

# *Speco-NVR*

## *User Guide*

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# Notice – Must be read before you start Speco-NVR!!

- Dedicated HDD is needed for the recording of the video data.
  - Add HDD solely for recording the data or make a partition on the HDD
  - The HDD or the partition for the recording should not contain data other than the data recorded by Speco-NVR.
- Avoid following conditions to prevent System Crash or Reboot
  - Automatic Windows Upgrade Setting
    - If you specify the time for the **automatic upgrade** of your windows operating system, the automatic upgrade **can cause reboot or system halt**.
    - Automatic upgrade of the windows operating system is not recommended.
  - Multi monitor device driver for the **NVIDIA video chip set** can cause **reboot or system halt**. We do not recommend to use video cards using NVIDIA chip sets.
- Recommended settings of the frame rate and data bit rate.
  - D1 size video : set the frame rates less than 15FPS.
  - CIF size video : make sure to set the summation of the bit rates from all video channels less than 50Mbps.

# 1. Introduction

- Speco-NVR is a PC application program package targeted for use on a centralized real time video monitoring and recording system based on network cameras, video servers.
- Speco-NVR needs a high performance PC. It is recommended to install Speco-NVR on a highly reliable hardware platform such as workstation. And Windows XP is recommended for the OS.
  - Speco-NVR shows the maximum stability and the performance when the **PC is running no other application** programs.
  - Basic screen of Speco-NVR includes up to 16 videos.
- Speco-NVR supports all network cameras supplied by Speco.
- The key features of Speco-NVR are :
  - Supports up to 64 channels
  - Live monitoring, Recording, Remote management of the network cameras.
  - Various recording modes : **Schedule, Manual, Alarm, Motion triggered**
  - A separate playback screen that can handle up to 16 simultaneous playback without interrupting real time monitoring.
  - Separate Event Log management
  - Integrated Pan/Tilt/Zoom control.

# 1. Introduction

- The basic display screen of Speco-NVR consists of up to 16 video windows. Up to 4 basic display screens can be launched simultaneously to support up to 64 channels.
- These screens can be shown on a single large screen or can be displayed on multiple display monitors. **When using multiple monitors**, make sure to **install sufficient graphic card** on your PC.

## 1.1. Introduction – Important Notice

- Time reference of Speco-NVR
  - Speco-NVR includes the features that need time reference. Speco-NVR refers to the time set on the PC for the operation. It is very important to **keep the clock of the PC precise.**
  - The time which is displayed beneath each screen in white color for real time connection is the time information sent from the network camera.
- **Do not change the parameters related with network configuration while the Speco-NVR has a video connection with corresponding device.**
- Do not run application programs other than Speco-NVR on the same PC.  
This can cause instability and performance degradation of the Speco-NVR.

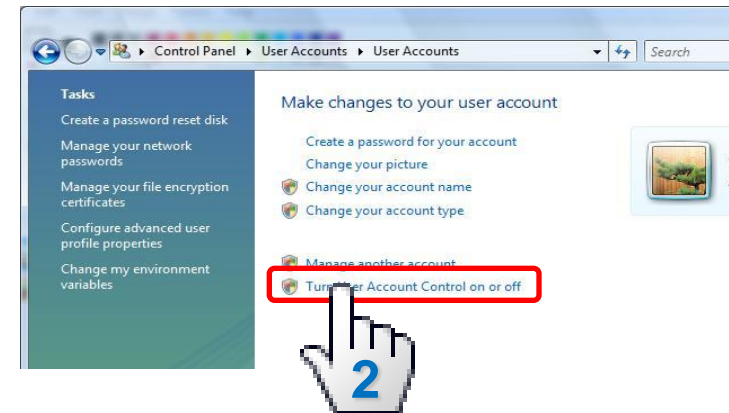
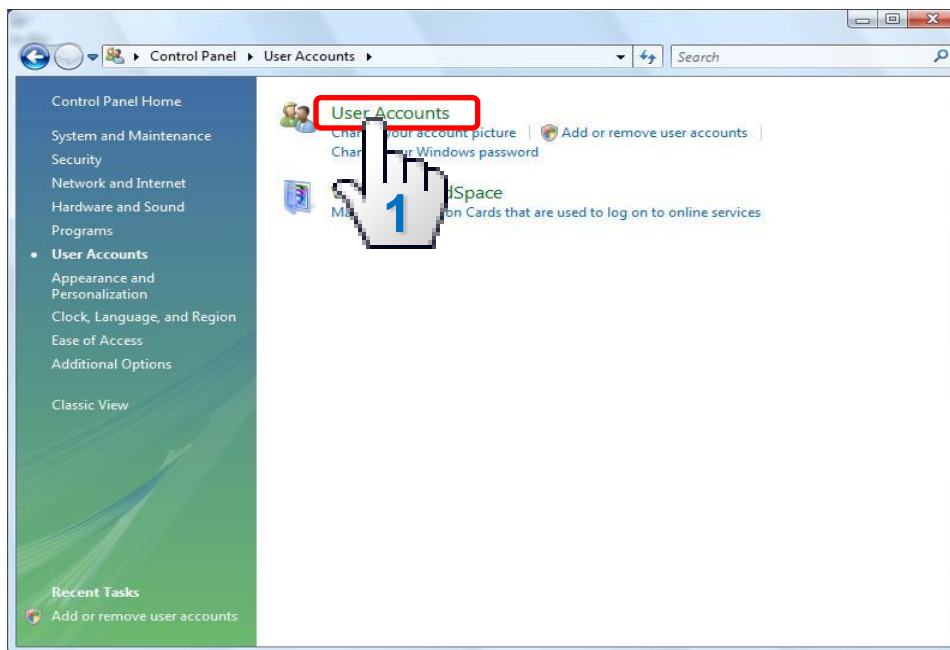
# 1.1. Introduction – for Windows Vista

Windows Vista and Windows 7 users need to configure **UAC (User Access Control)** and **Privilege Level** for proper recording and still video capture in Speco-NVR and Web Viewer. Follow through the details in this document to ensure the setting.

<Windows Vista>

## 1. UAC (User Access Control) configuration

- 1) Double-click “User Accounts” in control panel
- 2) Double-click “Turn User Account Control on or off”
- 3) Uncheck “Use UAC to help protect your computer”

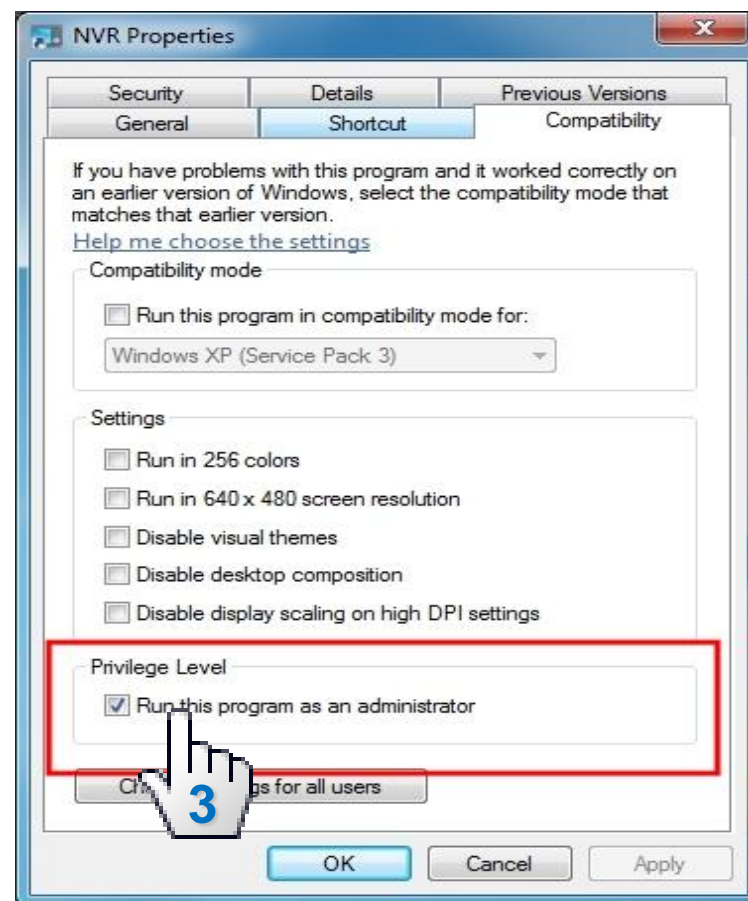
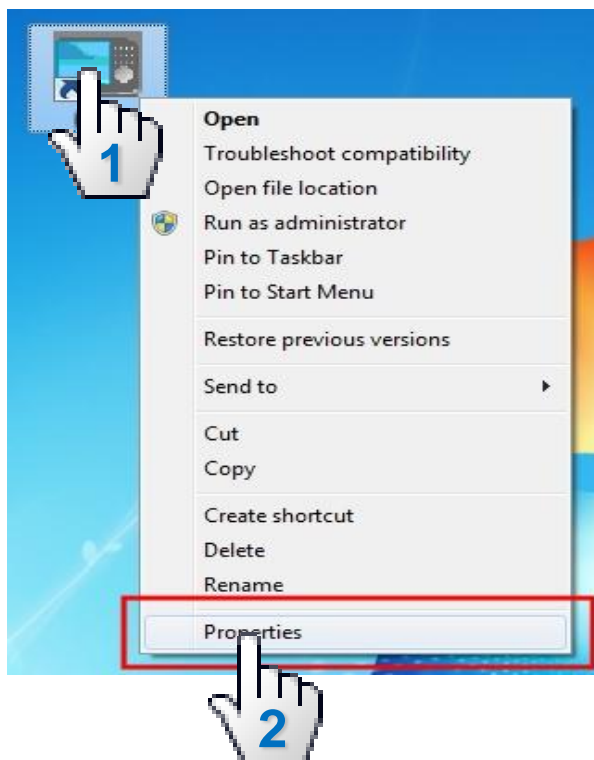


# 1.1. Introduction – for Windows Vista

<Windows Vista>

## 2. Privilege Level Control

- 1) Select “Speco-NVR” icon on the desktop
- 2) Click right mouse button and select “Properties”
- 3) Check “Privilege Level” in “Compatibility” tab



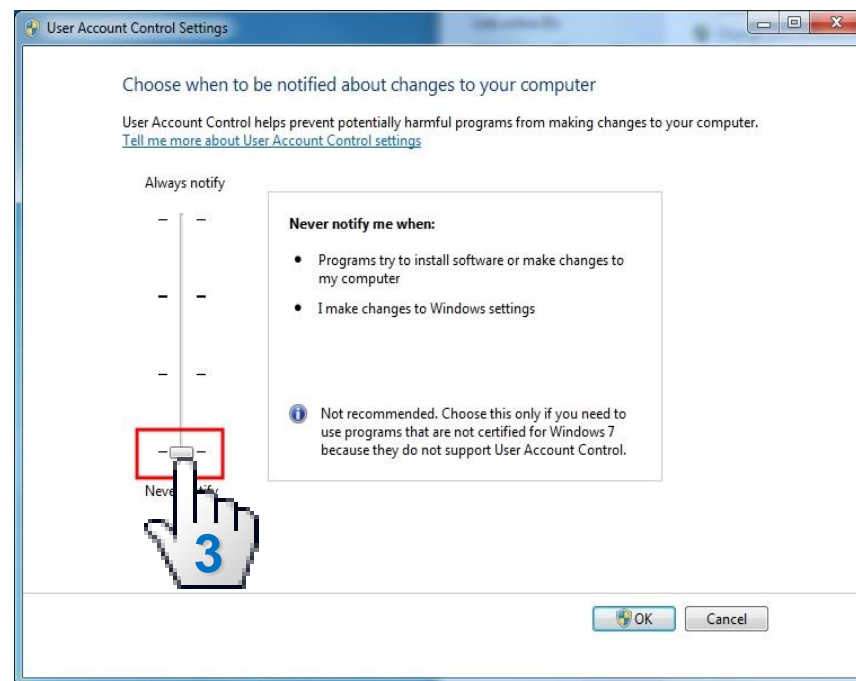
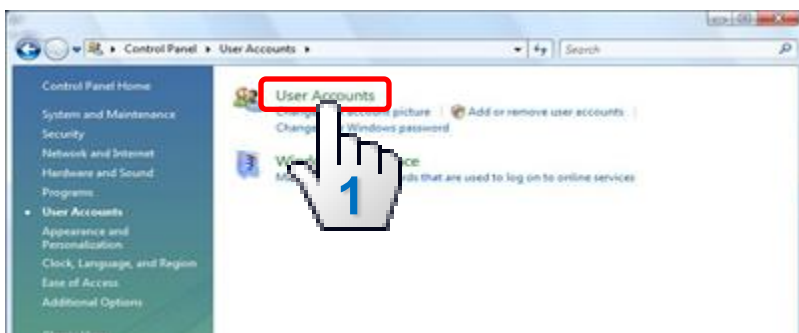


# 1.1. Introduction – for Windows 7

<Windows 7>

1. UAC (User Access Control) configuration

- 1) Double-click “User Accounts” in control panel
- 2) Double-click “Change User Account Control setting”
- 3) Set to “Never notify”

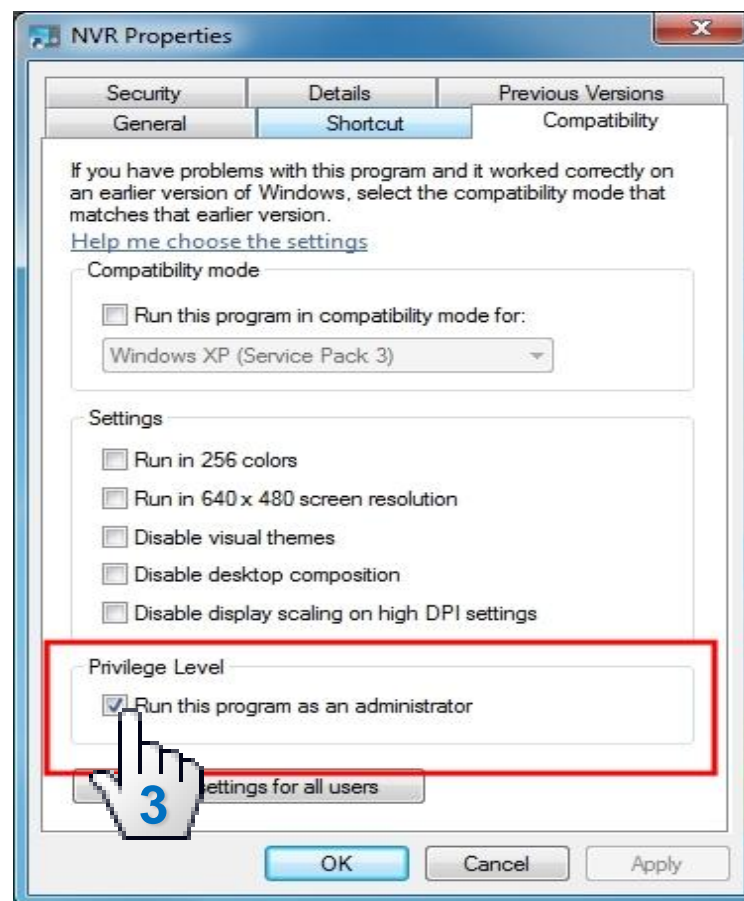
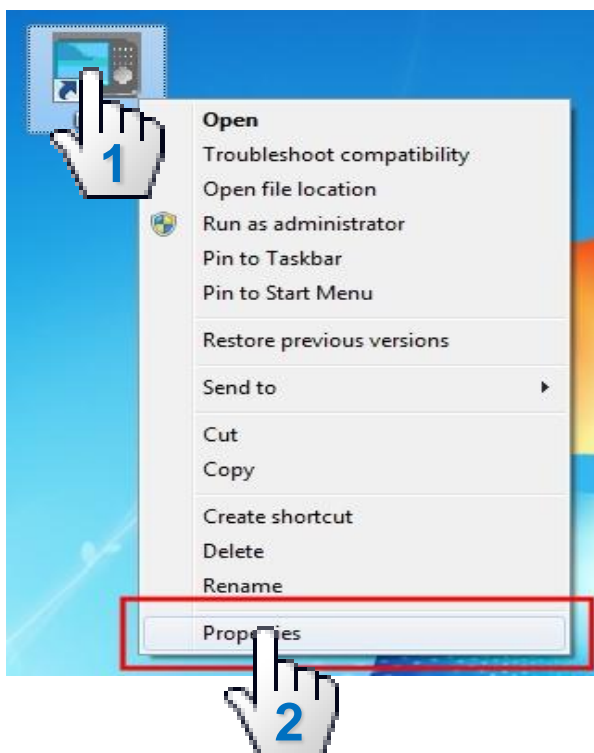


# 1.1. Introduction – for Windows 7


<Windows 7>

## 2. Privilege Level Control

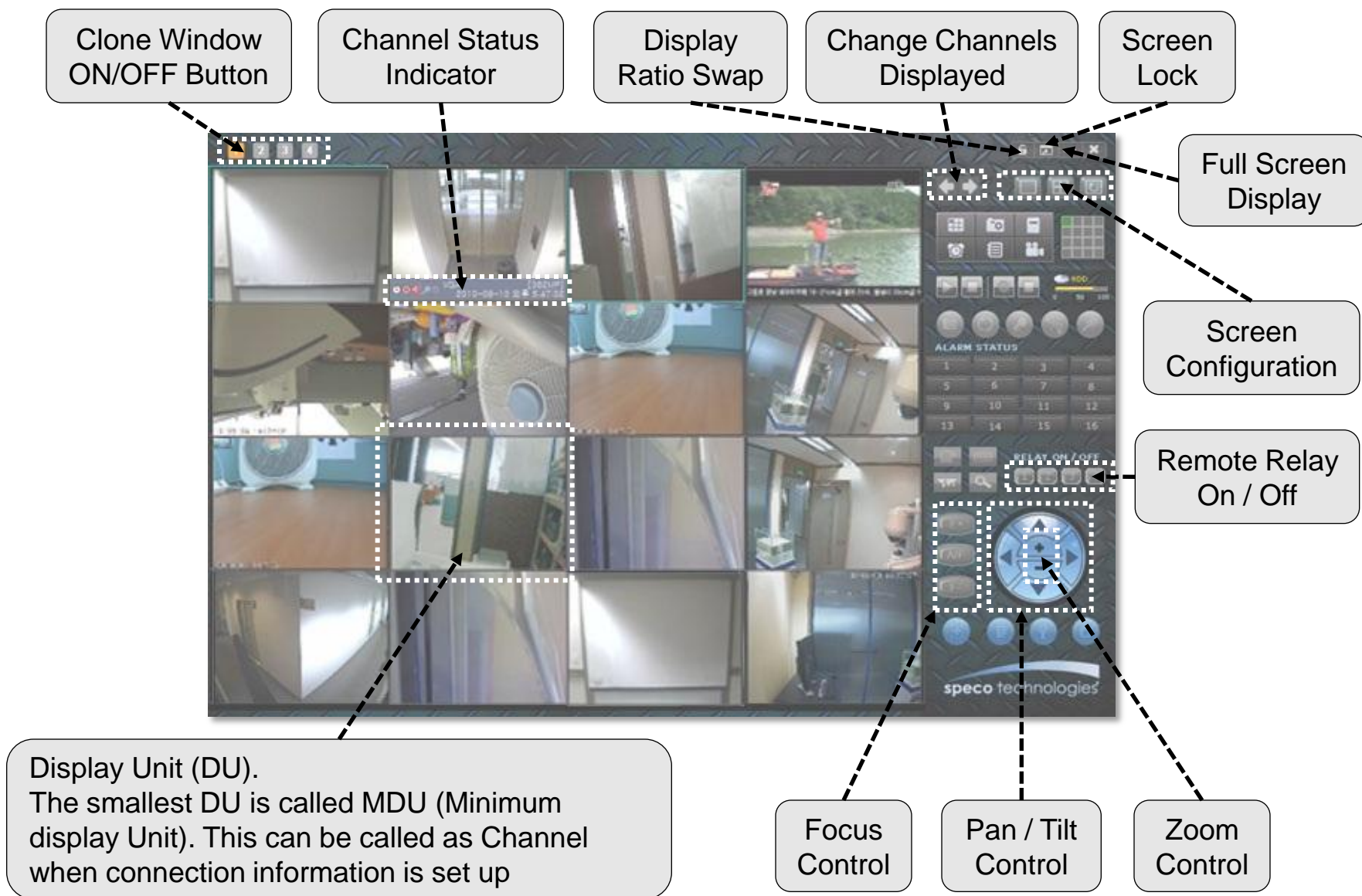
- 1) Select “Speco-NVR” icon on the desktop
- 2) Click right mouse button and select “Properties”
- 3) Check “Privilege Level” in “Compatibility” tab



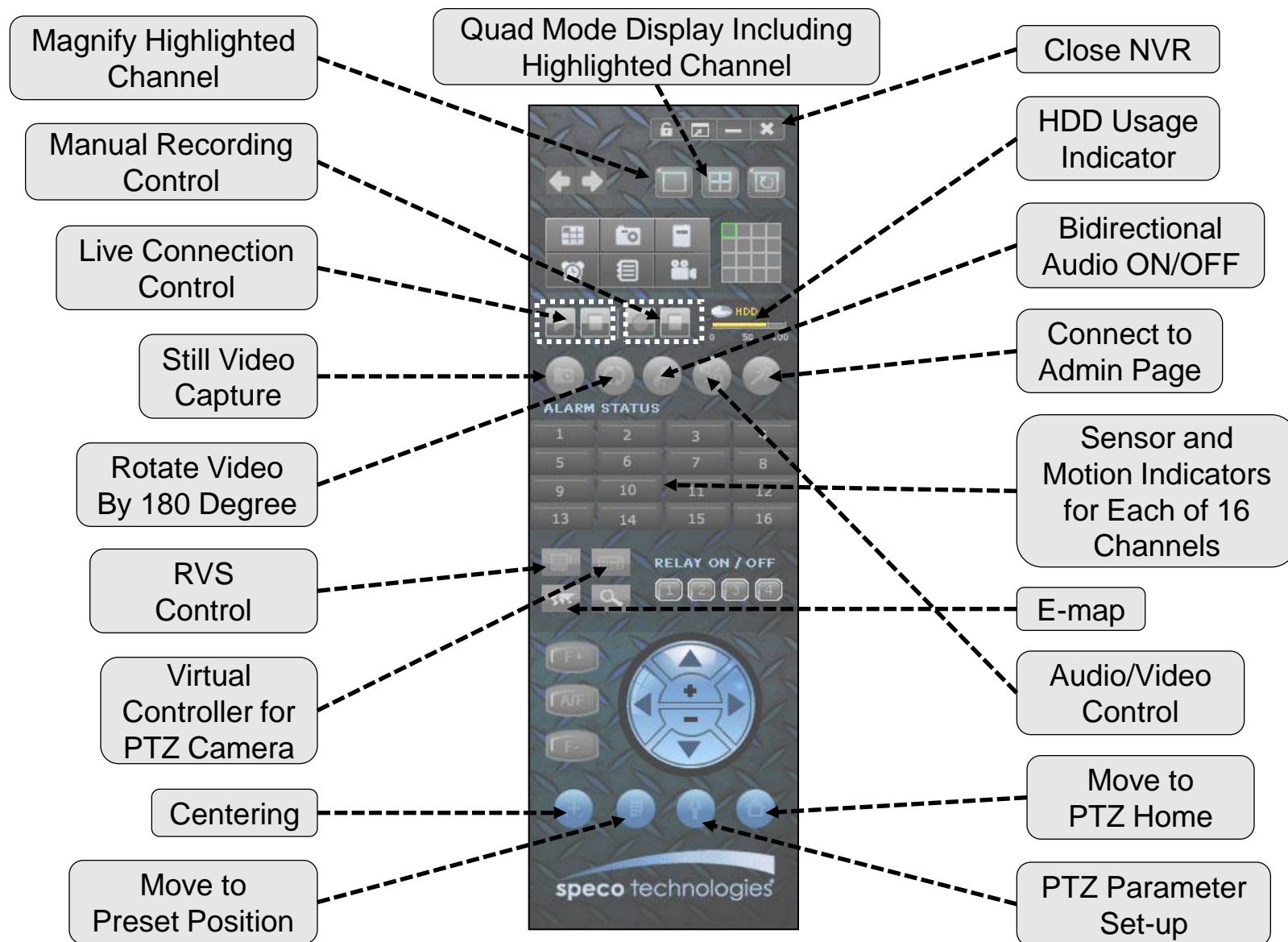
## 2. Installation of Speco-NVR

- Install “**Speco-NVR**” S/W from the material CD.
- Program installation will continue automatically and after the installation a launcher icon  will be created on your desktop.
- To play the recorded video file in Event Log Window, “icfPlayer” program will be installed automatically upon the installation of Speco-NVR.
- For the sake of **stability and improved performance**, Speco-NVR is designed to use dedicated HDDs for recording the AV data.
- **Never use the HDD assigned for recording the AV data in Speco-NVR to save other files or programs.**  
Speco assumes no responsibility caused by failure of observing this restriction.

## 3.1. Screen – Functional Buttons and Indicators




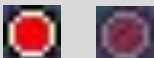














## 3.2. Screen – Functional Buttons and Indicators



## 3.2. Screen – Video Display Window

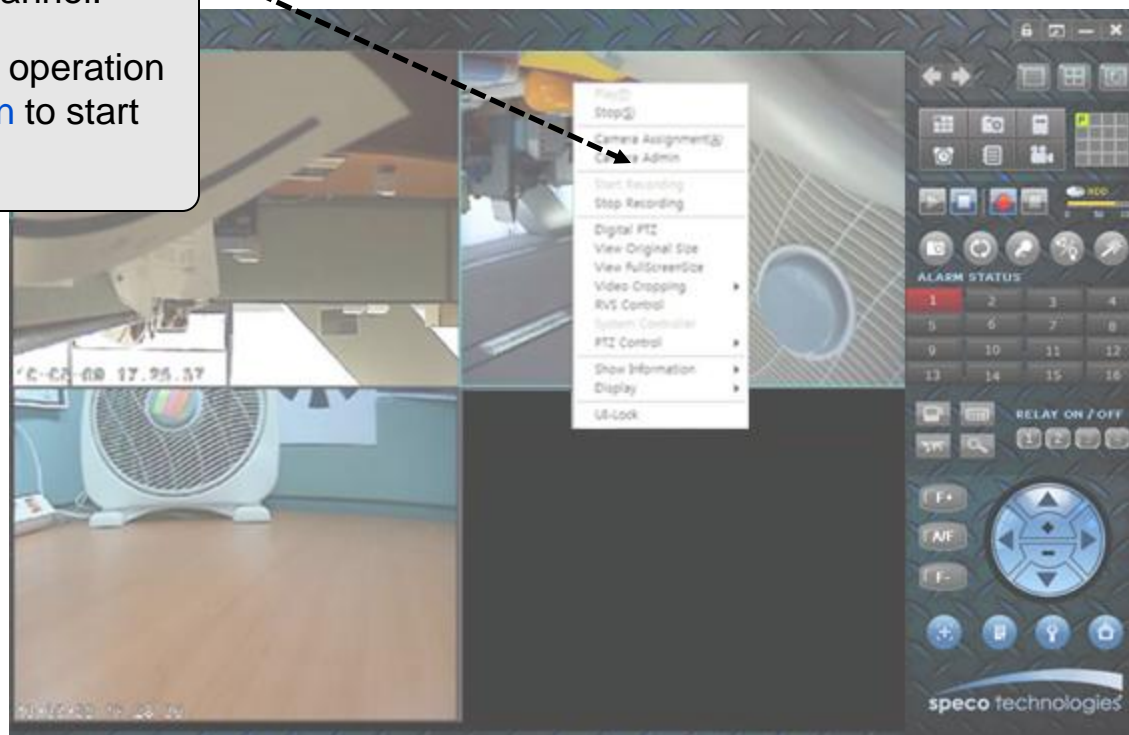
- Video display window is an area that displays video sent from the locations being monitored. The window can be divided into 16 sub-screens called **Display Unit (DU)**. Each DU has video display area and status indicator area.
- Channel Status Indicator

	Indicates the presence of recording schedule. YES (  ) , NO (  )
	Recording in progress (  ) / Recording stopped(  )
	Indicates whether audio is enabled (  ) or Not (  ) .
	Indicates whether bidirectional audio is enabled (  ) or Not (  ) .
	Indicates the presence of new event(  ) or no new event (  )
	Indicates number of connected users

- Messages
  - When there is no live connection, the message area indicates whether connection information is programmed or not (**Assigned / Not Assigned**).
  - When the channel is in live connection, the message area displays time and channel description. **The time displayed in the message area is the time set on the device sending the video.** Remember that this time can be different from the time set on the PC.
  - The size of the video is displayed in QCIF to UXGA.

## 3.3. Screen - Quick Control Pop-Up Menu

- Locate the cursor on each DU and **press right mouse button** to enable pop-up menu.
- Simple controls indicated on the right can be initiated for each channel.
- Move the cursor to desired operation and **press left mouse button** to start the operation.



## 3.3.1. Screen – Summary of Quick Controls

Menu	Description	
Play(P)	Make connection with selected network camera.	
Stop(S)	Disconnect selected network camera.	
Camera Assignment(A)	Modify information of selected network camera.	
Camera Admin	Run Administration Tools of selected network camera.	
Start Recording	Start recording from selected Display Unit.	
Stop Recording	Stop recording of selected Display Unit.	
Digital PTZ	Toggle digital PTZ function in selected Display Unit.	
Video Cropping	Select region size of video cropping.	
RVS Control	Run RVS control.	
System Controller	Run virtual keyboard controller.	
PTZ Control	Run additional PTZ actions.	
Show Information	Session Count	Display number of connections that connected with network camera.
	Packet Loss Ratio	Display packet loss ratio of network connection between PC with network camera.
	Frame Rate	Display average frame rate per second of network camera.
Display	Original Ratio	Toggle the display ratio as original and fit.
	Show Status Bar	Toggle the display status bar on and off
UI-Lock	Lock up NVR control interface to prevent unsecured access	



## 3.3.2. Screen – Quick Controls (View Original Size)

**1** Select a channel

**2** Select the View Original Size from pop-up menu.

**3** A new window will pop up with original video size

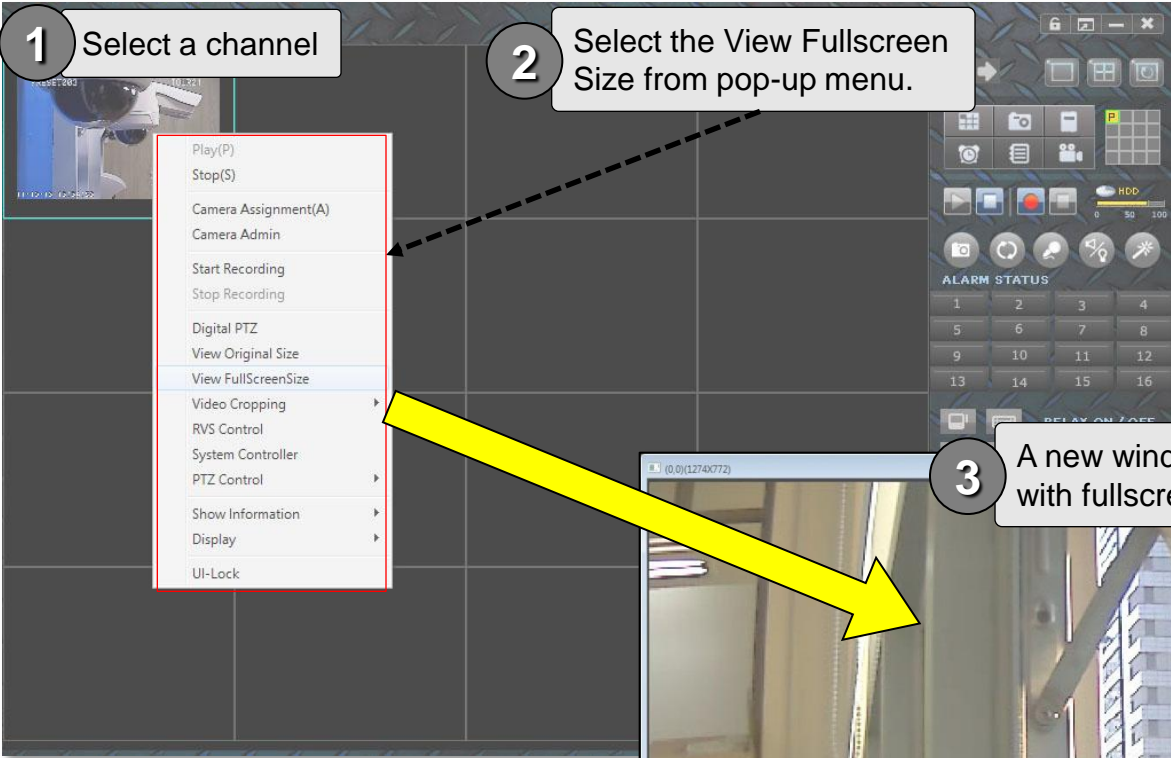
The display window size follows setting in Administration tools

**Video Quality & Bandwidth Control**

- Input Video Source: NTSC
- Video Size: 720 x 480 (D1)
- Video Rotation:

speco technologies

## 3.3.2. Screen – Quick Controls (View fullscreen size)



1 Select a channel

2 Select the View Fullscreen Size from pop-up menu.

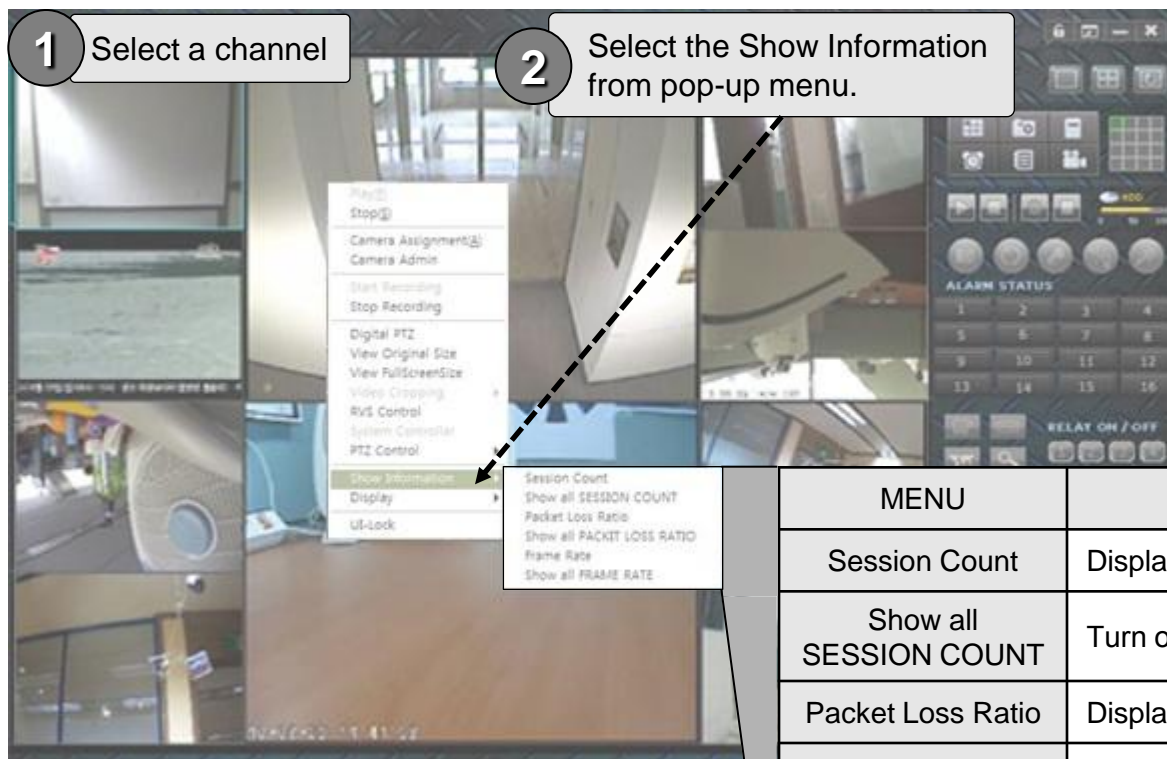
- Play(P)
- Stop(S)
- Camera Assignment(A)
- Camera Admin
- Start Recording
- Stop Recording
- Digital PTZ
- View Original Size
- View FullScreenSize
- Video Cropping
- RVS Control
- System Controller
- PTZ Control
- Show Information
- Display
- UI-Lock

3 A new window will pop up with fullscreen video size

The display window size follows video resolution setting of screen

The screenshot shows a multi-camera view with a context menu open over one channel. The menu includes options like Play, Stop, Camera Assignment, Start/Stop Recording, Digital PTZ, View Original Size, View FullScreenSize, Video Cropping, RVS Control, System Controller, PTZ Control, Show Information, Display, and UI-Lock. A yellow arrow points from the 'View FullScreenSize' option to a new window that has opened, displaying a fullscreen video feed of a modern building.

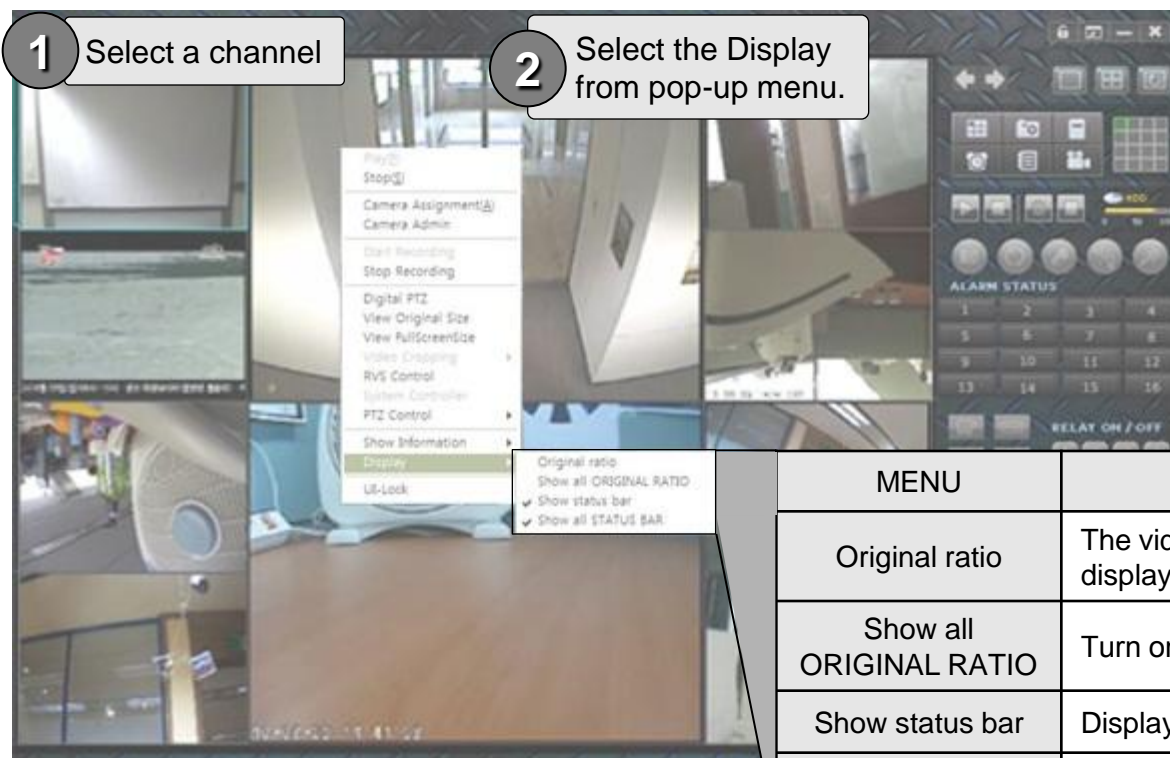
## 3.3.2. Screen – Quick Controls (Show Information)



The feature display the informations that related with video streaming from connected network camera

MENU	Description
Session Count	Display how many connection made with camera.
Show all SESSION COUNT	Turn on 'session count' on all channel in screen.
Packet Loss Ratio	Display the ratio of network packet loss.
Show all PACKET LOSS RATIO	Turn on 'packet loss ratio' on all channels in the screen.
Frame Rate	Display the average frame rate per second.
Show all FRAME RATIO	Turn on 'frame ratio' on all channels in the screen.





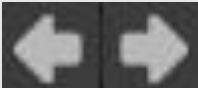




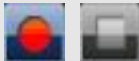







## 3.3.2. Screen – Quick Controls (Display)



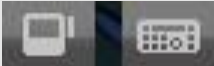








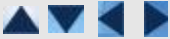




MENU	Description
Original ratio	The video image in selected DU keep original display ratio. The video image will not fit to DU size.
Show all ORIGINAL RATIO	Turn on 'original ratio' on all channels in screen.
Show status bar	Display status bar on bottom of DU.
Show all STATUS BAR	Turn on 'status bar' on all channels in screen.

The feature display the informations that related with video display from connected network camera



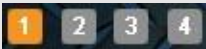





## 3.4. Summary of Buttons

		Magnify the highlighted channel to occupy entire display area.
		Display the highlighted channel and the following 3 channels in 2 x 2 mode.
		Return to original screen layout.
		Display former 1 or 4 channels in the display area following the settings of the display.
		Display next 1 or 4 channels in the display area following the settings of the display.
		Connect (and view) or disconnect to the entire channels which are configured.
		Start or stop recording of A/V data from all connected channels.
		Show the percentage of the HDD usage.
		Capture a still video of the highlighted channel.
		Flip the video of the highlighted channel.
		Enable/Disable bidirectional audio communication for the highlighted channel.
		A control window for the audio and video adjustment is launched.
		Connect to the admin page of the highlighted channel.

## 3.4. Summary of Buttons

		If the highlighted channel product have internal storage, a new window for the control of the HDD is launched.
		Virtual controller for controlling PTZ camera is launched. This is applicable only for OPTZ36XI, OPTZ36XO.
		When this button is activated, the camera center is moved to the point where the mouse click is made.
		Displays preset positions. If one of the list is selected, the camera moves to selected preset position.
		A new control window for setting various PTZ parameters is launched.
		Move the camera to home position.
 <p>* These controls are available when the channel is equipped with proper PTZ features.</p>		Move the camera to UP/DOWN/LEFT/RIGHT.
		Zoom In or Zoom Out.
		Move the focus to near position.
		Automatic focus adjustment
		Move the focus to far position.

## 3.4. Summary of Buttons

		<p>On/Off the relay of the highlighted channel. In the text area name of the relay is shown.</p>
		<p>On/Off control of clone windows 2,3,4.</p>
		<p>Screen Lock. When the screen is locked all the controls except for the display will be locked. Enter the ID and password to unlock the screen.</p>
		<p>Enlarge the screen to fill the monitor.</p>
		<p>Minimize Speco-NVR.</p>
		<p>Terminate the program. ID and password are required to terminate the program.</p>

## 4. First Connection to Live Video

1 Install Speco-NVR and connect your PC to the network.

2 Set-up IP information for the connection.

3 Click on Play Button.

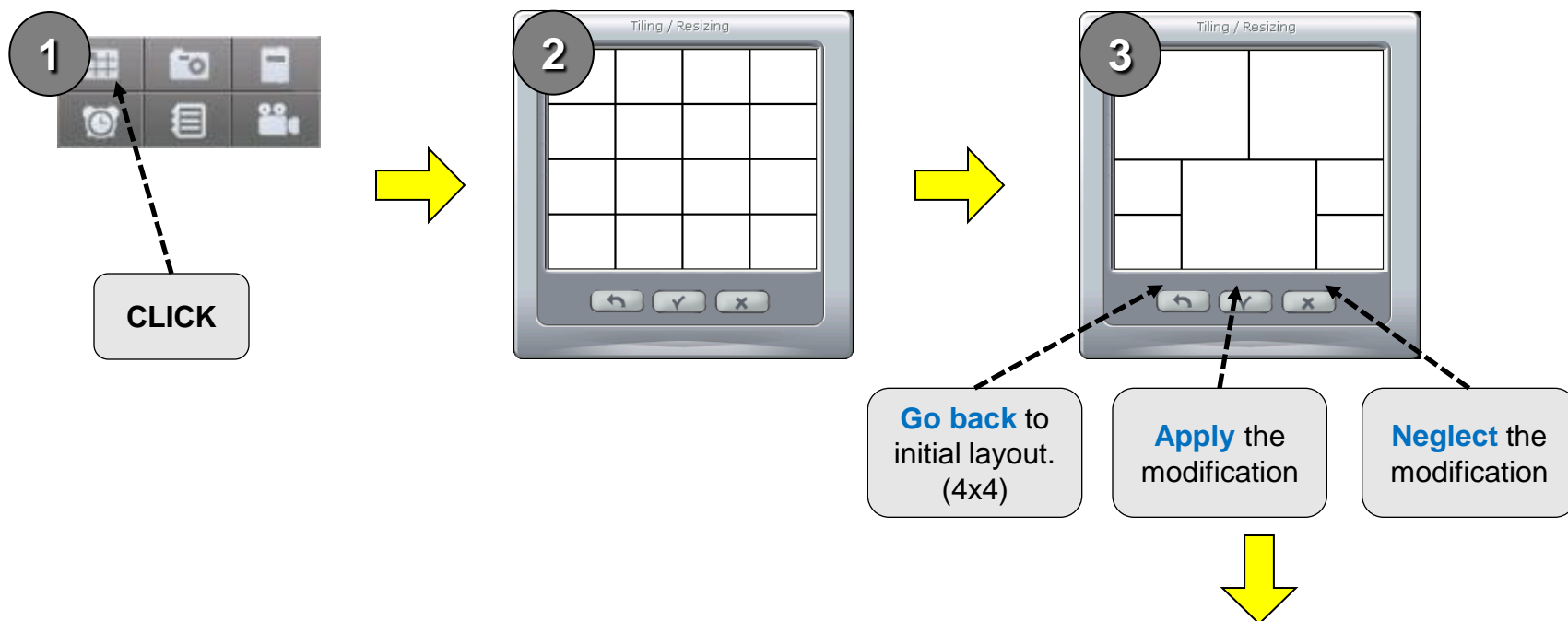
4 Example of live connection.

5 For further information, please refer to the remaining part of the manual.

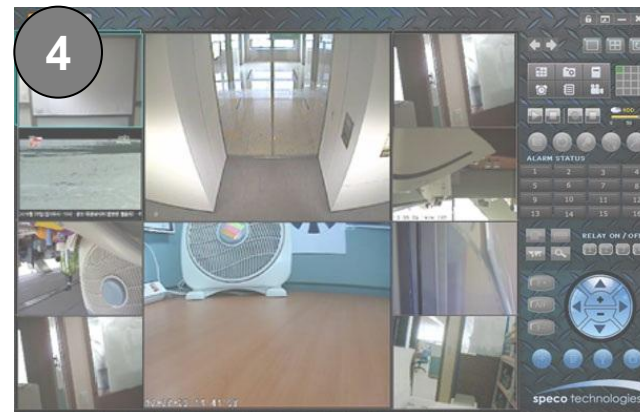




## 5.1. Detailed Description - Screen Layout



1. Combine adjacent MDUs from 4 x 4 screen to create larger Display Area (DU).
2. Click on the corresponding MDU and move the cursor in diagonal direction while the mouse button is pressed.
3. Release the mouse button when desired number of MDUs are merged to create a new Display Unit (DU).



<Example of a screen having 7 DUs>

## 5.1. Detailed Description - Screen Layout

### Assigning sequence numbers to the DUs.

To assign set up parameters to the DUs for the new layout, each DU is assigned with a number following the rule below.

DU at the top of the leftmost location has number 1.

Number is increased as we move to the right and to the bottom.

Reference position for the location is the top-left corner of each DU.

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

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

1	2	3	4
5	6		
7			
8			

1		2	
3	4	5	
6	7		

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

1		2	
3	4	5	6
7	8	9	10

## 5.2. Detailed Description – IP Set Up

Input parameters needed for the connection.

The screenshot shows the 'Address Manager' interface. At the top, there are six buttons: 'CLICK', 'Find Active Address Group', 'Create a new Address Group', 'Delete selected Address Group', 'Save selected Address Group', and 'Open Stored Address Group'. Below these are icons for a grid, a camera, a document, a clock, a list, and a video camera. The main interface displays a tree view on the left with 'Default Address Group' and 'New Address Group' containing 'Screen #1' through 'Screen #4'. A table on the right lists channels with columns: '#', 'Description', 'Address', 'Ch#', 'User ID', 'Password', and 'Port'. Annotations include: 'Multi-channel product set up button' pointing to the top right; 'Address Group (Address group in Green color is the selected address group)' pointing to 'Screen #1'; 'Screen within an Address Group' pointing to 'Screen #1' under 'New Address Group'; 'Address Group which are not in use presently.' pointing to 'Screen #2' under 'New Address Group'; 'RTSP Port number' pointing to the 'Port' column with a red exclamation mark; 'Password' pointing to the 'Password' column; 'User ID' pointing to the 'User ID' column; 'Channel Number for multi channel device' pointing to the 'Ch#' column; and 'IP Address (In case of using web port other than 80, insert web port as "[IP address:PORT NUM.]'.)' pointing to the 'Address' column with a red exclamation mark.

#	Description	Address	Ch#	User ID	Password	Port
1			1			554
2			1			554
3			1			554
4			1			554
5			1			554
6			1			554
7			1			554
8			1			554
9			1			554
10			1			554
11			1			554
12			1			554
13			1			554
14			1			554
15			1			554
16			1			554

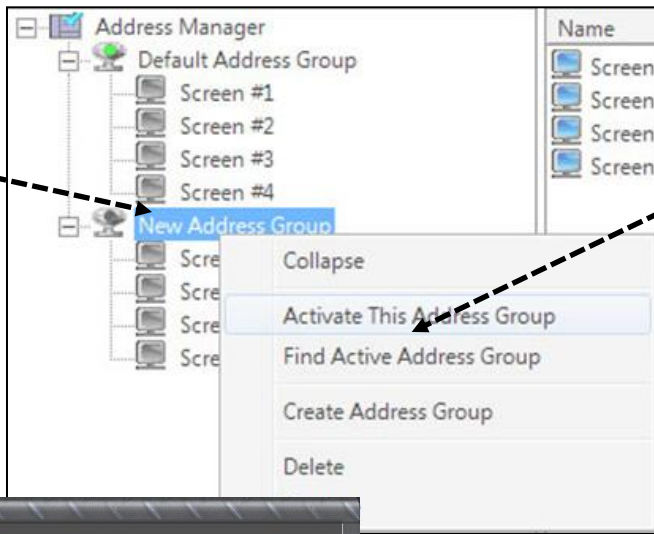
! IP can be replaced with host name when the device is registered with the DDNS server.

!! Input RTSP port number when port forwarding is enabled using IP sharing device

# 5.2.1. Detailed Description – IP Set Up – Selecting Address Group for the Connection

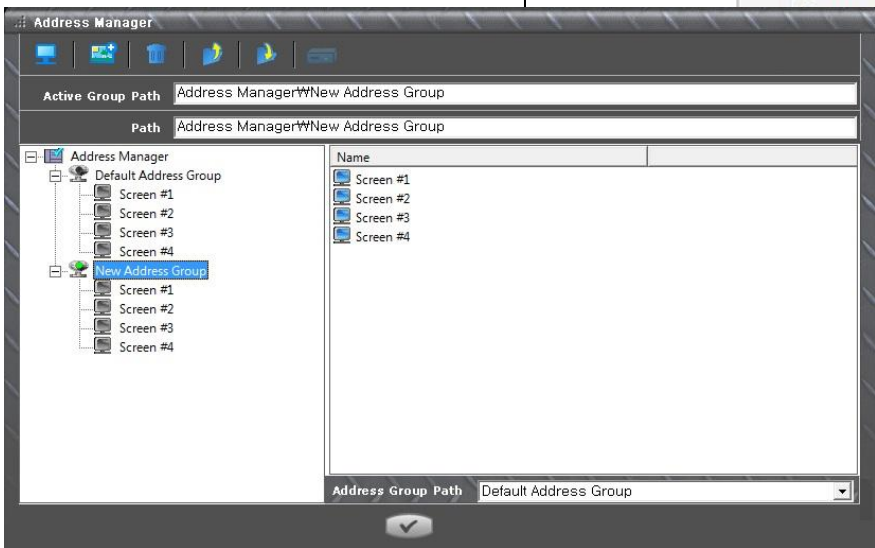
1

Locate the cursor on top of the corresponding Address Group and **press right mouse button.**



2

Select **“Activate This Address Group”** from the Pop-up menu.




3

Go back to the main screen. **Stop all connection and connect again.**

## 5.3. Detailed Description - Hard Disk Configuration

CLICK



- Assign or de-assign HDD to store video.
- The **overwriting function is enabled as default**, it will work when HDDs are full. NVR will delete records from the oldest date.

Show the list of the HDDs

Register the recording HDD.

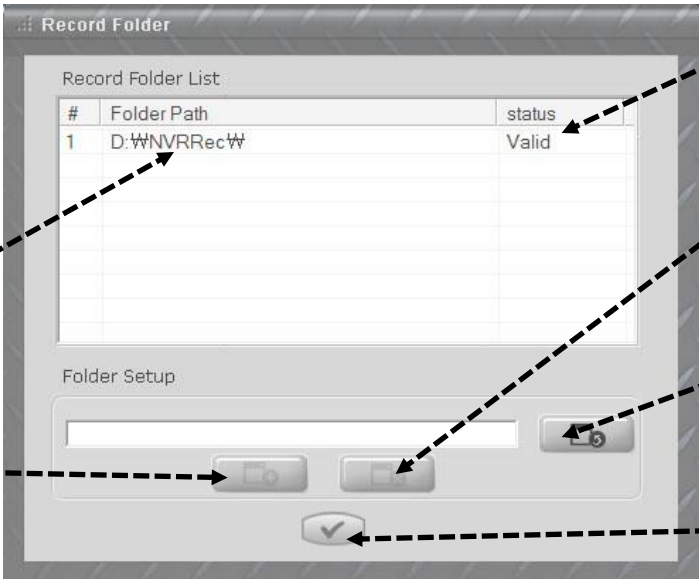
Status of the registered HDDs

#	Folder Path	status
1	D:\NVRRecW	Valid

Erase registered recording HDD.

Search for or create a recording folder.

Finish the configuration



**!** 1 HDD is equivalent to one folder. And the total capacity of the HDD is assigned as the size of folder.

**!!** Never use the HDD assigned for recording the AV data in Speco-NVR to store other files. Speco assumes no responsibility caused by failure of observing the restriction.

**!!!** Do not use the HDD having OS as the HDD for recording.

## 5.4. Detailed Description - Alarm Recording

Set alarm schedule for each channel in 1 hour resolution.

Click on corresponding time to control recording. Selected time zone is indicated as a box having different background color.

The selection is applied for single channel.  
 The selection is applied for multiple channels.  
 The selection is applied for all channels.

CLICK

Click on the desired screen. Selected screen is shown in yellow color.

Place the cursor on top of a time slot. The tool tip will show the channels having schedules on the time slot.

Select desired channel. You can select multiple channels. Only the schedules entered after the channel selection are applied.

Set the duration for alarm recording.

Apply the change and return to the previous menu.

Neglect the change and return to the previous menu.

Erase the programmed schedule. You must select channels before erasing the schedule.

The screenshot shows the 'Alarm setting' interface. At the top, there is a 'Duration' field set to '1' with the unit '(minute/s)'. Below it is an 'Alarm Sound' field with a search icon. To the right, there are two checkboxes: 'Use Alarm Sound' (unchecked) and 'Sound Off When Click' (checked). The main part of the interface is a calendar grid with columns for channels (Ch1 to Ch16) and rows for days of the week (SUN to SAT). Each cell in the grid contains a number from 0 to 23, representing hours. Some cells are highlighted with different background colors: pink for single channel, yellow for multiple channels, and green for all channels. Below the calendar, there are checkboxes for each channel (Ch1 to Ch16) and a 'Set to all' option. At the bottom right, there is a legend for the colors: pink for 'Single channel set', yellow for 'Multiple channel Set', and green for 'All channel set'. There are also navigation buttons at the bottom: a back arrow, a close 'X' button, and an eraser icon.

### Caution :

For addition or changing of the schedule, make sure to select channels before the operation. Only the changes made after the channel selection are applied.

## 5.5. Detailed Description – Recording Schedule

Set recording schedule for each channel in 1 hour resolution.

Click on corresponding time to control recording. Selected time zone is indicated as a box having different background color.

The selection is applied for single channel.  
 The selection is applied for multiple channels.  
 The selection is applied for all channels.

CLICK

Click on the desired screen. Selected screen is shown in yellow color.

Place the cursor on top of a time slot. The tool tip will show the channels having schedules on the time slot.

Select desired channel. You can select multiple channels. Only the schedules entered after the channel selection are applied.

Apply the change and return to the previous menu.

Neglect the change and return to the previous menu.

Erase the programmed schedule. You must select channels before erasing the schedule.

The Scheduler interface displays a grid for recording schedules. The columns represent channels (Ch1 to Ch16) and the rows represent days of the week (SUN to SAT). Each cell in the grid contains a number from 0 to 23, representing the hour of the day. The background color of the cells indicates the selection type: pink for single channel, yellow for multiple channels, and green for all channels. Below the grid, there are checkboxes for each channel (Ch1 to Ch16) and a 'Set to all' option. A legend at the bottom right shows three selection options: 'Single channel set' (pink), 'Multiple channel Set' (yellow), and 'All channel set' (green). At the bottom of the interface, there are two buttons: a checkmark (✓) to apply changes and an 'X' to neglect changes.

	Ch1	Ch2	Ch3	Ch4	Ch5	Ch6	Ch7	Ch8	Ch9	Ch10	Ch11	Ch12	Ch13	Ch14	Ch15	Ch16								
SUN	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
MON	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
TUE	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
WED	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
THU	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
FRI	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
SAT	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23

### Caution :

For addition or changing of the schedule, make sure to select channels before the operation. Only the changes made after the channel selection are applied.

# 5.6. Detailed Description - Playback

**CLICK**

Mark this button to select corresponding page.

If there is recorded file on the date, types of the video files are summarized in 4 different colors.

Channel Selection filter.

Data Type filter.

If there is recorded file on the date for the selected screen page, this circle is shown in red color.

Search condition input field when data type is other than "All Data".

Filter for selecting search method

Start Search

Check to select all in the list.

Search List. Check the box at the left to select.

Check to enable playback of multiple channels

Rotate video by 180 degree

Check during playback to display in original size.

Adjust audio and video

Time indicator

Record file type filter

Capture still video

**Table: Search Results**

Type	Start	Ch	End	Des
<input type="checkbox"/>	09:43:03	172...	390	
<input type="checkbox"/>	15:22:21	172...	390	
<input type="checkbox"/>	15:36:23	172...	390	
<input type="checkbox"/>	16:07:22	172...	390	
<input type="checkbox"/>	16:10:44	172...	390	
<input type="checkbox"/>	16:38:34	172...	390	
<input type="checkbox"/>	17:24:27	172...	390	



## 5.6.1. Detailed Description - Playback Screen

The screenshot displays the Speco-NVR playback interface. The main area shows a video feed of a modern building with a glass facade. The interface includes a control panel on the right side with the following elements:

- Year and Month selection: 2011, 10
- Calendar view showing dates from Sun to Sat.
- Event Legend: Manual (blue square), Schedule (yellow square), Motion (purple square), Sensor (red square).
- Screen selection: Screen1, Screen2, Screen3, Screen4 (each with a red dot and a play button).
- Playback controls: All Pa, All Chan, All Da (dropdown menus), a search bar, and checkboxes for All, Multiple, and Original.
- Record Log Table:
 

Type	Start	Ch	IP	Desc
<input checked="" type="checkbox"/>	17:06:15	2	172...	
- Record Folder Type selection: Manual (checked), Schedule, Motion (checked), Sensor.
- Total records: 1
- Playback controls: Play, Stop, Previous, Next, and Full Screen buttons.

At the bottom of the video feed, the following information is displayed:

[P1] IP:172.16.52.39  
Time:2011/10/17 17:06:15

## 5.7. Detailed Description – Live Connection and Recording

Click for live connection to all channels. Camera information are programmed through IP assignment.

Click to record video and audio from all live connection.

Click to disconnect entire live connection.

Click to stop all recording.

The interface displays a 4x4 grid of 16 camera feeds. The right-hand side features a control panel with an 'ALARM STATUS' section containing a 4x4 grid of indicator lights. Below this is a numeric keypad (1-16) and a central directional pad. The 'speco technologies' logo is visible at the bottom right of the control panel.

## 5.8. Detailed Description – Bidirectional Audio

A feature enabling bidirectional audio communication with corresponding device.

**1** Locate the cursor on the corresponding channel and click.

**2** Activated channel is indicated by a blue rectangle surrounding the DU.

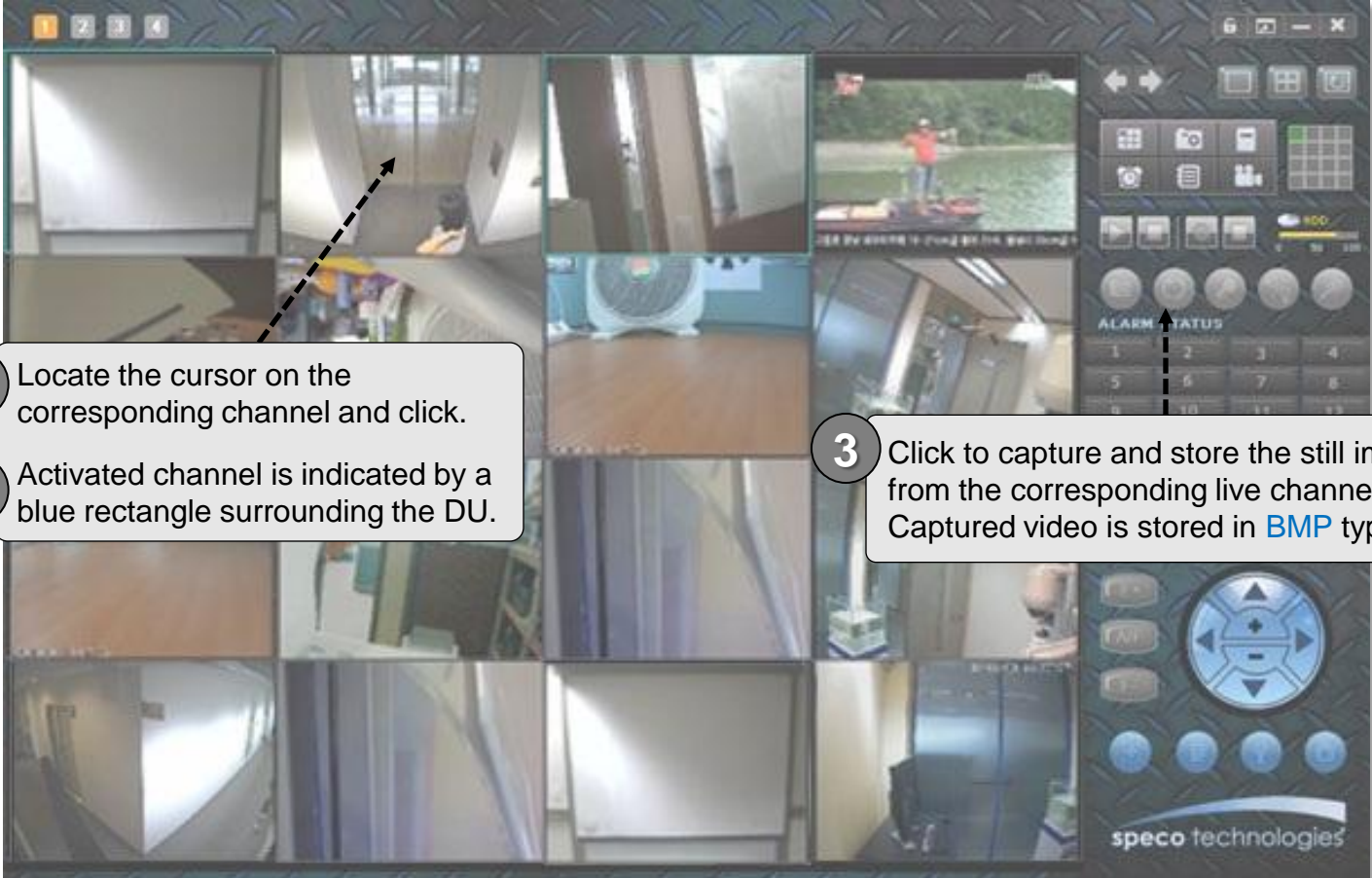
**3** Click to activate bidirectional audio communication. This feature toggles through On/Off every time the button is clicked.

**4** Microphone indicator is shown in bright color when the bidirectional audio is enabled. There can be some delay due to the network delay.

- This feature requires sound card and microphone on your PC.
- The corresponding device should be equipped with the speaker and microphone.

## 5.9. Detailed Description – Still Image Capture

A feature to capture and record still image from a live channel.



The screenshot displays a multi-camera view interface. A grid of camera feeds is shown on the left. A dashed arrow points from a callout box to a specific camera feed. On the right, a control panel is visible, featuring a numeric keypad and a 'CAPTURE' button. A dashed arrow points from a callout box to the 'CAPTURE' button. The interface also shows an 'ALARM STATUS' section with several indicator lights.

- 1 Locate the cursor on the corresponding channel and click.
- 2 Activated channel is indicated by a blue rectangle surrounding the DU.
- 3 Click to capture and store the still image from the corresponding live channel. Captured video is stored in **BMP** type.

## 5.9. Detailed Description – Still Image Capture

A feature to capture and record still image from a live channel.

- 4 A window pops up and preview captured image before save it.



## 5.9. Detailed Description – Still Image Capture

A feature to capture and record still image from a live channel.

The diagram illustrates the process of capturing a still image from a live channel. It consists of two main windows: a video feed window and a settings dialog box.

**Step 5:** Select capture option. This step points to the 'Option' button in the video feed window.

**Step 6:** Select text color from combo box. This step points to the yellow dropdown menu in the settings dialog box.

**Step 7:** Select check box for Time Stamp. It will display on Left Top. This step points to the 'Time' checkbox in the settings dialog box.

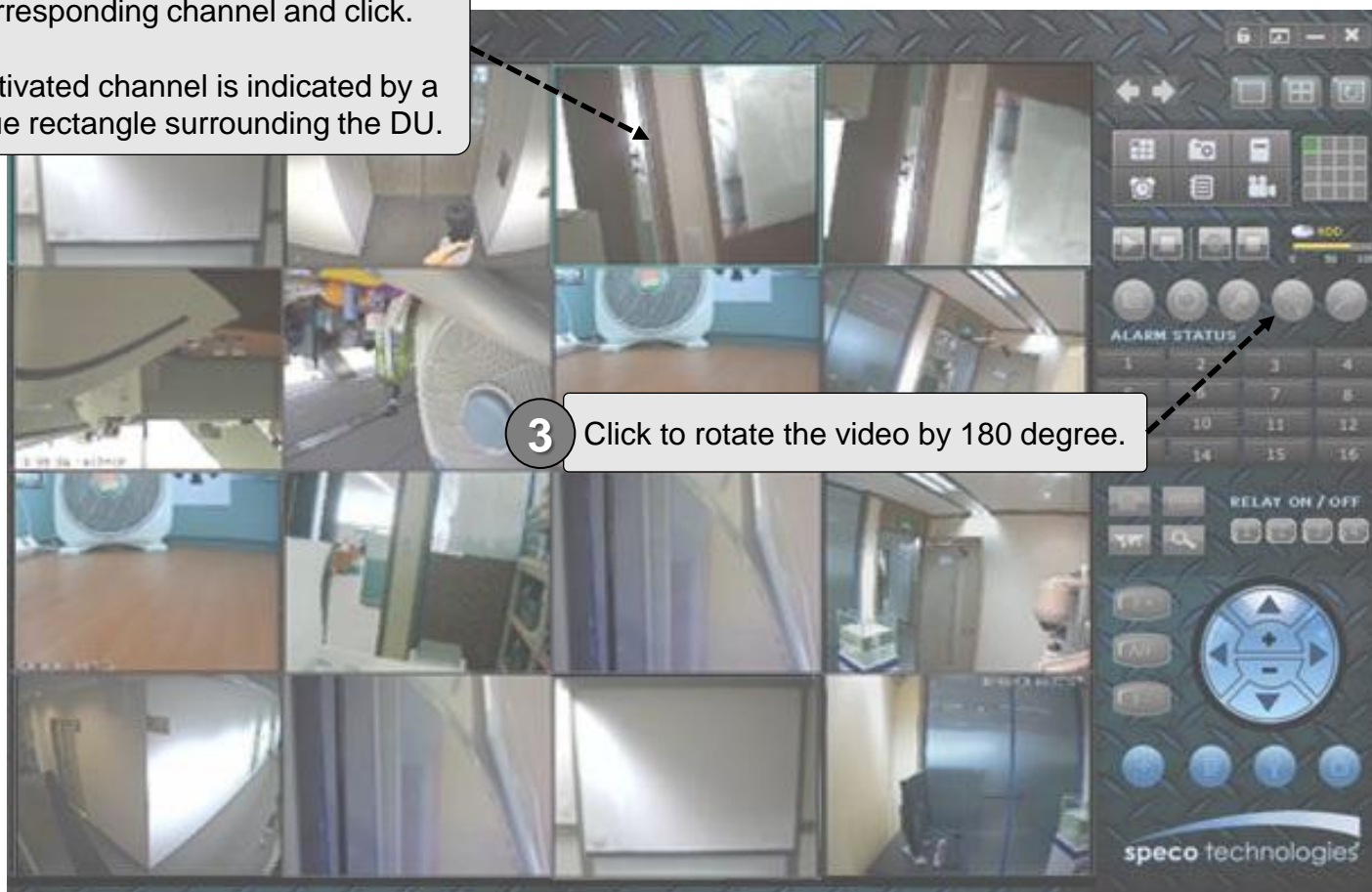
**Step 8:** When all setting is done, click OK to go next step. This step points to the 'OK' button in the settings dialog box.

**Step 9:** After check the file name, click 'SAVE' to save captured image. This step points to the 'OK' button in the video feed window.

The video feed window shows a live camera view with a timestamp '11-10-18 14:04:44' and camera ID 'CAM ID:001' and IP '139.7 09.9'. The settings dialog box includes a 'Time' checkbox, a 'Directory' field with an 'Open' button, and 'OK' and 'Cancel' buttons.

## 5.10. Detailed Description – Rotating the Video

- 1 Locate the cursor on the corresponding channel and click.
- 2 Activated channel is indicated by a blue rectangle surrounding the DU.



This feature will not give any effect to recorded video.

## 5.11. Detailed Description – Remote Management

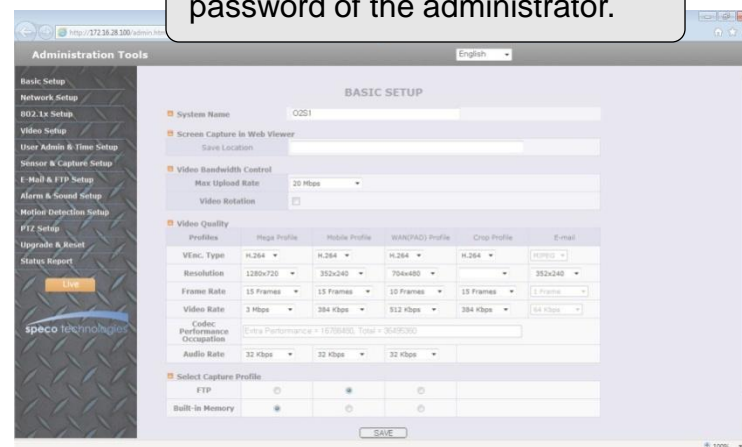
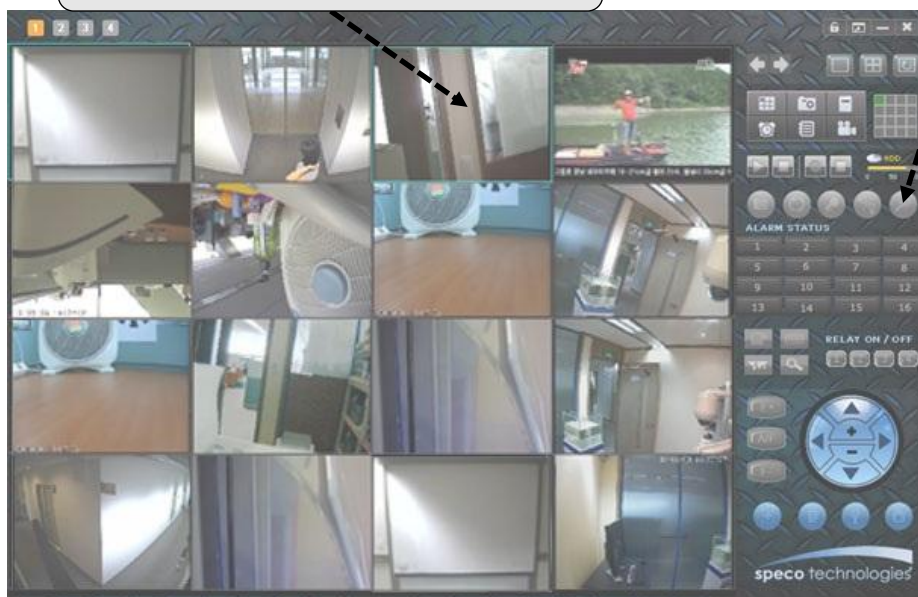
A feature to manage the corresponding device over the network

**1** Locate the cursor on the corresponding channel and click.

**2** Activated channel is indicated by a blue rectangle surrounding the DU.

**3** Click to connect to the admin page of the corresponding device.

**4** You are connected to the admin page through the web browser. You need the user ID and password of the administrator.

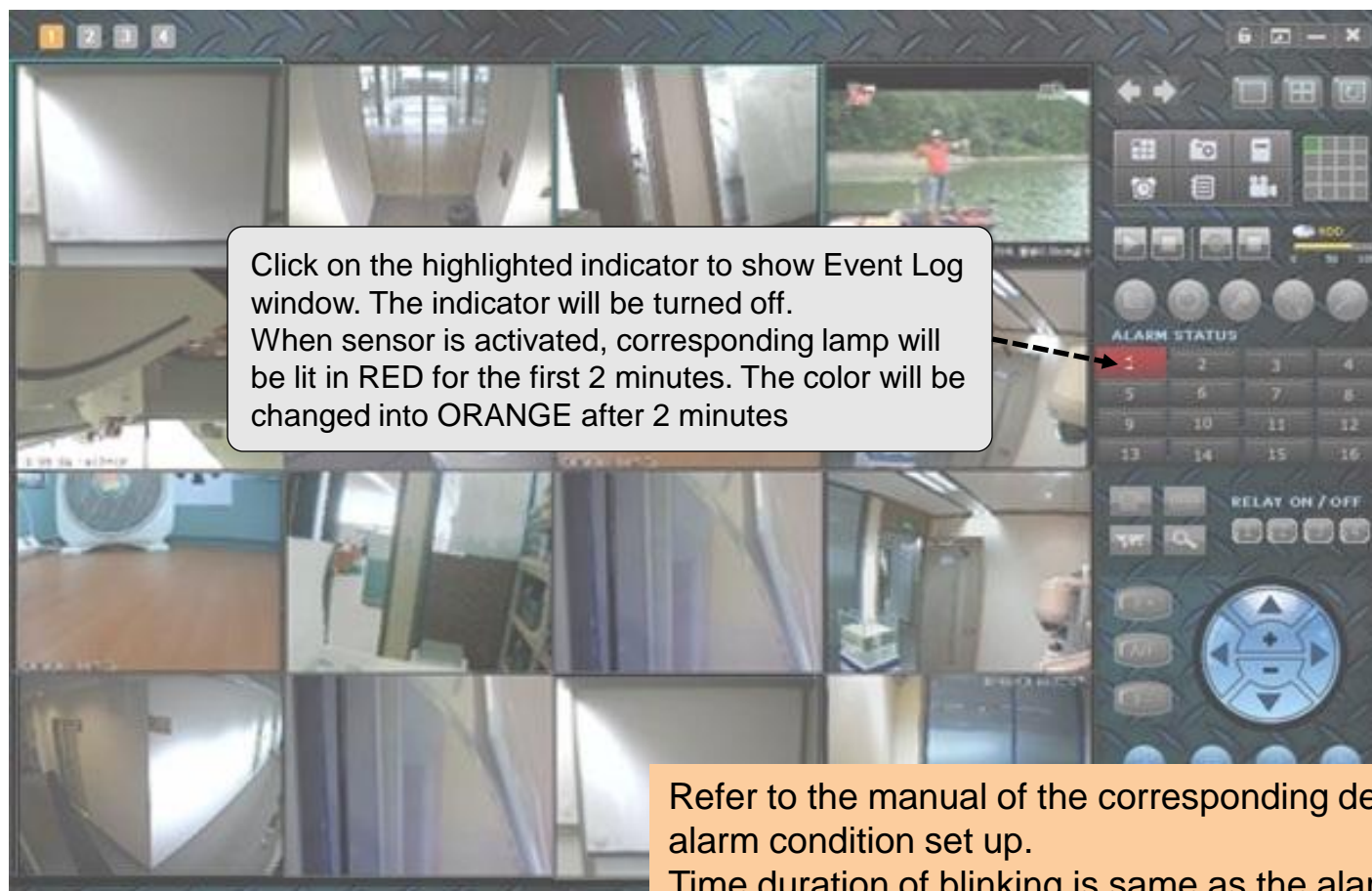


Refer to the user manual for the detailed information about administration page of variable devices.



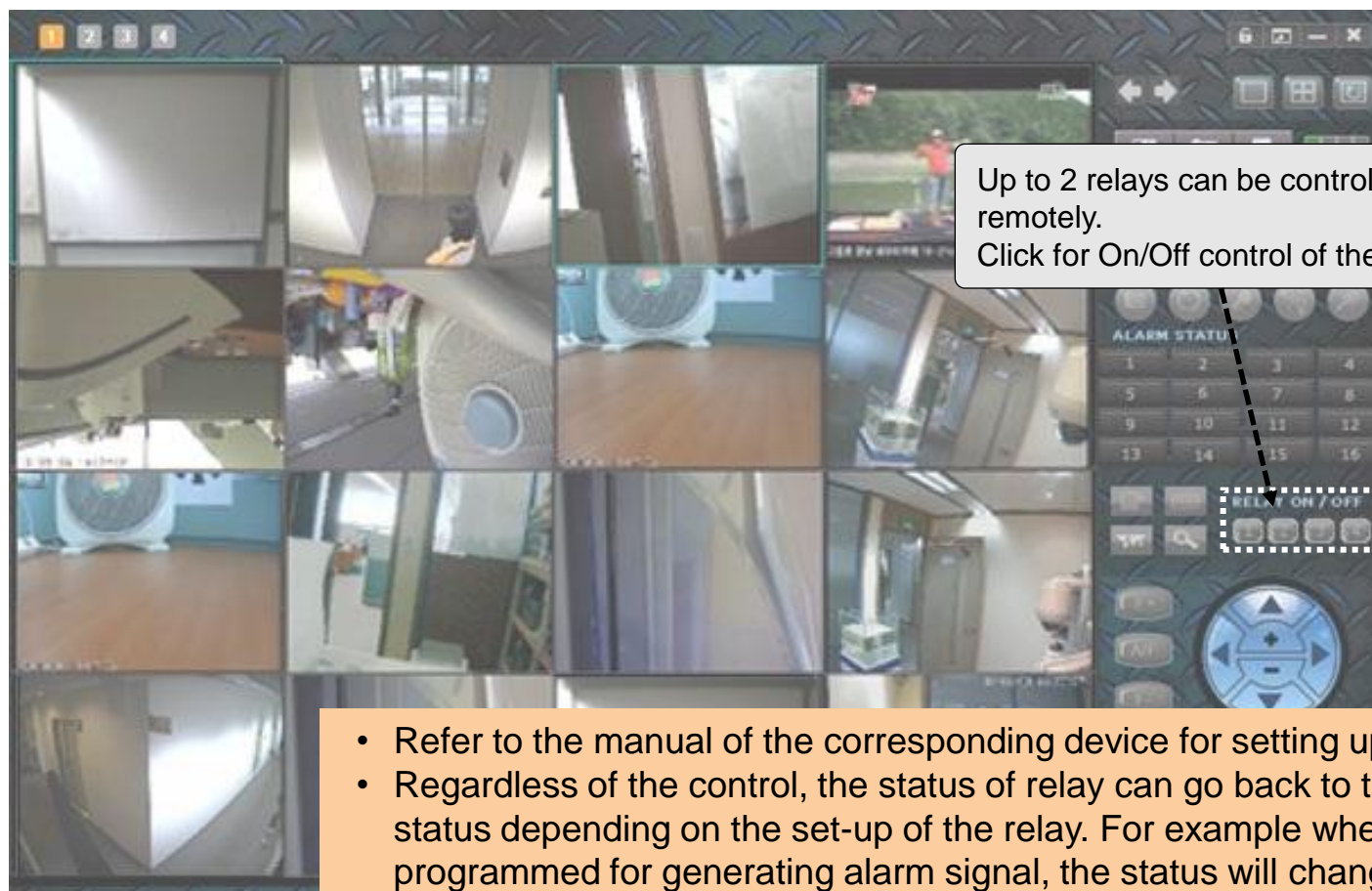
## 5.12. Detailed Description – Sensor and Motion Alarm Indication

If connected device generates alarm by sensor or motion detection, the alarm condition is transmitted to the Speco-NVR and state is shown on alarm status panel



## 5.13. Detailed Description – Remote Relay On/Off

A feature for On/Off control of the relay remotely.



- Refer to the manual of the corresponding device for setting up the relay.
- Regardless of the control, the status of relay can go back to the former status depending on the set-up of the relay. For example when relay is programmed for generating alarm signal, the status will change spontaneously upon alarm condition.
- There can be delay caused by the network.

## 5.14. Detailed Description – Video and Audio Adjustment

Click to launch Video/Audio adjustment bar.

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

RELAY ON / OFF

Brightness control

Contrast control

Volume control

Mute

Mix

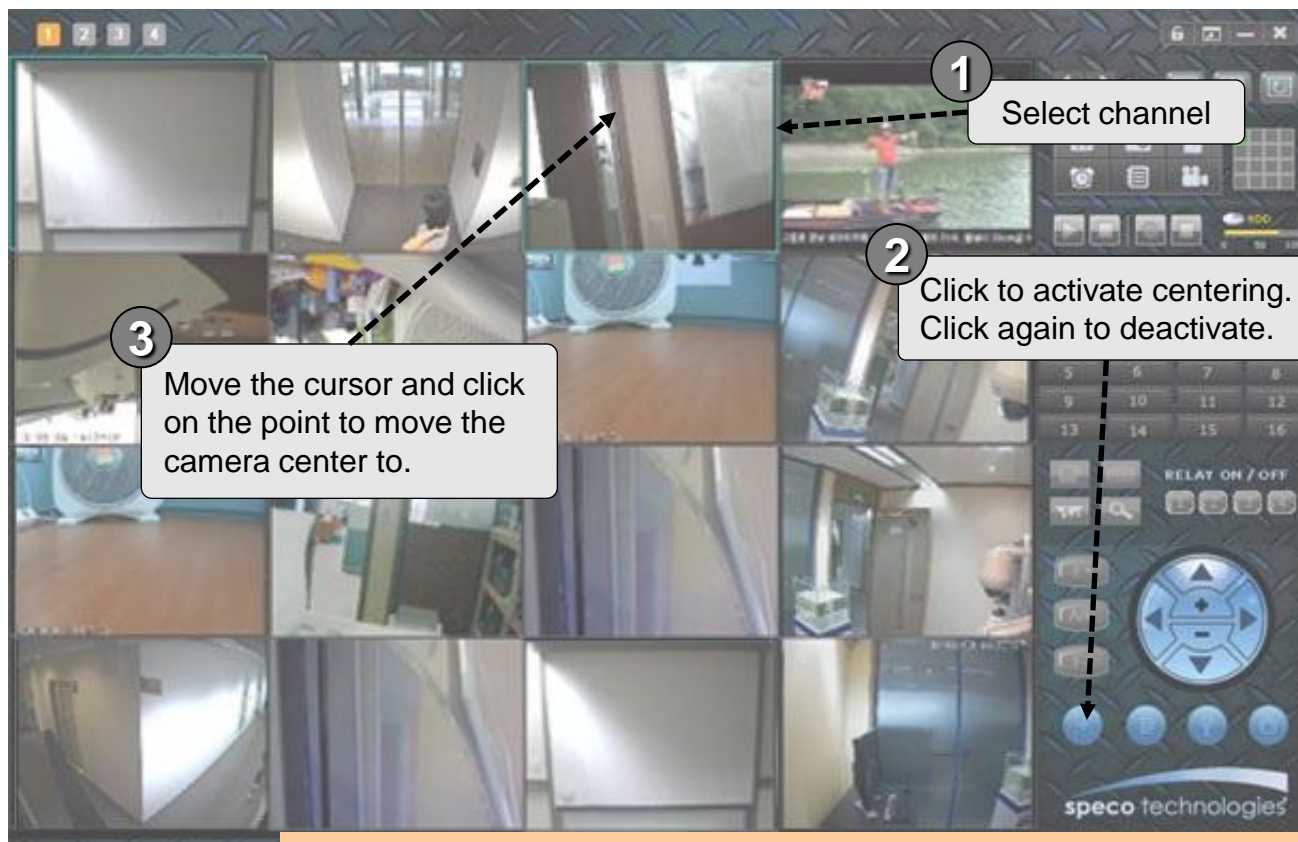
Check to mute the audio.

Check to mix the sounds from all live channels.

- Audio will be available only when the corresponding device is programmed to enable the audio.
- Refer to the manual of the corresponding device.

## 5.15.1. Detailed Description – PTZ Control (Centering)

A feature to move the center of the camera to the point of cursor.



- Pan/Tilt/Zoom and Lens controls are available only when the corresponding device is equipped with such feature.
- Refer to the manuals of the corresponding device for the details.

## 5.15.2. Detailed Description – PTZ Control (Preset Position)

A feature to move the view point of the camera to pre-defined position.

1 Select channel

2 Click to activate movement to preset position feature. Preset list will be popped up

3 Double click on desired preset position.

4 Finish the operation.

Preset #	Description
Preset 1 :	
Preset 2 :	
Preset 3 :	
Preset 4 :	
Preset 5 :	

- Pan/Tilt/Zoom and Lens controls are available only when the corresponding device is equipped with such feature.
- Refer to the manuals of the corresponding device for the details.

## 5.15.3. Detailed Description – PTZ Control (Parameter Set Up)

A feature to set up parameters for PTZ and Lens control.

The image shows a multi-camera view with a control panel on the right. Three numbered callouts provide instructions:

- 1** Select channel
- 2** Click to launch parameter set up window.
- 3** Adjust speed or step of PTZ.

The detailed control panel on the right includes:

- Radio buttons for **SPEED** and **STEP**.
- Sliders for **PAN**, **TILT**, and **ZOOM**.
- An **IRIS** section with three buttons: a circular arrow (Wider), an 'A' (auto), and a square with an 'X' (narrower).
- A checkmark button at the bottom.

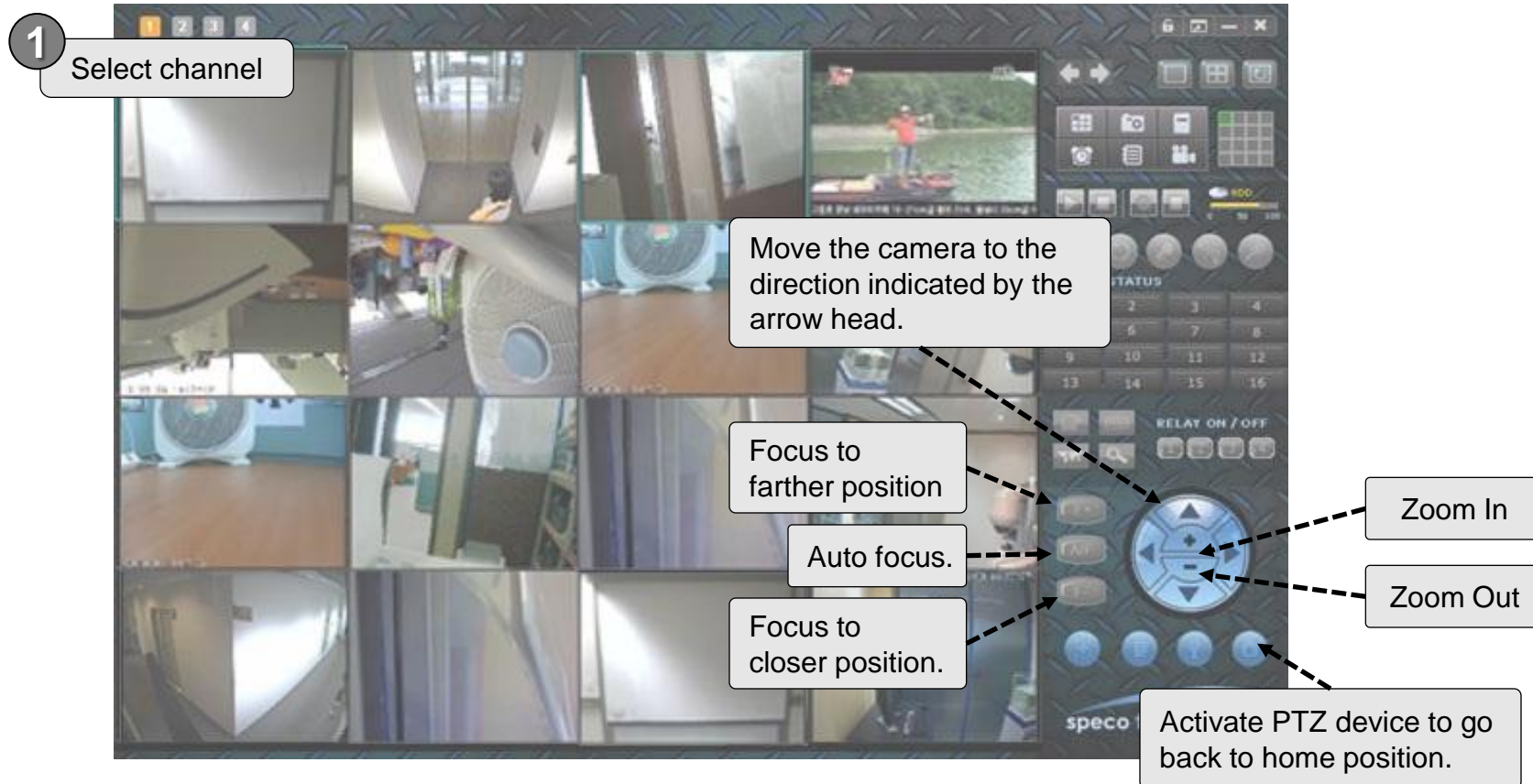
A callout for the IRIS buttons states: "IRIS control. Press each button for the control. Wider, auto, narrower from the left."

A callout for the SPEED/STEP buttons states: "Enable the Pan/tilt device to continuously scan through the set up region."

- Pan/Tilt/Zoom and Lens controls are available only when the corresponding device is equipped with such feature.
- Refer to the manuals of the corresponding device for the details.

## 5.15.4. Detailed Description – PTZ Control (PTZ and Lens)

A feature to control the PTZ and Lenz manually for the selected channel.



- Pan/Tilt/Zoom and Lens controls are available only when the corresponding device is equipped with such feature.
- Refer to the manuals of the corresponding device for the details.

# 5.16. Detailed Description – Video Crop

Click

1 Select the region to crop

Dragging

Size of the cropped region

(144,112) (368X240)

Upper left corner of the crop region

Cropped video is available from channel 3 of the corresponding product. (Refer to "Basic Setup" from the corresponding product's manual.)

Coordinate values in case of UXGA size video:  
Upper left corner : (0,0)  
Lower right corner : (1599,1199)

0 800 Max Res. 1600

190, 179

800, 600

600

1599, 1199

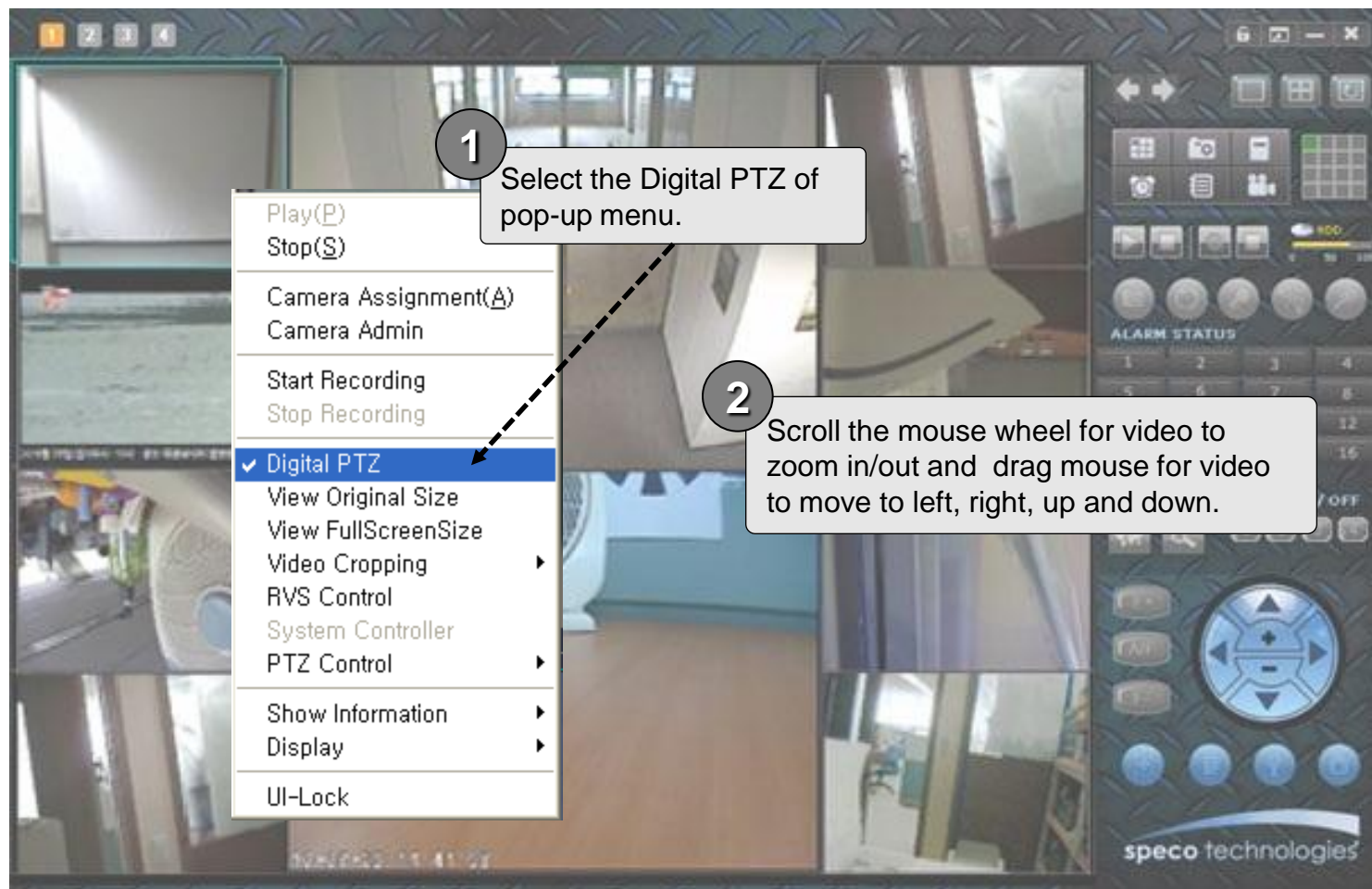
Max Res. 1200

It is up to 352 x 240 to resolution of video crop.



## 5.17. Detailed Description – Digital PTZ

Digital PTZ is feature that moves for video to left, right, up and down or zoom in/out by mouse control.



# 6. Event Log Management



Event Log Window

Event indicator is highlighted upon event (Sensor, Motion, No Video, and Video Recovered)  
Click on the highlighted indicator to show Event Log Window.

Event Log Viewer

#	PosID	Desc.	Address	Ch#	Port	EvtType	Time	Rec...
1	MIP...		58.181.14.70	1	554	Motion	14:29:26	No
2	MIP...		58.181.14.70	1	554	Motion	14:29:47	No
3	MIP...		58.181.14.70	1	554	Motion	14:30:08	No
4	MIP...		58.181.14.70	1	554	Motion	14:30:30	No
5	MIP...		58.181.14.70	1	554	Motion	14:30:51	No
6	MIP...		58.181.14.70	1	554	Motion	14:31:13	No
7	MIP...		58.181.14.70	1	554	Motion	14:31:34	No
8	MIP...		58.181.14.70	1	554	Motion	14:31:56	No
9	MIP...		58.181.14.70	1	554	Motion	14:32:18	No
10	MIP...		58.181.14.70	1	554	Motion	14:32:39	No
11	MIP...		58.181.14.70	1	554	Motion	14:33:00	No
12	MIP...		58.181.14.70	1	554	Motion	14:33:23	No
13	MIP...		58.181.14.70	1	554	Motion	14:33:44	No
14	MIP...		58.181.14.70	1	554	Motion	14:34:05	No
15	MIP...		58.181.14.70	1	554	Motion	14:34:27	No

2011 10

Sun	Mon	Tue	Wed	Thu	Fri	Sat
						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					

Screen: 1  
Channel: 1

Select Time Range

# 6.1. Even Log Window

The screenshot shows the 'Event Log Viewer' window with a table of event logs. The table has the following columns: #, PosID, Desc., Address, Ch#, Port, EvtType, Time, and Rec... The data in the table is as follows:

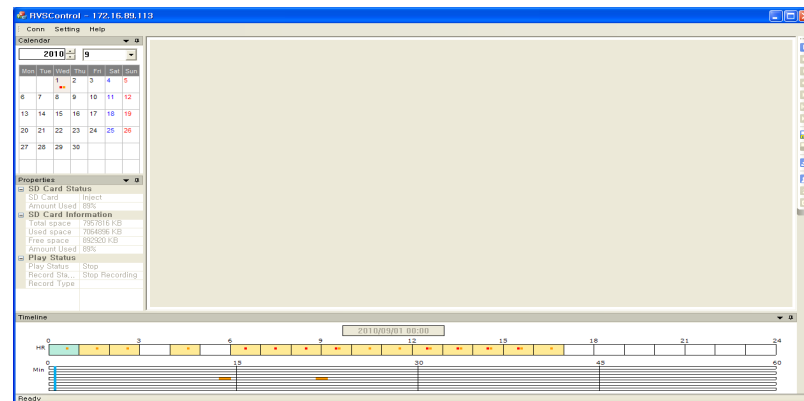
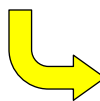
#	PosID	Desc.	Address	Ch#	Port	EvtType	Time	Rec...
1	MIP...		58,181,14,70	1	554	Motion	14:29:26	No
	MIP...		58,181,14,70	1	554	Motion	14:29:47	No
	MIP...		58,181,14,70	1	554	Motion	14:30:08	No
	MIP...		58,181,14,70	1	554	Motion	14:30:30	No
	MIP...		58,181,14,70	1	554	Motion	14:30:51	No
	MIP...		58,181,14,70	1	554	Motion	14:31:13	No
	MIP...		58,181,14,70	1	554	Motion	14:31:34	No
	MIP...		58,181,14,70	1	554	Motion	14:31:56	No
	MIP...		58,181,14,70	1	554	Motion	14:32:18	No
	MIP...		58,181,14,70	1	554	Motion	14:32:39	No
	MIP...		58,181,14,70	1	554	Motion	14:33:00	No
	MIP...		58,181,14,70	1	554	Motion	14:33:23	No
	MIP...		58,181,14,70	1	554	Motion	14:33:44	No
	MIP...		58,181,14,70	1	554	Motion	14:34:05	No
	MIP...		58,181,14,70	1	554	Motion	14:34:27	No

Callouts and their corresponding elements in the window:

- Position of video channel at Speco-NVR screen**: Points to the 'Screen' dropdown menu.
- RTSP port which was set during IP assignment.**: Points to the 'Port' column in the table.
- Event type : Motion, Sensor-1,2,3,4, No Video, Video Recovery**: Points to the 'EvtType' column in the table.
- Highlighted when there is event log on the date.**: Points to the calendar view on the right.
- Description which was set during IP assignment.**: Points to the 'Desc.' column in the table.
- IP Address which was set during IP assignment**: Points to the 'Address' column in the table.
- Channel number which was set during IP assignment**: Points to the 'Ch#' column in the table.
- Time of the event**: Points to the 'Time' column in the table.
- Designate the video channel for retrieving the event log. Enter screen and channel numbers in the corresponding fields.**: Points to the 'Screen' and 'Channel' dropdown menus.
- "Yes" means that there is recorded video file for the event. Double click to view recorded video**: Points to the 'Rec...' column in the table.
- Play the recorded file with the **icf player** program.**: Points to the play button icon.
- Start searching of event log for the specified video channel**: Points to the search icon.

icfPlayer program is necessary to play the recorded video file at Event Log Window

# 7. Remote Video Storage (RVS) Management



Target Application

- Management of video storage in IP Camera and Video Server.

# 7.1. RVS Control - SD Card (H.264 series)


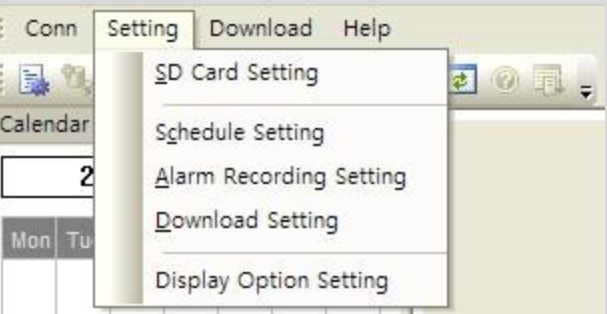
This feature is targeted to control H.264 cameras & servers having its own SD card.

The screenshot displays the RVSControl interface with the following components and callouts:

- Calendar:** Shows a monthly view for 2010, with a callout for "Monthly recording information" pointing to the 17th.
- Properties Panel:**
  - SD Card Status:** Callout for "Connected device's storage information" points to the "Amount Used" field.
  - SD Card Information:** Lists "Total space" (7957816 KB), "Used space" (7064896 KB), and "Free space" (892920 KB).
  - Play Status:** Shows "Play Status" as "Stop" and "Record Sta..." as "Stop Recording".
- Timeline:** A horizontal bar chart showing recorded data for 2010/09/01, with a callout for "Timeline for recorded data" pointing to the 3rd hour.
- Playback Controls:** A vertical toolbar on the right contains several buttons, with callouts for:
  - "Playback control buttons" (a group of navigation icons)
  - "Recording Start / Stop button" (a red square icon)
  - "Download recorded video" (a download icon)
  - "Connect to Administration Tools" (a gear icon)
  - "Rotate video upside down" (a rotation icon)
  - "Take a snapshot" (a camera icon)

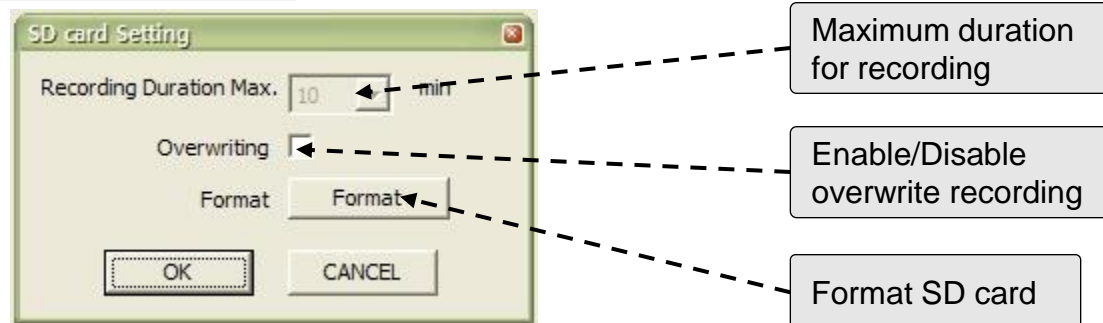
**RVS Control screen**

## 7.2. RVS Control - Menu

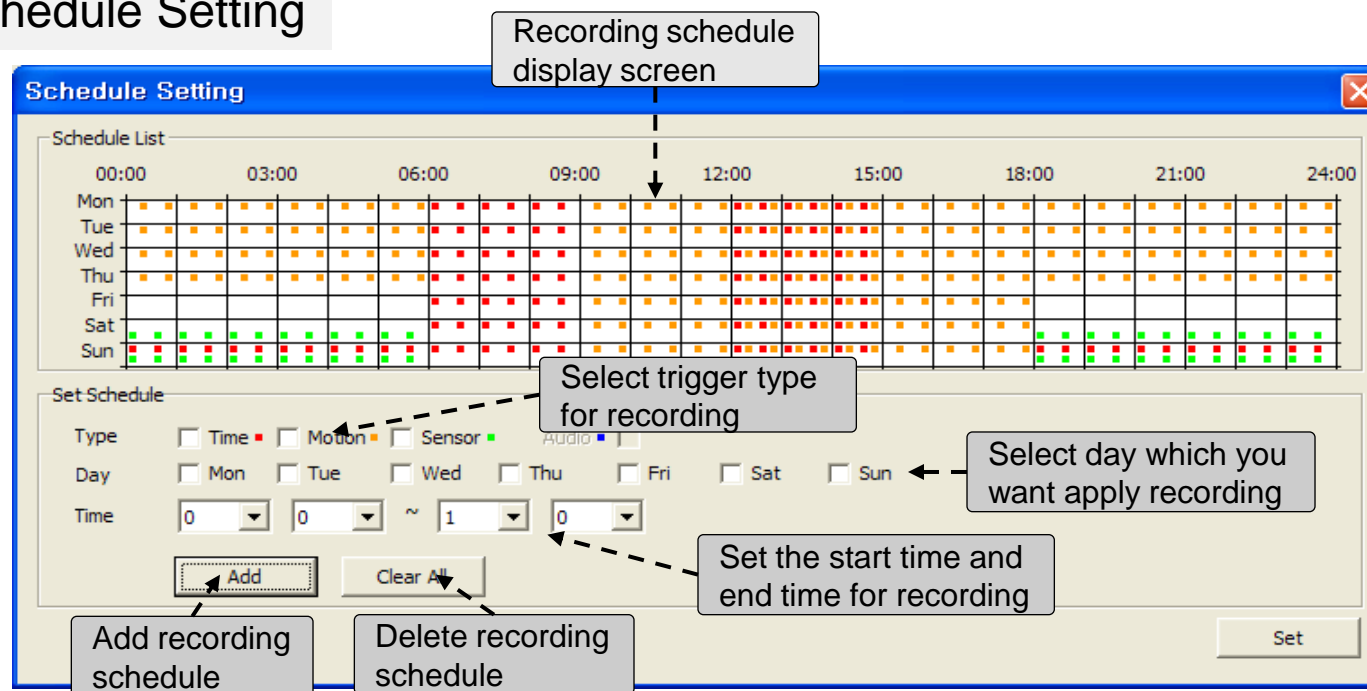
Menu	Sub menu	Description
	Exit	Close RVS control.
	SD Card Setting	Set recording options.
	Schedule Setting	Set recording schedule.
	Alarm Recording Setting	Set alarm recording duration.
	Download Setting	Set the download folder and file format.
	Display Option Setting	Control contrast & brightness and audio volume for playback.

## 7.3. RVS Control - Setting

### SD card Setting

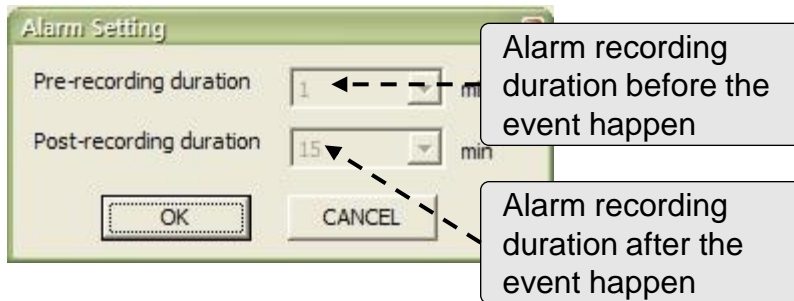


### Schedule Setting

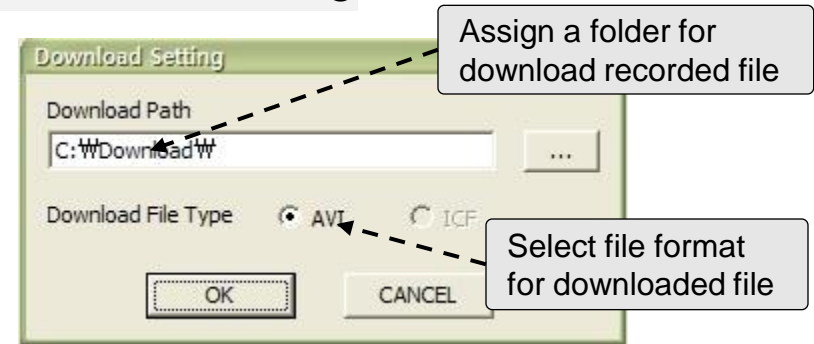


# 7.4. RVS Control - Setting

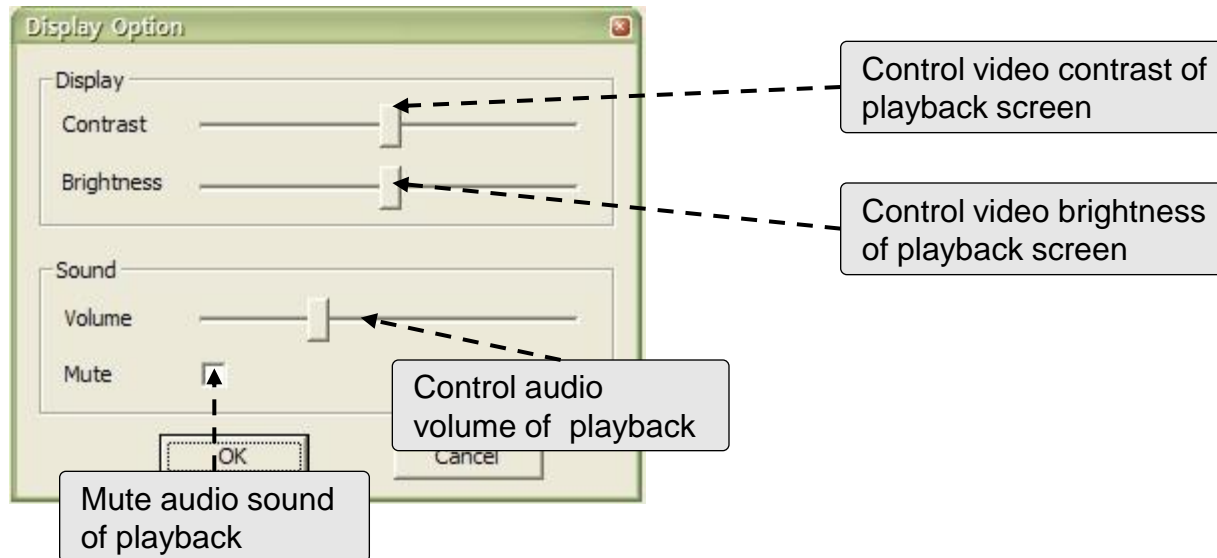
## Alarm Setting



## Download Setting



## Display Setting





# 7.5. RVS Control – Search

RVSControl - 172.16.89.113

Calendar

2010 8

1 Select a day from calendar

Marked Color	Recording Type
Purple	Panic Recording
Red	Time Recording
Orange	Motion Recording
Green	Sensor Recording
Blue	Audio Recording

Timeline

3

Timeline

2010/08/27 19:00

2 Select recorded time from timeline

3 Select specific time from timeline bar

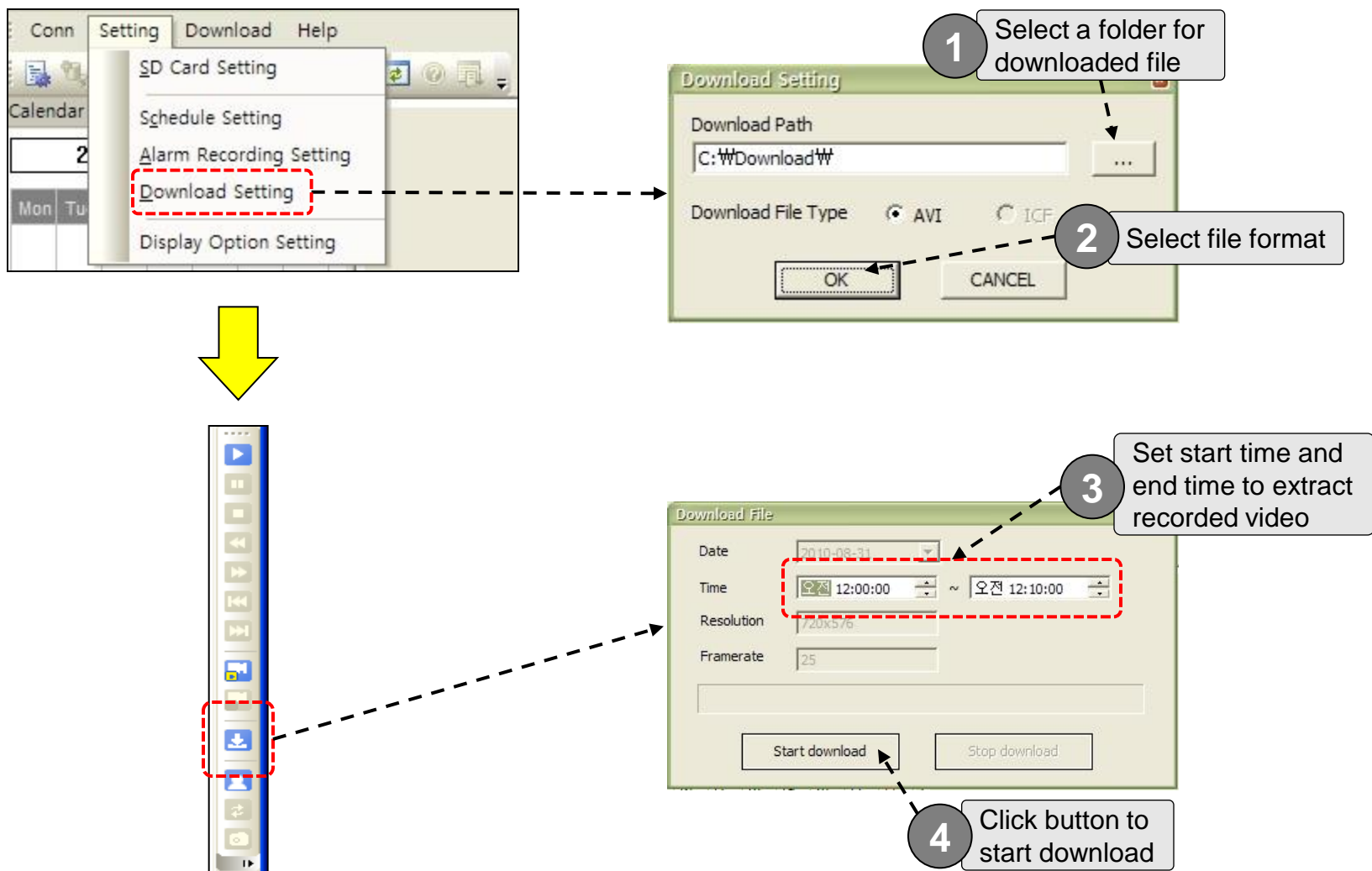
## 7.6. RVS Control – Playback

The screenshot displays the RVSCONTROL software interface. At the top left, the window title is "RVSCONTROL - 172.16.89.113". Below the title bar is a menu bar with "Conn", "Setting", and "Help". A calendar widget shows the date "2010" and "9". The main area is a large video display. On the right side, there is a vertical toolbar with various playback controls. A red dashed circle highlights the "Play" button (a blue square with a white right-pointing triangle). A callout box with the number "2" and the text "Click Play button" points to this button. At the bottom of the interface is a "Timeline" section. It shows a horizontal axis for "HR" (0 to 24) and "Min" (0 to 60). A specific time "2010/06/27 19:45" is highlighted. A red dashed box highlights a vertical blue line on the timeline at the 19:45 mark. A callout box with the number "1" and the text "Select target time that want to playback" points to this line. Below the timeline, the status "Ready" is displayed.

2 Click Play button

1 Select target time that want to playback

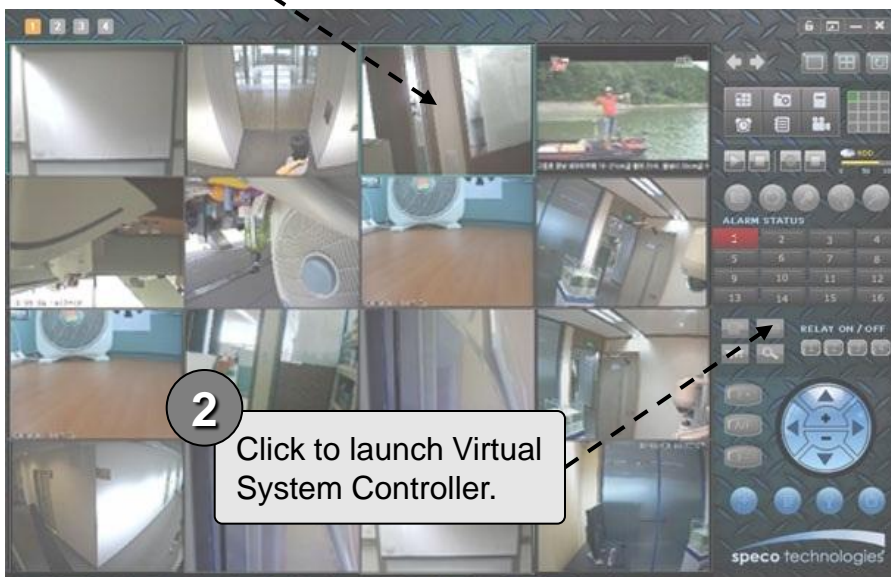
# 7.7. RVS Control – Download



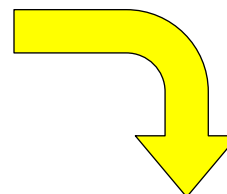
## 8. Virtual System Controller

Virtual System Controller is a program module that emulate keyboard controller for PTZ cameras. This feature is supported OPTZ36XI. OPTZ36XO.

1 Select a channel



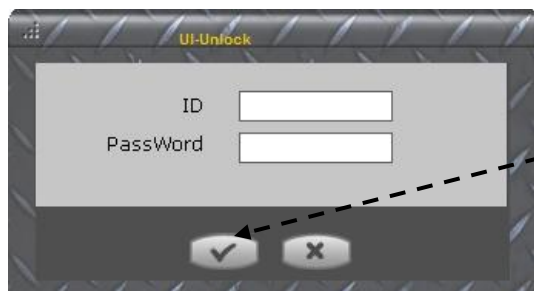
2 Click to launch Virtual System Controller.



There are many powerful features supported by Virtual System Controller. Please refer to “Virtual System Controller User’s Manual” for the details.

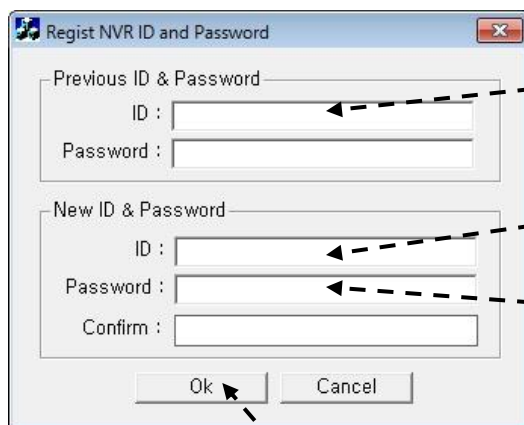
## 9. Screen Lock & Unlock

The program can be terminated only after the valid ID and password are entered.



Default value is empty.  
Just click on the this button to initiate the termination.

To assign new ID and password run 'program files>NVR->RegistNVRIDPwd'.







Existing ID and password. Skip this upon initial setting.

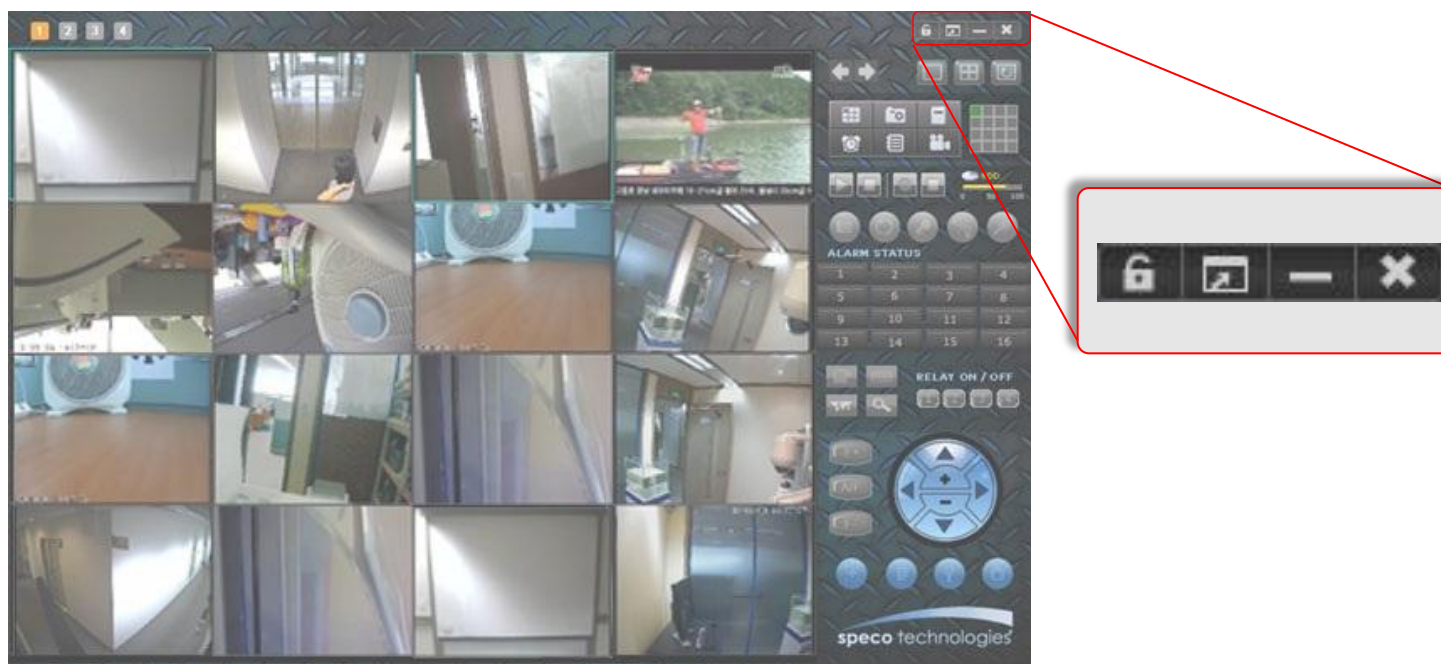
New ID.

Enter password for new ID and confirm

Click OK to finish the setting.

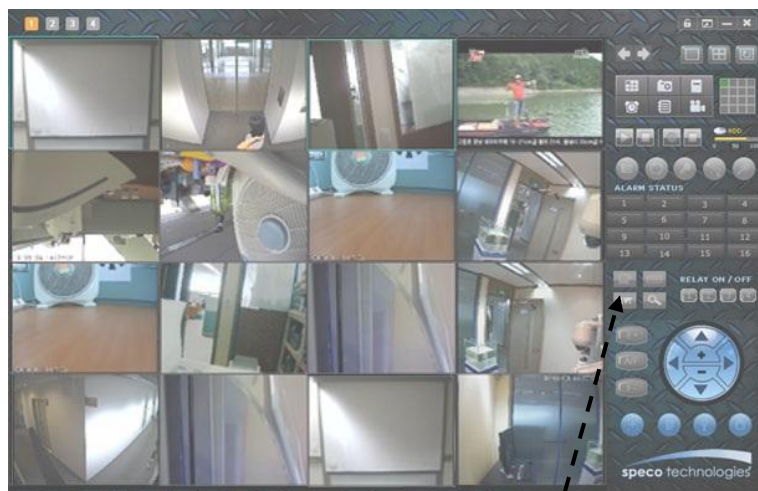
## 9. Screen Lock & Unlock

1. Click  to lock the program. The icon will be changed to .
2. When  is clicked after the program is locked, Speco-NVR will ask for ID and password to unlock the program.
3. The icon will be changed to  after unlock.

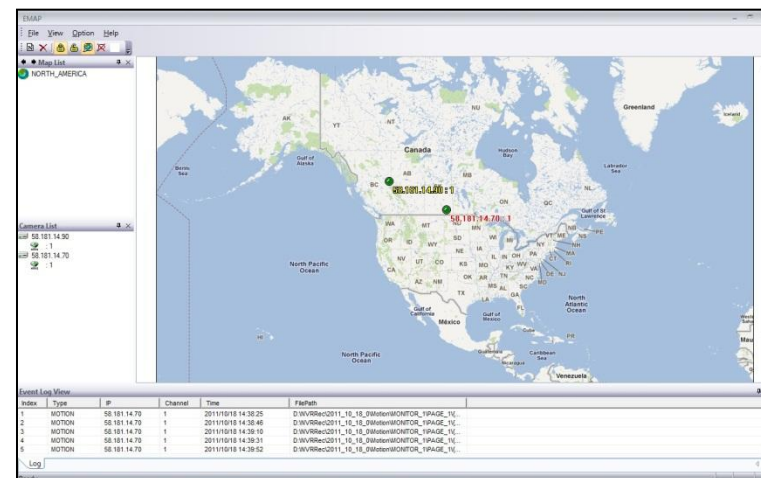
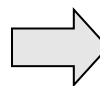


# 10. E-MAP

E-Map is a feature to position the cameras and video from them on map images.



Initiate E-Map



E-Map Controller

Map Data is not provided.  
Map data should be provided by the installer.

# 10.1. E-Map – GUI

The screenshot shows the E-Map interface with several key components highlighted by callouts:

- Menu Bar:** Located at the top left, containing File, View, Option, and Help menus.
- Tool Bar:** Located below the menu bar, containing various map navigation icons.
- Map List:** A sidebar on the left showing registered maps, including 'NORTH\_AMERICA' and 'office'.
- Map Window:** The main map area showing a map of North America with camera locations marked by icons. A red dot indicates a camera location with IP '58.181.14.90 : 1'.
- Map Icon:** A red dot on the map indicating another registered map. It supports image preview and moving to another map.
- Camera List:** A small window on the left showing a list of registered cameras with their IP addresses: '58.181.14.90' and '58.181.14.70'.
- Camera Icon:** A green circle on the map indicating a camera's connection status.
  - Dark green circle indicates a camera not connected.
  - Bright green circle indicates camera connected.
- Camera Preview Window:** A window showing a live video feed from a camera. The feed shows a desk with a computer monitor and keyboard. Text overlays include 'IP:58.181.14.70 CH:1', 'PRESET008', 'TOUR01', 'CAM ID:001', '139.7 09.9', and a timestamp '2011-10-18 오후 2:42:48'.
- Event Log Window:** A window at the bottom showing a table of events. The table has columns for Index, Type, IP, Channel, Time, and FilePath. The table is currently empty.



## 10.2. E-Map – Addition and Deletion of Map Image

1. Move to other map : Double click on the map data.
2. Addition and deletion of map  
: Select a map to add or delete and choose **Menu** -> **File** -> **New Map** or **Delete Map**.
3. Map file support **BMP** format.

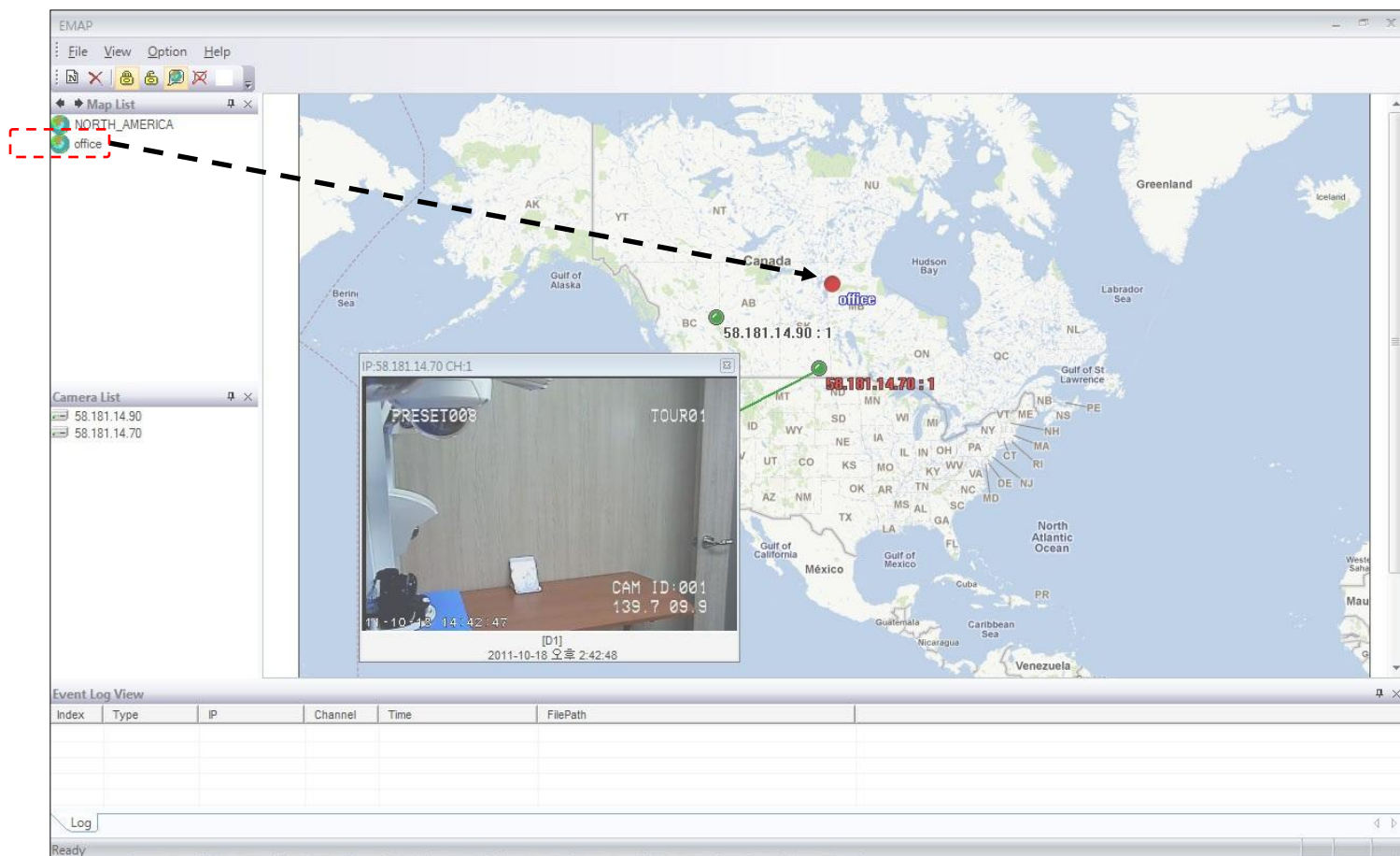
The screenshot displays the EMAP software interface. The main window is titled 'EMAP' and contains a 'Map List' panel on the left showing 'NORTH\_AMERICA'. The central area is split into two panes: the left pane shows a camera feed from 'PRESET001' with 'TOUR01' overlaid, and the right pane shows a map of North America. The camera feed includes text overlays: 'CAM ID: 001', '181.5 14.0', and '11-10-18 14:30:07'. The event log at the bottom shows a list of motion events.

Index	Type	IP	Channel	Time	FilePath
26	MOTION	58.181.14.70	1	2011/10/18 14:47:25	D:\NVRRec\2011_10_18_0\Motion\MONITOR_1\PAGE_1\{1}\{58.181.14.70}\{1}\{80}\20111018_142926.icf
27	MOTION	58.181.14.70	1	2011/10/18 14:47:47	D:\NVRRec\2011_10_18_0\Motion\MONITOR_1\PAGE_1\{1}\{58.181.14.70}\{1}\{80}\20111018_142926.icf
28	MOTION	58.181.14.70	1	2011/10/18 14:48:09	D:\NVRRec\2011_10_18_0\Motion\MONITOR_1\PAGE_1\{1}\{58.181.14.70}\{1}\{80}\20111018_142926.icf
29	MOTION	58.181.14.70	1	2011/10/18 14:48:30	D:\NVRRec\2011_10_18_0\Motion\MONITOR_1\PAGE_1\{1}\{58.181.14.70}\{1}\{80}\20111018_142926.icf
30	MOTION	58.181.14.70	1	2011/10/18 14:48:52	D:\NVRRec\2011_10_18_0\Motion\MONITOR_1\PAGE_1\{1}\{58.181.14.70}\{1}\{80}\20111018_142926.icf

## 10.3. E-Map – Placing Map Icon

Multi-Map : Select a map data from the map information window and then perform Drag & Drop to place a Map Icon on the Map window.

The Map Icon can be double clicked to move to the map.



# 10.4. E-Map – Placing Camera Icon

Select a camera data from the camera list and then perform Drag & Drop to place a camera icon on the Map window.

The screenshot shows the EMAP software interface. The main window displays a map of North America with a camera icon placed on the map. The camera icon is labeled with the IP address 58.181.14.70 : 1. A red dashed box highlights the camera icon in the Camera List, and a red dashed box highlights the camera icon on the map. A red dashed box also highlights the camera icon in the Event Log View table.

**Camera List**

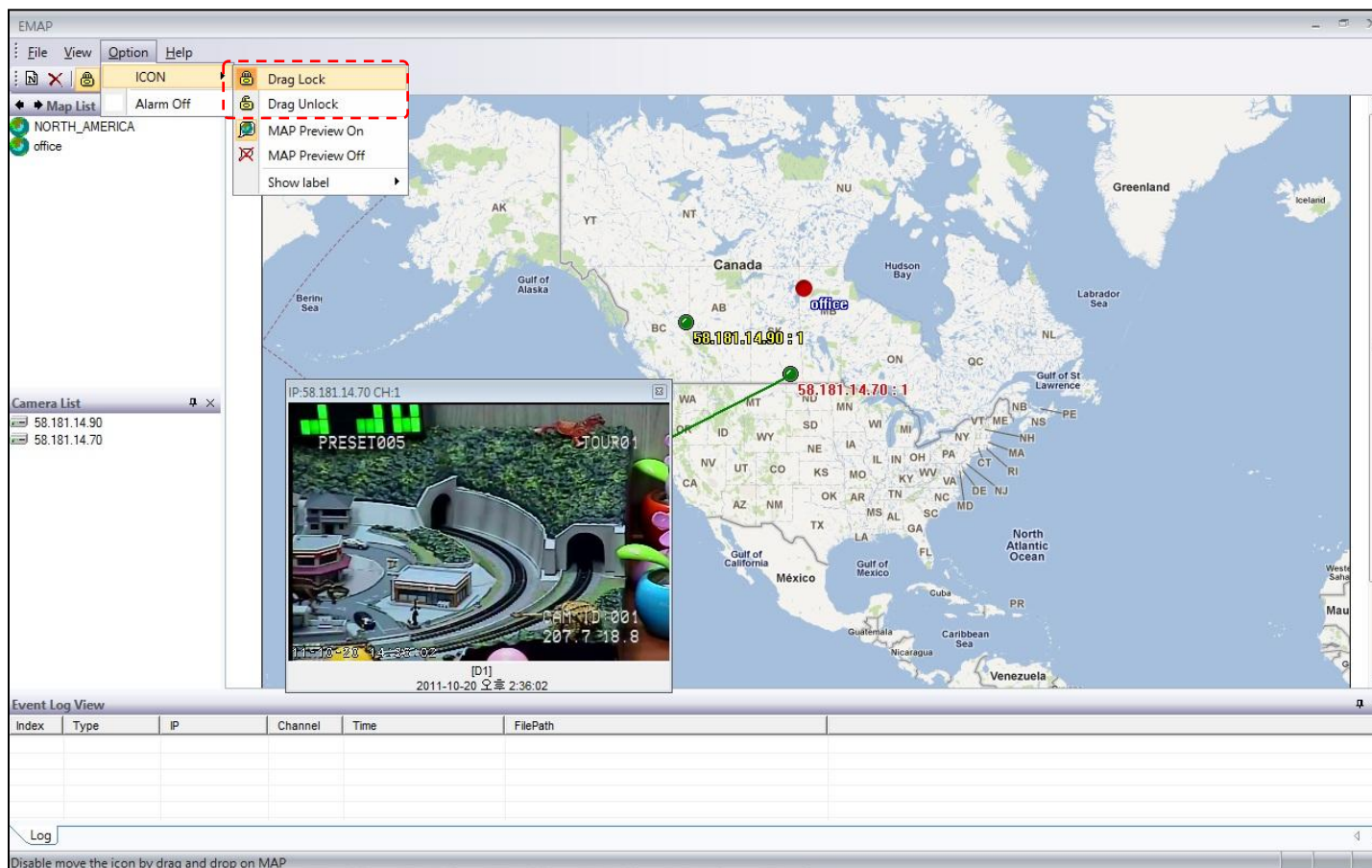
58.181.14.90	: 1
58.181.14.70	: 1

**Event Log View**

Index	Type	IP	Channel	Time	FilePath
1	MOTION	58.181.14.70	1	2011/10/18 14:38:25	D:\NVRRec\2011_10_18_0\Motion\MONITOR_1\PAGE_1\...
2	MOTION	58.181.14.70	1	2011/10/18 14:38:46	D:\NVRRec\2011_10_18_0\Motion\MONITOR_1\PAGE_1\...
3	MOTION	58.181.14.70	1	2011/10/18 14:39:10	D:\NVRRec\2011_10_18_0\Motion\MONITOR_1\PAGE_1\...
4	MOTION	58.181.14.70	1	2011/10/18 14:39:31	D:\NVRRec\2011_10_18_0\Motion\MONITOR_1\PAGE_1\...
5	MOTION	58.181.14.70	1	2011/10/18 14:39:52	D:\NVRRec\2011_10_18_0\Motion\MONITOR_1\PAGE_1\...

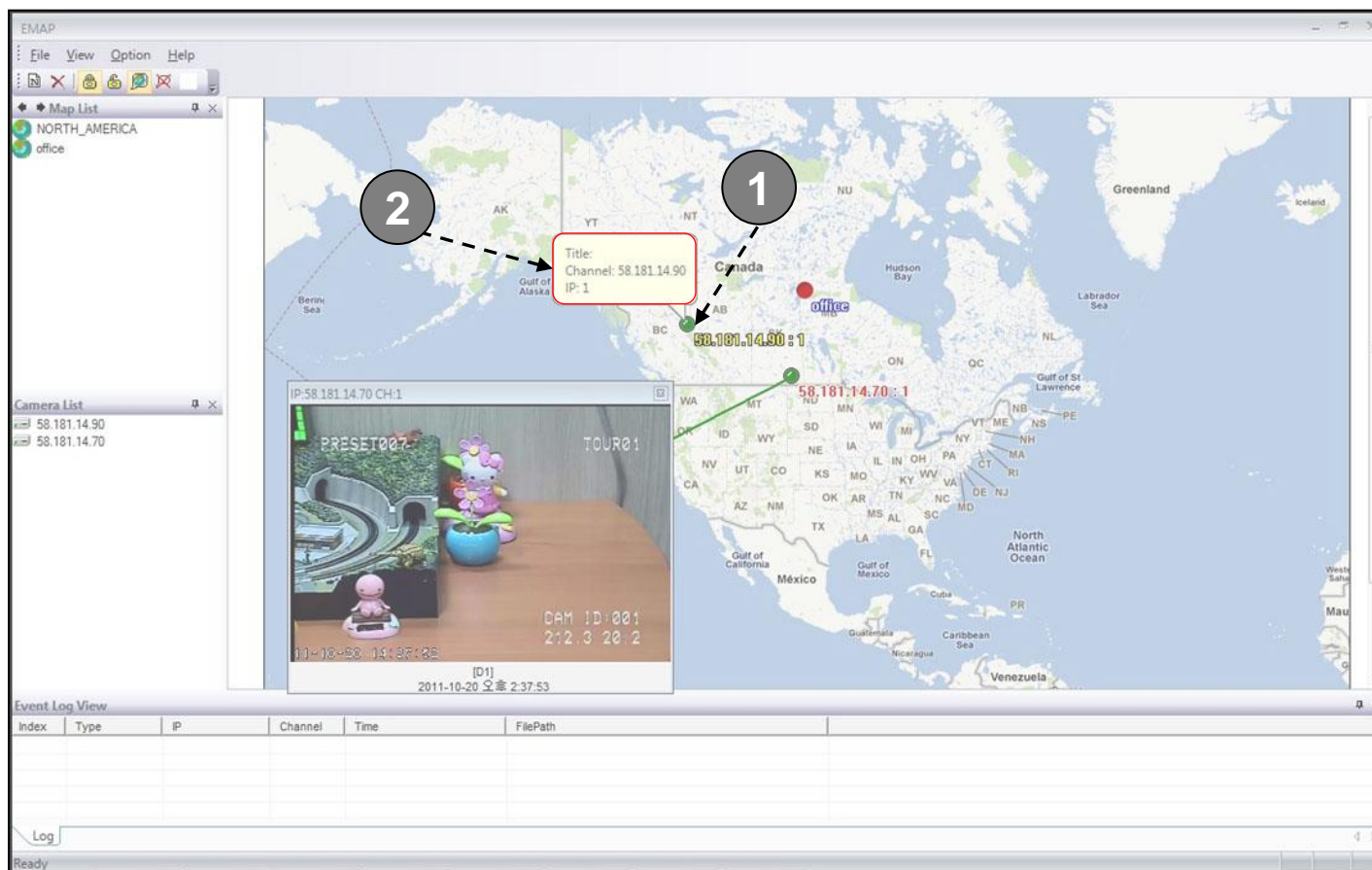
# 10.5. E-Map – Locking/Unlocking the locations of the Icons

Select Drag Lock or Drag Unlock from Menu -> Icon to lock or unlock the location of the icons.



## 10.6. E-Map –Msp and Camera Status Indication

1. Camera status : Dark Green circle indicates a camera not connected. Bright green circle indicates a camera connected.
2. Information Display : Locate the cursor on top of the Icon to show the address, channel and description of the camera.



# 10.7. E-Map – Connection to the Camera for Live View

1. Pop-up menu : Click on the right button after placing the cursor on the Camera Icon for the pop-up menu.
2. Live Pop-up : Double click the Camera Icon or select View from the pop up menu to show live streaming data from the camera.

The screenshot shows the EMAP software interface. The main window displays a map of North America with a camera icon highlighted. A pop-up window shows a live video feed from the camera. The interface includes a menu bar, a map list, a camera list, an event log, and a log window.

**Map List:**

- NORTH\_AMERICA

**Camera List:**

- 58.181.14.90
- 58.181.14.70

**Event Log View:**

Index	Type	IP	Channel	Time	FilePath
1	MOTION	58.181.14.70	1	2011/10/18 14:38:25	D:\WVRRec\2011_10_18_0\MotionMONITOR_1\PAGE_1V...
2	MOTION	58.181.14.70	1	2011/10/18 14:38:46	D:\WVRRec\2011_10_18_0\MotionMONITOR_1\PAGE_1V...
3	MOTION	58.181.14.70	1	2011/10/18 14:39:10	D:\WVRRec\2011_10_18_0\MotionMONITOR_1\PAGE_1V...
4	MOTION	58.181.14.70	1	2011/10/18 14:39:31	D:\WVRRec\2011_10_18_0\MotionMONITOR_1\PAGE_1V...
5	MOTION	58.181.14.70	1	2011/10/18 14:39:52	D:\WVRRec\2011_10_18_0\MotionMONITOR_1\PAGE_1V...

**Log:**

Ready

# 10.8. E-Map – Event Display

The list of events are displayed in this window.

The screenshot displays the EMAP software interface. On the left, there is a 'Map List' window showing 'NORTH\_AMERICA' and a 'Camera List' window with two entries for IP address 58.181.14.70. The main area is a map of North America with a red dot indicating an event location in the eastern United States, labeled '58.181.14.70 : 1'. An inset window shows a camera feed from 'P:58.181.14.70 CH-1' with 'PRESET008' and 'TOUR01' labels. The event log at the bottom is highlighted with a red dashed box and contains the following data:

Index	Type	IP	Channel	Time	FilePath
1	MOTION	58.181.14.70	1	2011/10/18 14:38:25	D:\NVRRec\2011_10_18_0\MotionMONITOR_1PAGE_1V...
2	MOTION	58.181.14.70	1	2011/10/18 14:38:46	D:\NVRRec\2011_10_18_0\MotionMONITOR_1PAGE_1V...
3	MOTION	58.181.14.70	1	2011/10/18 14:39:10	D:\NVRRec\2011_10_18_0\MotionMONITOR_1PAGE_1V...
4	MOTION	58.181.14.70	1	2011/10/18 14:39:31	D:\NVRRec\2011_10_18_0\MotionMONITOR_1PAGE_1V...
5	MOTION	58.181.14.70	1	2011/10/18 14:39:52	D:\NVRRec\2011_10_18_0\MotionMONITOR_1PAGE_1V...

## 10.8. E-Map – Event Display

1. Double click on the file path to playback the alarm event on a pop-up window
2. Up to 1000 events are stored and the oldest event will be removed to record new event.

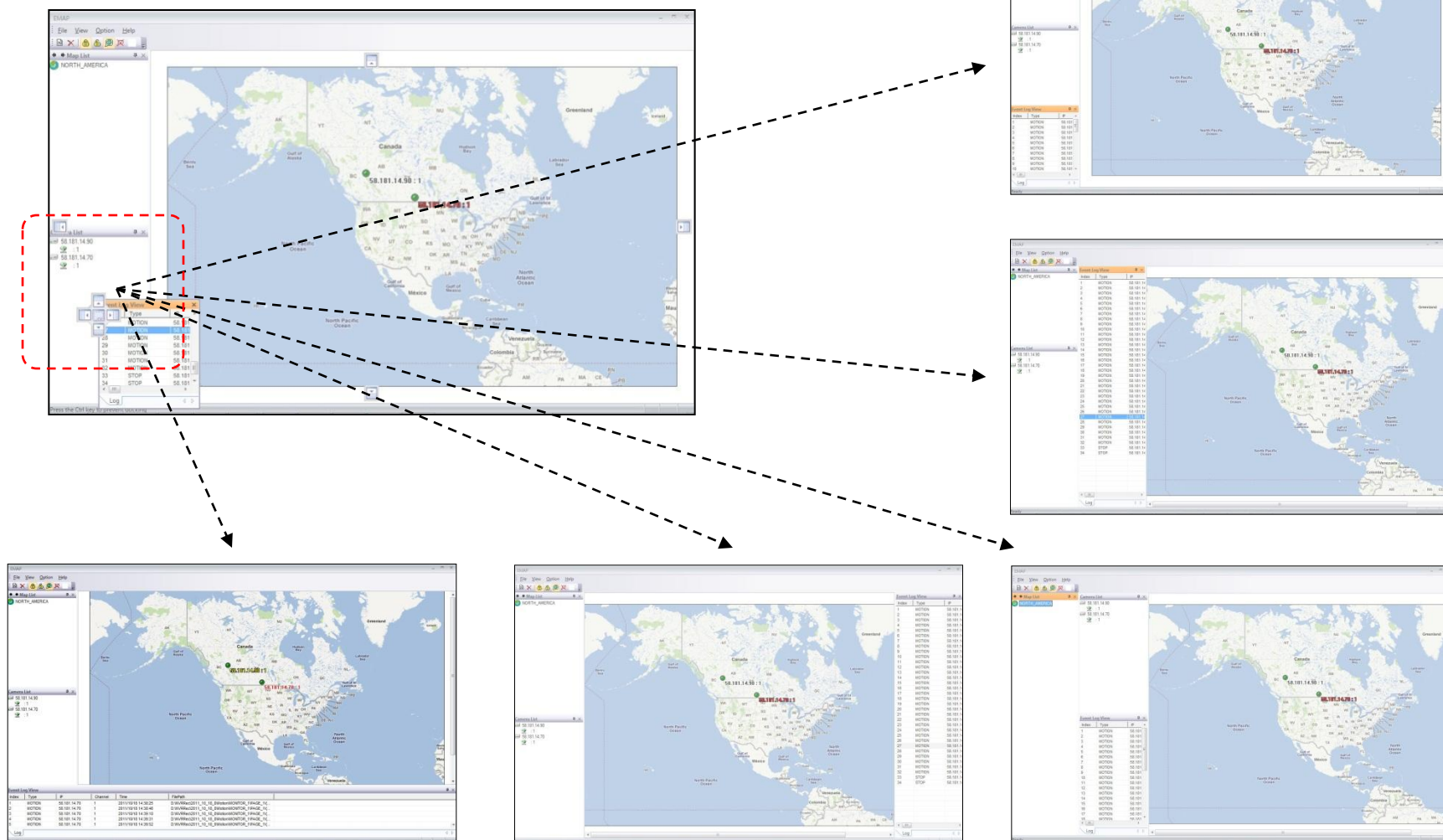
The screenshot displays the EMAP software interface. A central video playback window shows a camera feed of an office interior. The video has several text overlays: 'PRESET001' in the top left, 'TOUR01' in the top right, 'CAM ID: 001' and '181.5 14.0' in the bottom right, and a timestamp '11-10-18 14:30:07' in the bottom left. A dashed arrow points from the event log entry for index 17 to the video playback window. The event log table at the bottom shows the following data:

Index	Type	IP	Channel	Time	FilePath
16	MOTION	58.181.14.70	1	2011/10/18 14:47:25	D:\NVRRec\2011_10_18_0\Motion\MONITOR_1\PAGE_1\{1}\{58.181.14.70}\{1}\{80}\20111018_142926.icf
17	MOTION	58.181.14.70	1	2011/10/18 14:47:47	D:\NVRRec\2011_10_18_0\Motion\MONITOR_1\PAGE_1\{1}\{58.181.14.70}\{1}\{80}\20111018_142926.icf
18	MOTION	58.181.14.70	1	2011/10/18 14:48:00	D:\NVRRec\2011_10_18_0\Motion\MONITOR_1\PAGE_1\{1}\{58.181.14.70}\{1}\{80}\20111018_142926.icf
29	MOTION	58.181.14.70	1	2011/10/18 14:48:30	D:\NVRRec\2011_10_18_0\Motion\MONITOR_1\PAGE_1\{1}\{58.181.14.70}\{1}\{80}\20111018_142926.icf
30	MOTION	58.181.14.70	1	2011/10/18 14:48:52	D:\NVRRec\2011_10_18_0\Motion\MONITOR_1\PAGE_1\{1}\{58.181.14.70}\{1}\{80}\20111018_142926.icf



# 10.9. E-Map – Relocating the Functional Windows

Use Drag & Drop for relocating the functional windows



# Appendix A. – Recommended CPU/Graphics Card Spec.

## CPU

CPU	Resolution	Video rate / frame rate	Max Ch	RAM
i7 2600	1600x1200	4M / 15fps	16	4GByte or Above
	1280x720	3M / 30fps	20	
	704x480	1M / 30fps	64	
i5 2500	1600x1200	4M / 15fps	12	
	1280x720	3M / 30fps	16	
	704x480	1M / 20fps	64	
i3 2100	1600x1200	4M / 15fps	8	
	1280x720	3M / 30fps	11	
	704x480	1M / 30fps	32	

## Graphics Card

Use Graphics Card which is based on **ATI Radeon** Chipset

# Appendix B. - HDD Space Calculation

Use [storage calculator](#) in [selection guide](#) for calculation of the space.

## 1CH Digital Video Data Storage Requirement (iCanView200/300 Series or 1Ch Video Server)

Data Input Fields		
Cameras	1	Cameras
Average Video Rate	1024	Kbps
Average audio Rate	32	Kbps
Total	1056	Kbps

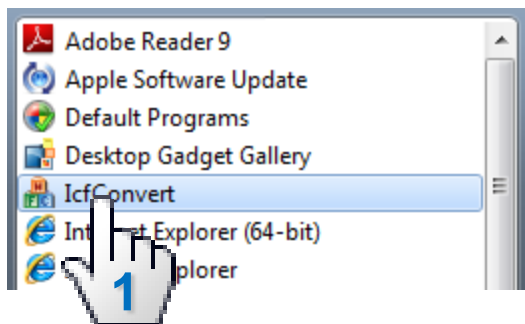
33

Calculated Results Fields														
Data Bandwidth	1,056	Kbits/S												
	1.03125	Mbits/S												
Storage Requirements	132	KBytes/S												
	464	MBytes/Hr		0.453186	GB/Hr									
	11,138	MBytes/Day		10.876465	GB/Day									
	77,963	MBytes/Week		76.135254	GB/Week									
Storage Days	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Storage Size (Gbytes)	10.9	21.8	32.6	43.5	54.4	65.3	76.1	87.0	97.9	108.8	119.6	130.5	141.4	152.3
Storage Weeks	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Storage Size (Gbytes)	76.1	152.3	228.4	304.5	380.7	456.8	532.9	609.1	685.2	761.4	837.5	913.6	989.8	1,065.9
Storage Size (Tbytes)	0.08	0.15	0.23	0.30	0.38	0.46	0.53	0.61	0.69	0.76	0.84	0.91	0.99	1.07
Storage Months	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Storage Size (Gbytes)	329.9	659.8	989.8	1,319.7	1,649.6	1,979.5	2,309.4	2,639.4	2,969.3	3,299.2	3,629.1	3,959.0	4,289.0	4,618.9
Storage Size (Tbytes)	0.33	0.66	0.99	1.32	1.65	1.98	2.31	2.64	2.97	3.30	3.63	3.96	4.29	4.62

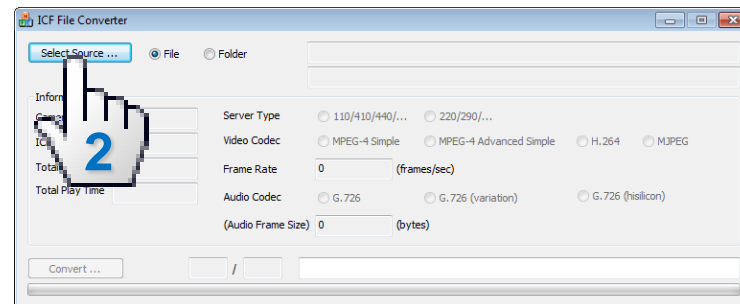
# Appendix C. – Converting ICF file to AVI file

## Procedure

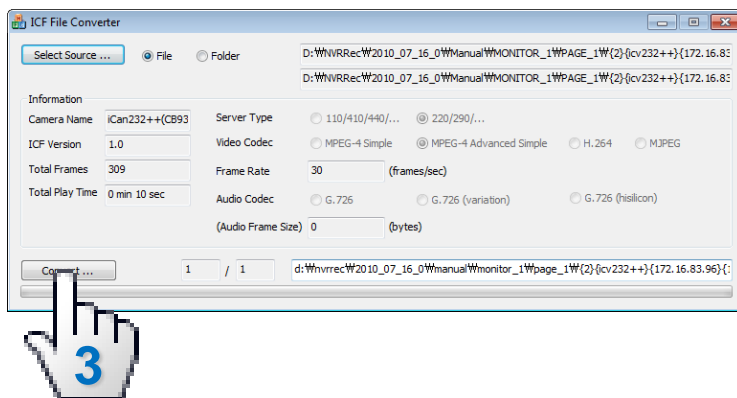
1. Click START and Run IcfConverter from program menu.



2. Click 'Select Source' and select ICF format file.



3. Click 'Convert' button to convert file format to AVI.



4. When the converting is complete, a window pops up. Click OK and check the converted AVI file.

