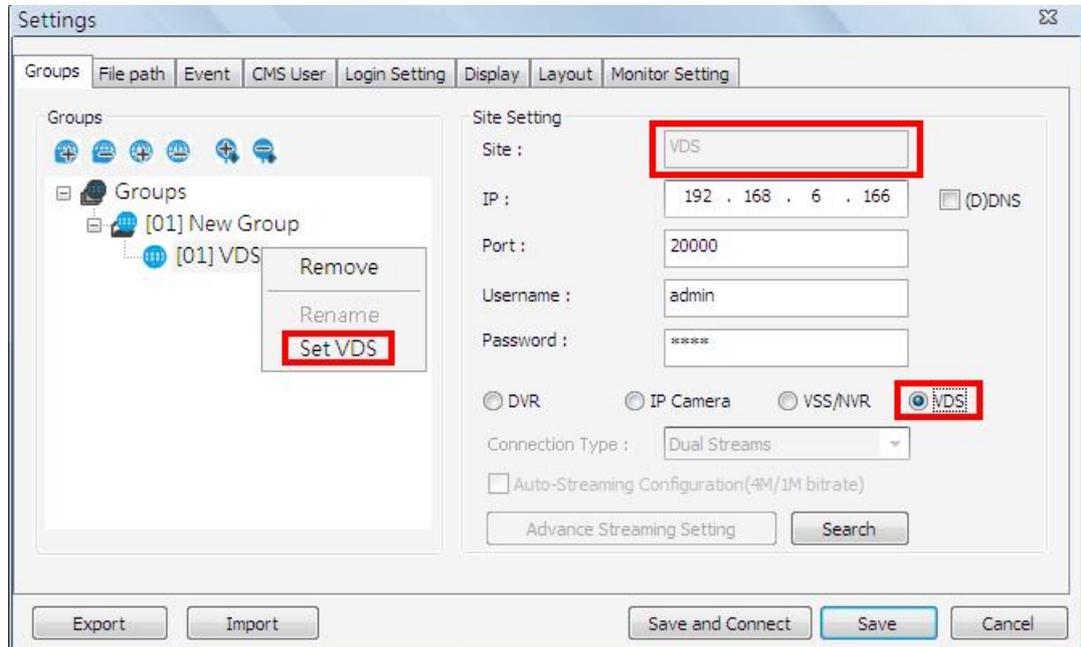
A setup window will be popped up as below. Input the IP, port, username, and password of VDS. Then click on <Testing VDS Connection> to test if the connection to VDS is successful. The testing result will be displayed on the right. Note that "()" next to site 2 of VDS means site 2 is not connected by VDS. Users can check or uncheck in front of the sites to select whether to display their videos. Click <OK> to confirm and save the setting.
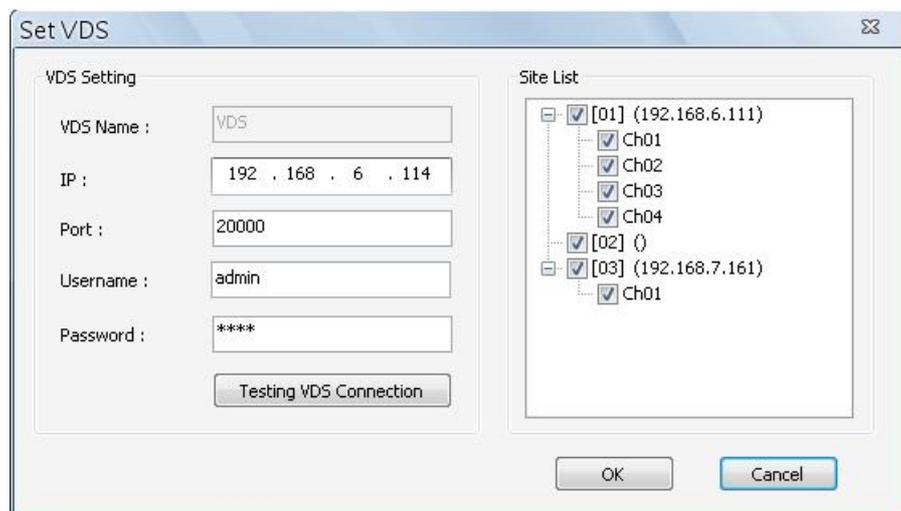
> ⚠️ **NOTE:** If IP address of CMS is not added to the White List of VDS, a message "Not In White List!" will be popped up.

> ⚠️ **NOTE:** If IP address of CMS is added to the Black List of VDS, a message "In Black List!" will be popped up.

For further details of VDS settings, please refer to User's Manual of VDS.

When users wish to edit the settings of VDS site, select <VDS> again or right click on the VDS site and select <Set VDS> to pop up the Set VDS window.

5.2.7   Get Channel Info.

After site setting is completed, right click the mouse on the group and select <Get channel info.>. CMS will retrieve number of channels of all added sites, and users can select displaying channels by checking the box in front of them. The unchecked channels will not be displayed in Live monitoring window and they will be grey out in the site tree.
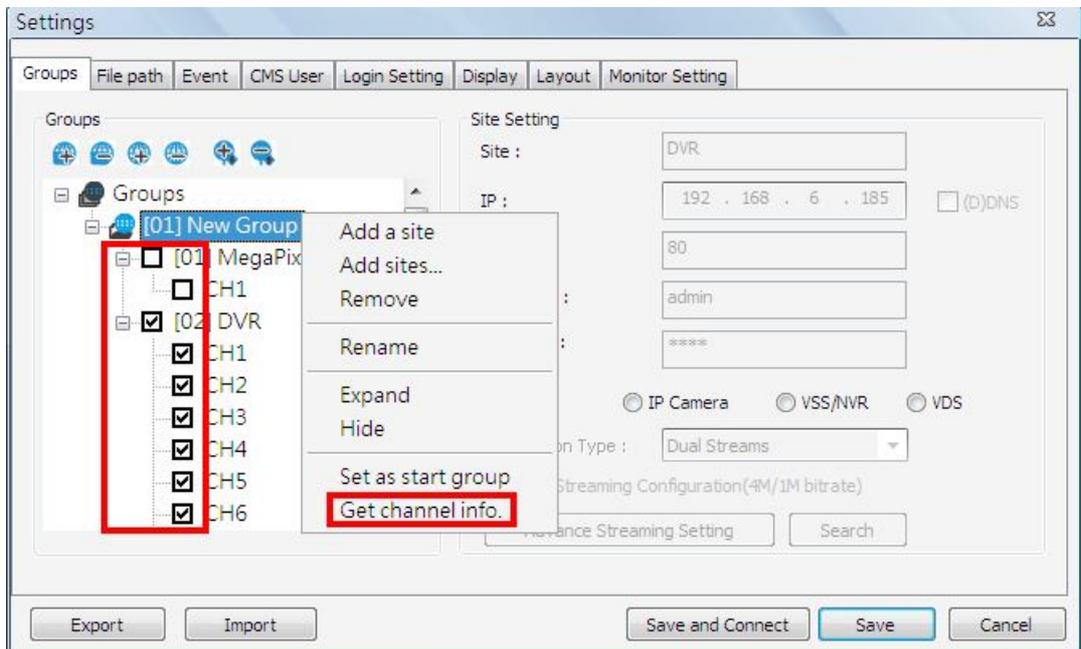
> ⚠️ **NOTE:** The number of displaying channels is limited to 64 channels, no matter how many sites are added.

5.3   Setup File Path

The File Path menu defines stored destination for snapshot files, AVI files, archive files, recorded videos and alert log files. It is recommended to use the default folders.
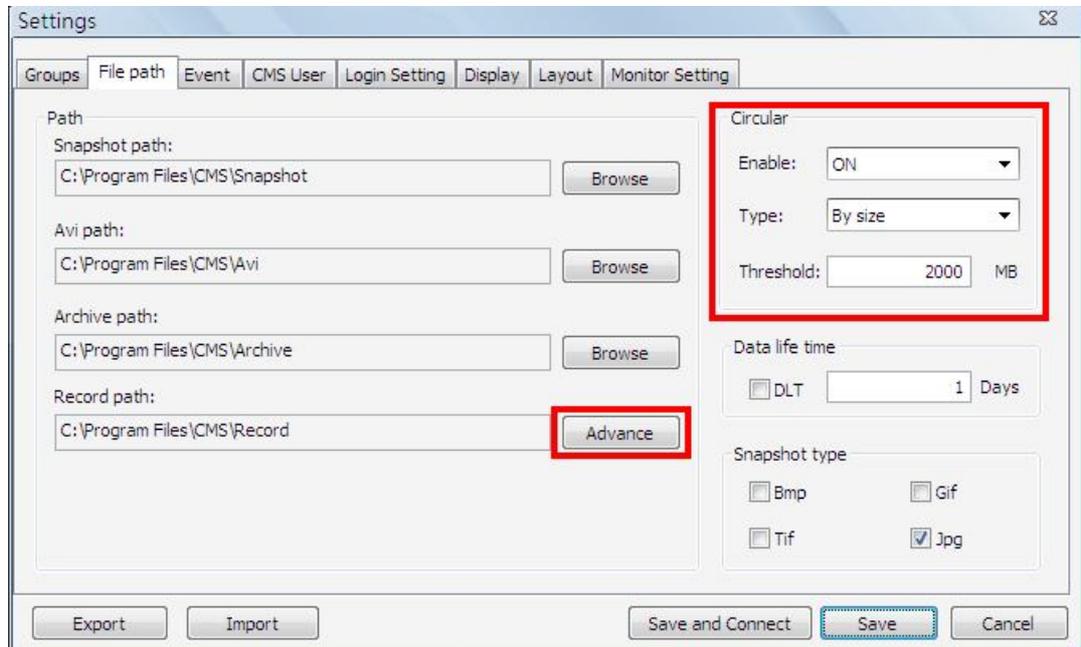
Record Path

The recorded videos can be stored in more than one folder. Click on <Advance> and the following window will be shown.
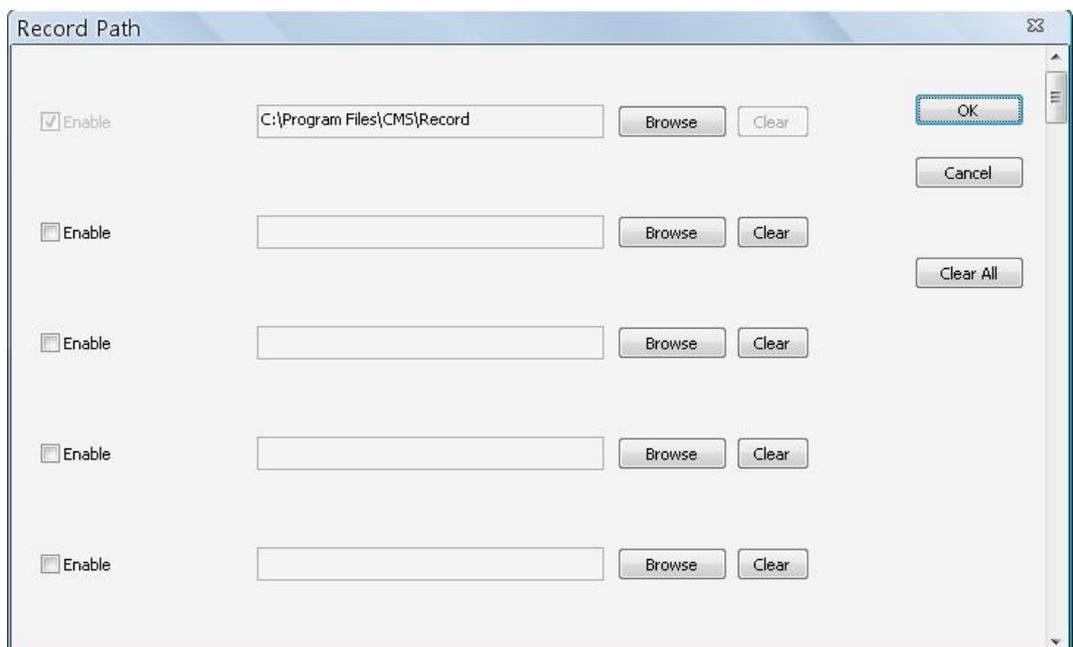
The number of selectable folders equals to the number of HDDs the PC connects to, excluding HDDs with capacity less than 2GB. Check the "Enable" box and click <Browse> to set more destination folders. Each folder should be from different HDD or an error message will be displayed. Note that if a HDD with less than 2GB capacity is selected, an error message will be shown. Click on <Clear All> will delete all folders except the first preset folder.

In each folder, subfolders will automatically be created with folder name "RecordFolder********", which ******** represents an 8-digit serial number. Each subfolder can store up to 500 videos. Once a subfolder is full, a new subfolder with a subsequent number will be created and new files will be stored to the new subfolder.

Circular Function

The <Circular> function is used to adjust the HDD space usage of CMS. For example, when the threshold is set to 2GB, and there are 20GB free disk space remaining in the HDD, CMS can only access the HDD no more than 18GB. When the free disk size is smaller than threshold:

1. If the circulation of files is performed at first time, CMS will start to overwrite the earliest recoded data. Next time when CMS starts up, the circulation of files will continue from where it was up to.
2. If the destination folders are reset, new folders will be created to store new files. The old files will be deleted and rewritten with new files.

Record Videos from IP Cameras to Remote Network Disks

When videos from IP Cameras will be recorded to a remote network disk, the DRV file is going to be stored under a temporary folder "\CMS\TEMP_REC\" if the file size is less than 100MB. Once the file size reached 100MB, the file will automatically be transfer to the designated remote network disk.

If the recording is interrupted (either connection reset, disconnected, stops recording, etc), a progress bar will be shown to inform users that the DRV file is being transfer to the designated remote network disk.

NOTE: For CMS servers 2~4, the temporary folders will be named as TEMP_REC2, TEMP_REC3, and TEMP_REC4.

Data Life Time

If users checked the box in front of "DLT" to enable Data Life Time function, the duration in days has also to be defined. When Data Life Time function is enabled, CMS will check the file edit time of the recorded video files in all "Record Path" and any video files exceed the defined duration will automatically be permanently deleted.

Snapshot Type

CMS has a snapshot function, and the file type for snapshot can be defined here. Note that if more than one type are selected, take 2 types for example, then each snapshot is saved to 2 types of files. They are the same image, but in different formats. For instance, if Bmp & Tif are selected and the snapshot is taken, two types of image files of the same snapshot image will be created.

5.4 Alert Events

The alert function enables the connected DVR(s) to send alert signals to CMS. This section describes how the alert function works.

Setting up the alert function

Step 1. Find the IP address of the local computer.

Go to **Start** menu, select **Run**.
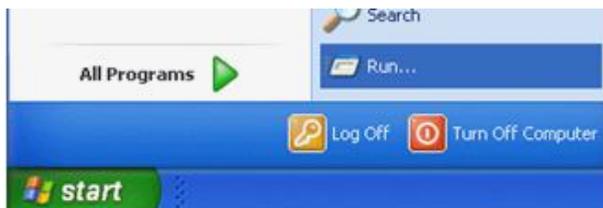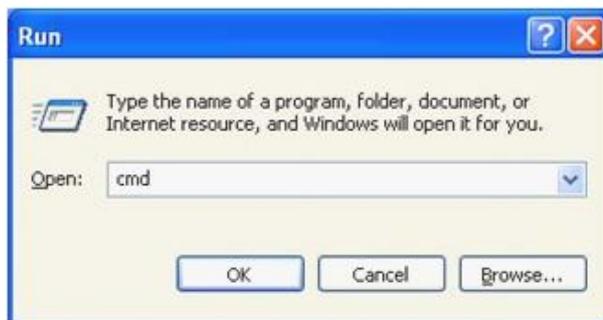
Type in **cmd** and click OK.

Type in **ipconfig** to get the IP Address of the local computer. Write down the IP address on a piece of paper for later use.
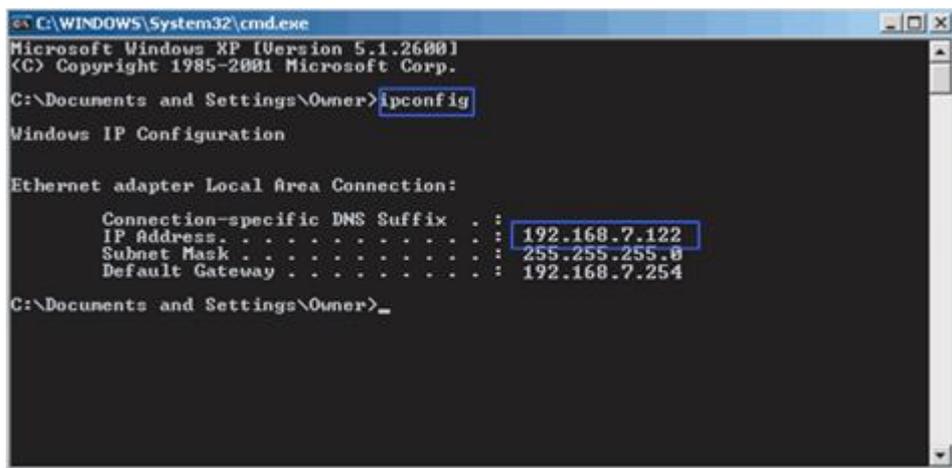
Step 2. Setup the <Alert Notification Setup> on the connected DVR(s). The <Alert Notification Setup> allows users to send alert notifications to CMS program which had been installed to the computer.

Alert Notification Setup	
Alert Configuration Set	1
Alert Notification	OFF
Alert IP	192.168.7.122
Alert Port	9999
Alive Interval	120 Sec

- Alert Configuration Set

<Alert Configuration Set> provides 3 combinations of Alert Notification, IP, and Port. Users can match the connected DVR to at most 3 different CMS servers.

- Alert Notification

4 options are included in this item; <OFF>, <Event>, <Alive>, and <Both>.

<OFF>:   The Alert Notification is turned off.

<Event>: When the alarm is triggered, the DVR will send an alert message to CMS.

<Alive>: The DVR will send an alive message to CMS every N second just to show that the connection between the DVR and CMS is in effect. The time interval N can be adjusted in <Alive Interval>.

<Both>: This enables the DVR to send both Event and Alive alert messages to CMS.

- Alert IP

The Alert IP must match the IP address of the local computer. In this example, the IP address of the local computer is 192.168.7.122.

- Alert Port

The Alert Port is the port used for sending and receiving alert signals. Choose any port that is not restricted by the network. The ports for both connected DVR and CMS Alert **must be the same**. In this example, the port is set to 9999.

⚠ **NOTE:** If 2 configuration sets are corresponding to 2 different CMS servers, each CMS server must have its own unique port number.

- Alive Interval

Time interval (1 to 255 sec) between each alive message can be set here.

Step 3. Setup the Alert of CMS.

Click on the <Setting> icon and go to Event tab to setup the port in the "Alert" section. Note the port must match the DVR's setting. And select <ON> to enable the alert function.
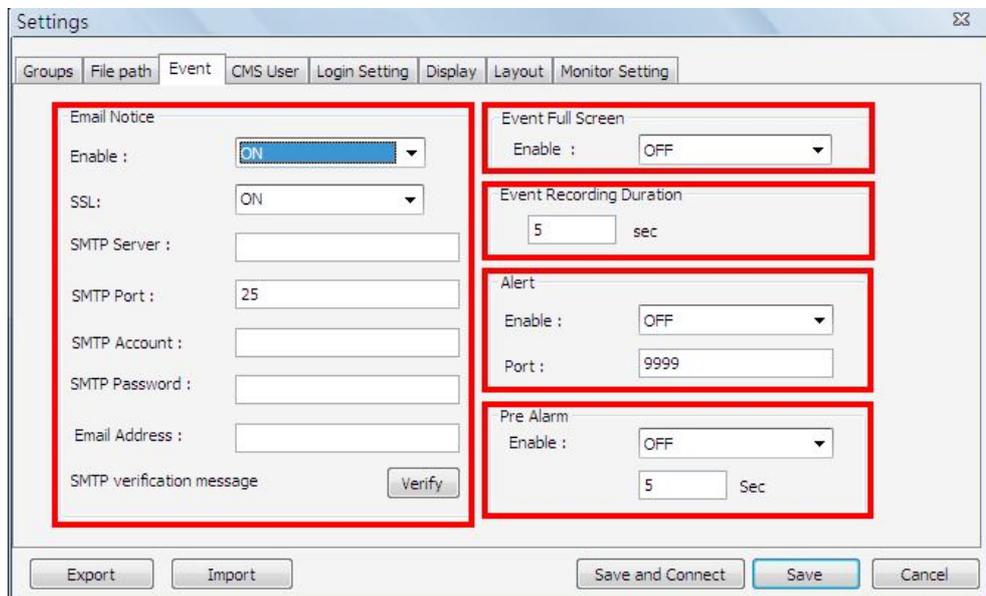
In addition, users can send alert notice to a specific email via a SMTP server by selecting <ON> next to <Enable> in "Email Notice" section. If the email server requires SSL, select <ON> next to <SSL>. Then enter all required SMTP information. If the format of the email address is entered incorrectly, an alert message will be shown on the screen. After SMTP information is filled in, click on <Verify> to confirm if the input data are correct. The message shown next to <Verify> will indicate if SMTP setup is successful.

⚠ **NOTE:** CMS will also send emails when connections to DVRs are lost or when errors occurred in HDDs.

In the "Event Full Screen" section, users can choose whether to display full screen of the alerted channel. Select <ON> to activate this function, or <OFF> to deactivate it.

The "Event Recording Duration" section is for users to define recording duration of event videos, when schedule is set and/or when motion recording is enabled.

In the "Pre Alarm" section, users can setup pre alarm video duration to be a part of event videos. Note that normal video recording has to be enabled in order to provide video data to the matching event video.

⚠ **NOTE:** If users reconnect or disconnect the sites, the list of the event full screen will be cleared.

⚠ **NOTE:** Once the list of the event full screen finished playing, the window will return to former viewing status**.**

Step 4. Alert Action

The connected DVR sends 4 types of alert message (State) to CMS: Alive, Alarm, Motion, and Video Loss. Alive messages are sent when the notification option is set to <Alive> or <Both> in the connected DVR. Alarm, Motion, and Video Loss messages are sent when the notification option is set to <Event> or <Both> in the connected DVR.

For details about alert information list, refer to section ***Alert Log***.

5.5   CMS User

The <CMS User> is for the management of user accounts in CMS. Users can set users' account information and privileges. The default username and password are: **admin** and **1234**.
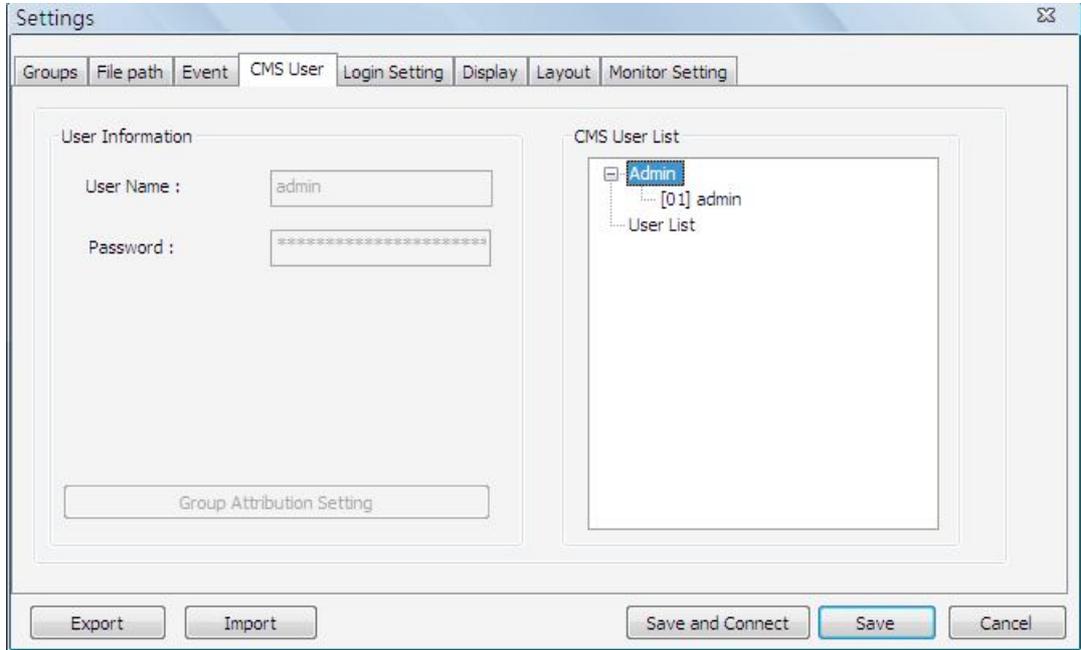
> ⚠ **NOTE:** Only users under the <Admin> group have the privilege to change the settings in <CMS User>.

To add a user, users must first add a group. Right click on <User List> and select <Add Group> from the pull-down menu.
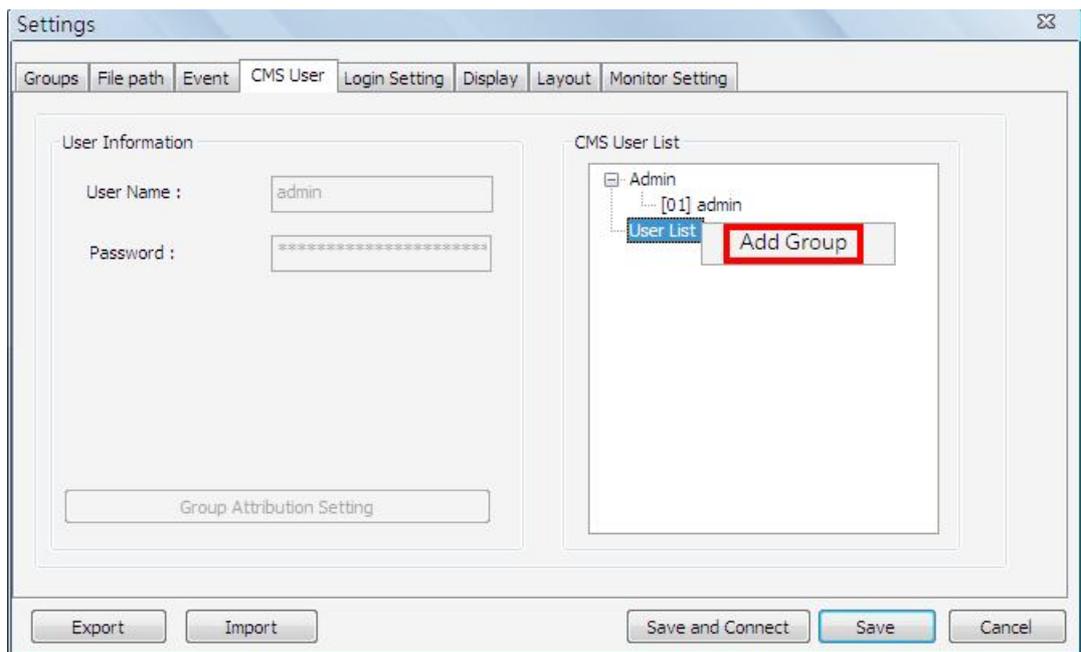
After the group is added, the first user account of the group will also be created. Users **MUST** set the password for this account before users can go to the next step.
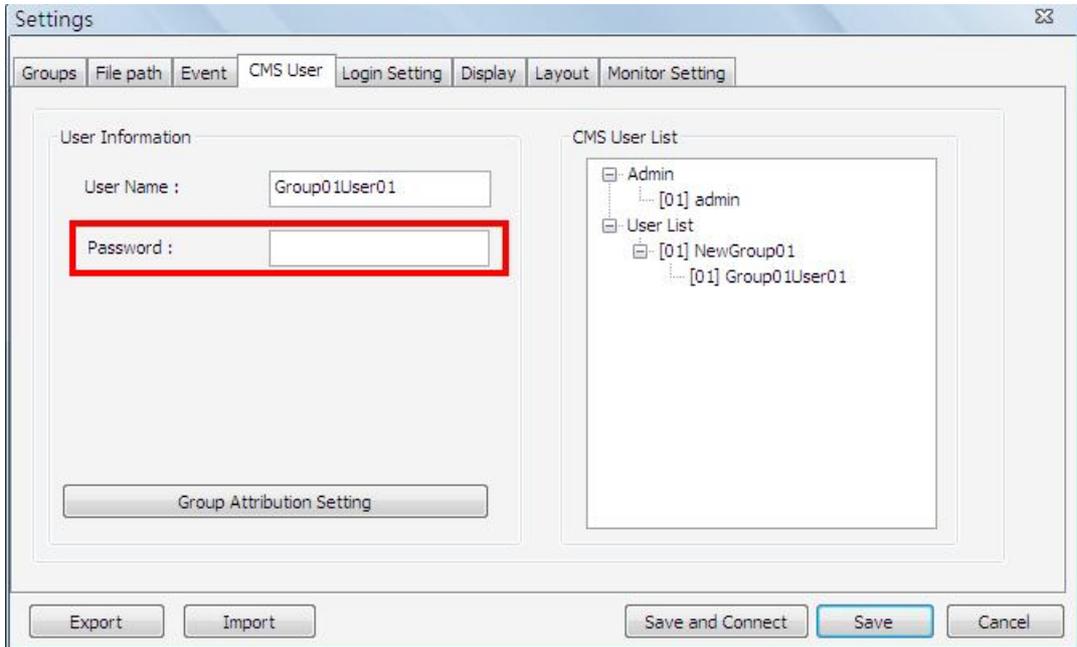
Right click on <NewGroup01> to add a user, remove a group, or rename the group.
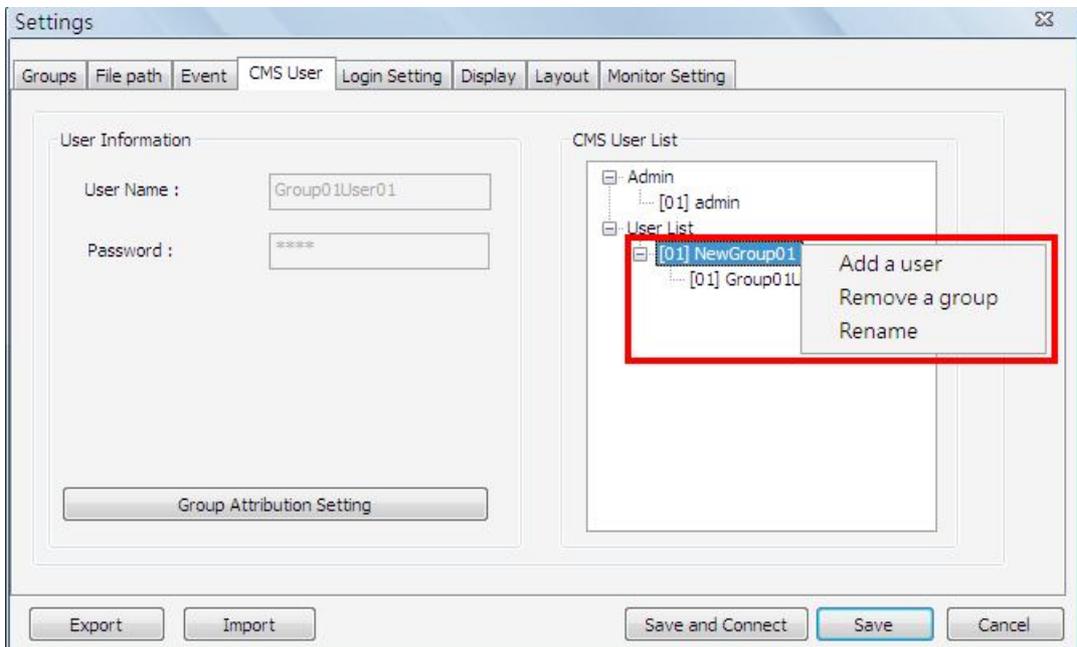
⚠ **NOTE:** The account currently used to login cannot be deleted. An error message will be displayed.

Right Click on <Group01User01> to remove a user or rename username.
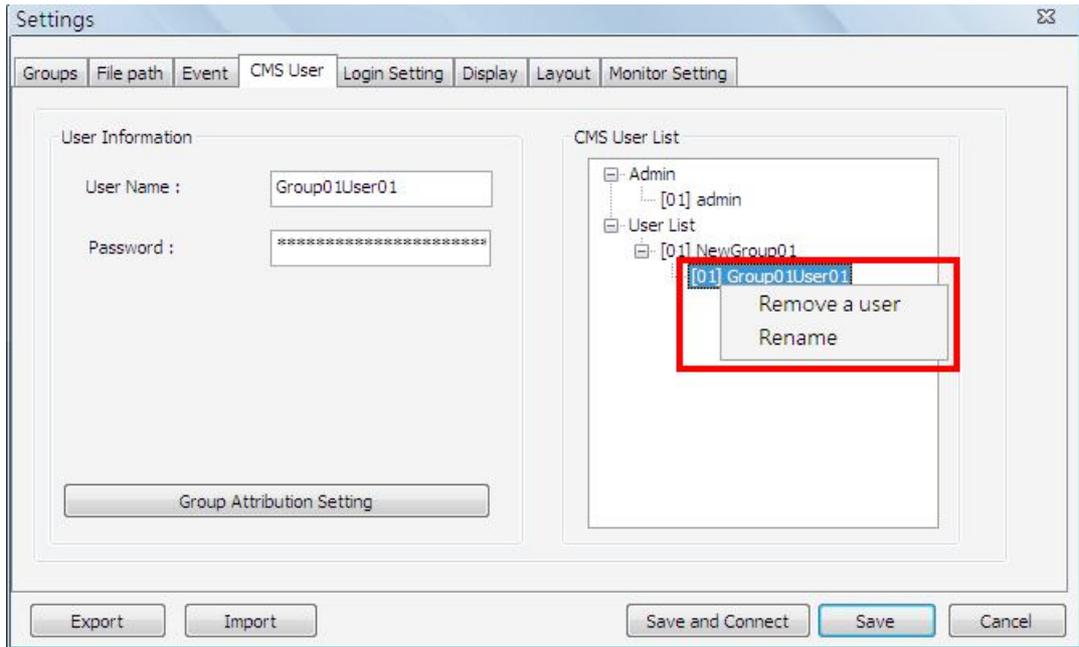
The <Group Attribution Setting> is for setting up the privileges of the selected user. Users can give each user account different privileges by configuring this function.
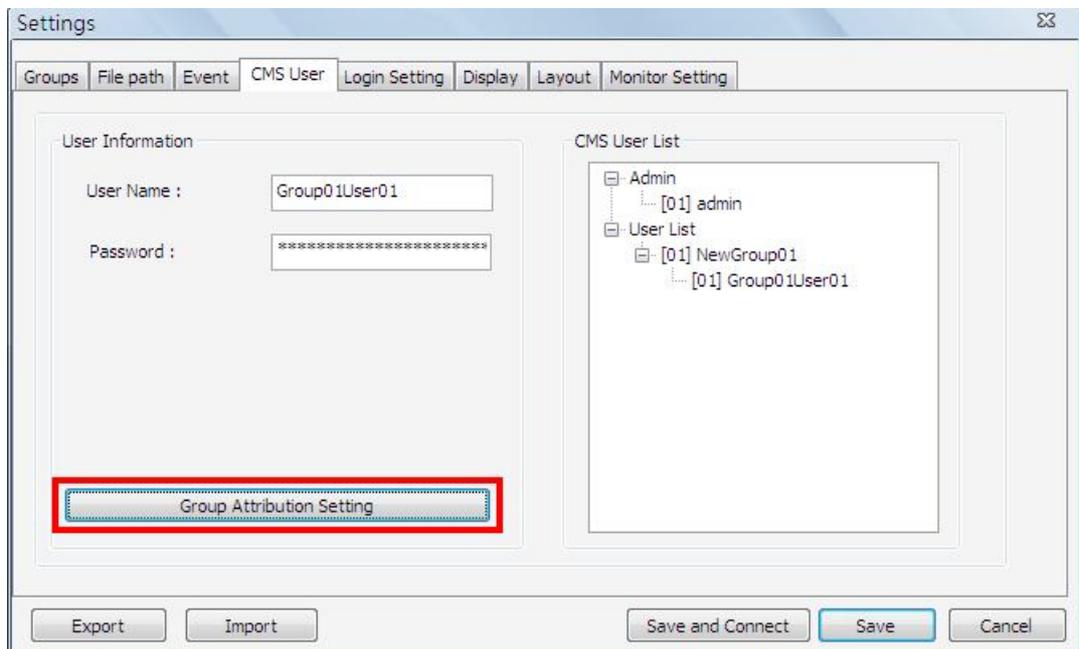
After entering the <Group Attribution Setting>, the following diagram will be shown. Select a user account in <Select CMS Group>, and users can click on the buttons to enable or disable its privileges.
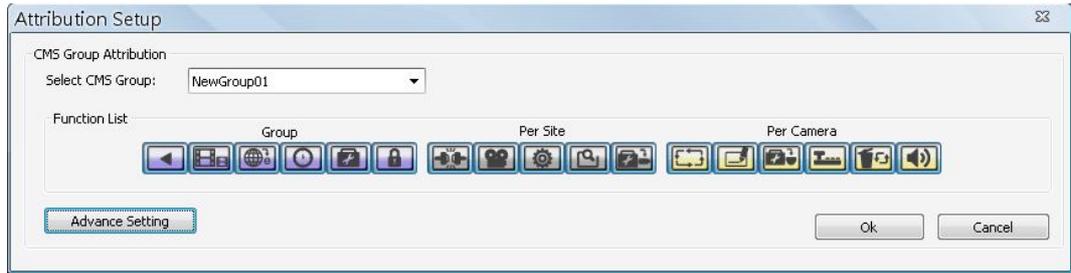
◆ Purple buttons are CMS menu controls including: Playback, Player, Emap, Schedule Record, Setting, and Lock.

◆ Gray buttons are site controls including: ReConnect\DisConnect, Record, Configuration, Event, and Camera Setting.

◆ Yellow buttons are camera controls including: Sequence, Rename, Dome Setting, Dome Control, Remove, and Sound Notification.

Each camera can be set to enable/disable Live, Play, or Record function individually after clicked on <Advance Setting>. Refer to the following figure for details.
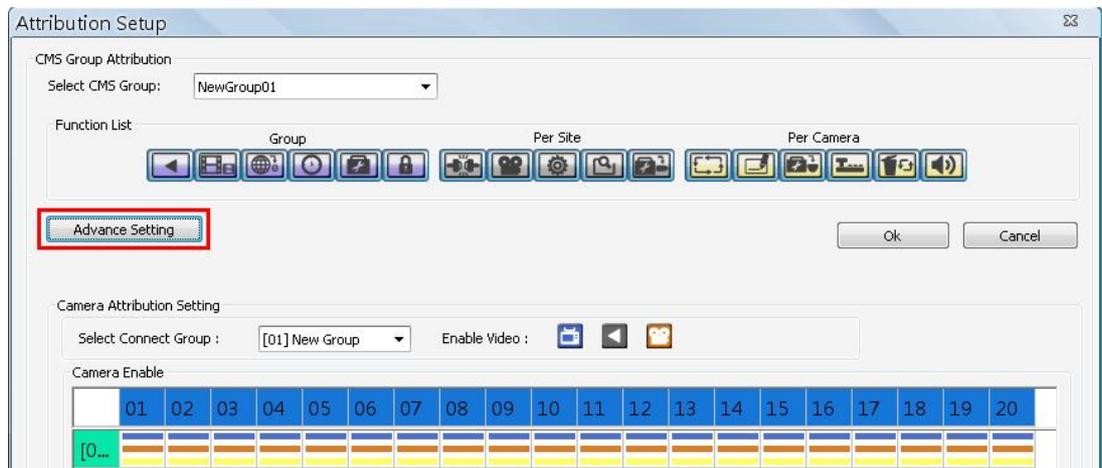
NOTE: The preset is 20 cameras for all sites. The real number of cameras per each site will not be detected.

NOTE: These settings will affect the whole operation of CMS. Please be very careful while configuring the settings.

Next time when users login, users can choose to enter CMS either as the admin or users.

5.6   Login Setting

Users can edit options regarding login settings in this section. Administrator username and password is required to edit the setting.
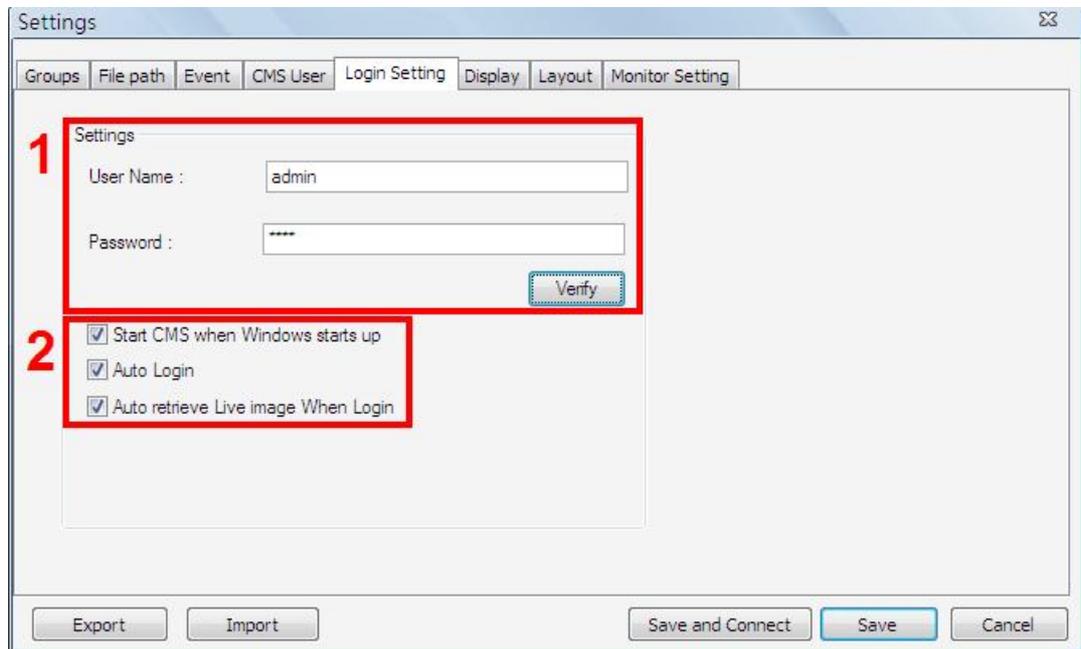
As shown in the above picture, the box marked "1" is where users can enter a set of username and password to be used for auto login. The "Verify" button can help users to check if username and password are correct. The following messages boxes will popup to inform the result of verification.

The box marked "2" contains the options regarding automatic actions. Clicking the first option "Start CMS when Windows starts up" to request the computer to open CMS in the mean time when the system startup. Note that the other two options "Auto Login" and "Auto retrieve Live image When Login" will be checked at the same time. Nonetheless, it is still users' choice to determine the favorite setting.

A message box will be shown when CMS is auto opening after the system started up. Click "Cancel" can terminate opening CMS.

Click the second option "Auto Login" to automatically login when CMS starts. Remember to enter and verify username and password in box 1.

Click the third option "Auto retrieve Live image When Login" to automatically connect to the sites in the start group when CMS starts. Detection of internet connection will be performed before hand and a pop-up message will be displayed. Click <Stop> to terminate the detection and AutoLive will not be initiated.

5.7 Display

Under <Display> tab, users can configure image display, camera info display, and sound notification settings.
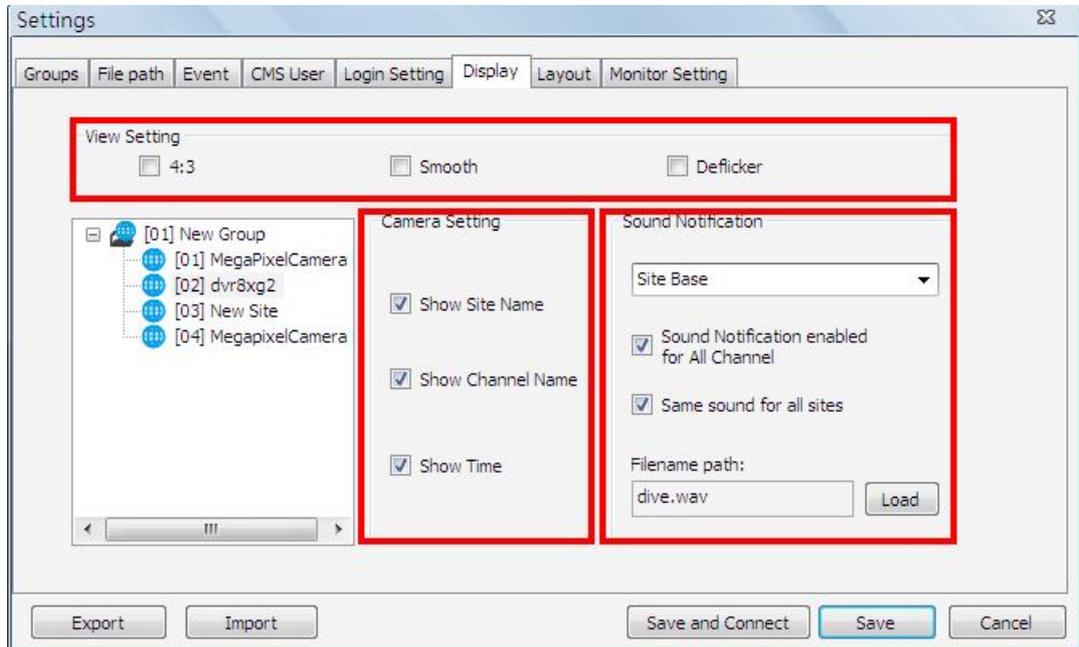
View Setting

Check the box in front of <4:3> to change the image aspect to 4:3 ratio. Smooth function helps to give the displaying camera image more sharpness. Enable deflicker function to avoid gleaming of images.

Camera Setting

Under this part, users can select whether to show site name, channel name, and/or time on the displaying camera image. Check the boxes and the selected information will be shown on the top-left corner of the camera image.

Sound Notification

Camera sound notification enables a preset sound file to be played when an alert event occurs. Users can setup sound notification options for the sites listed in the site tree on the left. First select a site in the site tree, and choose <Site Base> or <Channel Base> from the pull-down menu.

Select <Site Base> from the menu and check the option <Sound Notification enabled for All Channel> to switch on sound notification for all channels. All sites having the option <Same sound for all sites> checked will play the same sound file, which will be the latest selected one. Click on <Load> to select a sound file.

NOTE: On the top-left of the camera grids, word string "[SN]" will be shown to indicate sound notification is switched on for the channels.

Select <Channel Base> from the menu if users wish to switch on sound notification only for specific channels. Click <Load> to select a sound file. Next users need to go to the Device Setting window to enable/disable sound notification for the selected channels. Refer to section ***Device Setting*** for more details.

NOTE: The sound files selected will be saved in CMS folder \Setting\SoundNotification\.

5.8　　Layout

The Layout tab helps users in saving preferred layout format and retrieving the previously saved layout format.
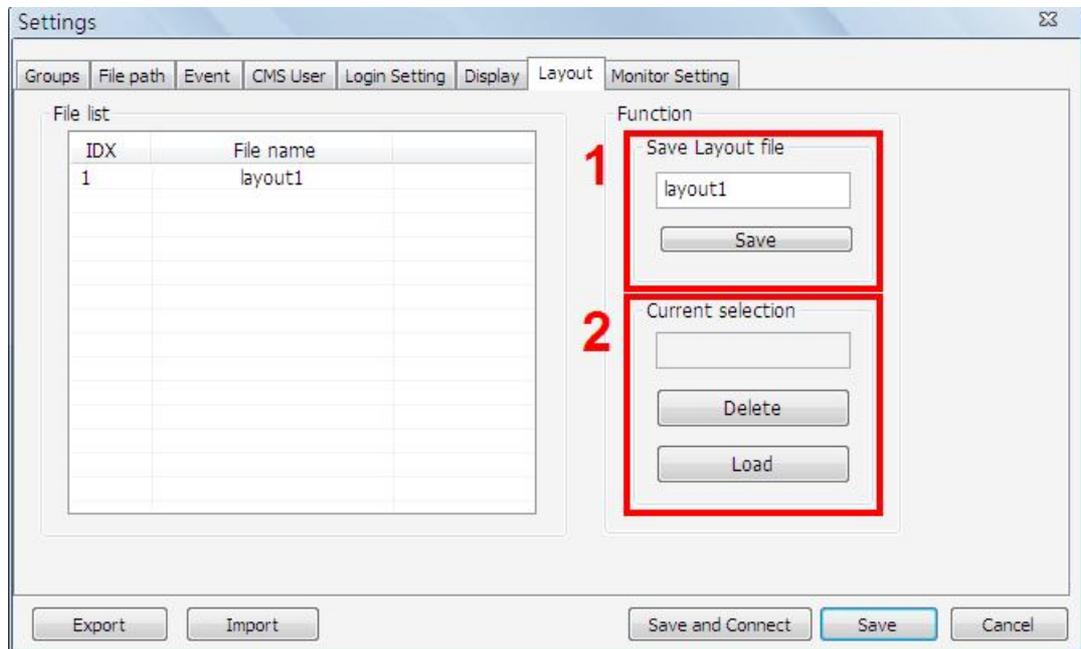
When users wish to save the current viewing display layout, first type in a file name and click on <Save> as shown in box 1.

In box 2, users can load or delete previously saved layout file. First select a file in the file list on the left, and click on <Delete> / <Load> to delete / load the selected layout file.

5.9   Monitor Setting

When two or more monitors are connected, users can decide which monitor to show which CMS server under the Monitor Setting tab.
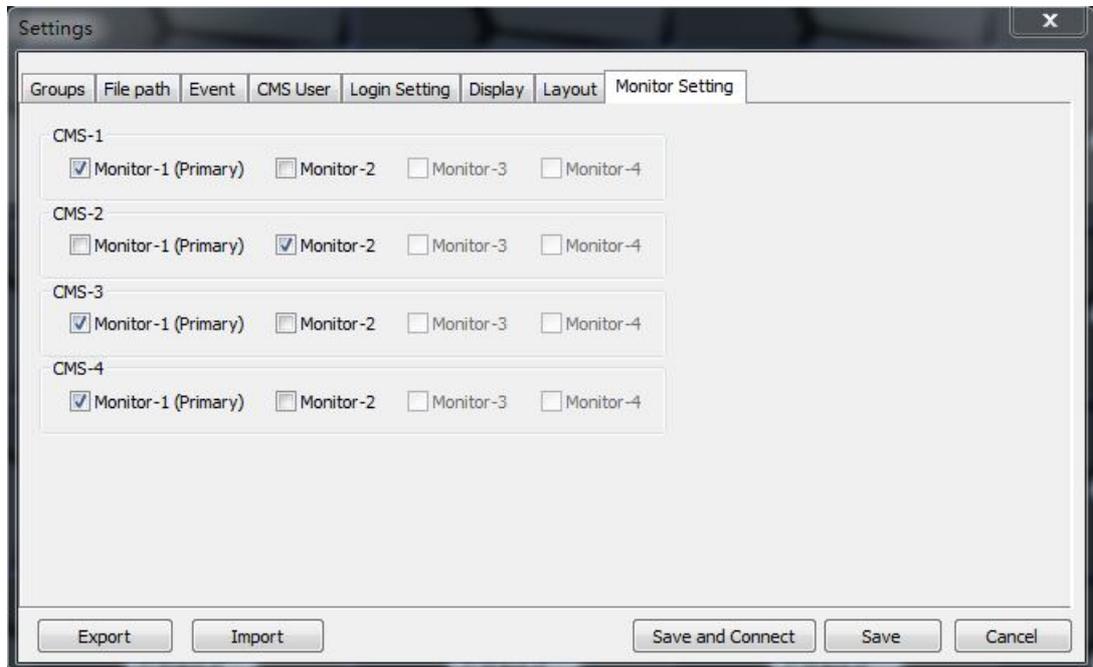
As shown in the above picture, the PC is connected to two monitors. Therefore, users can select displaying monitors for each CMS server by checking the box in front of the preferred monitor.

5.10 Export or Import Settings

The export / import function provides users the option to backup and restore the settings as needed.
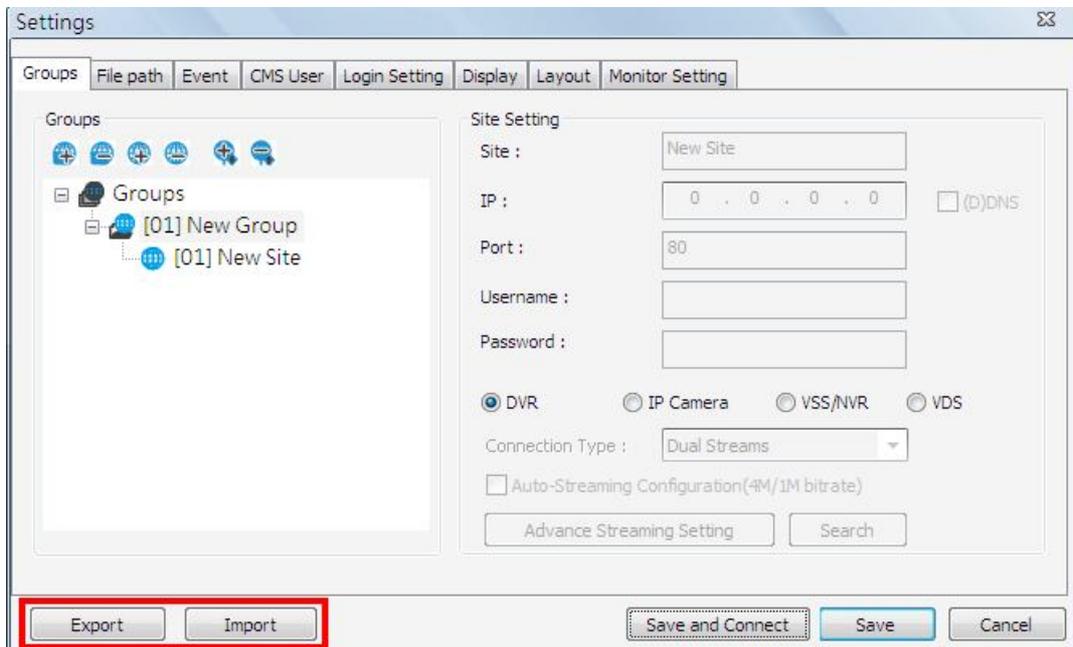
To export the configuration, click on <Export> and select a directory to save the configuration file.

To import a previously saved configuration, click on <Import> and find the configuration file that is going to be restored.

⚠ **NOTE:** After a setting is imported and saved, the imported setting will be loaded immediately and CMS will reconnect to the sites in the live group.

6.   Operation of CMS

Users can open up to **4** CMS instances simultaneously. If the PC is connected to more than one monitor, for example 4, then the PC can open up to 4 CMS instances at the same time on the 4 different monitors respectively. However the processor and RAM of the PC will limit the number of CMS instances as well. Note that all monitors have to be set to the same displaying resolution.

NOTE: Resolution of the monitors **MUST** be set to 1280*768 or above.

CMS multiple instances limitation according to the PC:

Dual Core or Hyper-Threading	RAM ≥ 512MB	Open 1 CMS
	RAM ≥ 1GB	Open up to 2 CMS
	RAM ≥ 1.5GB	Open up to 3 CMS
	RAM ≥ 2GB	Open up to 4 CMS
Single Core and Frequency > 2.0GHz	RAM ≥ 512MB	Open 1 CMS
	RAM ≥ 1GB	Open up to 2 CMS
	RAM ≥ 1.5GB	Open up to 3 CMS
	RAM ≥ 2GB	Open up to 4 CMS
Single Core and Frequency ≤ 2.0GHz	RAM ≥ 512MB	Open 1 CMS

NOTE: It is recommended to keep the connected channels within 512 channels if multiple CMS instances are opened.

Network Connection Detection

CMS will auto detect network connection status. If CMS lost network connection, an error message will be displayed. Click on <Stop> to cancel the network detection function.

When CMS detected the restore of network connection, the error message will disappear. Click on <Stop> to cancel this function.

6.1 Power Button

Click on the Power button and the pull-down menu are <Lock>, <Exit> and <Minimize>. Users can lock CMS system, exit CMS system, or minimize CMS main window.
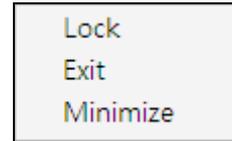
Lock
Exit
Minimize

Lock CMS System

The Lock function helps users to protect CMS from unauthorized use when there is need to be away from the computer for a while. Closing CMS is not allowed and other functionality will be limited as described below.

Click on the Power button and select <Lock>, then a confirmation message will be displayed. Click "Yes" to confirm locking up CMS system.

When CMS is locked, windows control will be as the following two types:

	Type	Example	Windows Control
1	Setting	Settings, Schedule Record, Emap, Dome Control, etc	The windows will be closed without saving changes. It is recommended to save settings before locking up CMS.
2	Monitoring	Archive, Alert, etc.	It is not allowed to close the window but just minimize it.

⚠ **NOTE:** If CMS is forced to be closed while it's locked, CMS system will still be locked when it is started up again.

Unlock CMS System

Click on the Power button and select <Unlock>, then a login window will be displayed for users to enter username and password to unlock CMS.

To unlock, the following are two scenarios:

	Login Account	Unlock Account	Note
1	User	- Login User - Any Administrator	The access authority will still be User's limit.
2	Administrator	- Login Administrator	If password is changed, use new password to unlock.

⚠ **NOTE:** If the password of the current login account is changed, use the new password to unlock.

Exit CMS System

Click on the Power button and select <Exit> to close CMS.

Minimize CMS Main Window

Click on the Power button and select <Minimize> to minimize CMS main window. CMS can be minimized to the tray icon or to the taskbar button. Refer to section **_PC System Info,_** for more information.

6.2   Display Mode

The available display modes are single channel, 4-windows, 9-windows, 16-windows, 25-windows, 36-windows, 49-windows, 64-windows, 8-windows, 10-windows and 13-windows. Click on any icon to view the selected display mode. To view in single channel, double click on the channel in the site tree or on the grid.

⚠️   **NOTE:** When the display is in single channel and the resolution is set to higher than D1, the ratio of length/width of the displayed image will be fixed.

Displaying Color of Camera Titles

There are three different displaying colors for camera titles Red, White, and Green. The following chart shows the meaning of three different colors.

Red	The connected site is a DVR currently recording.
White	1. The connected site is a DVR **NOT** recording. 2. The connected site is an IP Camera
Green	CMS is remotely playing back videos from connected sites.

In addition, icons Sequence, Full screen, Last mode, Page up and Page down give users variable options in monitor surveillance.

Sequence

Click on the <Sequence> icon to start sequence display of cameras added in the sequence list. The initial display mode will be what was set in sequence setting (1*1, 2*2, 3*3, 4*4 or 5*5). Refer to section **_Sequence Setting_** for details about sequence setups.

After sequence display is started, users can still change the split mode by clicking on the display mode icons for 4-windows, 9-windows, 16-windows or 25-windows. However, the initial split mode set in <Sequence Setting> will remain the same. Note that icons for any other display modes will not be accessible because they are not allowed to be shown in sequence mode.

The following functions are disabled in sequence mode:
1. Right click to see channel menu
2. Zoom In/Out
3. Page up / Page down
4. Drag and drop channels or sites to the display grids
5. Remove any channel grids on the display windows

> ⚠️ **NOTE:** If users enabled the <Event Full Screen> function and an event is triggered while running the sequence, CMS will display event full screen. The sequence will not resume until event full screen ends.

Click on the <Sequence> icon again to exit the sequence mode.

Full Screen/ Operator mode
Click on the <Full screen> icon to view the display window in full screen.

To exit from full screen mode, right click and select <Operator mode> in the pull-down menu. Users will be able to return to the operation layout. Note that <Operator mode> will only appear in the pull-down menu under full screen mode.
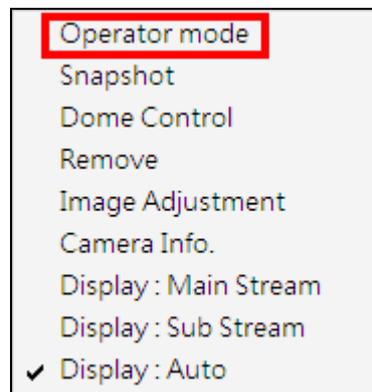
Alternatively, users can also press ESC key on the keyboard to return to the operation layout.

Last mode
<Last mode> allows users to quick return to last display mode.

Page Up / Page Down
Click on the <Page up> button to display images of previous cameras in the site tree. On the other hand, click on the <Page down> button to display images of next cameras in the site tree.

6.3   View Operator

Click on the <View Operator> icon and the pull-down menu are <Live all>, <Re-sort>, <Snapshot>, <Video preview> and <Sequence Setting>. Details of the menu items are described in the following subsections.

Live all
Re-sort
Snapshot
Video preview
Sequence Setting
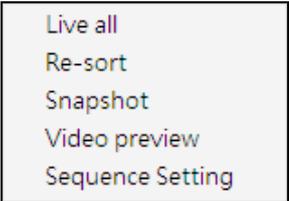
6.3.1   Live All

This menu item allows users to connect all sites in current site tree and display their Live monitoring at one click. More details about connection to sites, please refer to the following descriptions.

⚠ **NOTE:** For Live viewing of more than 16 IP devices, users need to lower the camera resolution and change the compression method to MPEG4 or MJPEG.

Reconnect/Disconnect the Sites

If the connection between CMS and any connected site has been interrupted, users can reconnect the site by right clicking on the **Site** in the site tree and select <ReConnect> from the pull-down menu. Users can also disconnect any site by right clicking and selecting <DisConnect> from the pull-down menu.

ReConnect
DisConnect
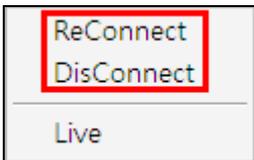
Live

Select <Live> after right click on a site and CMS will retrieve Live monitoring image(s) of the site.

Auto-Reconnect of Specific Disconnected Sites

CMS will automatically reconnect to specific disconnected sites every 7 minutes. Refer to the following table for all possible cases.

Situation	Auto-Reconnect
Sites that are not connected at the beginning:	Yes
Sites that are disconnected manually	No
Sites that are connected at the beginning but disconnected for some reason later on	Yes

6.3.2   Re-sort

The Re-sort function helps to rearrange display of camera images from all connected sites listed in the site tree. The first channel of the first connected site will be displayed in the first grid and so on from top to the bottom.

There are other ways to change displaying grids for channels / sites. Refer to the following descriptions.

Assign a Channel / Site to Certain Grid(s)
CMS allows users to assign any channel / site in the site tree to any grid of CMS main window. Follow steps below to complete assignment.

Step 1: Click and hold the channel / site users want.
Step 2: Drag and drop it onto the grid that users want to assign to.

Remove Display Grids
Users can also remove any channel by right clicking on the grid and select <Remove>. Or users can select any grid and press <Delete> key on the keyboard to remove the channel.

Note that the Re-sort function will restore the removed channels.
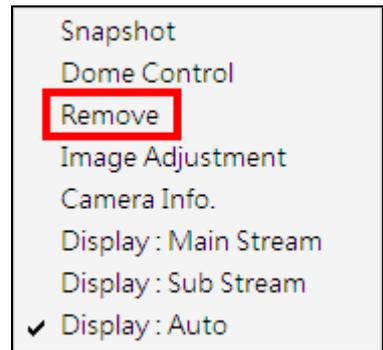
NOTE: The functions listed above will not be accessible in sequence mode.

6.3.3   Snapshot

The Snapshot function is a simple screen capture tool. When users click on <Snapshot>, it will capture the screenshot of the window that users are currently viewing. The snapshot files will be saved to the default path "\CMS\Snapshot\" or the folder that users selected in <File Path> setting.
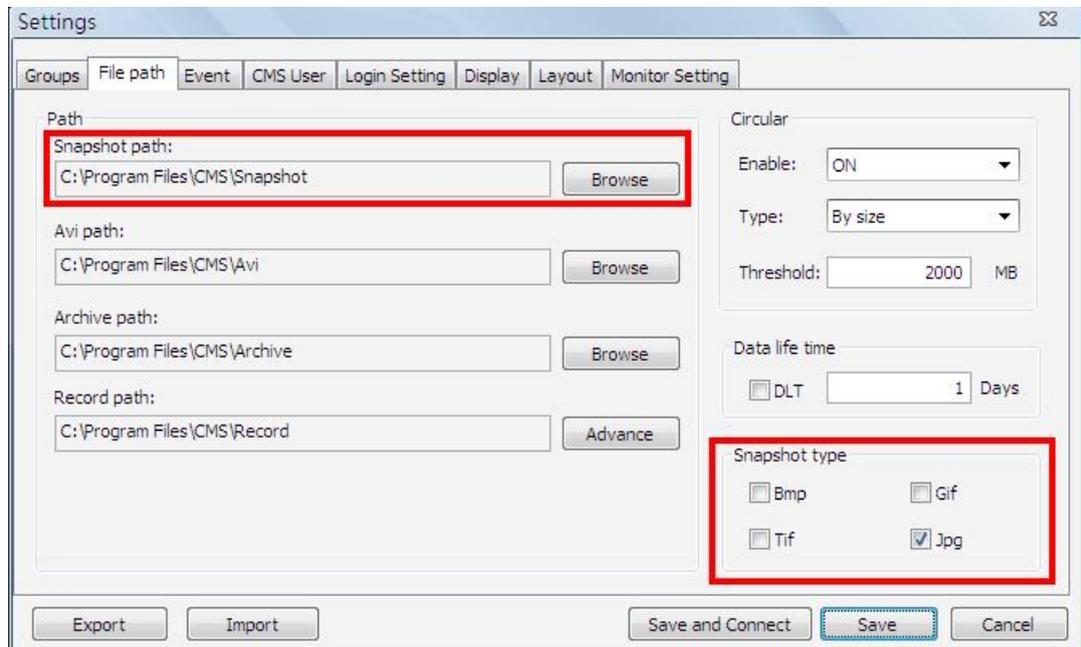
As shown above, the default snapshot type is Jpg. If users have selected more than one file type, users will get more than one files for one snapshot.

There are 2 ways to take the snapshot. One is to click on the <View Operator> icon and select <Snapshot>, then the snapshot window will be displayed. Click on <OK> to save the snapshot.

The other way is to right click on any grid, and select <Snapshot>. The file(s) will be saved without showing the confirming window. Note that it will only capture the image of the selected channel.
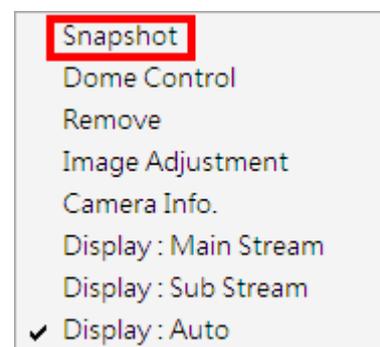
6.3.4   Video Preview

Video preview function allows users to choose showing channels in preferred display mode. Video preview window is as shown below.
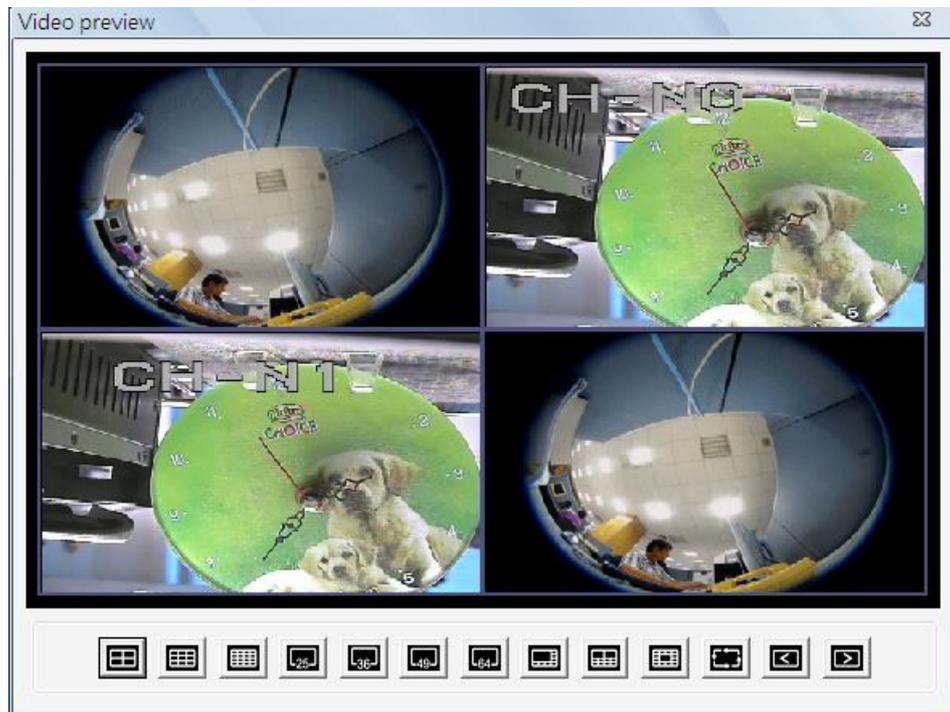
First select a preferred display mode shown at the bottom. Then click on <Page up> / <Page down> to choose showing channels. Double click on the chosen showing channels to return to CMS main window. CMS main window will be images of the chosen showing channels in selected display mode.

6.3.5   Sequence Setting

This function is for users to setup the displaying sequence. Before starting sequence display, users need to add channels to the sequence list. Double click on any channel in the site tree to add / remove the channel in the sequence list, shown as below on the left. Note that only channels of the connected sites will be displayed in the site tree. When a channel is added to the sequence, a capital "S" will be shown on the channel's icon.
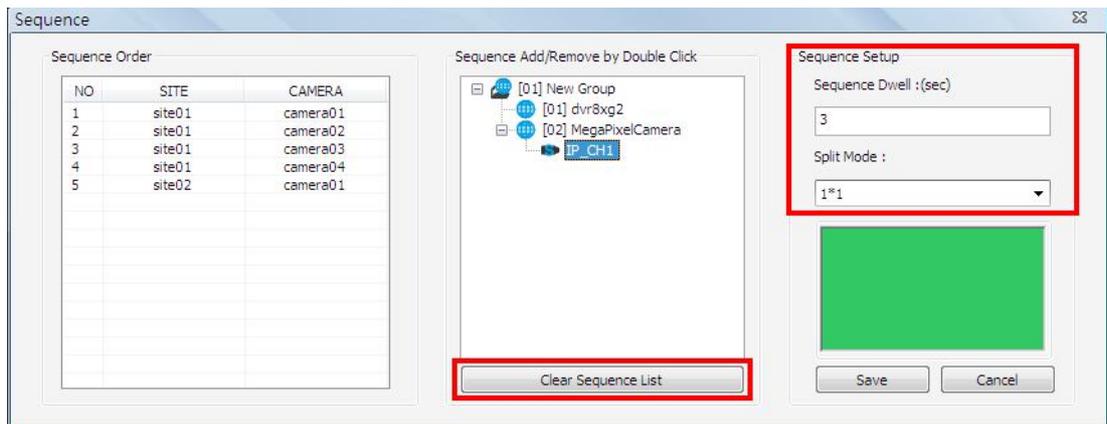
Under <Sequence Setup> on the right, users can setup the dwell time (1 to 120 seconds) and sequence split mode (1*1, 2*2, 3*3, 4*4 or 5*5). Click on <Save> to save the settings.

Click on <Clear Sequence List> to empty the sequence list.

6.4 Emap

Emap is a function that allows users to illustrate the positions of cameras on a self-selected image. Click on the <Emap> icon to open the Emap window. Refer to the instruction below to setup the Emap.

Add / Remove / Rename Maps

Step 1. First right click on "Map" in the map list, as shown below, and select <Add Map> to add a self-selected map. The supported picture formats are Bmp, Jpg and Gif files.

⚠️ **NOTE:** The image shown in the window is the default picture. It will only be available when CMS default setting is installed.

Step 2. A new map can also be added within an existing map. Right click on the displaying map and select <Add Map>. The added map will be shown as an icon (as in below picture) at its added position on the original map. Users can add up to five levels of within maps.
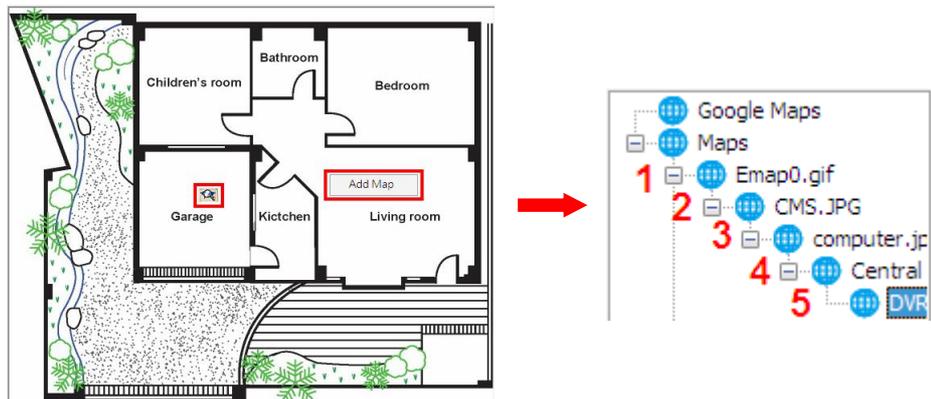
Step 3. Right click on a map in the map list to rename or remove it.
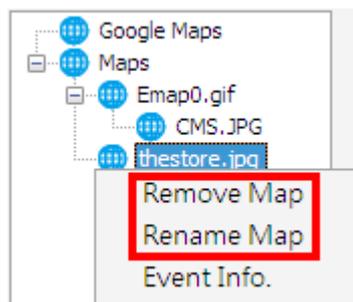
> ⚠️ **NOTE:** <Event Info.> will pop-up an event list including events from the cameras linked in the map.

Google Map Function

For users who wish to add maps with geographic location in Google Map, refer to the following steps.

Step A. Double click on the <Google Maps> icon and Google Map will be displayed.

Step B. Type the name of the location and click on <Search>. If Google Map is able to find the target location, it will be shown at the center of Google Map. The display size of Google Map will not be changed.

Step C. Click on the directional icons to move Google Map to any preferred directions. Click on the center icon to return to the last view.

Step D. Click on +/− to magnify/shrink the display size of Google Map. Alternatively, drag the slider bar to select a preferred display size.

Step E. Select preferred type of Google Map. "Hybrid" is the mixture of pure map and Satellite map.

Step F. Right click on a preferred location and select <Add Map> to add a self-selected map.

Step G. Once a map is added, a balloon with a letter will be displayed to mark the location of the map. Users can always click and drag balloons to change their locations. Right click on any balloon and users can remove or rename the selected map.

⚠ **NOTE:** Double click on any balloon and the map will be displayed. Alternatively, the map can also be restored via double clicking on the map icon in the map list.

Google Map also supports five levels of within maps. Please refer to **Step 2** of the previous subsection for more details about within maps.

<u>Add Cameras to the Map</u>

Double click on a selected map icon in the map list to display the map. Drag and drop a camera from the site tree to any desired position of the map.
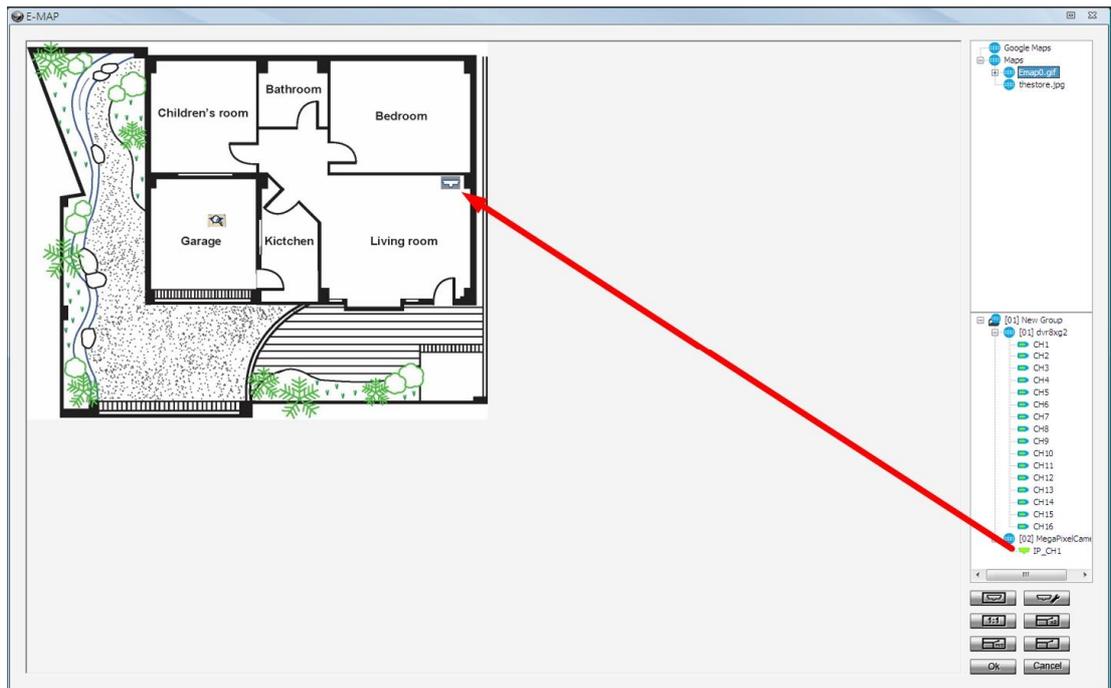
Remove Cameras from the Map

Right click on a camera icon in the map and users can remove it from the map. In addition, users can rotate the camera's pointing direction to North, Northeast, East, Southeast, South, Southwest, West or Northwest.

| Remove |
| Rotate ► |
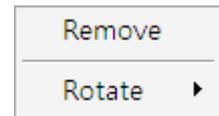
Camera Icons

There are four different types of camera icons in Emap, as shown below.

⏝	Dome Camera icon	This shows the camera is a PTZ camera.
⏝	Fisheye Camera icon	It will display when the camera is a fisheye camera.
▭	Fixed Camera icon	This shows the camera is a fixed camera.
🔔	Alert icon	This will show when an alert is triggered to the camera. It will blink to attract attention.

⚠️ **NOTE:** When a within map has alert triggering cameras, its map icon will also blink to attract users' attention.

Display Live Preview of Cameras in the Map

Double click on any camera icon in the map and its Live preview image will be displayed. When the mouse pointer moves over a camera icon in the map, an information dialog box will be displayed as marked #1 in the below picture. When users clicked on a camera icon, its Live preview window will be highlighted, if it's been displayed, as marked #2 in the below picture.
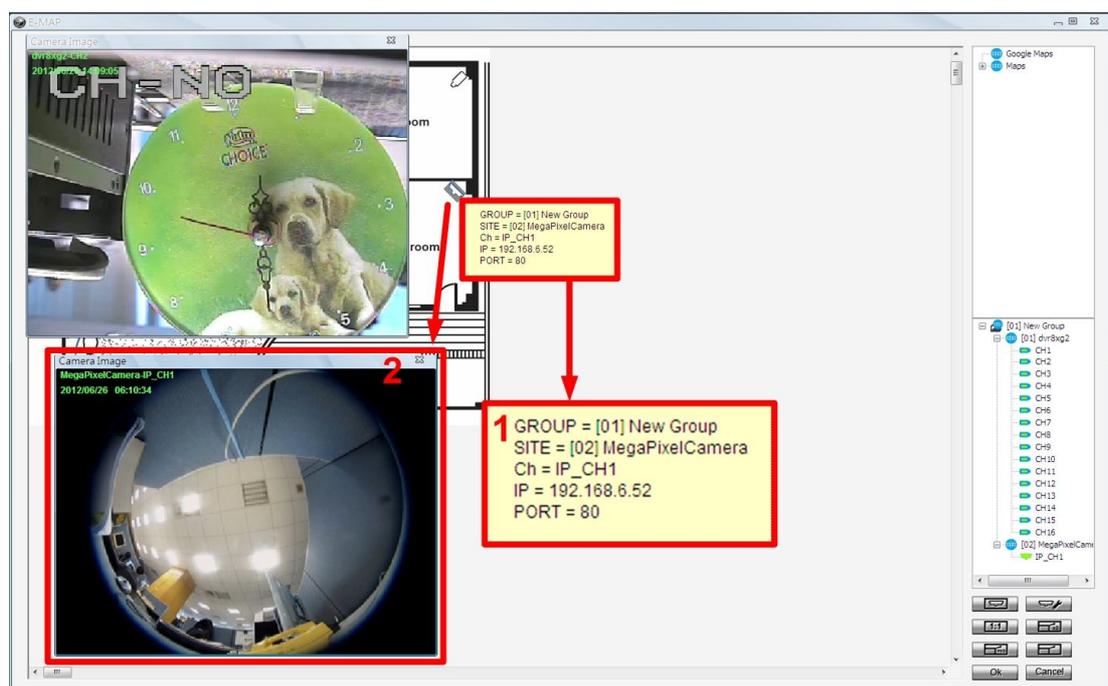
⚠ **NOTE:** The camera Live preview window is limited up to three instances at the same time.

Right click on any Live preview window to see the camera control menu, including: Snapshot, Talk(On/Off), Dome Setting, Dome Control, Sound Notification(On/Off) and Camera Info. Refer to their related sections for more details.

AngelEye Mode

Underneath the site tree, there is an icon shown as on the right. Click on this icon and the Emap window will be change to AngelEye mode. The AngelEye mode allows users to monitor Live videos of chosen cameras embedded on the self-selected map without window frames and excess info. The following picture is the setting mode under AngelEye mode. Refer to the steps described below to setup AngelEye display.
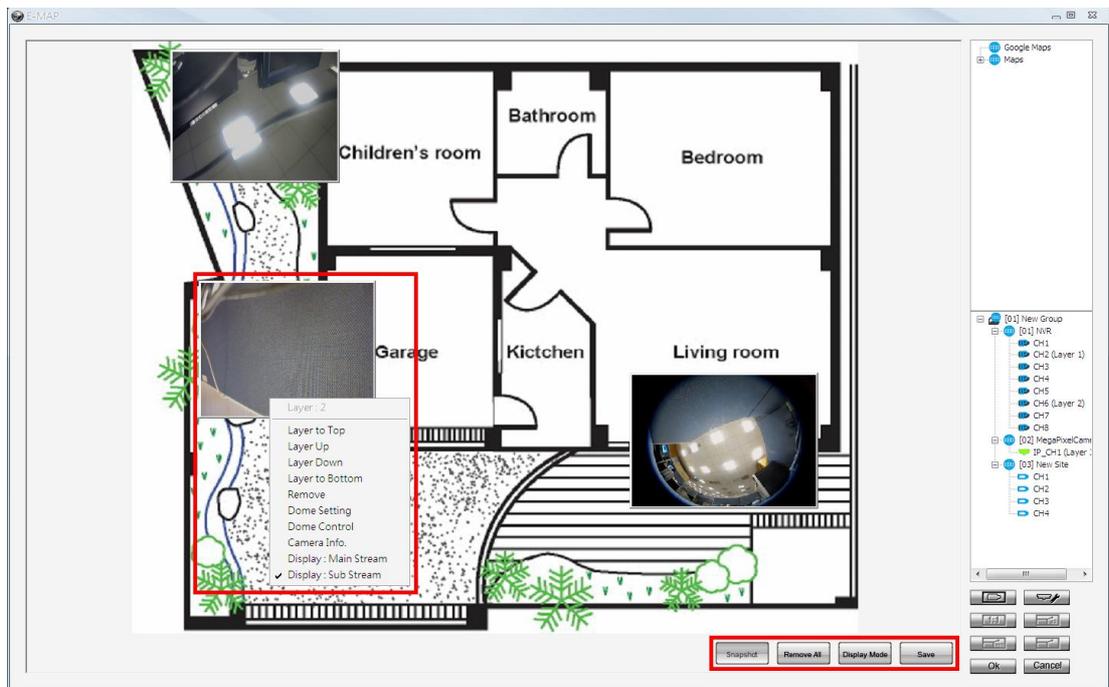
Step 1. First users can click on the map list to add a new map or select an existed map. The map will be scaled in proportion to fit the window.

Step 2. Click and drag cameras in the site tree to be indicated in the map. Only the connected cameras can be drag in the AngelEye mode, and the Live videos will be directly displayed, with channel and site numbers shown on the top. Users can adjust the camera display size be click on the edge and drag in or out. Click at the center of the camera display and users can drag it to any desired position.

Step 3. The first camera will be layer 1, and so on. The latest layer will be on top, if camera displays overlapped on one another. Level of layer can be changed by right click on the camera display and select Layer to Top, Layer Up, Layer Down or Layer to Bottom.

Step 4. In addition, the pull-down menu also includes Remove, Dome Setting, Dome Control, Camera Info., Display: Main Stream and Display: Sub Stream. Refer to their related sections for more details.

Step 5. The <Remove All> button allows users to clear everything and start it all over.

Step 6. When everything is set, click on <Save> at the bottom to save the setting. Then users can click on the <Display Mode> button to switch to the display mode. The button will change to <Setting Mode> for users to switch back if more setting is required.

Step 7. In display mode, the <Snapshot> button will be available for users to capture snapshot pictures. The snapshot files will be stored under "\CMS\Snapshot".

If users want to switch from AngelEye mode to regular Emap mode, click on the [ ] button.

<u>Setting</u>

Users can click on the setting icon [ ] to setup the initial display mode of the Emap window. The setting window is as below.
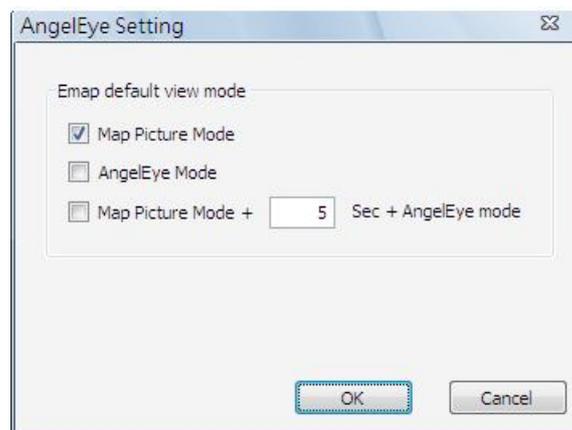
1. Check the box in front of <Map Picture Mode> to display regular Emap mode when the Emap window starts up.

2. Check the box in front of <AngelEye Mode> to display AngelEye mode when the Emap window starts up.

3. Check the last item and input duration of time in seconds to display regular Emap mode for the specified time and then switch to AngelEye mode automatically.

Change Emap Size (Regular Emap Mode Only)

Users can adjust the display size of the map by clicking on the icons shown on the right. The descriptions of the icons are as below.

<Original>: To display the original size of the image.

<Double>: To double the size of current displayed image.

<Half>: To reduce current displayed image size by one half.

<Fill>: To adjust the image to fit display window (refer to figure on the right).

NOTE: If there is no map loaded in the Emap window, an error message will be shown when clicking on any of the four buttons.

NOTE: When the map is very large, or when users cannot see the entire map, click on any camera in the site tree and Emap will automatically move to the location of the selected camera.

Ok / Cancel

Click on the <Ok> button to save all actions in the Emap window and exit. Alternatively, click on the <Cancel> button to delete actions of this operation and exit.

NOTE: If users try to close the Emap window by clicking on <X> at the top, a hint message will be displayed to confirm if users wish to save the setting.

6.5 Record

Click on the <Record> icon and the pull-down menu are <Instant Record> and <Schedule Record>. Details of the menu items are described in the following subsections.
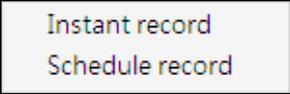
Instant record
Schedule record

6.5.1 Instant Record

While the videos are usually recorded to the connected DVR, users can also choose to instantly record current "Live" videos to the local computer. Select <Instant record> to start recording. A check will be shown in front of <Instant record>. To end instant recording, select <Instant record> again and the check mark will disappear.

If time difference between CMS and the recording site is more than 1 day, a message will be displayed. Select <Yes> to start recording. Or select <No> to abort recording.

⚠ **NOTE:** Only videos of the displaying channels will be recorded. When the displaying channels changed, the recording video will follow the change as well. The channels not selected to be displayed will not be a part of the instant recorded video.

When the channels are being recorded, the title of the channels will show a capital letter "R" at the end. The recorded files will be saved to the default folder "\CMS\Record\".

If users want to switch from Live mode to Playback mode while CMS is recording videos, the recoding has to be terminated. A message dialog will be displayed for confirmation. However, the recording will be resumed from stopping point once "Playback" mode is ended and returns to "Live" mode.

⚠ **NOTE:** If the connection to the recording site is disturbed and then reconnected, the recording will be terminated without resumption.

6.5.2   Schedule Record

Users can schedule specific time to record videos of current connected sites to the local computer. Select <Schedule Record> and the Schedule Record window will be displayed.

NOTE: Please beware that CMS only supports schedule recoridng for up to 64 channels at once, despite the number of connecting sites.

The current setting site will be shown on the top of the Schedule Record window, as circled in the picture below. Alternatively, users can click on the <Select All> or <Clear All> buttons to setup all sites to always record or always not record at once.
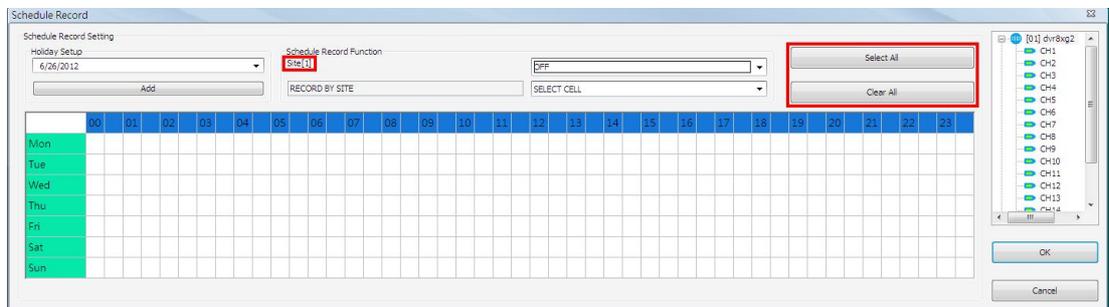
The scroll-down menu circled below shows the recording types.
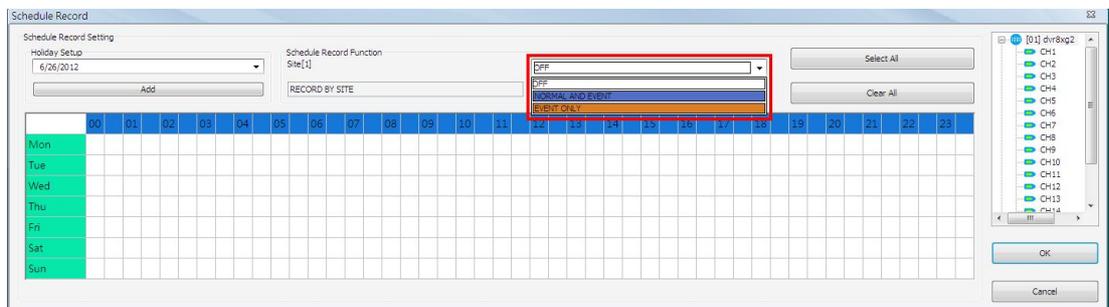
<OFF>
Select this to switch off the schedule record function.

<NORMAL AND EVENT>
Schedule to record both the normal and event videos within the selected time frame.

<EVENT ONLY>
Schedule to record only the event videos within the selected time frame.

The scroll-down menu circled below shows the selecting options.

<SELECT CELL>
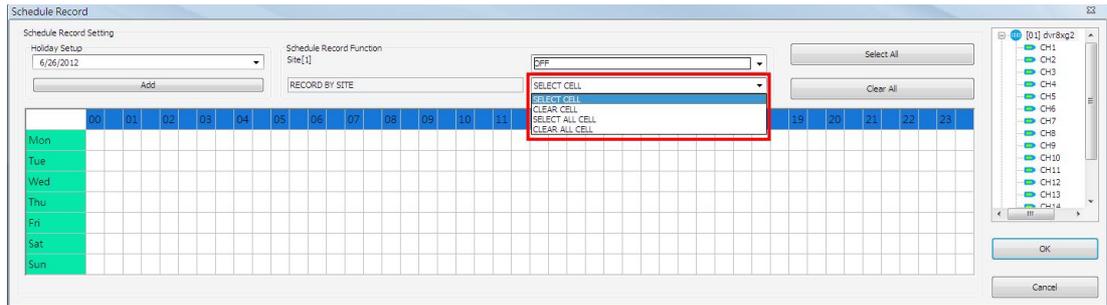
Choose this to select any cell from the table.

<CLEAR CELL>

Choose this to clear any cell from the table.

<SELECT ALL CELL>

Choose this to select all cells from the table.

<CLEAR ALL CELL>

Choose this to clear all cells from the table.

Follow steps below for an example of setting schedule record for CMS.

Schedule Recording Times

Step 1. Select a site or a channel from the box on the right by a single click. When a site is selected, the same setting of schedule record will be applied to all channels. Click on a channel to set unique schedule record for the particular channel. In this example, schedule of a site will be set. Select a site in box 1, and set the recording option to <NORMAL AND EVENT> in box 2.
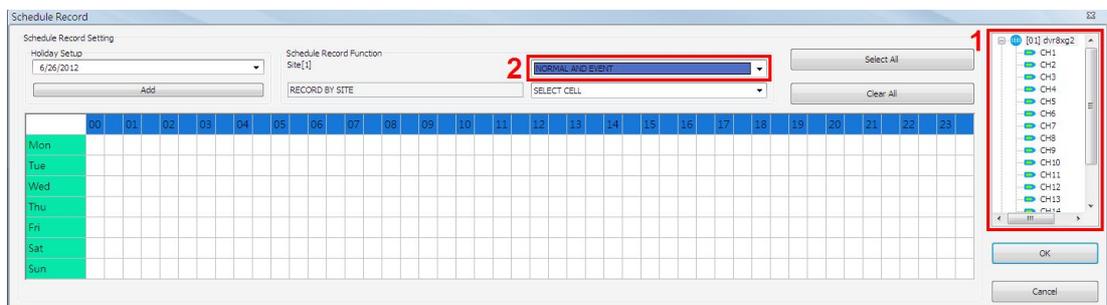
Step 2. Assuming that the site will be scheduled to start recording video from 2:00 to 4:30 on Tuesday and Wednesday. Since the duration of each cell is 30 minutes, click on the cell under 02 for Tuesday and drag to the cell under 04 for Wednesday; and the color of the cells will be changed to purple indicating that both normal and event videos are going to be recorded during the selected times.
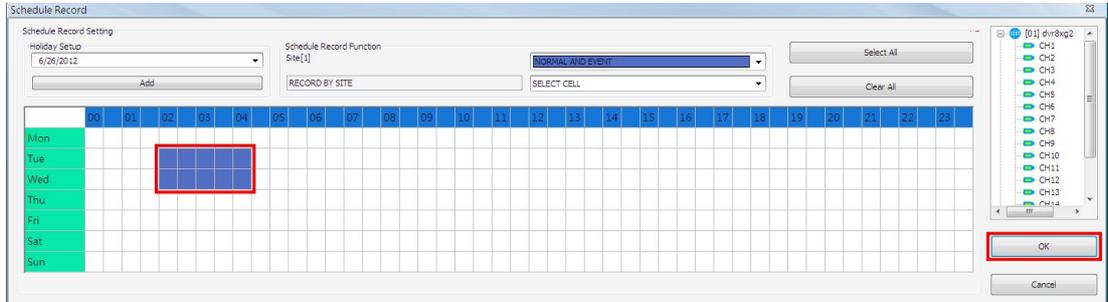
Step 3. After the time frames are selected, click <OK> to save and exit the Schedule Record window.

Cancel Scheduled Recording Times

If users want to cancel a time frame from selected schedule, for instance, 3:00~3:30, set the selecting option to <CLEAR CELL> in box 1. Click and drag the cells under 03 from Tuesday to Wednesday. The cells will be blank which indicates that CMS is not going to record anything. Click on <OK> to save and exit the Schedule Record window.
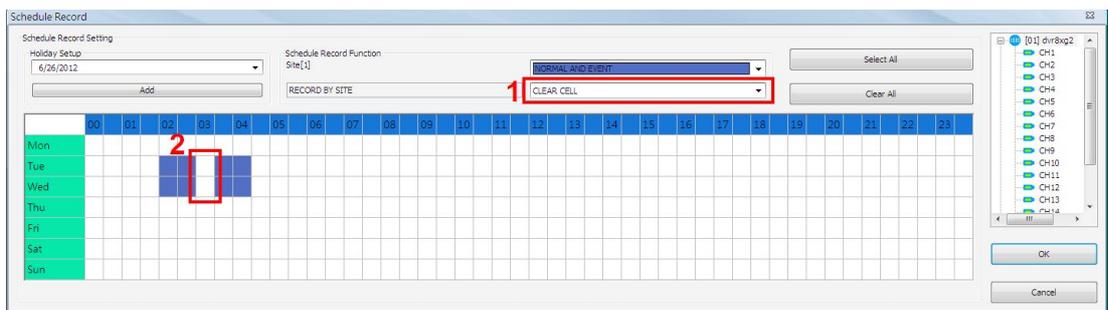
Select/Clear All Cell

If users want to set the schedule to record at all times, click on the circled blank cell located on top left corner of the table or set the selecting option to <SELECT ALL CELL>. If users want to reset the schedule of the site, set the selecting option to <CLEAR ALL CELL>. Click on <OK> to save and exit Schedule Record window.
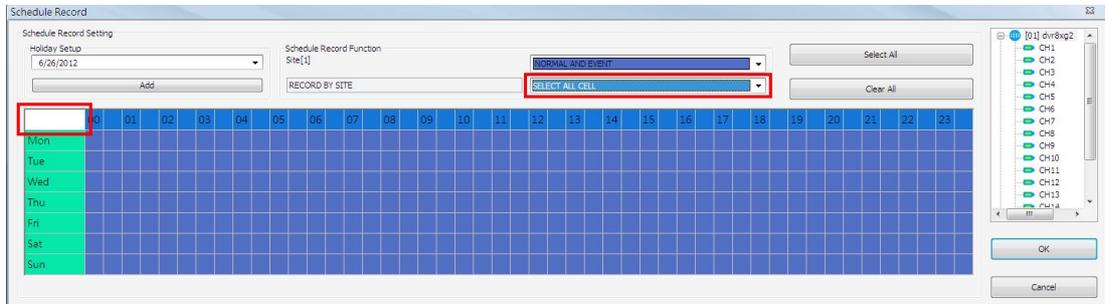
Select/Clear Cell by Date/Time

Another way to select or clear time frame is by clicking on the Day or Time tabs. For example, when users click on <Tue> tab, the color of all Tuesday cells will be changed and the site is scheduled to record normal and event videos every Tuesday. When users click on 5:00~5:30 tab, color of all 5:00~5:30 from Monday to Sunday will be changed. Click on <OK> to save and exit Schedule Record window.
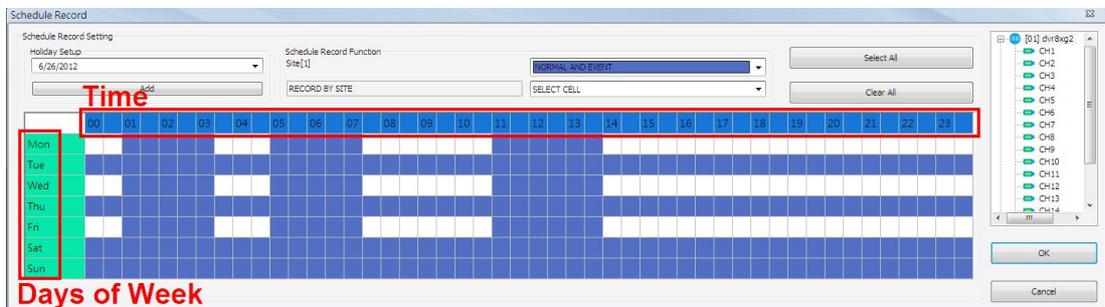
Special Schedule of a Specific Date

If users wish to setup a special schedule for a specific date, simply select a date from the pull-down menu of <Holiday Setup> and click on <Add> button. At the bottom of the <Schedule Record> window, users can find a new row of the added date as shown below. Setup the schedule for that date, and the schedule record will only run once for that special day.
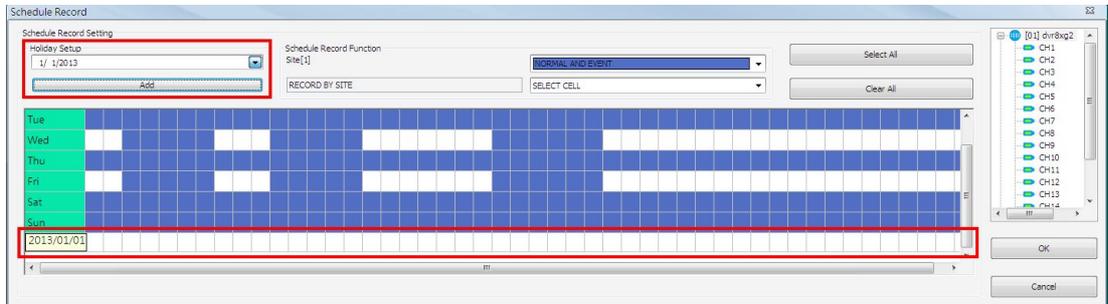
6.6   Playback

Click on the <Playback> icon and the pull-down menu are <Local Playback> and <Remote Playback>. Details of the menu items are described in the following subsections.

Local Playback
Remote Playback

6.6.1   Local Playback (CMS Player)

Select <Local Playback> and CMS Player will be launched. When multiple CMS instances are opened, each CMS can launch 1 CMS Player. The main window of CMS Player is shown as below.

⚠️ **NOTE:** When CMS is terminated, CMS Player will also be ended at the same time.
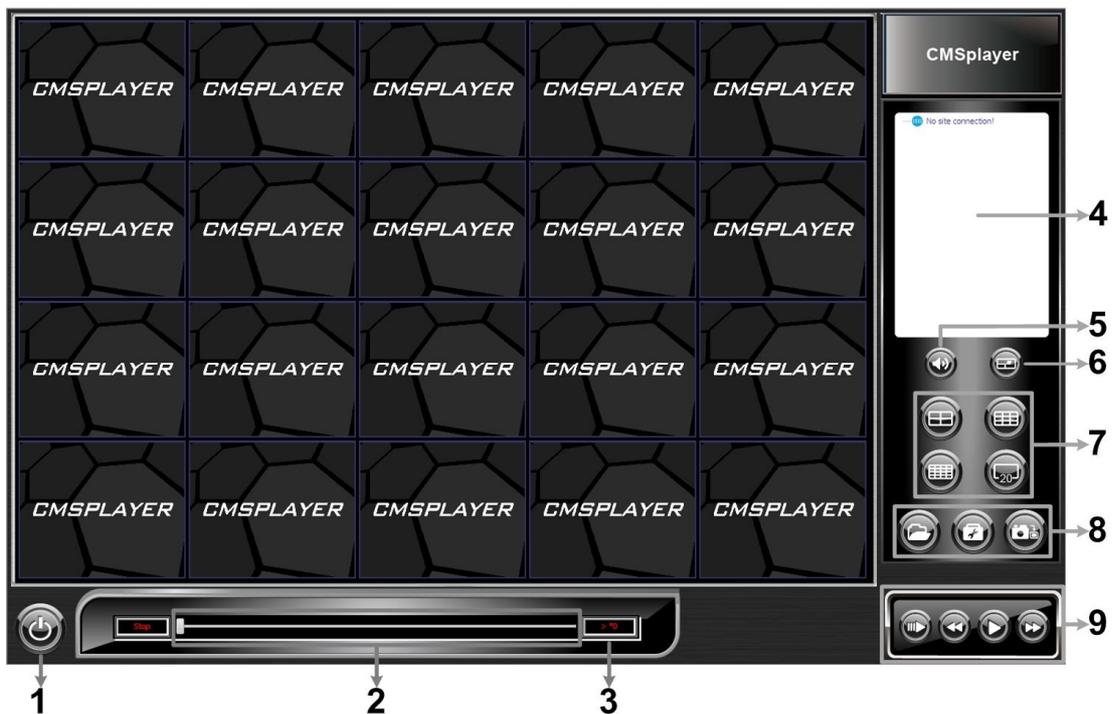
1	Power Button
2	Slider Bar
3	Playback Speed Indicator
4	Site Tree
5	Audio
6	Full Screen
7	Display Modes: 2X2, 3X3, 4X4 and 5X4
8	Open Video File, Frame View Setting, Snapshot
9	Playback Controls

Functions of the buttons will be described in the following paragraphs.

Power Button

Click on the Power button and users can choose to exit or to minimize CMS Player window.

Slider Bar

Click and drag the slider bar to search through the video.

▼Slider Bar

Playback Speed Indicator▲
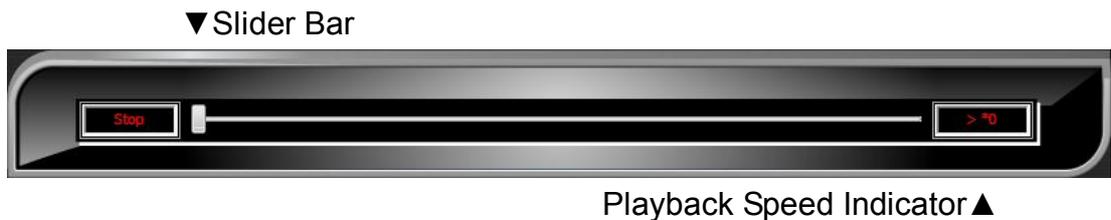
Playback Speed Indicator

The playback speed indicator shows playback speed in forward or backward direction.

- ">" indicates forward playback while "<" indicates backward playback.
- Playback speed can be faster or slower: 1, 2, 4, 8, 16, 32, 1/2, 1/4, 1/8, 1/16 or 1/32.

Site Tree

The site tree shows the channels of the opened DRV file. Double click on a channel to view the selected channel in one screen. Right click on the site tree can choose to expand or collapse site tree.

Audio

Click on the <Audio> icon located underneath the site tree to enable or disable the audio of the opened DRV file.

Full Screen

Click on the <FULL SCREEN> icon will enlarge CMS Player window to fit full screen. Click on the <FULL SCREEN> icon again or press <Esc> key on the keyboard to return to normal screen mode.

Display Modes

Users can click on <2X2>, <3X3>, <4X4> or <5X4> icons to view in multiple window modes.

Open Video File

Click on the <Open Video File> icon to display the "Playback Search" window. Users are allowed to playback, export, or delete videos.

Playback Video:
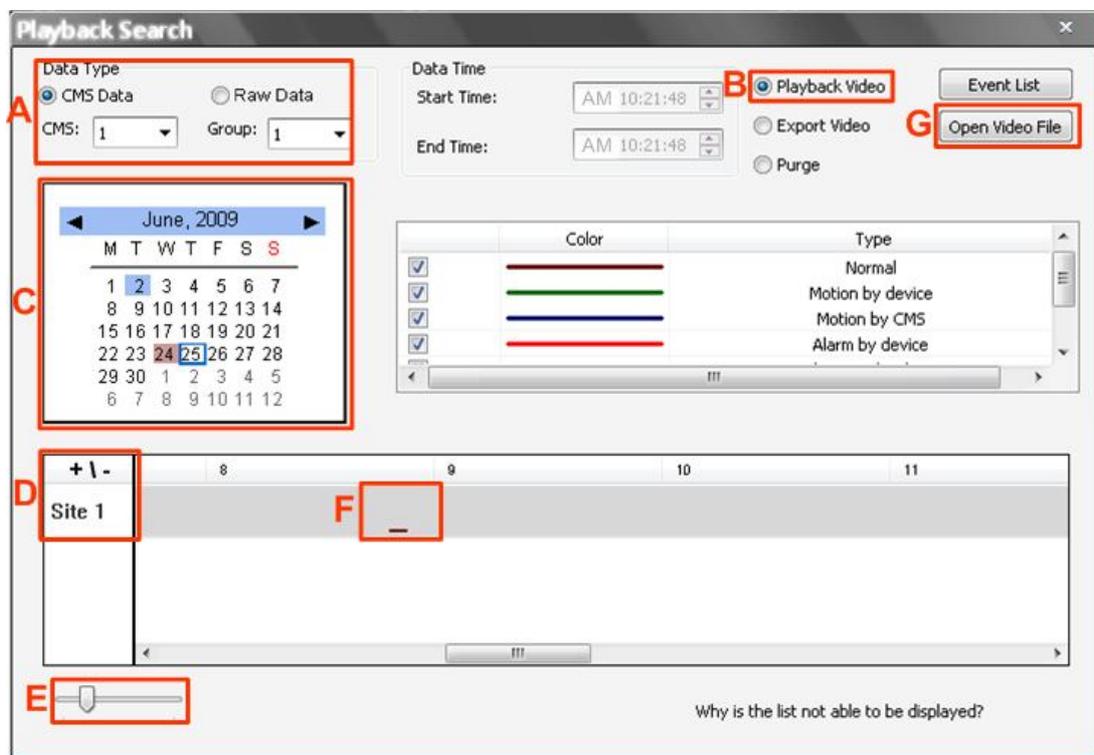
Step A. Select <CMS Data> and choose CMS server & group. Alternatively, select <Raw Data> and allocate a folder containing DVR HDD files.

Step B. Select <Playback Video>.

Step C. Select date of designated videos. Today's date is in blue box, the date with video data is highlighted in brown, and the selected date is highlighted in blue.

Step D. For playback of CMS Data, select sites. Click on <+\-> to select or deselect all sites. The selected site will change to gray color. For playback of Raw Data, there is no need to select sites, since it's just the DVR itself.

Step E. Scroll the slider bar to zoom in/out the displaying time.

Step F. Point the cursor at designated time and double click to start playback the video.

Step G. Click on the <Open Video File> button to search for videos via file list. Users can also convert DRV files to AVI files here. Refer to the next page for instruction of conversion.

⚠️ **NOTE:** The recorded video of IP Camera can only be played back by CMS player. Some errors might occur if playing back with DVRPlayer.

Convert *.drv files to *.avi files:

Click on the <Open Video File> button in the "Playback Search" window, then the "Select a folder" window will be displayed. On the top center of this window, select <Convert To AVI> and double click on the file which users wish to convert. A "Conversion List" window will pop up and the file will be added to the list. The other way to add files to the list is to right click on the file and select <Add To List> or <Add All To List>.
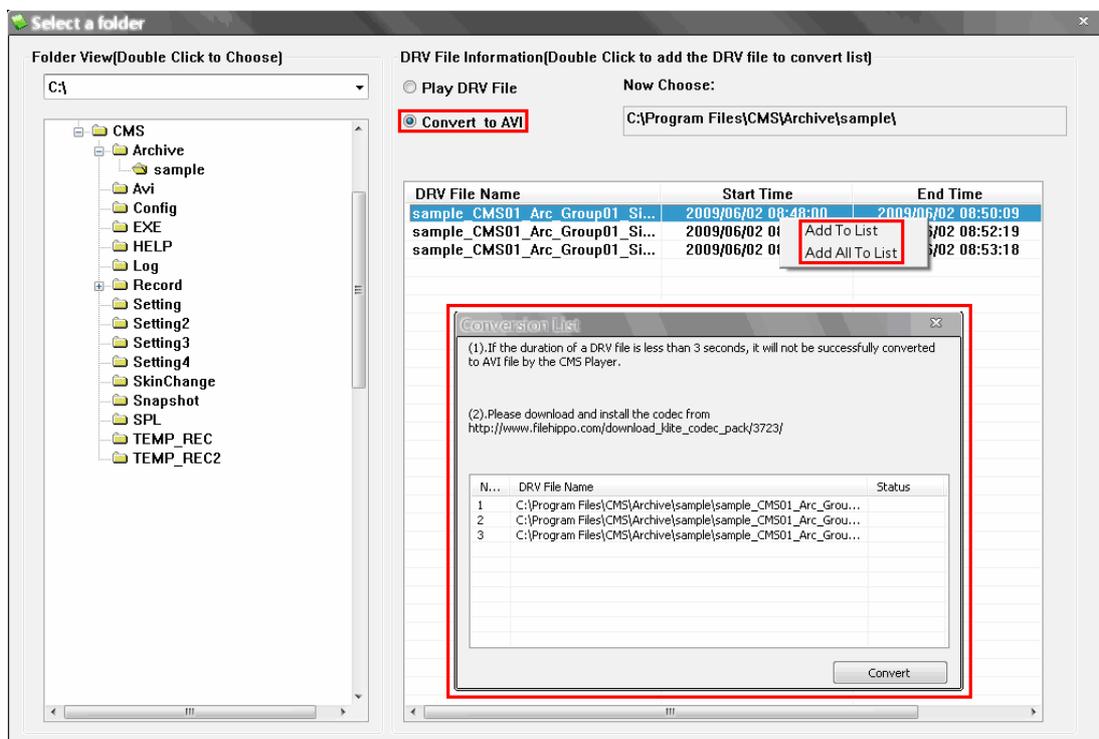
⚠️ **NOTE:** The list can contain files from different folders.

The messages shown on the conversion list windows are very important. If the duration of a DRV file is less than 3 seconds, the file will not be successfully converted. In addition, a link is provided for users to download and install video codec in order to playback the converted AVI files.

If users wish to remove any file from the conversion list, right click on the file and select <Remove> or <Remove All> to delete files from the list. Click <Convert> to start conversion of files on the list.
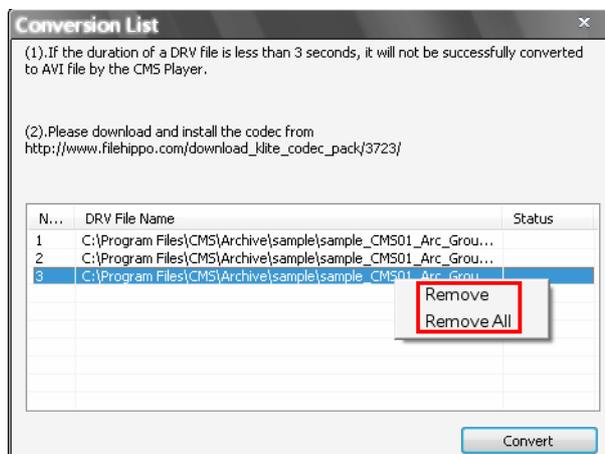
A progress window will be displayed to show current progress of conversion. If users wish to terminate the conversion, click <STOP> to abort.

If the conversion is aborted, the status column will show "Break Off" for the specific file aborted. If the file failed to be converted, the status column will show "Fail".
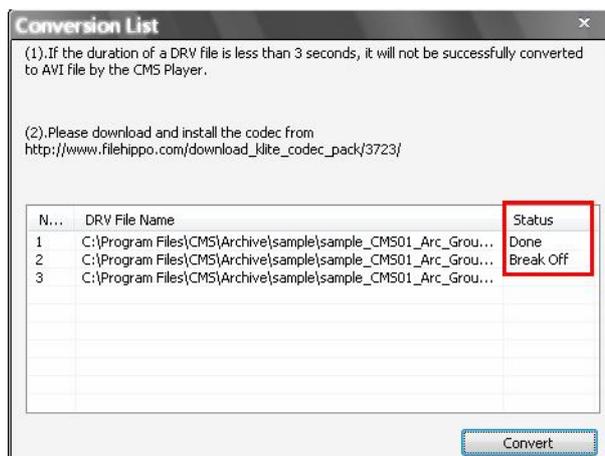
Once the conversion is completed, the converted files will be stored in the folder specified in file path setting of CMS Player.

⚠ **NOTE:** If the converted AVI files cannot be played due to lack of codec, please refer to appendix ***Install AVI Codec***.

Export Video:
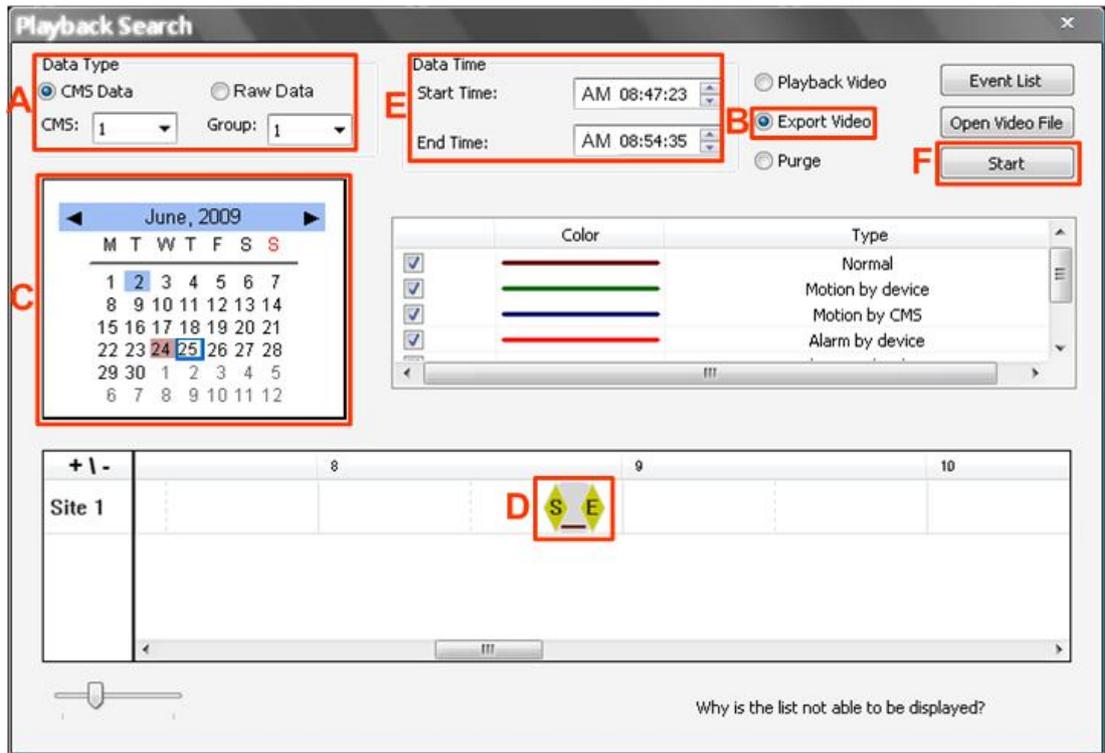
Step A. Select <CMS Data> and choose CMS server & group. Alternatively, select <Raw Data> and allocate a folder containing DVR HDD files.

Step B. Select <Export Video>.

Step C. Select date of designated videos. Today's date is in blue box, the date with video data is highlighted in brown, and the selected date is highlighted in blue.

Step D. Click and drag the cursor to select designated videos.

Step E. The start and end time of the selected video will be displayed here.

Step F. Click on the <Start> button. A window will pop up, and users are allowed to enter a filename and select video type (AVI or DRV) through the window. Then click on <Save> to start the exportation.

Delete Video:

Only when the current CMS login account is in the admin group, will the video deletion function be available. Refer to the following for step by step instruction.
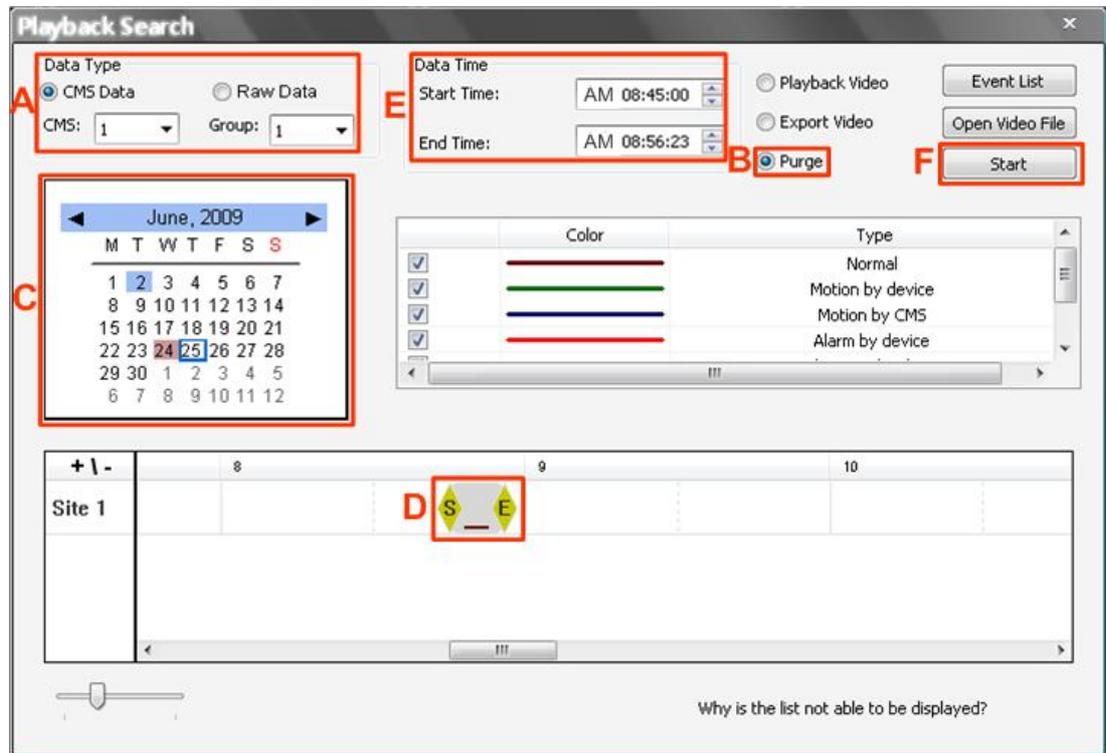
Step A. Select <CMS Data> and choose CMS server & group. Note that Raw data does not support purge function.

Step B. Select <Purge>.

Step C. Select date of designated videos. Today's date is in blue box, the date with video data is highlighted in brown, and the selected date is highlighted in blue.

Step D. Click and drag the cursor to select designated videos.

Step E. The start and end time of the selected video will be displayed here.

Step F. Click on the <Start> button and a confirmation dialog will be displayed. Enter correct username and password to start the deletion.

Event List:

Users can also playback and export event videos via searching through the event list. Click on the <Event List> button on the upper right hand corner of the "Playback Search" window. The "Event List" window will be displayed as on the right. Refer to below for the instruction.

First set searching criteria in Box A and click on the <Search> button. The event videos satisfied the searching criteria will be listed in Box B. If the list contains more than 1000 event videos, click on the <Previous> and <Next> buttons in Box D to see more selections.
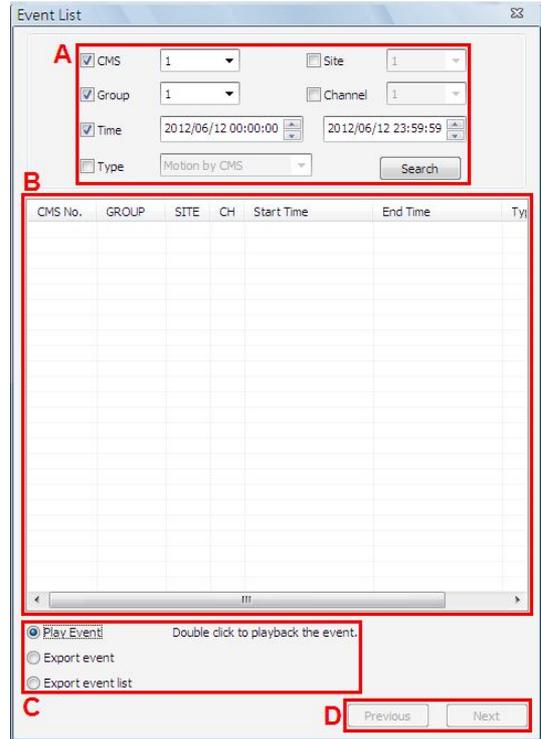
In Box C, users can choose to playback event video, export event video or export event list. Select <Play Event> and double click on any item in Box B to playback selected event video. Select <Export event> and a <Start> button will appear at the bottom. Press Ctrl key to select multiple files and click on the <Start> button to begin exporting the event video(s). Alternatively, select <Export event list> and click on the <Start> button to export the event list.

⚠️ **NOTE:** For event search of Raw data, the <CMS>, <Group> and <Site> in Box A will be inaccessible.

Video Type Display:
The chart in the middle of the "Playback Search" window allows users to assign unique color displays to represent different types of video data. Double click on any cell under the "Color" column and choose a preferred color to represent the corresponding video type.

Frame View Setting
Click on the <Frame View Setting>
icon and the pull-down menu will be
display as on the right. Refer to the
following for introduction of each
function.

Frame view setting
File path setting
Counting Application
Missing/Foreign Object Detection
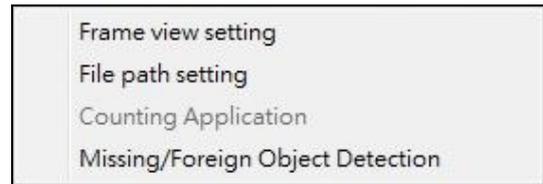
Frame view setting:
Users can choose to show/hide the
time and alert text on the video.

Click on the <Frame View Setting>
icon, and the View Setting window
will be displayed. Check <Show
Time>, and the time will be shown on
the screen. Check <Show Frame
State>, and the alert icon will be
displayed at bottom-left. Uncheck to
hide the information.
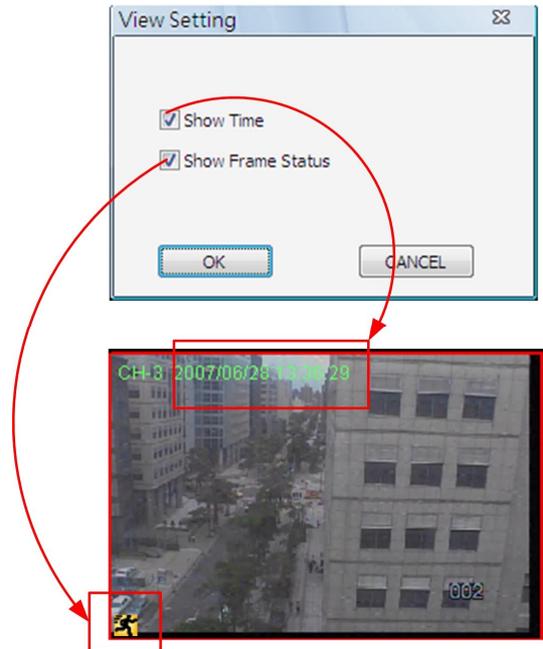
File Path Setting:
Click on the <File Path Setting> icon to preset file paths for AVI conversion
files and snapshot files. Click on <Browse> to select desired folders. In
addition, file type of snapshot pictures can also be selected: Bmp, Jpg, Gif or
Tif formats. After the settings are selected, click on <Save> to apply the
settings.
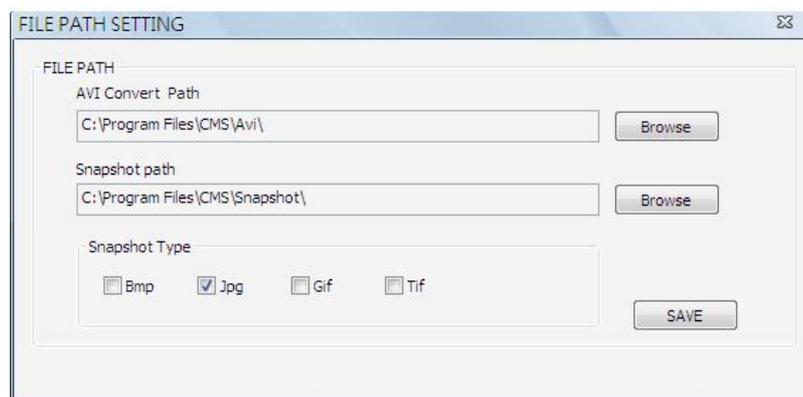
Counting Application (PRO Version Only):
Counting Application function in CMS Player is the same as in CMS. Please
refer to section ***Counting Application (PRO Version Only)*** for more details.

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Missing/Foreign Object Detection:

Click on the <Frame View Setting> icon and select <Missing/Foreign Object Detection>. The basic configuration of Missing/Foreign Object Detection function in CMS Player is the same as what is in CMS. Please refer to section ***Missing/Foreign Object Detection*** for more details. This section will introduce the different part of the Missing/Foreign Object Detection function in CMS Player.
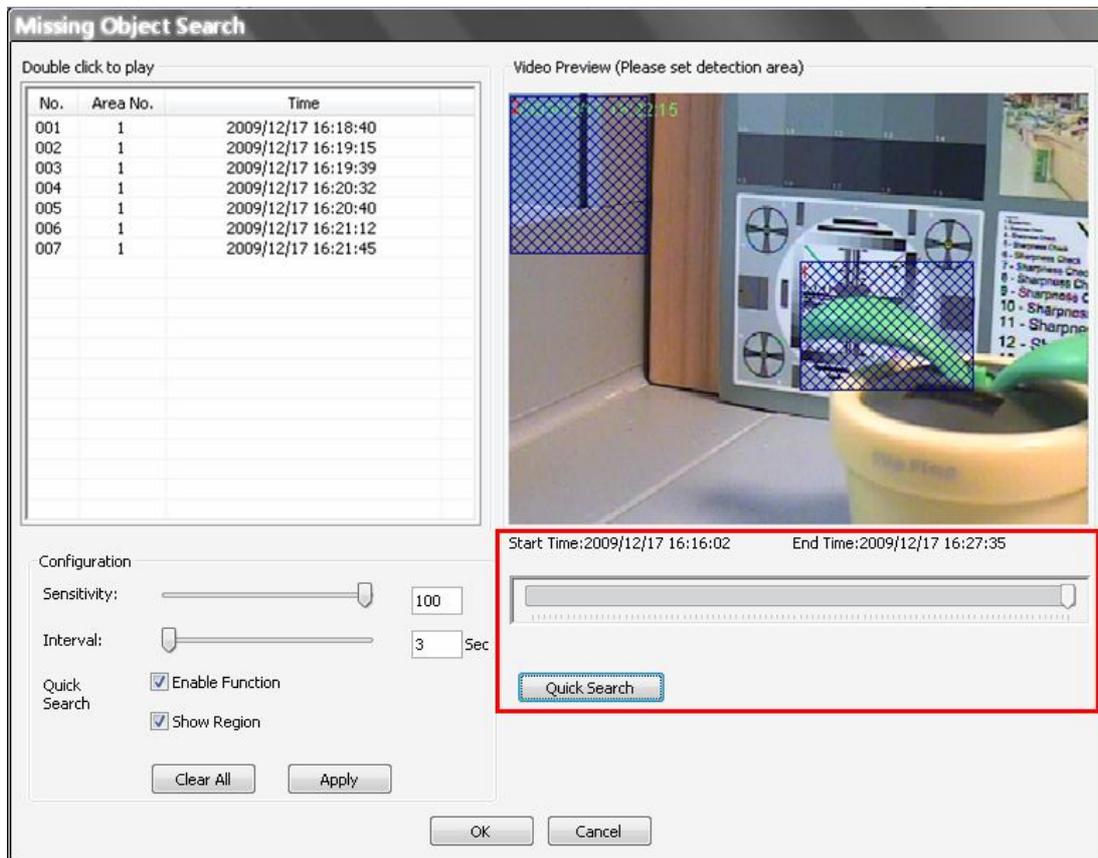
Quick Search: Click on it to quick skim through the video for object search of the selected area(s). The list will be filled when foreign or lost of object alert(s) found.

Stop Quick Search: Click on it to stop quick search.

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Snapshot

Click on the <Snapshot> icon to capture a snapshot of the screen. When the snapshot window is opened, users can choose to rename the filename or leave it as it is. Click on <OK> to save the snapshot or <CANCEL> to discard it.

Playback Controls

Slow Down:

Click on ![icon] to enable slow speed playback of the video. The icon will be lighted as ![icon], and users can click on ![icon] or ![icon] to change playback speed (1/2, 1/4, 1/8, 1/16 or 1/32).

Play/Pause:

Click on ![icon] to start playing back the video. The icon will change to ![icon] showing that the video is now playing. Click on ![icon] to pause playing back the video.

Fast/Step Backward:

Click on ![icon] to play the video fast backward. When the playback of the video is paused, click on this icon to move one step backward.

Fast/Step Forward:

Click on ![icon] to play the video fast forward. When the playback of the video is paused, click on this icon to move one step forward.

Assign a Channel to Certain Grid

Similar to CMS, CMS Player also allows users to assign any channel to any grid. Click and drag a channel in the site tree to any preferred grid of CMS Player main window.

Resort / Remove Displaying Grid

Right click on any gird and select <Re-sort> to restore the original layout.

Users can also remove any channel by right clicking on the grid and select <Remove>. Alternatively, users can click on any grid and press <Delete> key on the keyboard to remove it.

NOTE: Selecting <Re-sort> will restore the removed channels.

Image Adjustment

Image adjustment function in CMS Player is the same as in CMS. Refer to section ***Image Adjustment*** for more details.
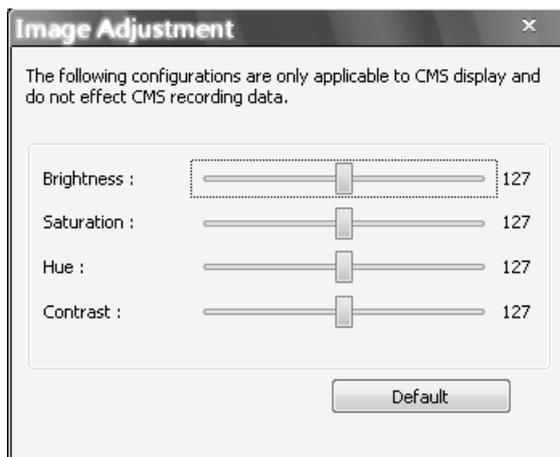
Camera Info.

Camera Info. function in CMS Player is the same as in CMS. Please refer to section ***Camera Info.*** for more details.

6.6.2   Remote Playback

This function allows CMS users to playback normal and event videos stored in the connected DVR, VSS/NVR, and VDS. Select <Remote Playback>, and the remote playback window will be displayed as below.
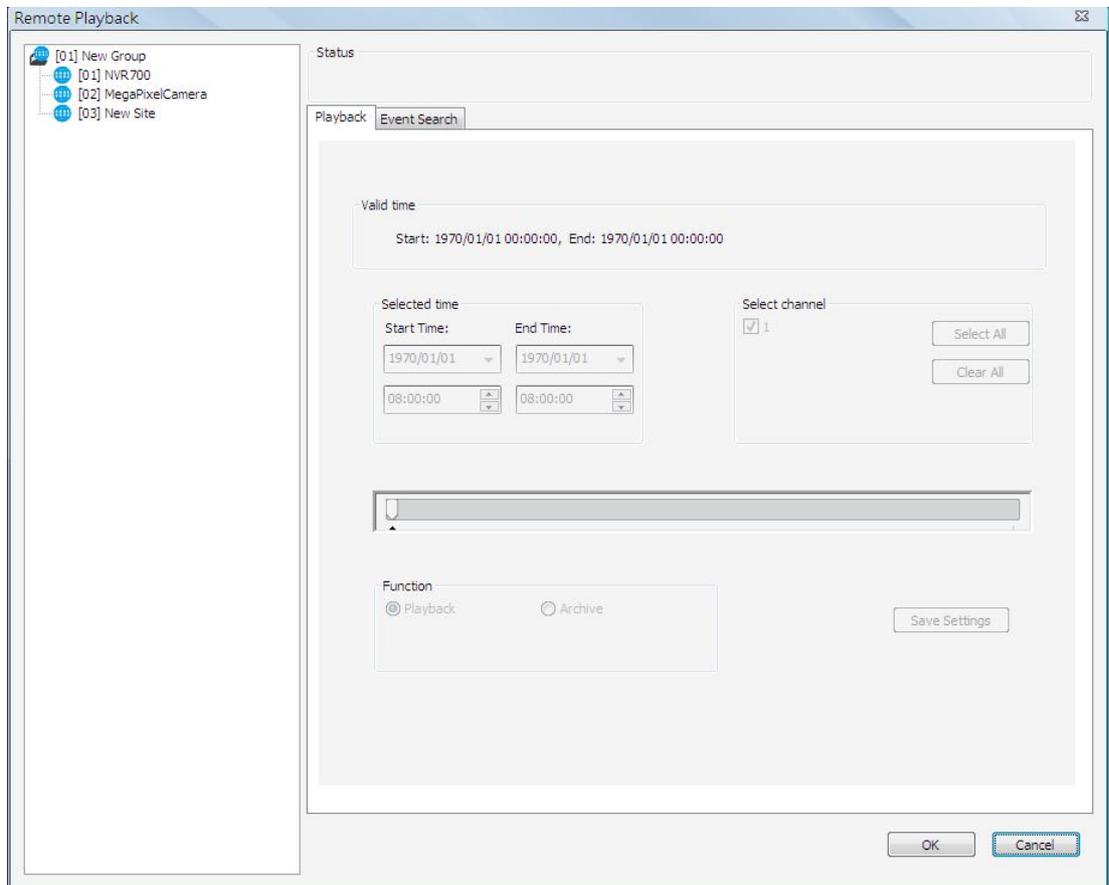
First users have to select a connected site from the site list shown on the left. Then users can decide to playback normal recorded videos or event videos by clicking on the tabs on the right.

Refer to the following for description of normal video playback and event video playback.

NOTE: The "Selected time" area will become a calendar if the selected site supports Calendar Search function.

Normal Video Playback

After a site is selected, "Valid Time" area will indicate the start and end time of the available recorded video.
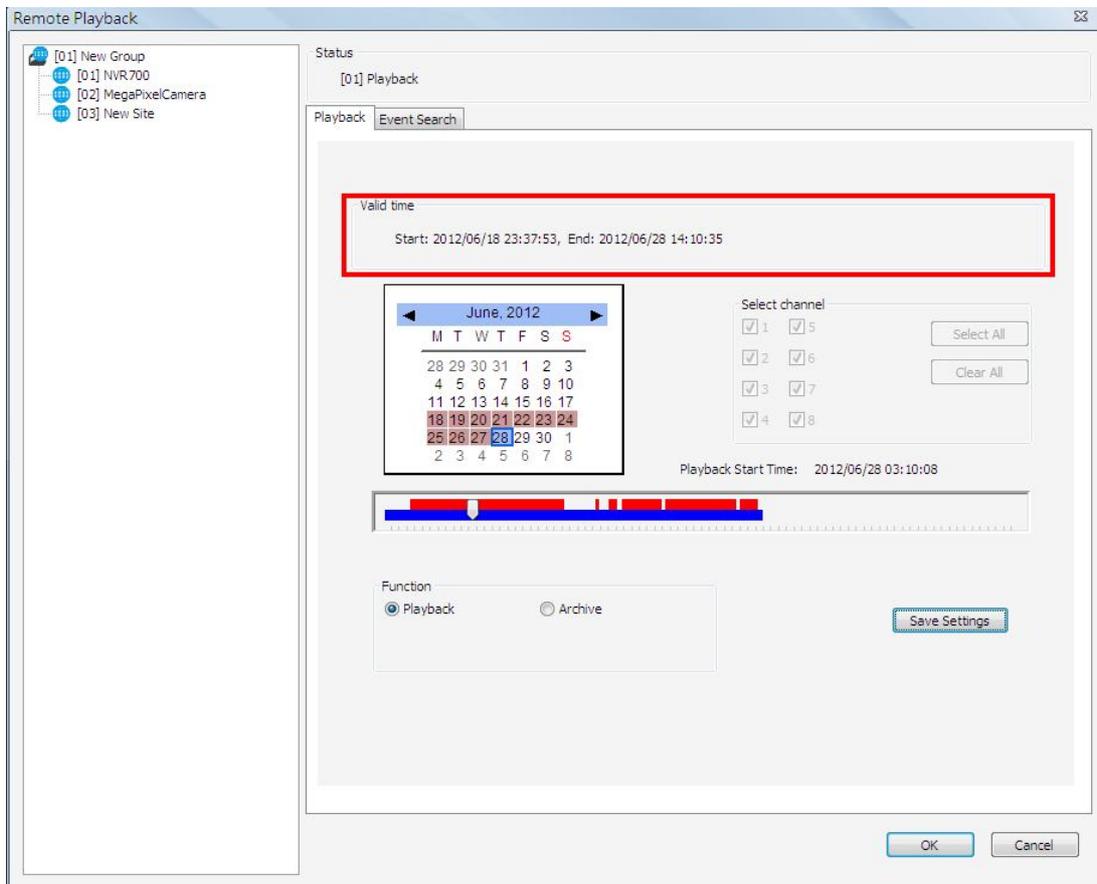
Playback from DVR and VSS/NVR Sites:

Step 1. First select <Playback> in "Function" area.
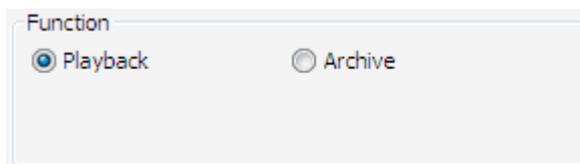
Step 2. Pick a date in the calendar and select the starting time for playback by moving the arrow of the slider bar. Then click on <Save Settings> to confirm playback of the selected site. The "Status" area at the top will show the site number and "Playback".
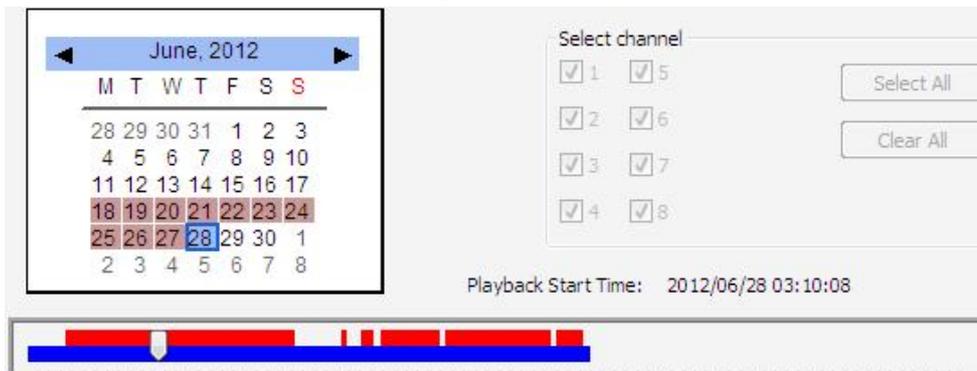
Step 3. Playback of multiple sites at the same time is allowed. Users can select another site and setup its playback time following steps 1 and 2 described above.

Step 4. Click on <OK> at the bottom and CMS will begin to playback chosen video time of the selected sites.

⚠ **NOTE:** Do not forget to click on <Save Settings> to confirm playback, or CMS will not begin the playback even if users clicked on <OK>.

Playback from VDS Sites:

If users selected a VDS sites, two extra options will be displayed as below. Select <DVR> to retrieve data from DVR connected to VDS. Or select <VDS> if VDS is set to record from the connected DVRs. Then follow the same steps described above.

⚠ **NOTE:** Before the playback starts, a message will popup if CMS main window is currently recording video. When multiple playbacks are initiated, users can check the box at the bottom to confirm for all playbacks.
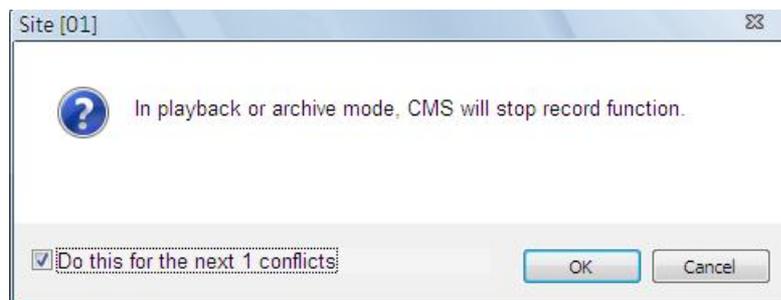
When the playback begins, users can move the mouse to the bottom of the video and a time bar will be displayed as shown below. Users can drag the index to quick playback new selected time of the recorded video.
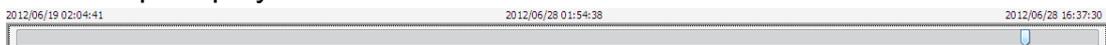
Archive Normal Videos:

Users can save the recorded video in the selected site to the local computer. The archived videos will be in DRV files, which can only be played in CMs Player. Follow the steps explained below.

Step 1. First select <Archive> in "Function" area. Then "Selected channel" area will be available for users to choose preferred channels. If users wish to export AVI file as well, check the box in front of <Export AVI>.
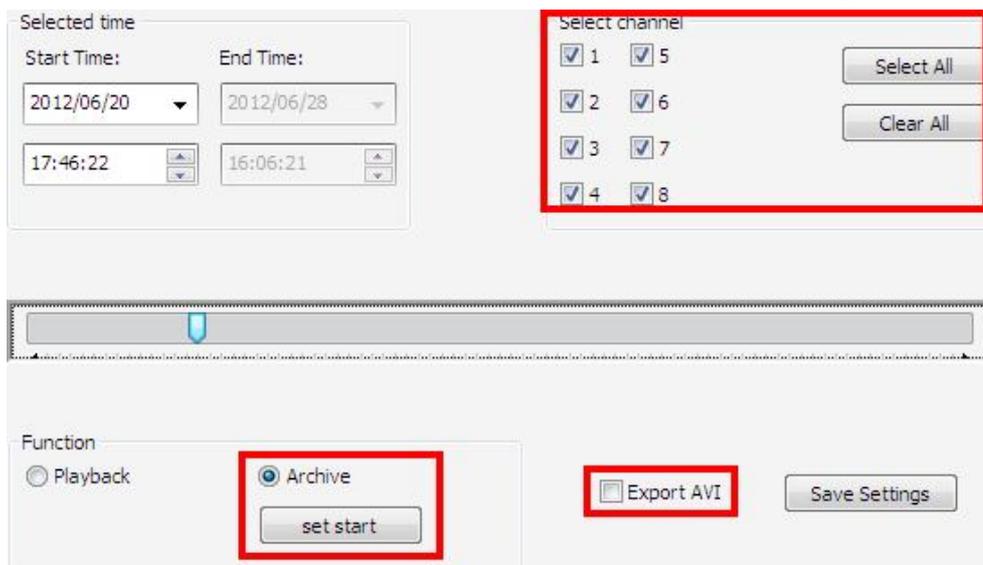
> ⚠ **NOTE:** The exported AVI files will be separated files for each channel.

Step 2. Specify the Start Time in "Selected time" area and click on <set start> in "Function" area. Then specify the End Time and click on <set end>. Alternatively, use the slider bar to select start time and end time. Click <Save Settings> and specify a filename.

Step 3. Archiving from multiple sites at the same time is allowed. Users can select another site and setup its archiving time following steps 1 and 2 described above.

Step 4. Click on <OK> at the bottom and CMS will start to download the video data. After archiving is completed, conversion to AVI files will begin if <Export to AVI> is checked.

> ⚠ **NOTE:** Do not forget to click on <Save Settings> to confirm archiving, or CMS will not download videos even if users clicked on <OK>.

Event Video Playback

After a site is selected, click on the <Event Search> tab and the event list will be displayed. Users can scroll down the list to look for target event video.
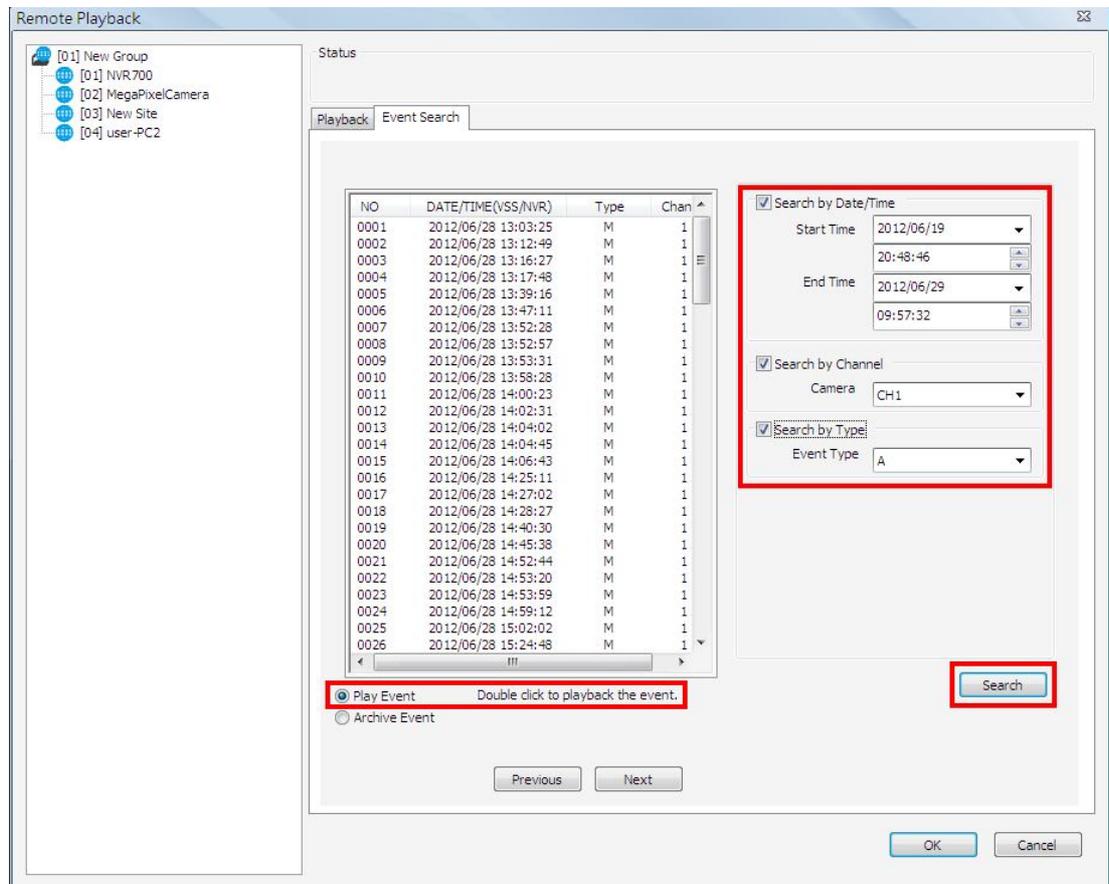
There are three search options on the right for users to filter the event list according to the requirement. After the options are set, click on <Search> at below and the event list will be filtered with the setting constrain.

Underneath the event list, select <Play Event> and double click on any item to playback the event video.

Archive Event Videos:

Users can also download event videos to the local computer. Below the event list, select <Archive Event> choose a preferred event to download it. If more than one event is needed, press the "Ctrl" key to select multiple event videos. The maximum items can be selected is 1,000, which is the capacity of the list.

If users need AVI files as well, check the box in front of <Export AVI>. Then click on <Start Archive> and an <Event Archive> window will pop up. The progress bar shows current downloading position. The status column shows the event is under "Archive", "Wait", or "Done" condition.
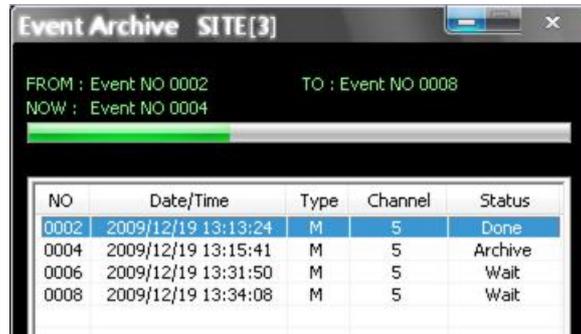
> ⚠ **NOTE:** The event archive or normal video archive for different sites can be performed simultaneously.

Search by Text:

If the selected site is a DVR with a POS module installed, users can search recorded videos with text inputs. The <Search By Text> tab will be displayed as shown below. Users can specify searching criteria listed on the right and click on <Search> at the bottom to begin video search. Note that the videos in the list cannot be archived.
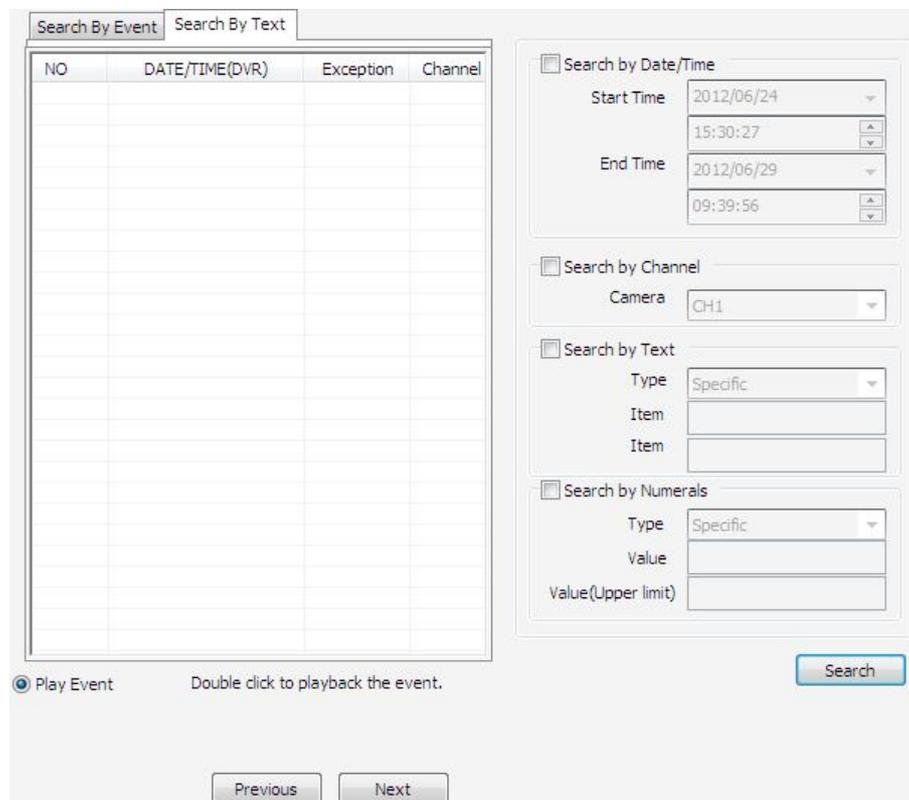
Playback / Archive Event Video from VDS:

For VDS sites, the event list can be retrieved from VDS or from its connected DVRs. In <Search By Event(DVR)> tab, users can search and playback event videos stored in the DVR connected by VDS. In <Search By Event(VDS)> tab, users can search and playback event videos stored in VDS. The <Search By Text> tab is the same as on the previous page, which retrieve data directly from the DVR connected by VDS.

Search By Event(DVR)	Search By Event(VDS)	Search ◄ ►		
NO	DATE/TIME(DVR)	Type	Cha
0001	2012/06/29 10:02:11	M	
0002	2012/06/29 10:05:33	M	
0003	2012/06/29 10:06:42	M	
0004	2012/06/29 10:07:32	M	
0005	2012/06/29 10:08:01	M	
0006	2012/06/29 10:08:56	M	
0007	2012/06/29 10:09:24	M	
0008	2012/06/29 10:14:23	M	
0009	2012/06/29 10:14:22	M	
0010	2012/06/29 10:14:22	M	
0011	2012/06/29 10:15:03	M	
0012	2012/06/29 10:15:30	M	
0013	2012/06/29 10:23:37	M	
0014	2012/06/29 10:23:37	M	
0015	2012/06/29 10:23:39	M	
0016	2012/06/29 10:26:37	M	
0017	2012/06/29 10:26:58	M	
0018	2012/06/29 10:27:54	M	

Search By Event(DVR)	Search By Event(VDS)	Search ◄ ►	
NO	DATE/TIME(DVR)	Type	Chan
0001	2012/06/28 22:19:41	M	4
0002	2012/06/28 22:20:13	M	2
0003	2012/06/28 22:20:13	M	4
0004	2012/06/29 05:56:12	M	4
0005	2012/06/29 05:56:13	M	2
0006	2012/06/29 08:06:37	M	11
0007	2012/06/29 08:06:37	M	9
0008	2012/06/29 09:05:01	M	4
0009	2012/06/29 09:05:01	M	2
0010	2012/06/29 09:05:04	M	12
0011	2012/06/29 09:05:13	M	11
0012	2012/06/29 09:05:13	M	9
0013	2012/06/29 09:05:13	M	5
0014	2012/06/29 09:07:28	M	12
0015	2012/06/29 09:13:03	M	12
0016	2012/06/29 09:37:25	M	12
0017	2012/06/29 09:41:17	M	12
0018	2012/06/29 09:43:27	M	12
0019	2012/06/29 09:52:56	M	11
0020	2012/06/29 09:53:37	M	12
0021	2012/06/29 09:55:29	M	12

⚠ **NOTE:** VDS does not support the <Search By Text> function.

6.7   System Information

Click on the <System Information> icon and the
pull-down menu are <Device Health>, <PC system
info.>, <About CMS>, <CMS operator log> and
<Device operator log>. Details of the menu items are
described in the following subsections.

Device Health
PC system info.
About CMS
CMS operator log
Device operator log
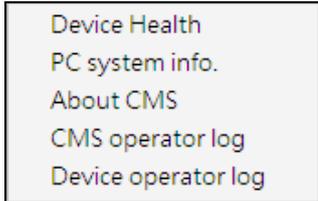
6.7.1   Device Health

This is a function that allows users to verify the HDD health status of currently
connected DVR and NVR. Select <Device Health> and a progress bar will be
shown to indicate that the information is being retrieving. The following figure
is an example. Note that since IP cameras do not have connected HDD, they
will not be shown in the chart.

	Health Status (Refresh Rate = 5 min)				⊠
Site[01]	Device Name	Internal/External	Total size	Active/NonActive	Temperature
	2:ST3500418AS	Internal	458GB	Active	35
	3:ST3500418AS	Internal	458GB	Active	39
	4:ST3500418AS	Internal	458GB	Active	39
Site[03]	Device Name	Internal/External	Total size	Active/NonActive	Temperature
	1:Hitachi HDS72105	Internal	458GB	Active	38

Device Name
This item shows the model name of the HDD.

Internal/External
This item indicates whether the HDD is an internal or external device.

Total Size
This item indicates the total size of the HDD.

Active/Non Active
This item indicates whether the HDD is active or non-active.

Temperature
This item indicates the current temperature of the HDD in Celsius degree.

NOTE: Temperature data is not retrievable for some specific models. Under Temperature column, it will show "Not available".

6.7.2   PC System Info.

Select <PC system info.> and the following window will be displayed. The information provided includes CPU usage, Memory usage and HDD info. In addition, there are two more options at the bottom for users to enable/disable minimization to tray icon and joystick control. Refer to the following for more details.
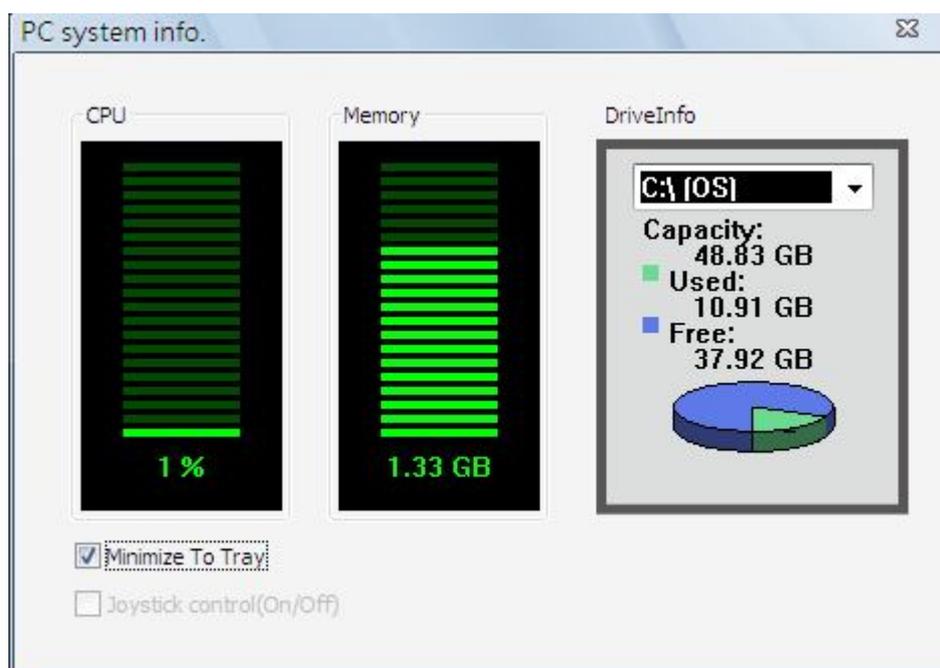
HDD Info

The pie chart displays the HDD information. This is especially useful when users use CMS to record the video to the local computer. Scroll down the menu to see the information of all the HDD(s) installed on the local computer, such as C drive, D drive, etc. The information will be updated every 30 seconds. If file circular is enabled, the circulation will as well be updated every 30 seconds.

Minimize To Tray

If <Minimize To Tray> is checked, CMS window will shrink to CMS icon in the system tray when users click on the Power button and select <Minimize>. The taskbar button will also disappear. To restore CMS window, click on CMS icon and the task button will appear again. Then click on the task button to restore CMS window. Alternatively, if <Minimize To Tray> is not checked, CMS will only minimize to the taskbar button.

Joystick Control

When a joystick is connected, it can work in Mouse Control mode and Dome Camera Control mode. Refer to the picture on the right for a sample of a joystick. The requirement of the joystick is as the following:
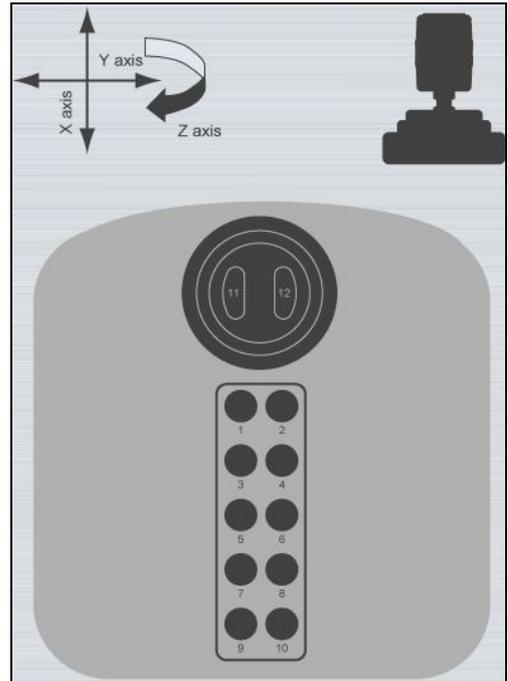
1.   12 buttons
2.   X, Y, and Z axis

Press the button "8" to change between mouse or dome camera control modes. Note that if the selected camera is not a dome camera, the joystick will only work in mouse control mode.

NOTE: Only the first launched CMS server can use joystick control function.

When CMS detected an available joystick, CMS icon in the system tray icon will change to a joystick icon. In addition, a message will be shown to tell current control mode: mouse control or dome camera control. Click on the <System Information> icon and select <PC system info.>. Then check the box in front of <Joystick control (On/Off)> to switch on joystick control.

Users can click on the Start menu and access <Joystick> to display the quick instruction picture of dome camera or mouse control mode.

Whenever the joystick control mode changes, a message will be shown at the system tray to inform users. Refer to the following tables for the joystick controlling options:

Under Mouse Control Mode

X axis	Left / Right movement
Y axis	Up / Down movement
Z axis	Clockwise to speed up; Counterclockwise to slow down movement
8	Change to Dome Camera Control mode
11	Left clicking key
12	Right clicking key

Under Dome Camera Control Mode

X axis	Move dome / OSD menu selecting left or right
Y axis	Move dome / OSD menu selecting up or down
Z axis	Clockwise to zoom in; Counterclockwise to zoom out
1	Slow down movement
2	Speed up movement
3	Focus Far
4	Focus Near
5	Iris Close
6	Iris Open
7	Auto / Manual Focus
8	Change to Dome Camera Control mode
9	Enter OSD Menu (IP Dome)
10	Function as ENTER key in OSD Menu (IP Dome)
11-12	No function

6.7.3 About CMS

Select <About CMS> and the version window will pop up, showing CMS version info and CMS software upgrade options. CMS software can be upgraded automatically or manually. Check the box in front of <Auto Upgrade> to enable automatic software upgrade. Moreover, the <CMS Software Upgrade> button allows users to immediately upgrade CMS.
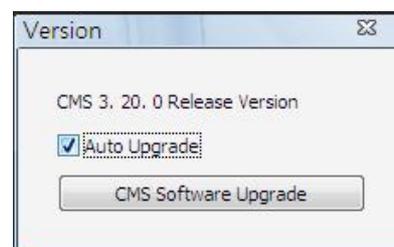
Refer to the following for details of automatic and manual software upgrade.

Automatic Software Upgrade

If automatic software upgrade is enabled, CMS will connect to the FTP Server and check for upgrade once a month. If no upgrade is available, CMS will continue normal process. If upgrade is detected, please follow the steps below to proceed.

Step 1. A message box will pop up to inform that there is upgrade available. Click <OK> to download the upgrade software and continue to the next step. Otherwise, click <Cancel> to abort and continue to normal CMS process.

Step 2. Choose a destination folder to save the file. Then a window will pop up and show the downloading status. Click <Abort> to terminate the download and CMS will be started as usual.

Step 3. When the download is completed, the installation of the new version of CMS can be started following the same procedures described in section ***Software Installation***.

⚠ **NOTE**: If the upgrade file is not completely downloaded, an error message will be displayed to notify users.

⚠ **NOTE**: A release note will also be downloaded together with the setup file. A popup window will be displayed to show the file path where the release note is saved.

Manual Software Upgrade

To manually upgrade software, click on <CMS Software Upgrade>. Then follow the same steps listed above to complete the download and installation.

6.7.4   CMS Operator Log

The step by step operation of CMS will be recorded by CMS operator log. Select <CMS operator log> and the Log window will be displayed.

Time	User	Action
2012/06/21 10:04:40	admin	Stop Sequence
2012/06/21 10:04:44	admin	Change Split Mode to 1-windows
2012/06/21 10:04:47	admin	Change Split Mode to 1-windows
2012/06/21 10:04:49	admin	Change Split Mode to 4-windows
2012/06/21 10:04:52	admin	Change Split Mode to 1-windows
2012/06/21 10:04:54	admin	Change Split Mode to 4-windows
2012/06/21 10:04:58	admin	Change Split Mode to 1-windows
2012/06/21 10:05:00	admin	Change Split Mode to 4-windows
2012/06/21 10:05:01	admin	Change Split Mode to 1-windows
2012/06/21 10:05:03	admin	Change Split Mode to 16-windows
2012/06/21 10:05:11	admin	Change Split Mode to 1-windows
2012/06/21 10:05:21	admin	Change Split Mode to 4-windows
2012/06/21 10:05:21	admin	Play Sequence
2012/06/21 10:05:25	admin	Stop Sequence

Previous   Next   Save

The list will display 1,000 items with latest ones showing at the bottom. The list can store up to 10,000 items in circulation, which means the oldest ones will be deleted when the number of items exceeds 10,000.

Previous button
Click this button to show previous 1,000 items.

Next button
Click this button to show next 1,000 items.

Save button
Click on this button to save CMS operator log as a file.

6.7.5   Device Operator Log

Select <Device operator log> and users can access operator log of DVRs and NVRs. Select a DVR or a NVR site in the site list, and users will be ask to input the administrator account name and password. Note that the login name and password in site setting has to be the administrator account as well. Otherwise an error message will be displayed.

Save button
Click on the <Save> button to save the device operator log as a file.

6.8   Setting

Click on the <Setting> icon and the pull-down menu are <CMS Setting> and <Device Setting>. Details of the menu items are described in the following subsections.

CMS Setting
Device Setting
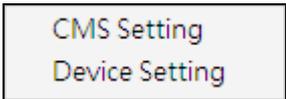
6.8.1   CMS Setting

The instruction of CMS setting is already explained in section _**Configure CMS**_ and its subsections. Please refer to the section for all details.

6.8.2   Device Setting

Select <Device Setting> and the following window will be displayed. The settings are separated as by sites or by channels. First users have to select a site or a channel in the site tree on the left. The selected site or channel will be shown under "Current Selection" area. Note that users can only edit settings of the connected sites.
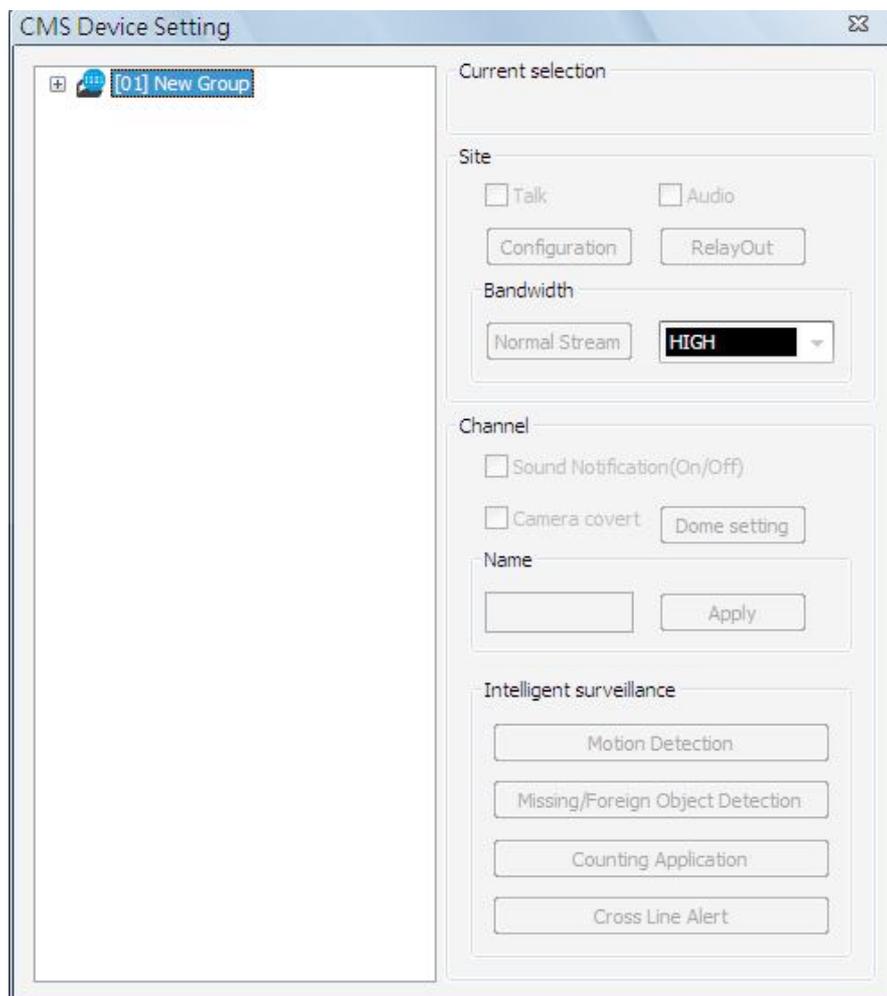
2-way Audio Talk (IP Cameras Only)

For IP cameras, 2-way audio talk function enables users to communicate with the camera side. All stream types except "RTP OVER RTSP" support 2-way audio. The current supported 2-way audio type is ALaw and uLaw audio type.

Check the box in front of <Talk> to enable the talk function. Display the IP camera in single-channel viewing mode, and users can speak through the microphone now to communicate with the camera side. "Talk" will be shown on button left of the Live video.

⚠️ **NOTE:** The communication mode is one to one. Broadcasting function currently is not available.

Audio

Check the box in front of <Audio> to switch on/off the audio.

⚠️ **NOTE:** Switching ON/OFF the audio at CMS will not affect the audio setting of the connected sites.

Configuration

Click on the <Configuration> button to open the configuration menu of the site. The configuration menus for different types of sites are different from each other. Refer to the following for examples.

Configuration Menu of an IP Camera:

The Configuration menu of an IP camera is as shown below. The <Stream> tab is the same as in <Advance Streaming Setting> in section ***Setup the IP Camera Site Manually***.

Other tabs (Property, Network, Video Setting, and System) allow users to edit the IP camera's corresponding settings. Click on <Apply> at the bottom and users can see effect of the new setting in the Live video. The change of settings will be applied to the webpage of the IP Camera as well.

If users wish to connect to the IP camera's webpage via a browser, click on <Link to WebPage> at the bottom. When the setting is completed, click <OK> at the bottom to exit the Configuration menu.

NOTE: Only A5s IP Cameras with software version "**d20110323NS**" or later support the configuration function.

Configuration Menu of a DVR:

The following is the Configuration menu of a DVR. Some items are not available in CMS setting condition. Please refer to User's Manual and OSD Setup Manual of the DVR for detailed instruction.
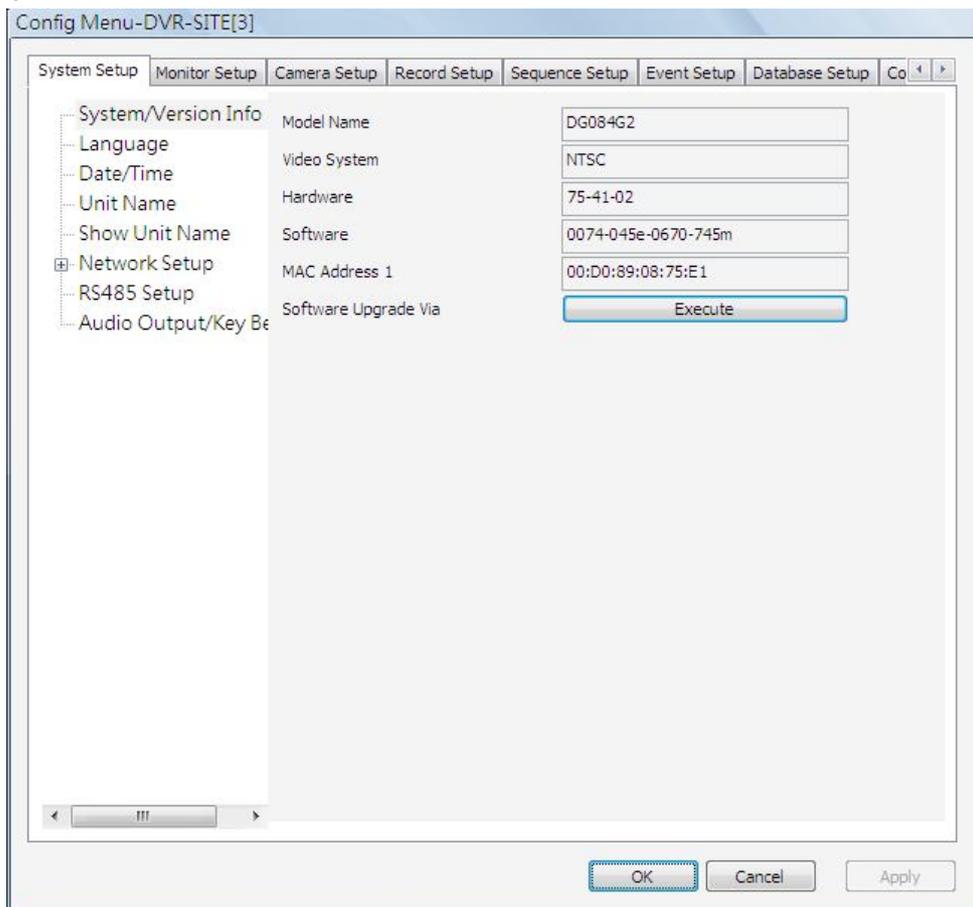
Configuration Menu of a NVR:

The following is the OSD Menu of a NVR. Some items are not available in CMS setting condition. Please refer to User's Manual and OSD Setup Manual of the NVR for detailed instruction.
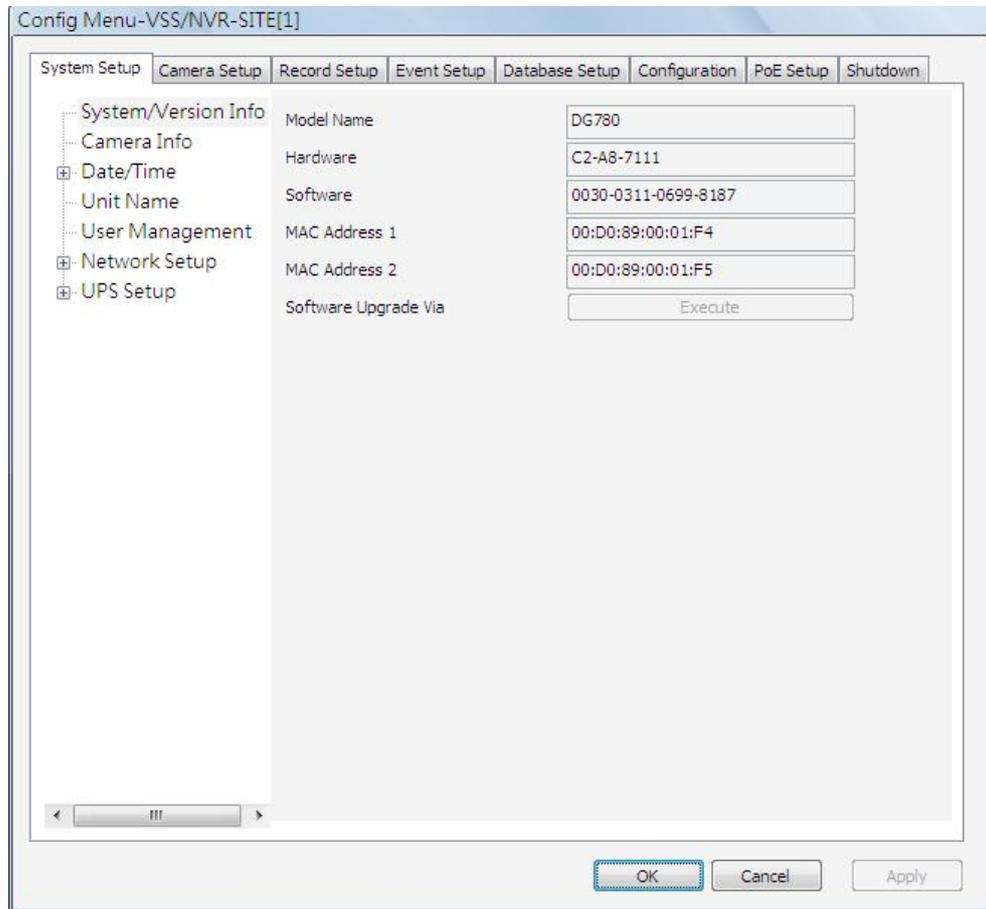
Editing the HDD of Network Video Storage (NVS):

Go to <Database Setup> tab and click on the <Execute> button next to <Internal Disks>, and a list will popup showing all internal HDDs. The list also contains information about total size, state, and temperature of the internal HDDs. <Active> means the HDD is added to the NVS database. Under <Action> column, users can add or remove a HDD to/from the database, and format or repair a HDD.
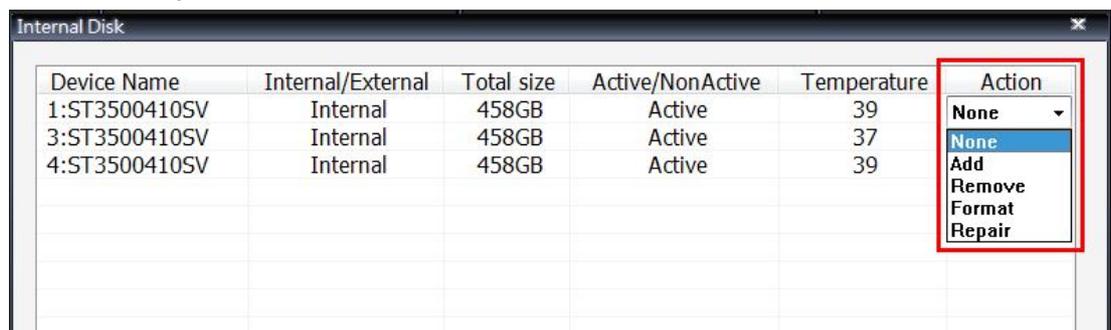
Configuration Menu of an IP Camera via VSS Site:

An example of the configuration window of the VSS site is shown as below. Users can edit the IP camera's configuration settings.
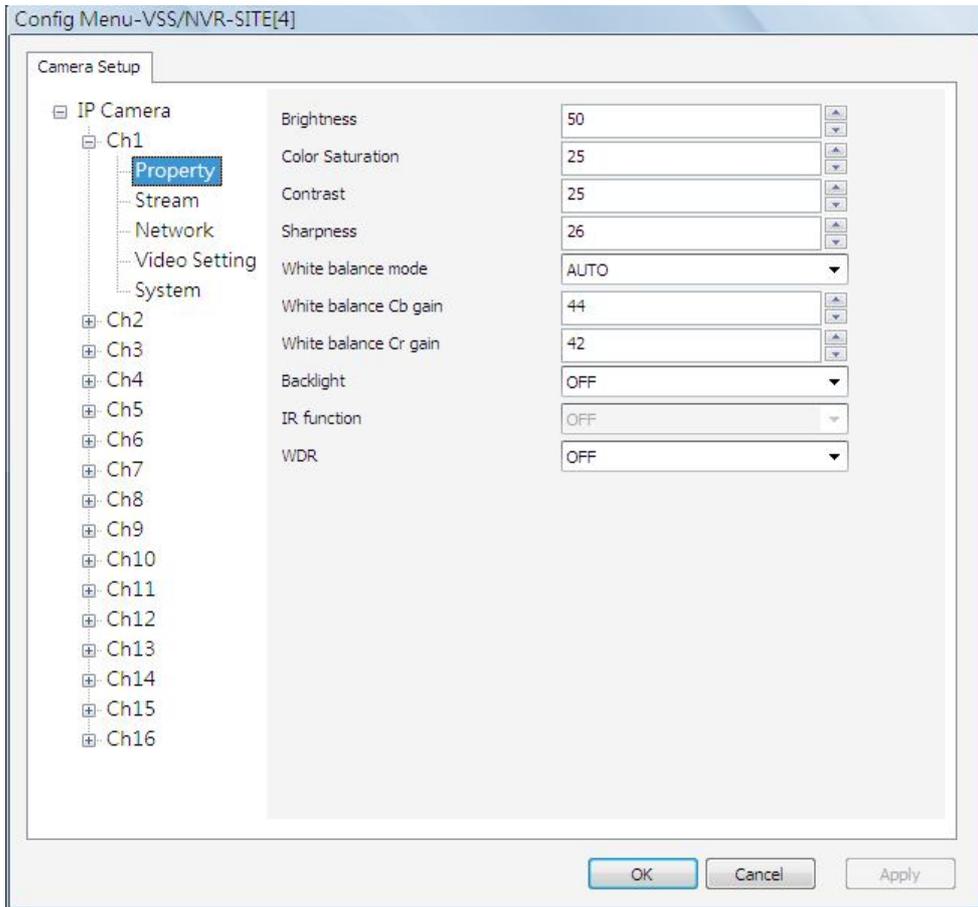
Relay Out (DVR Only)

For DVR sites, users are allowed to manually trigger preset relay out alarms at the DVR side. Click on the <RelayOut> button and a status window will be displayed, as on the right. Click on the button next to any relay out alarm to manually trigger it. Click on the button again to switch it off.

NOTE: Different models of DVR will have different number of relay out alarms.

Bandwidth – Normal/Dual Stream (DVR Only)

For different networks with different bandwidths, two streaming options are provided – Normal Stream and Dual Stream. Users who are using high-speed networks, normal stream will be a recommended choice. Depending on the HDD capacity and network usage, set to high, middle or low bandwidth.

For networks with limited bandwidth, dual stream will be a better choice. It enables coexistence of high quality stream at local DVR side and lower quality stream but faster transmission for CMS side. To select dual stream, click on the bandwidth button to switch to <Dual Stream>. Then users can furthermore choose different bit rates to adjust for the best displaying quality.

The setting will be applied immediately, and is going to be saved for CMS next startup.

<u>Sound Notification Setting</u>

When a channel is selected, <Sound Notification(On/Off)> will be available for setting. Check the box to enable sound notification function for the selected channel. Note a message window will arise if there is no sound file selected yet. Refer to section ***<u>Display</u>*** for more details about selecting sound files.

⚠️ **NOTE:** On the top-left of the grid will show [SN] to indicate sound notification is switched on.

In addition, there are some quick hot keys for setting up sound notification function directly at CMS main window. Refer to the following description.

1. Click a channel grid and press the following keys:
   ● Ctrl + n: Sound Notification ON
   ● Ctrl + f: Sound Notification OFF
2. Click a channel grid and press the following keys:
   ● Ctrl + Alt + n: Sound Notification ON for all sites
   ● Ctrl + Alt + f: Sound Notification OFF for all sites
3. Click a site in the Site Tree and press the following keys:
   ● Ctrl + Alt + n: Sound Notification ON for the selected sites
   ● Ctrl + Alt + f: Sound Notification OFF for the selected sites

<u>Camera Covert</u>

If a camera is set to covert at the DVR side, uncheck the box in front of <Camera Covert> to un-covert at CMS side. Then video stream will come in, and an icon "🔶" will be shown at bottom-left of the grid. The icon represents that the camera is covert at the DVR side.

This function is only available when CMS and DVR side are logged in using accounts with administrator authority.

Dome Setting (Dome Cameras Only)

Click on the <Dome setting> button to setup the Dome ID and Dome Protocol.

Change Camera Name

Users can change the display name of the channel here. Input a new name and click on the <Apply> button to change the camera name immediately.

Intelligent Surveillance

There are four intelligent surveillance function provided for users to setup each channel separatedly. Note that <Counting Application> and <Cross Line Alert> are for PRO versions only.

CMS Motion Detection:

Users can setup motion detection at CMS site independently. Click on the <Motion Detection> button and the following setting window will be displayed.
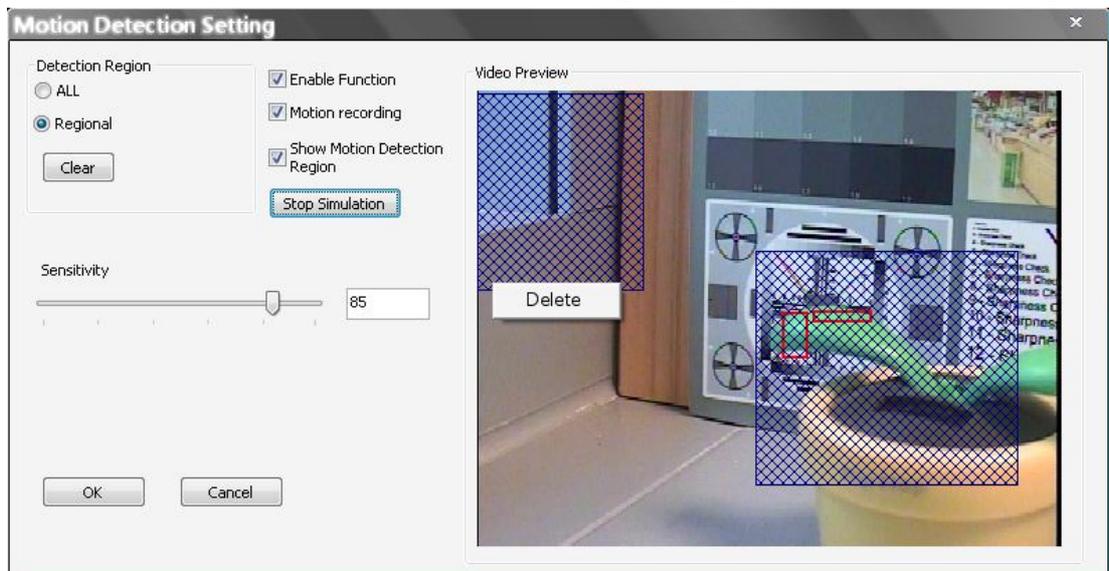
Users can choose to monitor the complete screen or select up to 8 boxed areas after clicked on <Regional>. Click on <Clear> button to delete all selected areas. Alternatively, right click on any selected area to delete it individually.

Refer to the following for description of motion detection settings.

Enable Function: Check on it to start monitor motion detection.

Motion recording: Check on it and CMS will record event video when motion is detected. The length of event video will follow <Event Recording Duration> specified in Event setting.

Show Motion Detection Region: Check on it to display the detection area visually on the monitoring screen. The boxes will also be captured and displayed on the snapshot images.

Start Simulation: Click on it to start simulating motion detection. As shown above, red boxes will mark the motion areas.

Stop Simulation: Click on it to stop simulation.

Sensitivity: Setup a desired sensitivity level.

Click on <OK> to apply the settings, or click on <Cancel> to disregard and return to Live mode.

⚠️ **NOTE:** When motion alert is triggered, an alert icon "🏃" will be displayed at bottom-left of the grid.

Missing/Foreign Object Detection
The purpose of Missing/Foreign Object Detection function is for users to keep an eye on the important objects and areas. Click on the <Missing/Foreign Object Detection> button, and the object detected search window will be shown as below.

Users can setup at most 8 monitoring areas. Click on <Clear All> button to delete all boxes. Alternatively, right click on any single box to delete it individually.

Sensitivity: Setup a desired sensitivity level.

Interval: The time specified here is for determining the lost of objects. If an object is removed from the selected areas for more than the time specified here, lost of object alert will be triggered.

Enable Function: Check on it to enable missing/foreign object detection.

Show Region: Check on it to display the detection area visually on the monitoring screen. The boxes will also be captured and displayed on the snapshot images.

Clear All: Click on it to clear all selected boxes.

Apply: Click on it to save and apply settings in the configuration section.

Start Simulation: Click on it to start simulating object detection. As shown in the previous page, green boxes will mark the lost of objects.

Stop Simulation: Click on it to stop simulation.

Live: Click on it to restore the Video Preview frame to live image.

Lost of Object Alerts
When lost of object alerts are detected, restore the object detected search window and the list on the left-hand side will show area number and time of the lost of object alerts.

If the connected site is a DVR, double click on any item to playback video that is 15 seconds before the alert triggered. However, if the video is not added to the database yet, an error message will be displayed.

NOTE: Only the configuration of area positions, sensitivity, and interval will be permanently saved. The default image will be replaced by the initial image every time when CMS restarts. Therefore, please check the configuration every time CMS starts up.

NOTE: CMS Player also has Missing/Foreign Object Detection function, and it is slightly different from what's in CMS. Refer to the appendix A for more details.

Click on <OK> to apply the settings, or click on <Cancel> to disregard and return to Live mode. The selected boxes will not be shown on the live monitoring screen.

NOTE: The "Motion Detection" function and "Missing/Foreign Object Detection" function can be enabled simultaneously.

Counting Application (PRO Version Only)

Counting Application enables users to keep tracks of object entrance/exit at designated positions. Click on the <Counting Application> button and the counting application setting window will be shown as below.
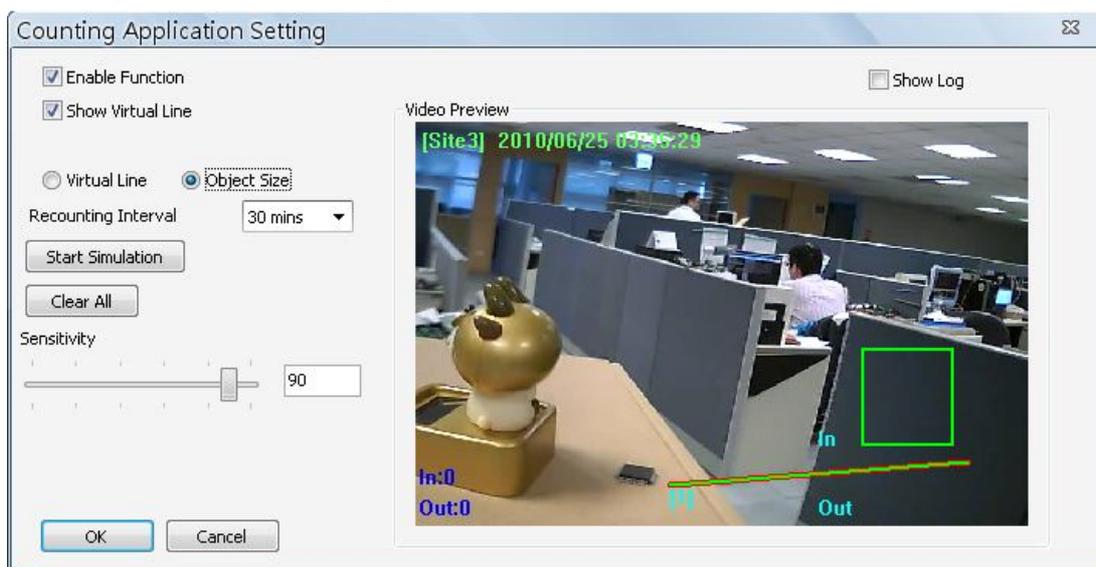
Refer to the following for description of counting application settings.

Enable Function: Check on it to enable counting application.

Show Virtual Line: Check on it to display the virtual line on Live monitoring display.

<u>Virtual Line:</u> Click to select this and users can draw virtual lines at preferred positions. After a virtual line is drawn, a window will pop up as shown on the right. Users have to define In/Out direction and monitoring type. A maximum of 10 virtual lines can be defined for each camera.

<u>Object Size:</u> After the virtual line is drawn, users need to define size of detecting object. Click and drag the mouse to define a preferred object size.

<u>Recounting Interval:</u> Users need to specify duration of time segment. The In/Out counting numbers will be reset for each time segment.

<u>Start Simulation:</u> Click on it to start simulating counting application. The In/Out counter will show numbers of detections.

<u>Stop Simulation:</u> Click on it to stop simulation.

<u>Clear All:</u> Click on it to clear all defined virtual lines and the object size box.

<u>Sensitivity:</u> Setup a preferred sensitivity level.

<u>Show Log:</u> Check on it and the log will be displayed as shown on the right.

<u>Clear Log:</u> Click on it to clear the log.

Click on <OK> to apply the settings, or click on <Cancel> to disregard and return to Live mode.

NOTE: Counting Application function is also available in CMS Player. The setting options are exactly the same as in CMS.

Cross Line Alert (PRO Version Only)

Users can use Cross Line Alert function to monitor prohibited entrance/exit at designated boundary line. Click on the <Intelligent Surveillance> button and the cross line alert setting window will be shown as below.
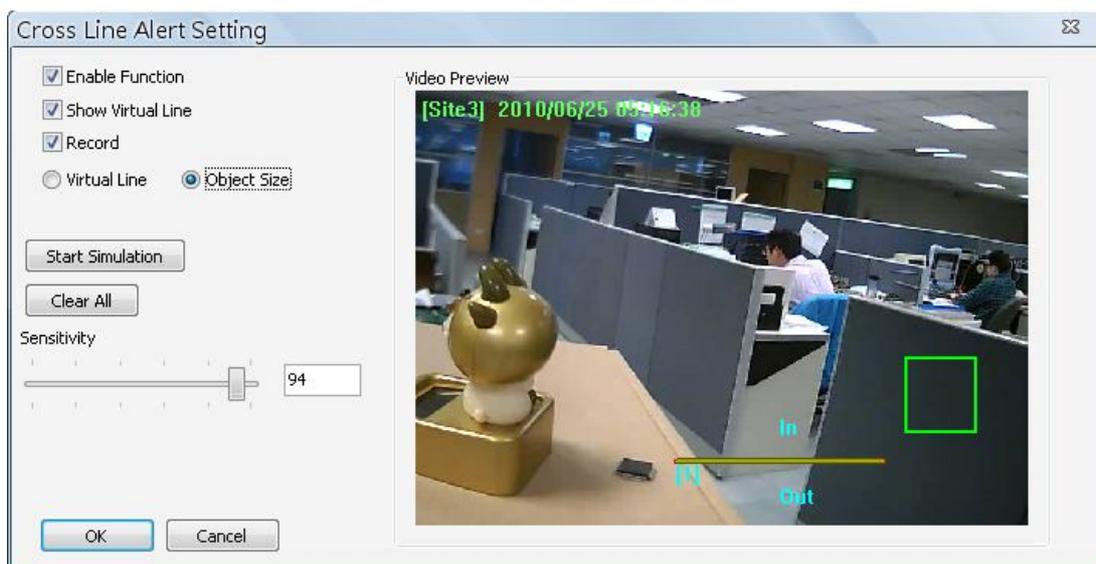
Enable Function: Check on it to enable cross line alert function.

Show Virtual Line: Check on it to display the virtual line on Live monitoring display.

Record: Check on it to trigger event recording whenever cross line alert is detected.

Virtual Line: Click to select this and users can draw virtual lines at preferred positions. After a virtual line is drawn, a window will pop up as shown on the right. Users have to define In/Out direction and monitoring type. A maximum of 10 virtual lines can be defined for each camera.
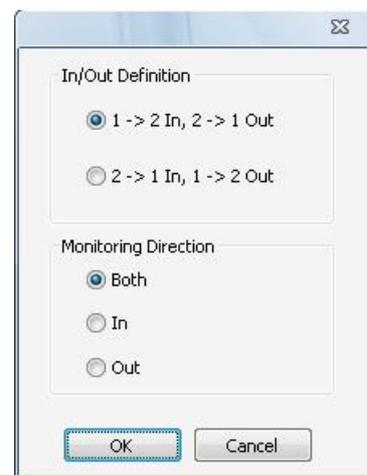
Object Size: After the virtual line is drawn, users need to define size of detecting object. Click and drag the mouse to define a preferred object size.

<u>Start Simulation:</u> Click on it to start simulating counting application. The In/Out counter will show numbers of detections.

<u>Stop Simulation:</u> Click on it to stop simulation.

<u>Clear All:</u> Click on it to clear all defined virtual lines and the object size box.

<u>Sensitivity:</u> Setup a preferred sensitivity level.

Click on <OK> to apply the settings, or click on <Cancel> to disregard and return to Live mode.

NOTE: When cross line alert is triggered, an alert icon "⚡" will be displayed at bottom-left of the grid.

6.9 Disconnection Log

CMS will automatically detect if any sites connected at the beginning are disconnected for any reason other than manual disconnection in every 3 minutes. The <Disconnection Log> icon will blink to hint users when abnormal disconnection happened.

Users can also click on the <Disconnection Log> icon at any time to restore the disconnection list.

The list can be saved as a TXT file by clicking on <Save> at the bottom.

6.10   Alert Log

When an alert is triggered while the alert function is enabled, the <Alert Log> icon will blink to indicate that an alert has been triggered. Click on the <Alert Log> icon to display the Alert Info window. Users can click on the <Save> button to save the alert information list.
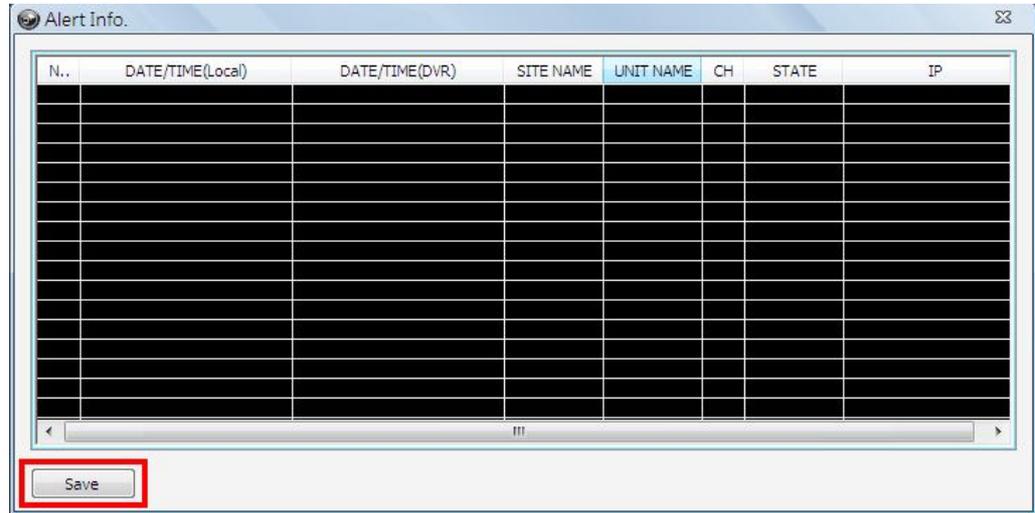
⚠ **NOTE:** The maximum number of items that can be kept on the alert list is 1,000. When the list reached 1,000 items, the earliest alert messages will be deleted while the new ones are being saved.

Double click on the Event Messages (Alarm, Motion, or Video Loss) to view the event video in full screen. If the DVR sending the Event Messages is not currently connected to CMS, a message box will be displayed. Connect the DVR and the event video will be available.

Icons of alert types, as listed below, will be displayed at bottom-left of the grid.

🏃	Motion	🔔	Alarm
🏃	Cross Line	V	Video Loss

⚠ **NOTE:** If the alert event has not yet been added to the database of the DVR, a warning message will be shown to notify users.

7.   Additional Functions

There are more functions available when right clicking on the displaying grids. Refer to the following subsections for more information.

7.1   Dome Control

Users can also control a dome camera in CMS. Right click on a grid where a dome camera is properly installed and select <Dome Control>. The dome control panel will be displayed.
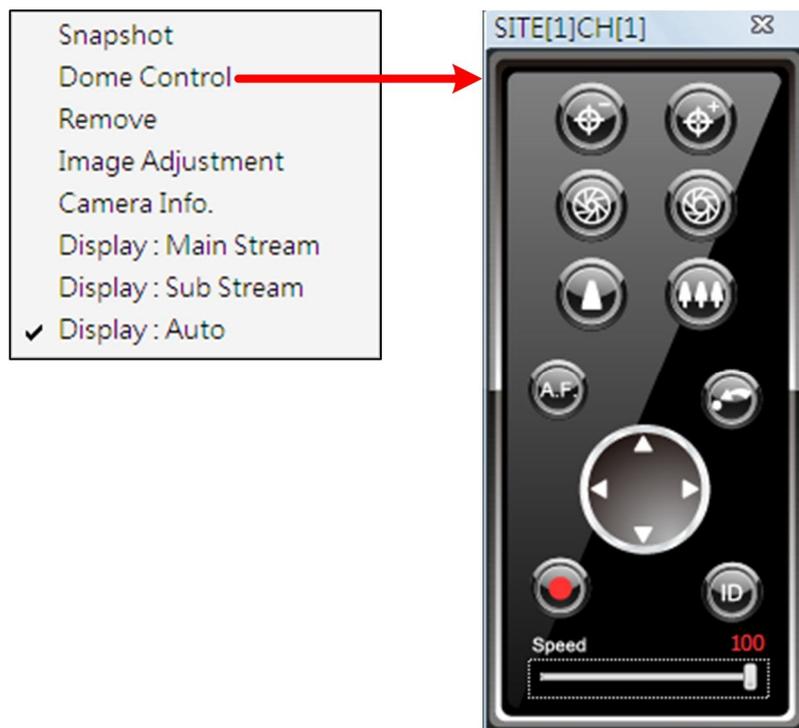
The function of each button on the dome control panel is described below.

<u>Focus</u>

This is used to manually focus on preferred objects. Click on the <Focus Near> / <Focus Far> icons to adjust the focus.

<u>Iris</u>

This is used to adjust iris of then lens. Click on the <Iris Open> icon let in more light. Otherwise, click on the <Iris Close> icon to reduce incoming light.

Zoom

This is used to zoom in / out to preferred objects. Click on the <Zoom In> / <Zoom Out> icons to adjust the lens. It can also be adjusted by moving the scroll wheel of the mouse. Scroll toward users to zoom out and away from users to zoom in. CMS zoom function will be disabled in dome camera control mode.

A.F. (Auto Focus)

Click on ![icon] to focus the camera automatically.

Go Preset Point

Click on ![icon] to go to any preset point.

Direction Button

Click on the arrows to pan/tilt the dome camera.

Set Preset Point

Click on ![icon] to set the current position as a present point. As shown on the right, specify the preset point number and give it a name. The setting will apply to the remote site as well.

ID

Click on ![icon] to setup the Dome ID and Dome Protocol.

Speed Slider Bar

The slider bar is used to adjust the speed of the pan/tilt movement. 0 is the slowest and 100 is the fastest.

Mouse Control

If the mouse is moved to the top / bottom / left / right edge of the screen, a red triangle as in the picture on the right will show up. At this time left clicking the mouse to move the screen toward the direction where the red triangle points to.
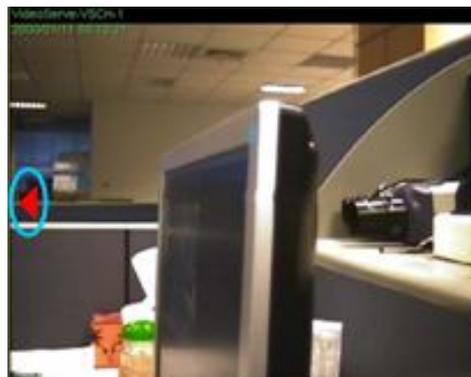
7.2   Image Adjustment

Both CMS and CMS player provide the image adjustment function. Double click on a channel to view in 1x1 mode, then right click on it. Select <Image Adjustment> from the pull-down menu, and the image adjustment window will be displayed. Users can change the brightness, saturation, hue and contrast value of the channel.

```
Snapshot
Dome Control
Remove
Image Adjustment
Camera Info.
Display : Main Stream
Display : Sub Stream
✔ Display : Auto
```
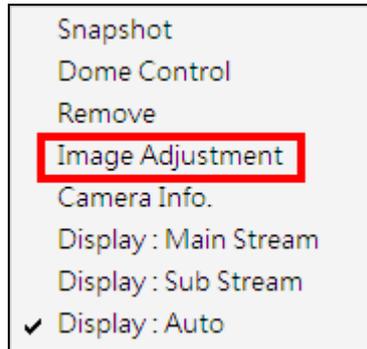
NOTE: The <Image Adjustment> option will only be available when viewing in single-channel mode.

Click the <Default> button to reset the adjustments to the default values.

NOTE: The image adjustment function has no effect to the recorded video. Whatever changes made here will not apply to the recorded video.

7.3   Camera Info.

Camera information can be viewed both in CMS and CMS Player. Right click on any channel grid and select <Camera Info.> from the pull-down menu to view its camera information. Refer to the following for examples of Camera Info. window from CMS and CMS Player.

Snapshot
Dome Control
Remove
Image Adjustment
Camera Info.
Display : Main Stream
Display : Sub Stream
✔ Display : Auto
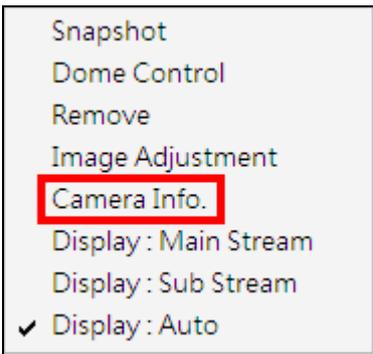
Camera Info of CMS

Camera Info.

Site Name :	New Site
Channel Name :	IP_CH1
IP :	192.168.6.56
Frame Rate :	24
Video Size :	720 x 480
Format :	H.264
Device :	IP Cam
Model :	NH Series
Stream Type :	RTP_PLUS_RTSP H264
Main Stream BPS :	0.0 Kbps
Main Stream Loss Rate :	0.0 %
Sub Stream BPS :	1152.6 Kbps
Sub Stream Loss Rate :	0.0 %

Close

Camera Info of CMS Player

Camera Info.

Device :	DVR
Frame Rate :	26
Video Size :	720 x 240
Format :	H.264

Close

7.4   Dual Streaming Options

When the connected site is an IP Camera or a VSS/NVR device, the display and recording formats will be in dual streaming mode, while three different options are available.

Right click on a grid of an IP Camera or a VSS/NVR site and dual streaming options will be shown at the bottom, including Main Stream, Sub Stream, and Auto. Only one option can be selected out of the three. The preset is Auto.

```
Snapshot
Dome Control
Remove
Image Adjustment
Camera Info.
Display : Main Stream
Display : Sub Stream
✔ Display : Auto
```
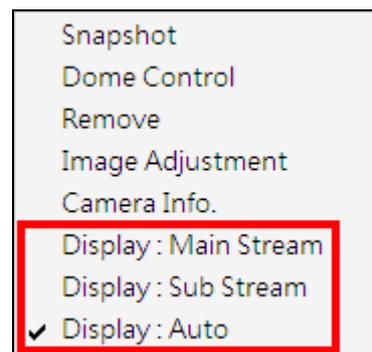
NOTE: For VSS/NVR sites, the Main/Sub stream types **MUST** be defined beforehand.

Refer to the following table for details of which type of streams will be used under different combinations of display and recording settings for the three different options.

	Dual Streaming Options		
	Auto	**Main Stream**	**Sub Stream**
Display Only			
Multi-window Display	Sub Stream	Main Stream	Sub Stream
Single Channel Display	Main Stream	Main Stream	Sub Stream
Display AND Recording			
Multi-window Display / Recording	Sub Stream / Main Stream	Main Stream	Sub Stream / Main Stream
Single Channel Display / Recording	Main Stream	Main Stream	Sub Stream / Main Stream
Recording Only			
Recording Only	Main Stream	Main Stream	Main Stream

Some special cases are:
1. For IP Camera sites, if sub stream is not enabled, the dual streaming option will be preset and fixed as <Display: Main Stream>.
2. For NVR sites, the recording stream will be whatever streams come in. The displaying stream will follow rules of dual streaming option selected.
3. For VSS/NVR sites, the dual streaming options will not be available if the connection type is set to <Sub Stream Only>. Thus both recording and displaying streams will be the sub stream.

7.5   Fisheye Camera Display

When a fisheye camera is connected, there will be a small icon displayed at the bottom left-hand corner of the grid. Right click on the camera display and the pull-down menu will include <Fisheye Option>, as shown below.
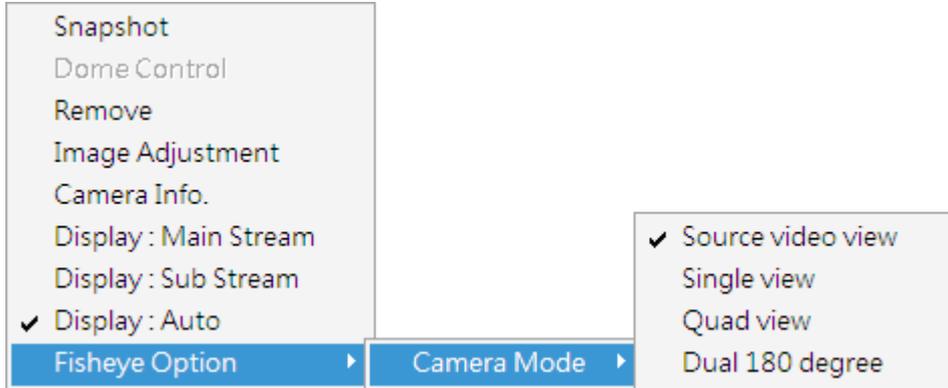
NOTE: Resolution of the main stream **MUST** be set to 1920*1080 or higher, otherwise the pull-down menu will not be available.

When the display is in multi-channel mode and the fisheye camera is set to <Display: Main Stream>, the camera mode selections are Source video view and Single view. If the display is in single channel mode, the camera modes are Source video view, Single view, Quad view and Dual 180 degree.

Source Video View

This is the original video source from the fisheye camera. The image will look like the following.

Single View

This is the expanded picture of the original video source, for the purpose of easier observation by human eyes.

Quad View

Similar to single view, quad view shows the original video source in four expanded pictures. Users will be able to monitor bigger area than single view, but the picture size is one half smaller.

Dual 180 Degree

This camera mode will cut the original video source into half and expand each half into a rectangle picture, as shown below. This allows users to monitor the whole source view, but the pictures may be a little bit distorted.

Change Displaying Area

Under single view, quad view and dual 180 degree modes, users can click on any spot to make the position at the center of the displaying image. This will change to a different displaying area.

In addition, users can also click and hold the left key of the mouse to drag the camera image to change the displaying area. A red arrow will be displayed on the screen to show the moving direction.

> ⚠ **NOTE:** Whatever type of camera mode is displayed for monitor purpose, the recorded video will always be in source video view.

7.6 ePTZ Control via Mouse

Both in CMS and CMS Player, zoom in/out can be easily controlled via the scroll wheel of the mouse. Either in CMS or CMS Player, click on any grid that users wish to zoom in viewing area. Move the scroll wheel away from users to zoom in and the screen will show like the following picture.

On the upper left-hand corner will show zoom-in multiple. The maximum multiple is X7. Also on the lower right-hand corner will show the position of current viewing area, shown as an inner white rectangle, comparing with the original screen, shown as an outer rectangle frame.

In addition, the viewing area can be dragged and moved by left clicking and holding the mouse while moving. On a zoomed-in screen, the mouse pointer will change to and when the mouse is clicked the pointer will become to indicate that the image is dragged.

⚠ **NOTE:** This function is not available in Dome Camera Control mode. Scrolling the wheel of the mouse will zoom in/out the camera lens of the dome camera.

⚠ **NOTE:** This function will use up a lot of CPU resources. It is recommended not to open too many programs at the same time to avoid crash of CPU.

Appendix A: Install AVI Codec

In order to correctly playback converted AVI files, install K-Lite Codec Pack and select codec options during installation, as described below.

1. Check <Mu-law, A-law> & <MS ADPCM> under <Other audio formats [ffdshow]>.
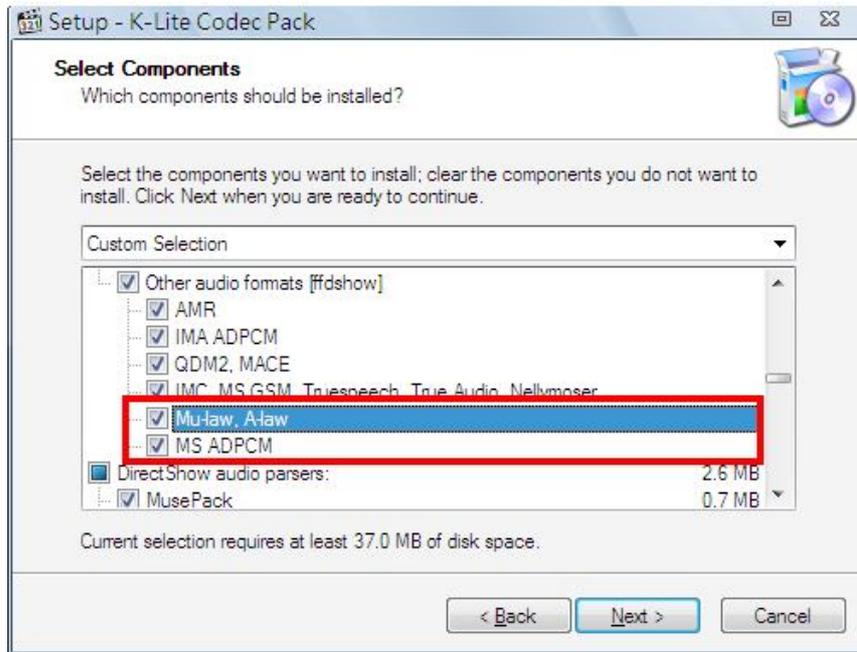
2. Find <DirectShow source filters:> and select <(use system default)> (some versions may show <Microsoft>) for <AVI splitter>.
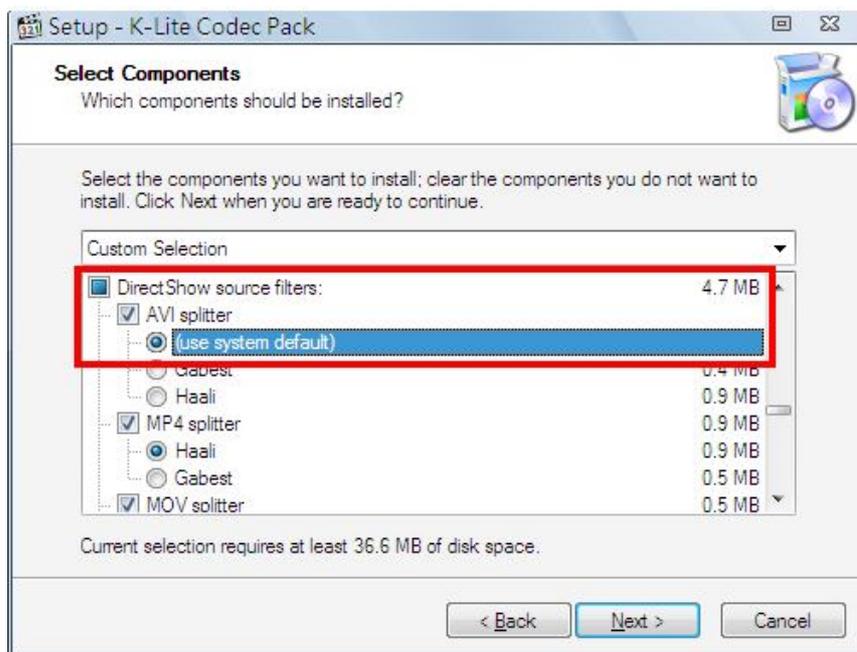
If H.264 AVI files cannot be played or the videos cannot be displayed correctly, please go to Start menu → <K-Lite Codec Pack> → <Configuration> → <ffdshow video decoder>. Then change the following settings

1. Under <Codecs>section, select <libavcodec> for H264/AVC Decoder.
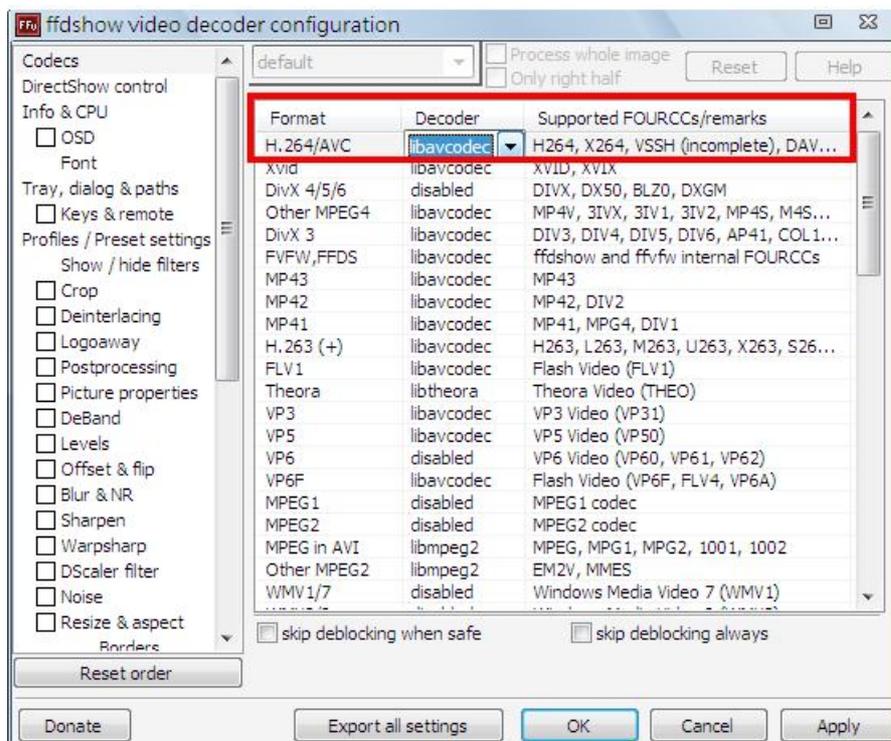
2. Under <Decoder options> section, select <none> for <Error resilience>.
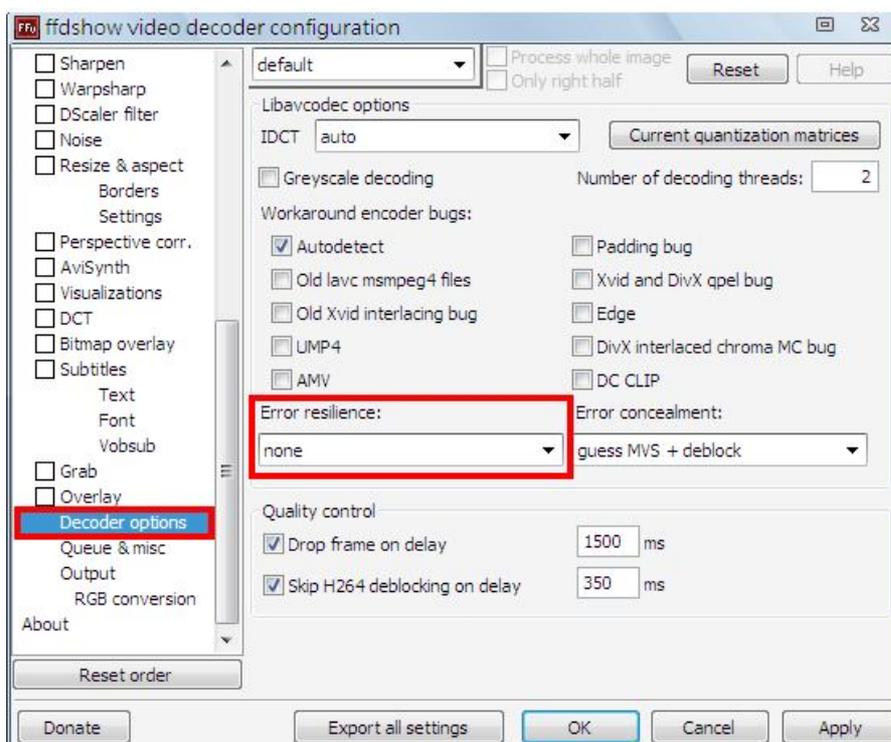
Appendix B: Troubleshooting

The followings are some common situations when users are having difficulty with CMS server.

1. CMS server does not work properly. How can it be recovered or where can I ask for help?

   Please try the following ways to recover it first.
   A. Please check if the computer meets the system requirement.
   B. If CMS automatically closes when it's starting up or connecting to sites, please send the files stored in \CMS\Setting\ under improper operation condition. Afterwards, re-install CMS and check to install **Default Setting** during installation. Remember not to import old setting files. This will tell whether if the old setting data are corrupted.
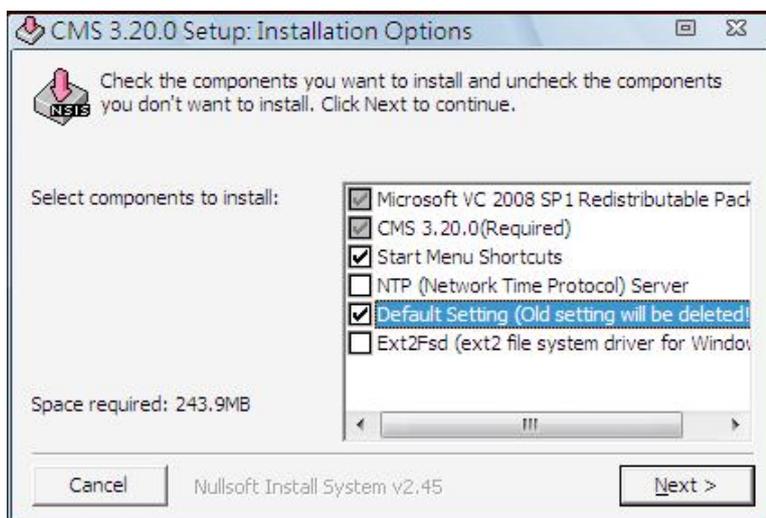
   C. If CMS cannot successfully connect to sites, check the followings.
      ● Confirm IP, port, username, and password of the site. Users can connect to the site via IE browser to verify the site exists and is connectable.
      ● Close firewall and virus scan software and try to connect again. If the problem is due to firewall or virus scan software, please change their settings.
      ● If the connection still failed, please send the IP address to our engineer.

   ⚠ **NOTE:** When users need to ask for the engineer's help, please send a copy of the files stored in \CMS\Log\ as well.

2. CMS server takes up too many HDD space.

We have found that the preset of the virus scan software "NOD32" will automatically create a temporary file under windows system temporary folder when CMS connects to sites. This temporary file will automatically increase the size which causes the HDD became lack of space.

Please go to the control center of the NOD32 and disable **IMON**. Then the problem should be resolved. The following pictures are examples.
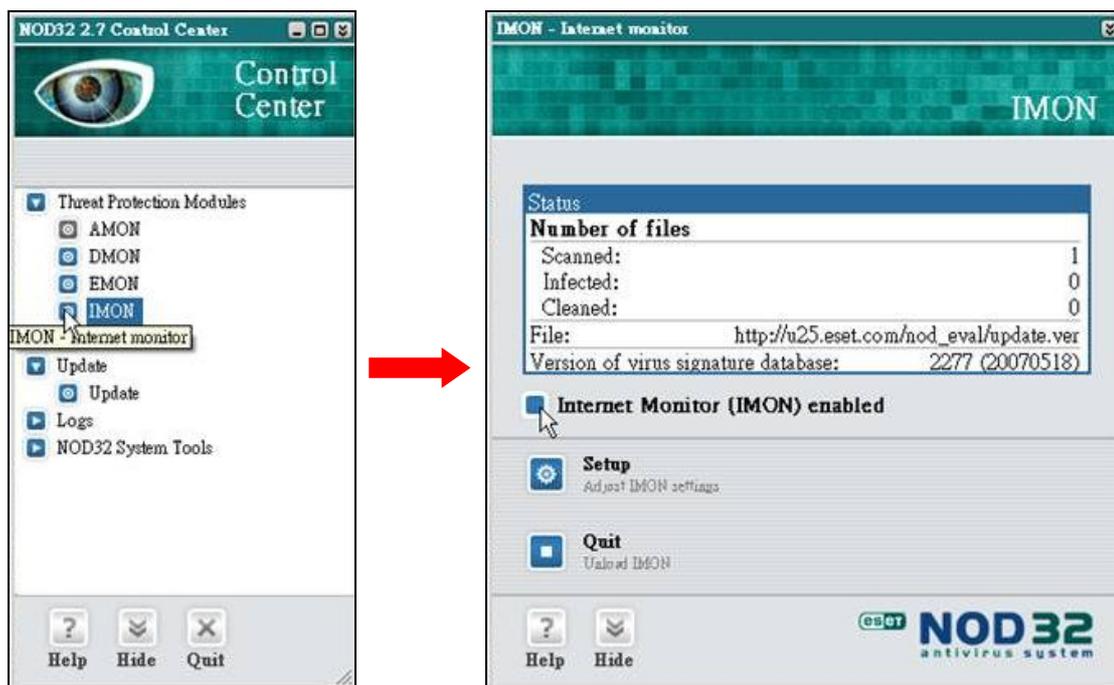
3. The PC crashed while playing back the AVI file exported from DVR or converted by CMS Player.

Click <Start Menu> and select <Run>. Then input "cmd regsvr32 /u shmedia.dll" and click <OK>. Playback the AVI file again and the problem shall be solved.