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Chapter 1

Introducing the DVR 2400 Surveillance System

The **DVR 2400 Surveillance System** is the perfect solution for home, office, school, factory, and general security use. By installing this software suite into a computer server unit that is connected with surveillance cameras, motion sensors, and alarm devices, you can monitor both in- and outdoor premises, and record intruder break-ins or any suspicious activities on digital video.

The **DVR 2400** Surveillance System includes five programs:

- **Site Server**

  Site Server allows live monitoring of up to 16 video cameras (such as CCTV and PTZ video cameras) and 16 sensor units, and provides event detection/notification capabilities. Events can either be motion detected by video cameras or by sensors. This program can be configured to automatically record detected events, trigger alarms, and/or send notifications (such as sending e-mail, dialing out to a phone, etc.). You can have the same configuration options for all camera/sensor devices or specify different settings for each device.

- **Record Player**

  Record Player allows you to play back previous recorded events. This program keeps a database of digitally recorded videos, and allows you to search for recorded events by specifying the date/time of occurence or the type of event. Record Player can display up to 16 videos simultaneously on the program screen.

- **Backup Scheduler**

  Backup Scheduler allows you to make backups of the recorded videos. You can initiate the backup process manually, or configure this program to perform automatic backup onto the specified storage locations.

- **Remote Viewer**

  Remote Viewer allows live video surveillance and recording in a remote computer via a Web browser. Remote users that are granted sufficient rights will be able to monitor video cameras, control PTZ cameras, record events on digital video, and playback recorded events, and talk to the DVR Site Server.

❑ Remote Record Player

Remote Record Player allows you to download a video recording from a remote computer to your local computer. Determine specific properties (e.g. date and time) of the video to download then after downloading, play back the video inside this same program.

Features

❑ Advanced Motion Detection

- Detect motion in a specified area.
- Supports signal tolerance, sensitivity adjustment, and eliminates prompt motion to avoid false alarm.

❑ Smart Search Feature

- Search by time or by type of event.

  There are 3 types of events: motion events, sensor events, or manually triggered events.
- Identify the target by motion detection.

❑ Networking

- Supports multiple levels of access control.
- Allows users to view remote cameras, remotely record video, and control remote PTZ cameras through the Internet.
- Converse with another colleague in another location using the **Talk** feature.
- Allows user to download video recordings from a remote computer.

❑ Superior Video Compression Technologies

- Includes industry standard Motion-JPEG compression, and the following proprietary technologies: HM and SmartSaving.
- Supports automatic adjustment of compression ratios from the scene complexity, and achieves optimal quality and high compression ratio.

❑ Complete Digital Video Recording Features

- Supports 640 x 480, 640 x 240, 320 x 240 video, 720x480 and 720x240 frame sizes.
- Supports 1/4/9/16 split-screen layout.

- Record audio along with the video using a separate audio recording device.
- Provides an electronic map that lays out the locations of video cameras and sensors.
- Support the integration of traditional security sensors and devices.
- Controls PTZ cameras.
- Event notification includes phone, e-mail, fax, alarm, and flashing message.
- Perform task scheduling for recording, motion detection, and event notification.
- Types of video recording include non-stop recording, non-stop smart recording, event recording and time-lapse recording.
- Allows you to play back up to 16 recorded events simultaneously.
- Supports manual and auto backup of recorded events.
- Recycles storage to keep fixed days of video recordings.

Applications

- ❑ Monitoring the babies room, a sick family member or the elderly.
- ❑ Home and community security: Notify security personnel in time by telephone when there is an intrusion. Remote monitoring is also supported.
- ❑ Store or supermarket surveillance: Monitor whether or not there are unauthorized people trespassing your warehouse through 24-hour or month-long recording.
- ❑ Office surveillance: Monitor entrance and exit to keep track of who goes in and out of your office.
- ❑ Automated bank machine and teller counter surveillance.
- ❑ Department store surveillance: Monitor showcase counters, display counters, and visiting customers.
- ❑ Remote monitoring of each floor in a building. Centralize the monitored records in a secure place through LAN.
- ❑ Monitoring server rooms and factory machines for easier tracking of abnormal situations.

Chapter 2

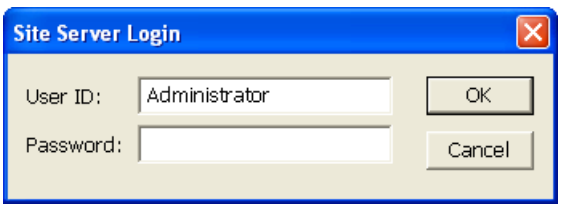
Site Server

Site Server is a video and audio surveillance and recording program. It allows up to 16 video cameras, 16 audio input devices, and 16 sensors to be monitored simultaneously on the program screen. For each camera, the motion detection feature can be activated for tracking and recording motion events. For the utmost security, round-the-clock, non-stop video recording can also be enabled. As the administrator of your DVR 2400 Surveillance System, you can also create accounts for other users and give them access rights to Site Server and the other programs of your DVR 2400 system.

Launching the Site Server

When launched for the first time, Site Server will allow any user to have access to the program. To restrict the program's access rights only to privileged users, click to open the **Preferences** dialog box, then click the **User** tab and select the "**Enable access control**" option.

When access control is enabled, **Site Server** will prompt for the User ID and Password everytime the program is launched. Type "**Administrator**" in the "**User ID**" field and leave the "**Password**" field empty. These are the defaults that are assigned to the administrator account.



It is strongly recommended that a password be defined for the administrator account. Select the "**Administrator**" account in the **Preferences dialog box: User tab** and then click the **Modify** button to set the password. Refer to the section, "User Accounts (User tab)", on page 53 for more details on managing user accounts.

Monitoring Video Cameras in Live Mode

When you have entered the **Site Server** program, the program goes into **Live mode**. In this mode, you will be able to see live video from up to 16 cameras and monitor input/output devices (such as sensors and alarms).

This Multi-screen Display can have up to 16 split screens to show live video from different video cameras.

This displays the current date and time.

Click this button to minimize the Site Server program window onto the Windows Taskbar.

These are the video recording (R), video source (V), and event detection (E) indicators. If a video camera has an associated audio input device, an audio icon is displayed beside the video source.

This is the Camera Operation Panel.

These buttons allow you to change how split screens are displayed.

These are Channel Selection buttons.

This is the Power button. Click this button to close the Site Server program.

Split Screens

Split screens show live video from the video cameras that are installed in the monitored site. On the split screens, the video camera number, current date and time, etc. can be displayed. If video recording is currently in progress, a "**REC**" indicator will also appear at the bottom right corner of the corresponding screen.

Choose what information to display on split screens in the **Captions dialog box**. (See page 32 for details.)

In the **Preferences dialog box: View tab**, several video cameras can be assigned to be displayed in a single split screen. Each camera is displayed for a specified time duration before switching to the next camera. (See page 46 for details.)

Note: Per split screen, the "**REC**" indicator will be displayed if and only if the caption display is enabled in the **Preferences dialog box: Camera tab** and when the respective cameras are in video recording mode. (See page 32 for more information on displaying captions.)

Changing split screen position

Drag a split screen and drop it to another split screen to exchange their positions.

Maximizing split screen size

If there are 4, 9, or 16 split screens displayed, double-click a split screen to enlarge its size and temporarily cover its three neighboring screens. To restore the split screen back to its normal size, double-click on it again.

How split screens are maximized depends on the total number of split screens that are currently displayed on the Site Server program window.

Split Screen buttons

These buttons change how split screens are displayed on the program screen.

Toggles between **Full-screen** and **Normal** display modes.

Displays a split screen in single view.

Splits the Multi-screen Display into 16 split screens.

Splits the Multi-screen Display into 9 split screens.

Splits the Multi-screen Display into 4 split screens.

Map button 

Click the **Map** button to switch Site Server to **Map mode**. This mode shows a graphical layout of the site being monitored, with clear indications on where the video cameras, sensors, and/or alarms are installed. (See "Monitoring a Site in Map Mode" on page 21 for details.)

Channel Selection Panel

By default, **Video Camera** buttons are displayed at the bottom of the Site Server program window. These buttons allow you to display a split screen in single view.

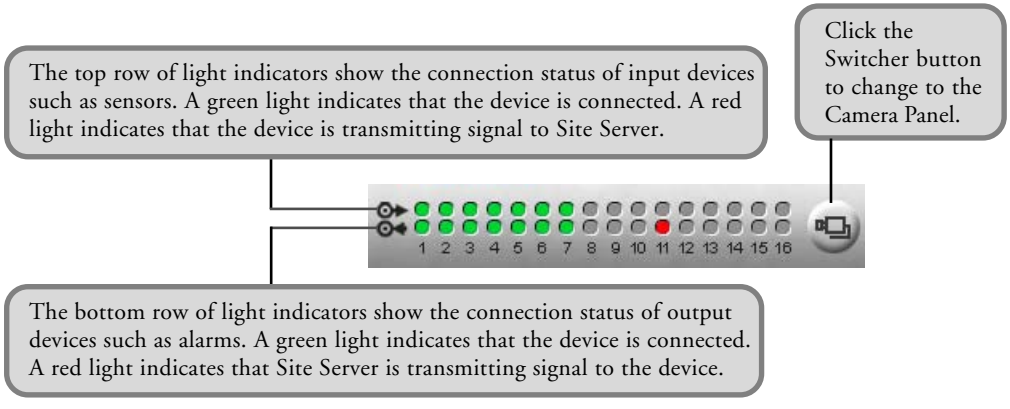
If there are input/output devices such as sensors and alarms also connected, you can easily switch between viewing video cameras and monitoring the input/output devices.

Camera Panel

This panel provides camera buttons that are numbered in sequence and a Switcher button.

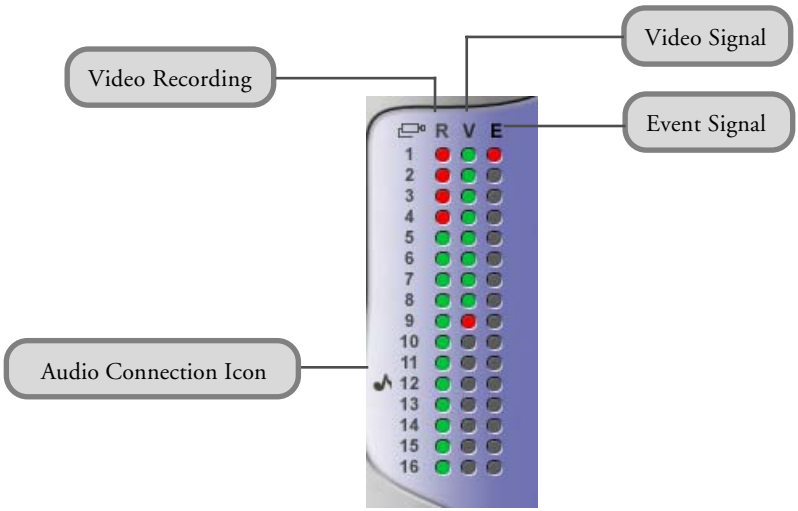
Input/Output Device Panel

Input/Output Device Panel displays light indicators that show whether the input/output devices are connected to the Site Server.



Status Panel

The **Status Panel** displays four types of status information: Video Recording, Video Signal, Audio Connection Icon, and Event Signal.



Video Recording

"**R**" stands for video recording. When a light indicator appears green in color, it means that the video recording function is enabled for the video camera.

Video Signal

"**V**" stands for video signal from cameras. When a light indicator appears green in color, it means that the video camera is connected and turned on. When a light indicator appears red in color, it means that connection to the video camera is lost.

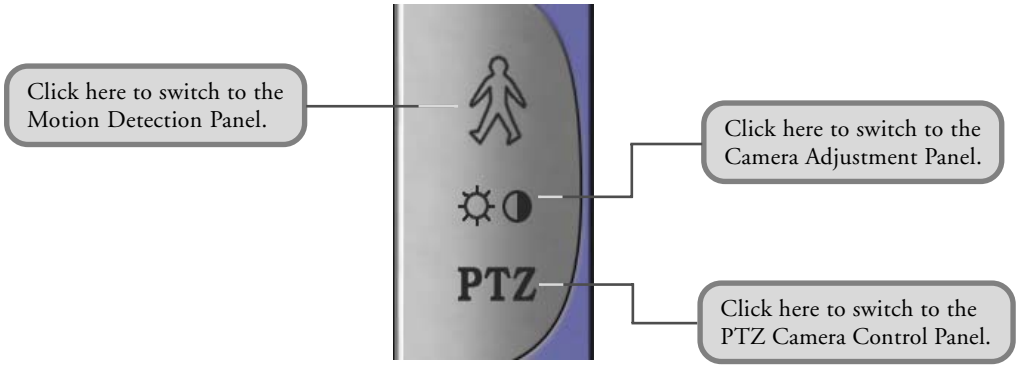
Event Signal

"**E**" stands for event signal, which could have been activated by motion detection or by an input device such as the sensor. The light indicator appears red in color when an event has been detected.

Note: Video/Audio recording features, video camera connections, audio channel connections, and input device connections can all be enabled or disabled in Preferences dialog box. (Refer to the section "Configuring the Site Server" on page 32 for details.)

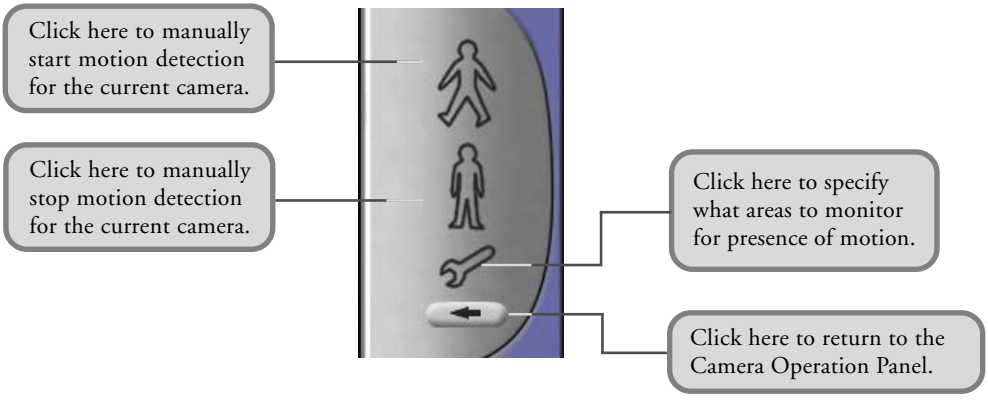
Camera Operation Panel

The Camera Operation Panel allows you to switch between three different control panels: Motion Detection Panel, Camera Adjustment Panel, and PTZ Camera Control Panel. **You will be able to access these panels only when you have switched the screen to single view mode.**



Motion Detection Panel

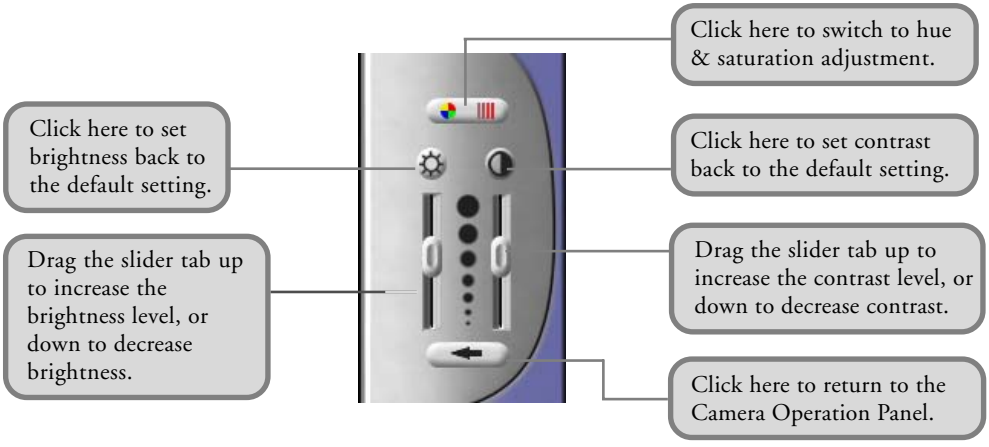
The Motion Detection Panel allows you to manually start or stop motion detection. The **Start** and **Stop** buttons are available only when the current camera's motion detection function has not been configured to be performed on a scheduled basis.



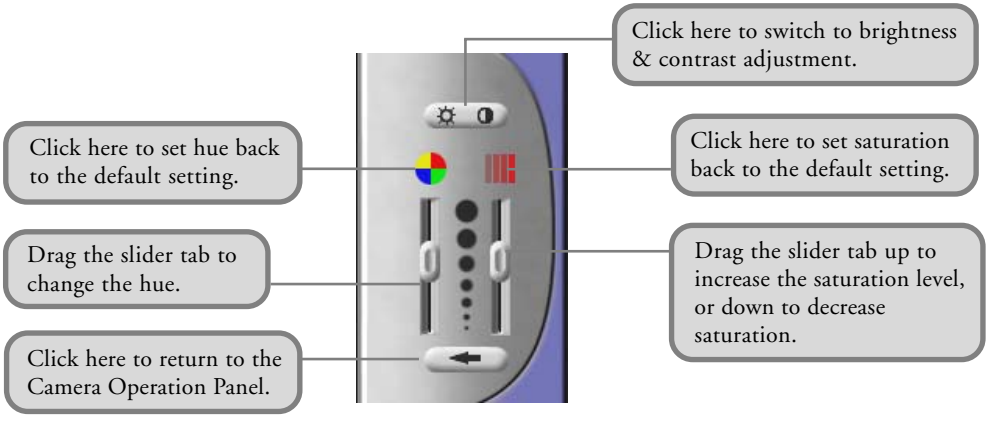
Camera Adjustment Panel

The Camera Adjustment Panel provides controls for enhancing the current camera's video display on-screen.

Brightness and Contrast Adjustment



Hue and Saturation Adjustment



Operating PTZ Cameras

Use the PTZ Camera Control Panel to operate PTZ (Pan/Tilt/Zoom) cameras.

PTZ Control Panel

The PTZ Camera Control Panel provides four types of adjustment panels that allow you to customize and operate PTZ cameras. Click to open a pop-up menu where you can switch between these four panels.

Basic	Switch to the **Basic** panel if you want to manually control camera panning, tilt movements, and zooming.
Advanced	The **Advanced** panel allows you to set the iris level and focus of a selected PTZ camera as well as the camera's pan and tilt speed.
Auto	Switch to the **Auto** panel if you want to enable/disable the auto-panning or auto-loop function. In this panel, you can define settings for these functions.
Custom	The **Custom** panel lists commands for operating the PTZ camera that you have custom-defined in the Settings dialog box. To execute a command, simply click on its button in this panel.

Basic

Click this button to close the PTZ Camera Control Panel.

If there are multiple PTZ cameras, use these buttons to select a PTZ camera that you want to adjust or customize.

This is the Pan and Tilt control. Click one of the four arrow buttons to adjust the camera angle up, down, left, or right. Click the "X" button to stop movement.

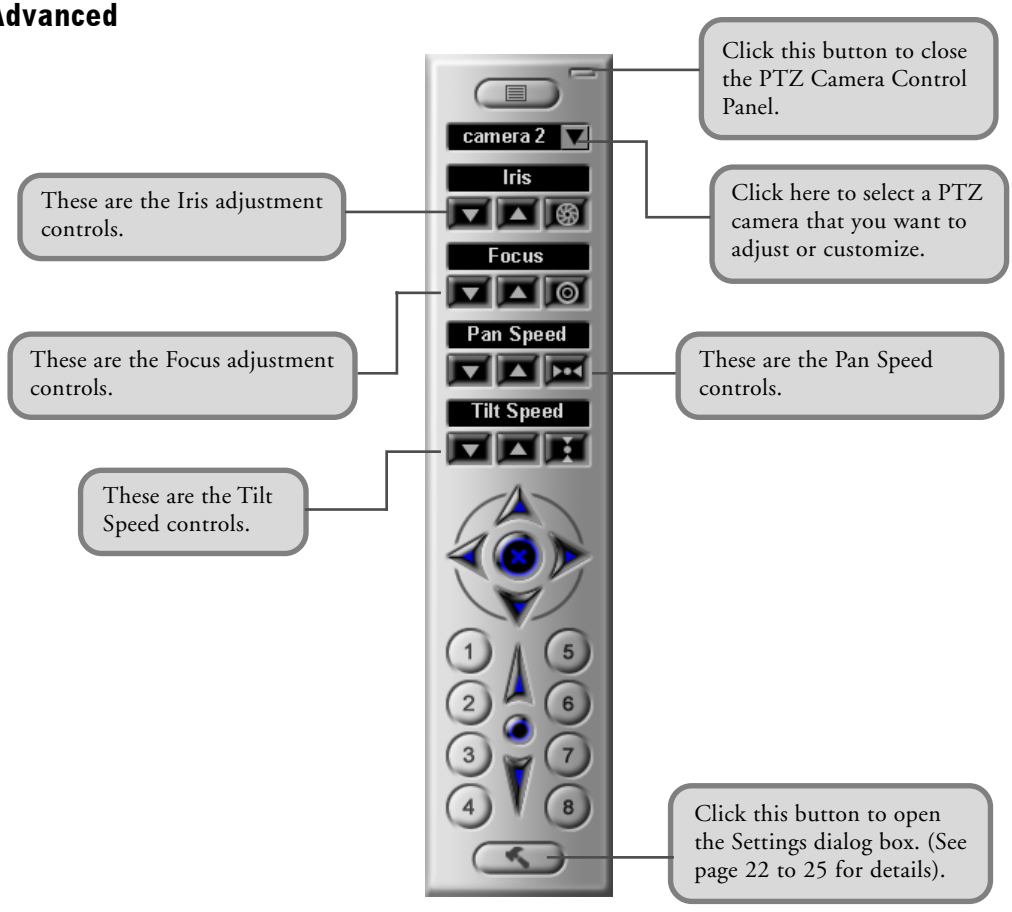
These number buttons are Preset buttons that let you store up to eight camera angle positions.

Click a preset button and hold for 2 seconds to record the current PTZ camera's angle position. Or, right-click the button to specify a name and record the current PTZ camera's angle position for the preset.

This is the Zoom control. Click the up arrow button to zoom in, or the down arrow button to zoom out.

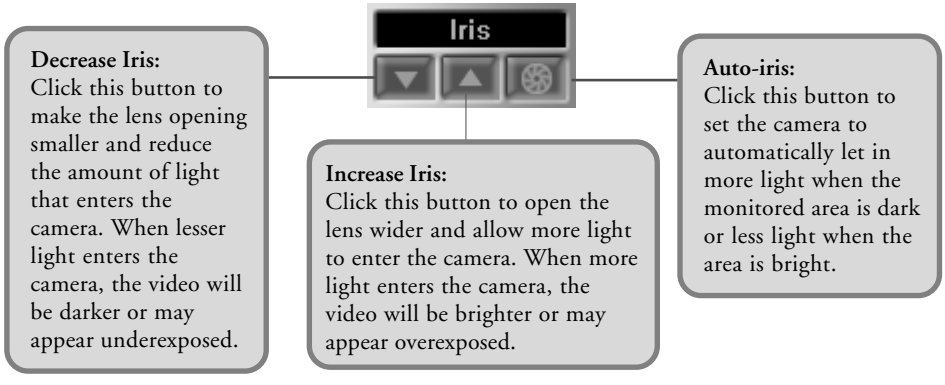
Click this button to open the Settings dialog box. (See page 22 to 25 for details).

Advanced



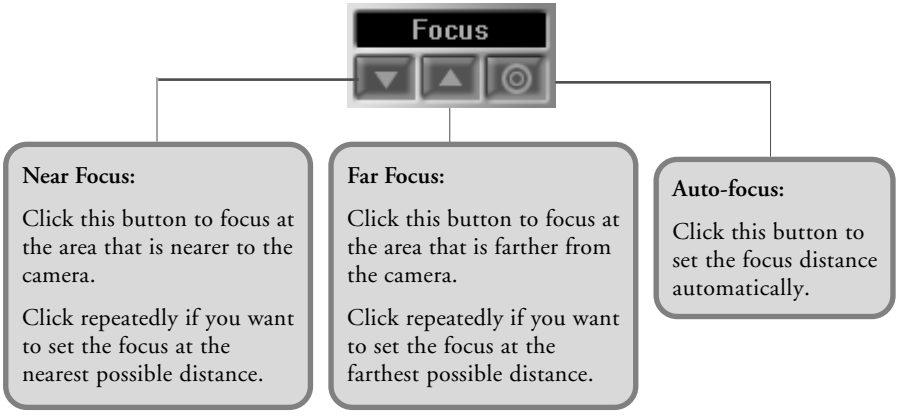
Iris controls

The iris lens of a PTZ camera controls the amount of light that enters the camera. These are the Iris adjustment controls:



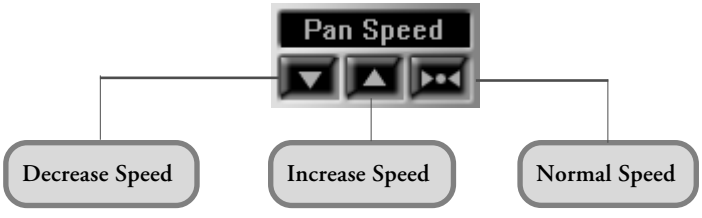
Focus controls

Use the Focus controls to set the focus distance.



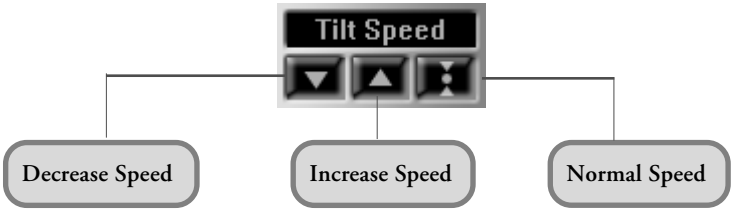
Pan Speed controls

Use the Pan Speed controls to set the speed for turning the PTZ camera.

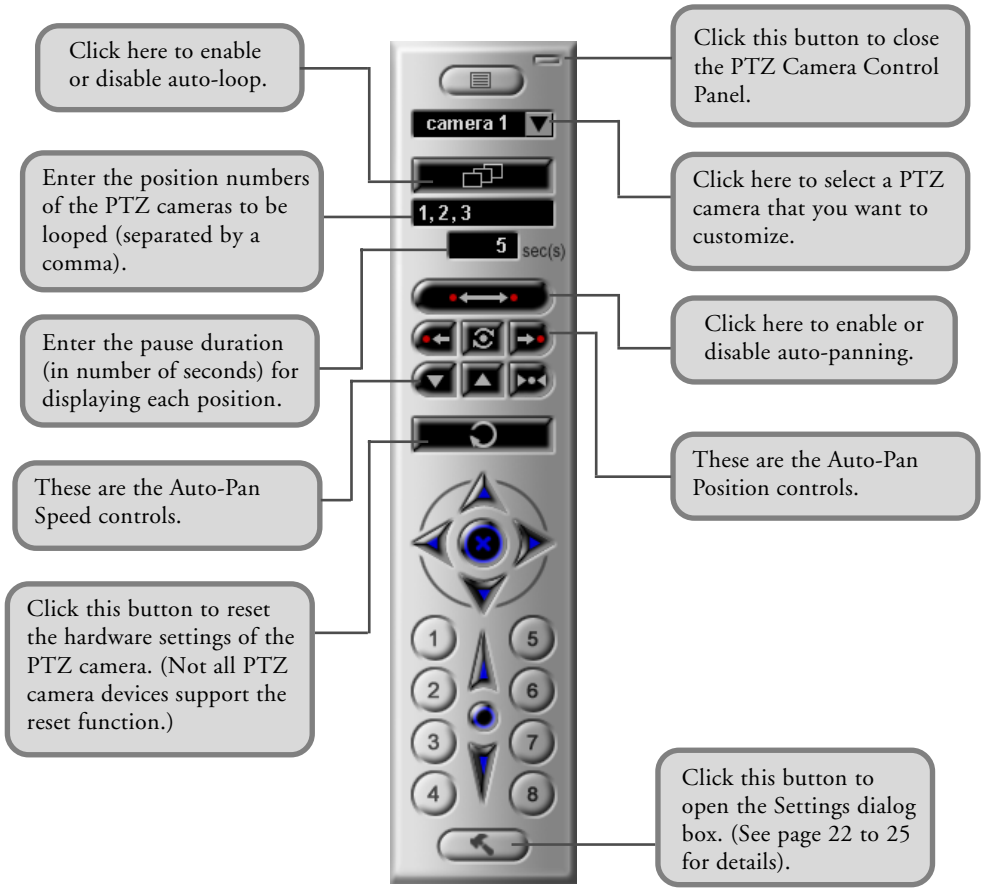


Tilt Speed controls

Use the Tilt Speed controls to set the speed for adjusting the angle of the PTZ camera.

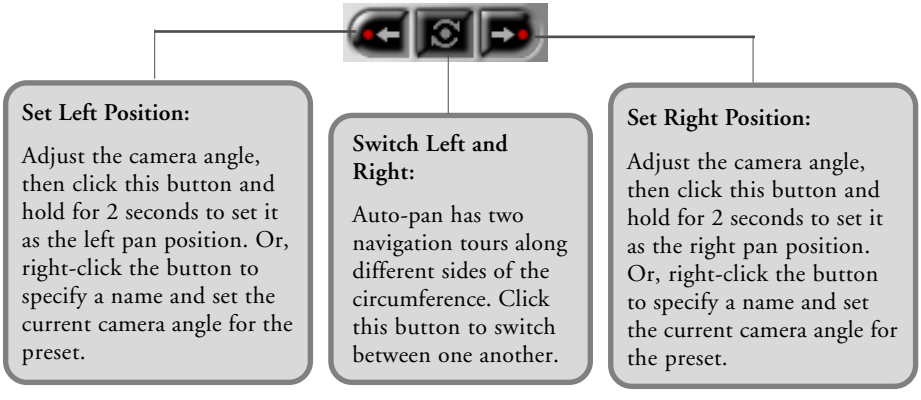


Auto



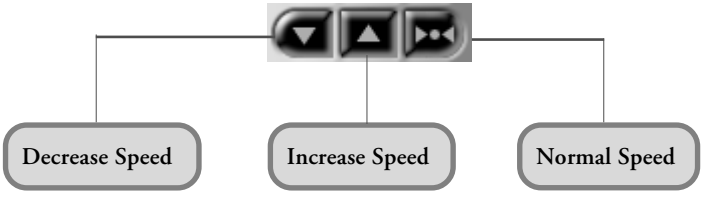
Auto-Pan Position controls

Use these buttons to set the two camera positions for auto-panning.

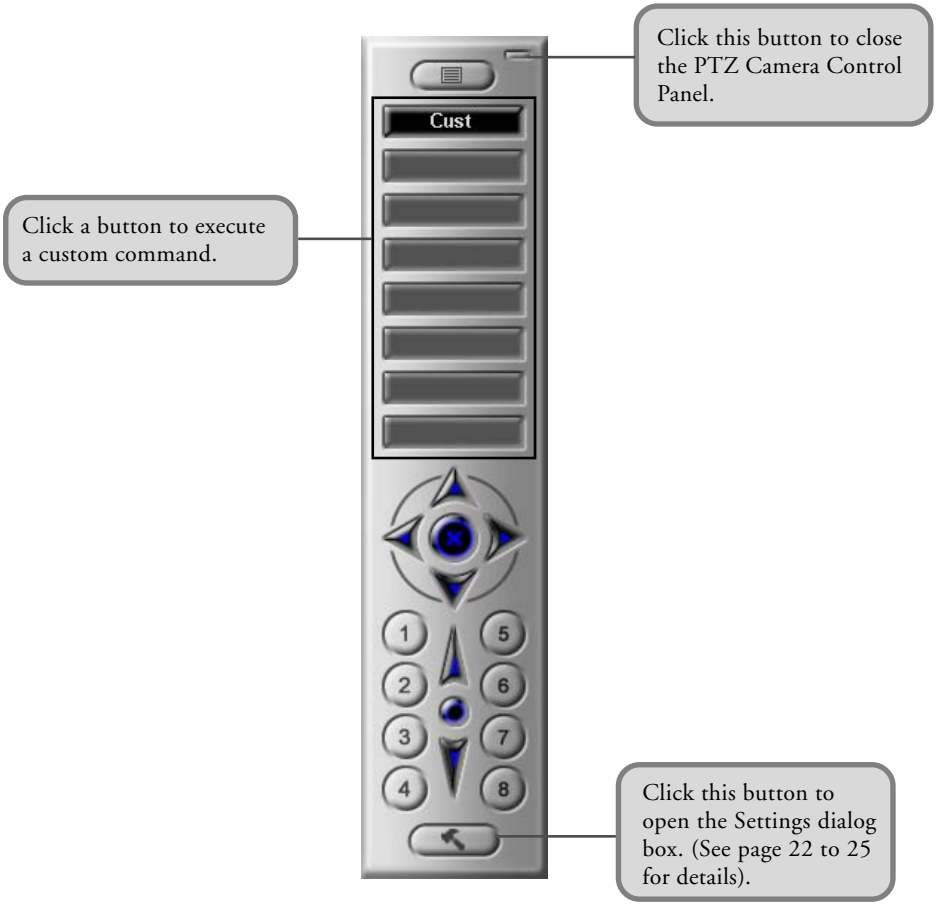


Auto-Pan Speed controls

Use these buttons to set the speed for auto-panning the PTZ camera.



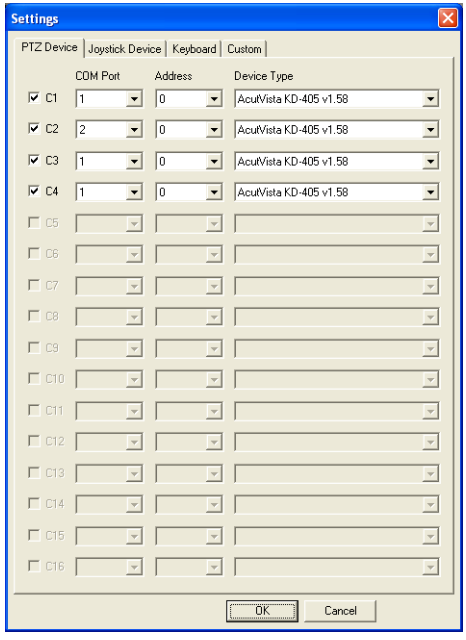
Custom



Settings dialog box

The Settings dialog box allows you to activate/deactivate PTZ cameras and define advanced settings for these cameras.

PTZ Device



1 **Video Input Ports (C1 - C16)**

These indicate the total number of video input ports that are available in your capture card. For instance, if C1 to C4 are enabled and the remaining numbers are grayed out, this means that your capture card is only equipped with 4 video input ports.

If you have PTZ cameras, you need to select which video input ports of the capture card the cameras' video cables are plugged into. If you select the incorrect check boxes, you will not have access to the PTZ cameras.

2 **COM Port**

Select the proper COM port on the Site Server computer where a PTZ camera's control cable is connected to.

3 Address

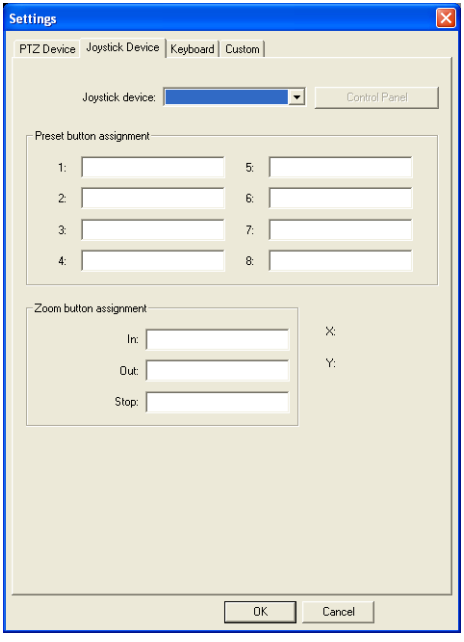
If there are multiple interconnected PTZ cameras that share the same COM port, specify each PTZ camera's address ID.

Note: The address ID is set on the PTZ camera device, and must be unique for each device.

4 Device Type

Select the brand/model name of the PTZ camera.

Joystick Device



1 Joystick device

If the computer is installed with a joystick device, you can use the joystick to control a PTZ camera. Select the joystick device from this drop-down list to customize it

2 Control Panel

Click this button to open a Control Panel where you can test the selected joystick device.

3 Preset button assignment

The numbers in this group box represent the eight preset camera angle positions. You can assign different joystick buttons to each of these preset positions.

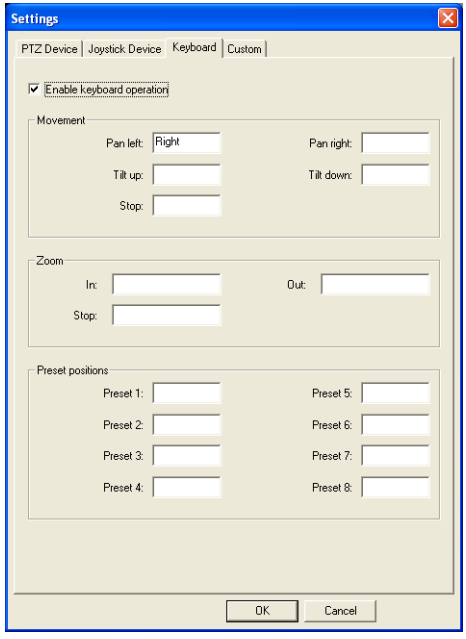
4 Zoom button assignment

Here, you can assign different joystick buttons for zooming in, zooming out, and pausing camera zoom.

X: Y:

Displays the current coordinate position of the joystick movement.

Keyboard



1 Enable keyboard operation

Select this option if you want to operate the PTZ camera through a keyboard.

2 Movement

Assign the desired keys to use for controlling camera movement such as pan, tilt, and pause.

To assign, first click your mouse inside the text box, then press the desired key. For instance, if you want Pan Left to be assigned with the Left Arrow key, simply press this key in the provided text box.

3 Zoom

Assign the desired keys to use for zooming in, zooming out, and pausing camera zoom.

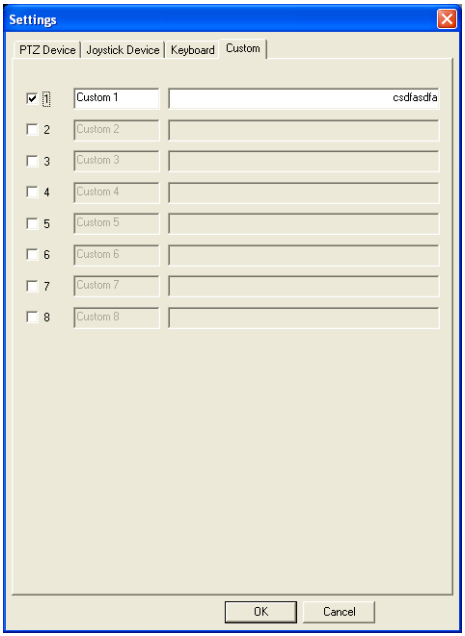
Simply press the key you want to assign in the provided text box.

4 Preset positions

The preset numbers in this group box represent the eight preset camera angle positions. You can assign a different key to each of these preset positions by simply pressing the desired key in the provided text box.

Custom

This is where you can customize the buttons in the Custom panel and assign PTZ commands to each button. You can define up to eight buttons.



1 Button number

Select a number to customize a button.

2 Button name

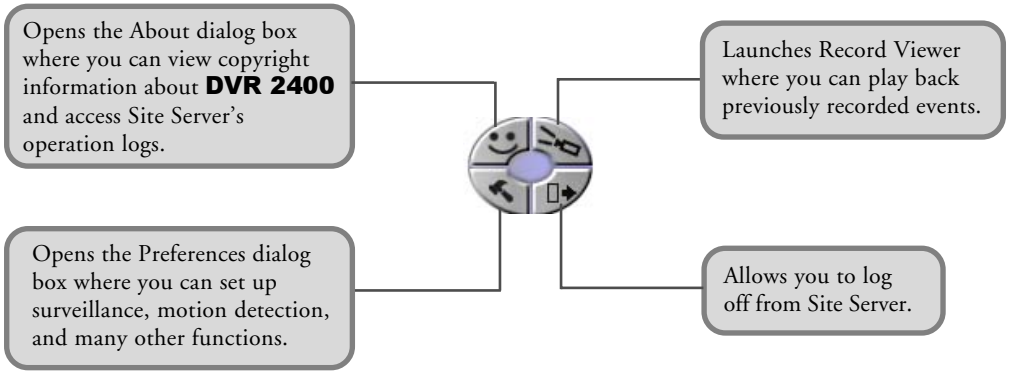
Specify a descriptive name for each button, which will appear on the Custom panel.

3 Command

Enter the custom command in the provided text box.

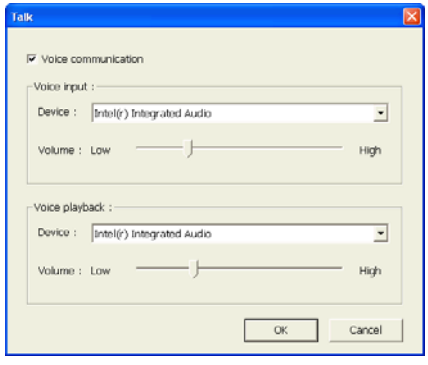
PTZ control commands are hexadecimal strings, and different PTZ camera manufacturers provide different sets of control commands. You can get the control command list from the PTZ camera manufacturer or download from the manufacturer's Web site.

Other button controls



Talk Button

Site Server can be enabled to accept two-way communication request from a remote client site also running the Remote Viewer program. Click the button to open the Talk dialog box where you can configure settings to enable two-way voice communication.



1 Voice communication

Select this option to activate the Talk feature of Site Server.

2 Voice input

Displays the audio device used by your input device (e.g. microphone) to capture your voice. You can also adjust the input device's volume here. If you have more than one audio device installed, select the device you want to use from the drop-down menu.

3 **Voice playback**

Displays the audio device used by your playback device (e.g. speakers) to play back the voice from your counterpart. You can also adjust the playback device's volume here. If you have more than one audio device installed, select the device you want to use from the drop-down menu.

The Voice input and Voice playback audio devices that you select must not be occupied by another device when using the Talk feature. Please check the **Audio** tab in Preferences (see page 40) to see if the audio device is being used or not.

Monitoring a Site in Map Mode

To create a graphical layout of the site being monitored, switch to **Map mode**. Map mode allows you to load a picture of the entire site being monitored and insert device icons on the picture to indicate the locations where video cameras, sensors, and/or alarm devices are installed in the site. This can help you to instantly identify the location where detected events occurred and take immediate actions when necessary.

To switch to Map mode, click MAP. Then, click ▼ to switch to **Map Edit mode** and start creating a map layout of the monitored site.

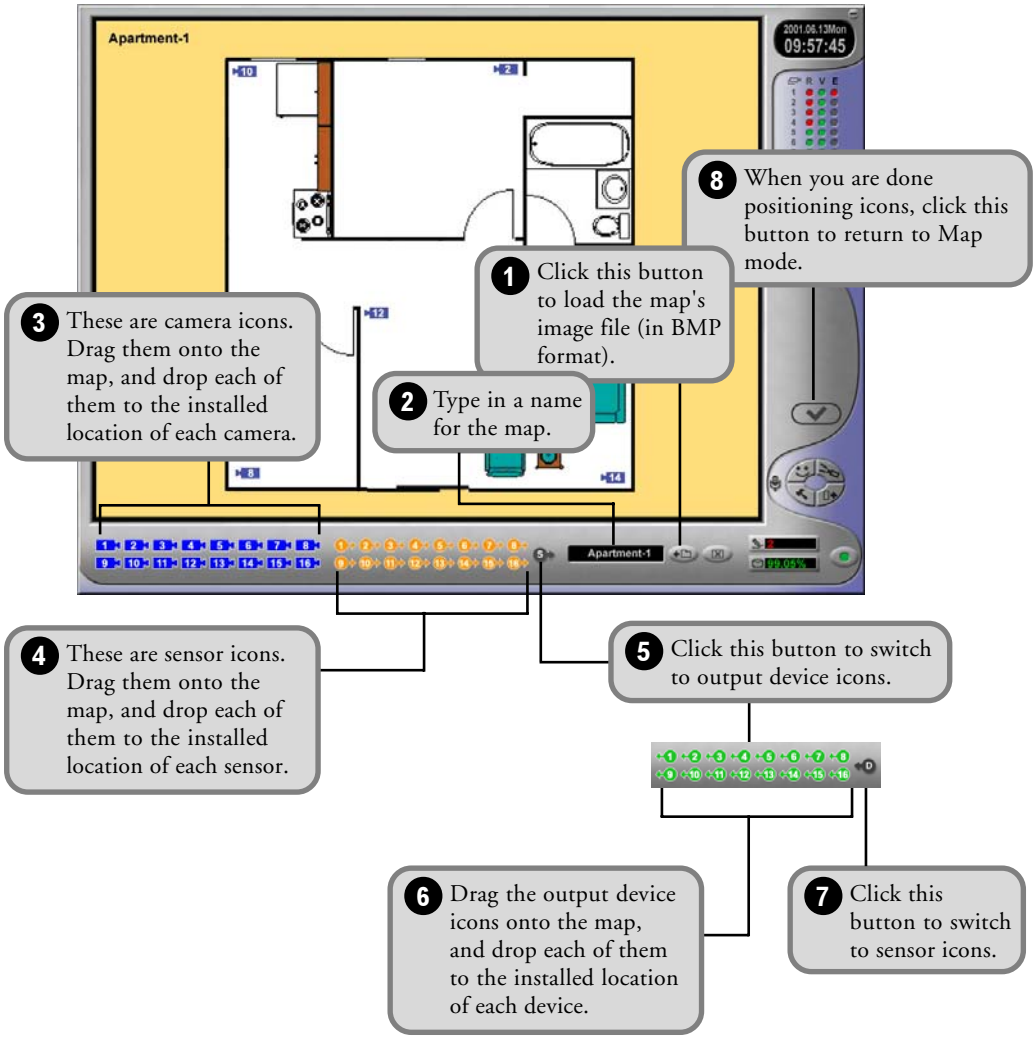
Creating a site map

To create a map layout in Map Edit mode, place the camera, sensor, and output device icons on the site map according to their actual installed locations. See the figure next page for step-by-step instructions on how to load a picture of the site map and position icons on the map.

While positioning an icon, you can remove an icon from the map by dragging that icon out of the map.

If you want to start all over and add icons to the map, click ⊠. This clears all icons from the map.

While you are adding camera icons onto the map, you may notice that their colors vary. Camera icons may appear in one of these three colors:



10 In gray color, indicates that there is no video camera connected.

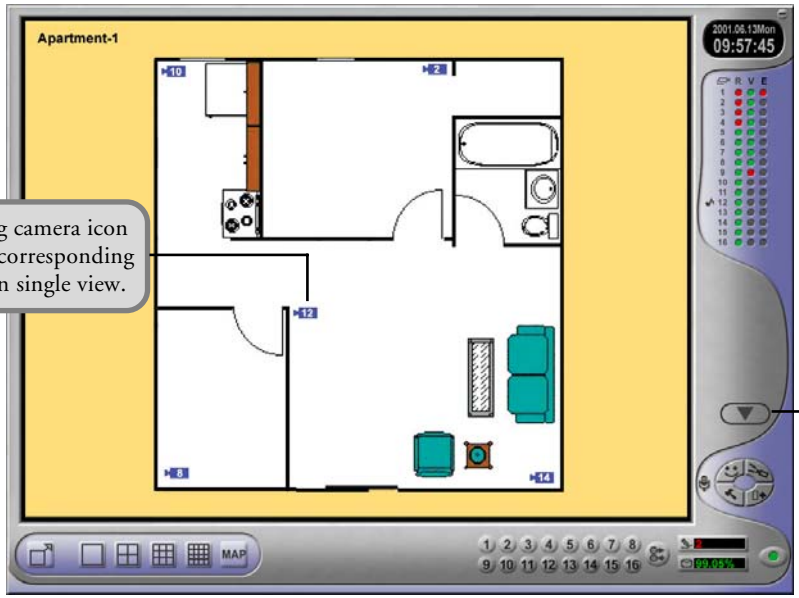
10 In light blue color, indicates that there is a video camera connected but the corresponding camera icon has not yet been plotted on the site map.

10 In dark blue color, indicates that there is a video camera connected and the corresponding camera icon has already been plotted on the site map.

Viewing the site map

Once the site map is complete, you will be able to easily pinpoint locations where detected events occurred by watching out for flashing icons on the site map.

Whether it is a video camera, sensor or output device that has been triggered by an event, its corresponding icon on the map flashes. If a camera has been triggered by an event, you can click on the flashing camera icon to switch to single view and see what is happening live at the site.



Click a flashing camera icon to display the corresponding video camera in single view.

Click this button to switch to Map Edit mode.

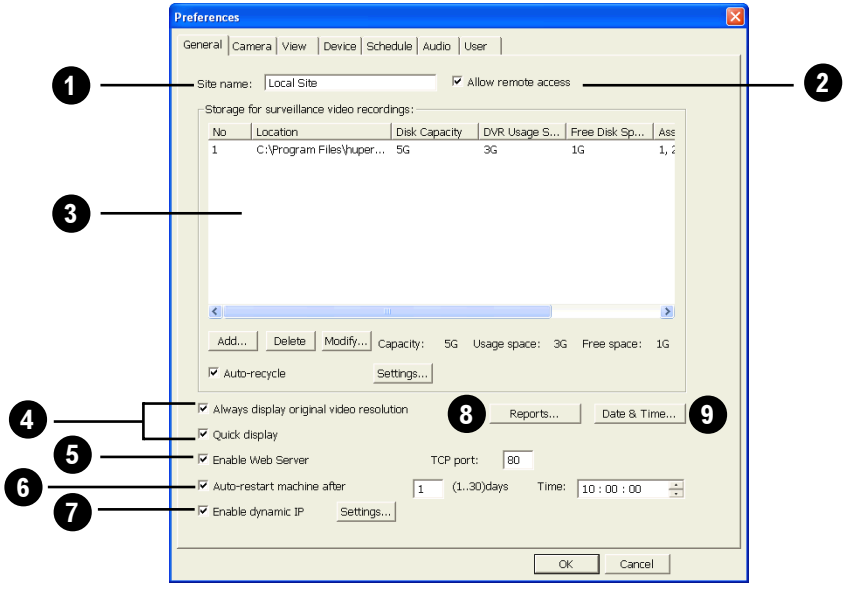
Configuring the Site Server

Click on the Site Server program to open the Preferences dialog box and choose which video cameras and sensors to monitor, enable/disable output devices (such as alarms), and set up Site Server to perform motion detection, digital video recording, scheduled surveillance, and other tasks.

The suceeding sections explain how to configure settings in the Preferences dialog box.

General settings (General tab)

Click the **General tab** in the Preferences dialog box to configure the following settings:



1 Site name

Type in a name for identifying the monitored site (for instance, the location name).

2 Allow remote access

Select this option if you want to enable other users to remotely monitor the site from a Internet, Intranet or direct modem connection.

3 Storage for surveillance video recordings

Allocate disk drives and folders for saving digitally recorded videos.

4 Display options

These options determine how video will be displayed on the monitor screen. (See page 28 for more details on these options.)

5 Enable Web Server

Select this option to configure Site Server as a Web server. When acting as a Web server, Site Server will allow remote access to its live video cameras. Remote users can launch Microsoft Internet Explorer and type in the IP address of site server to

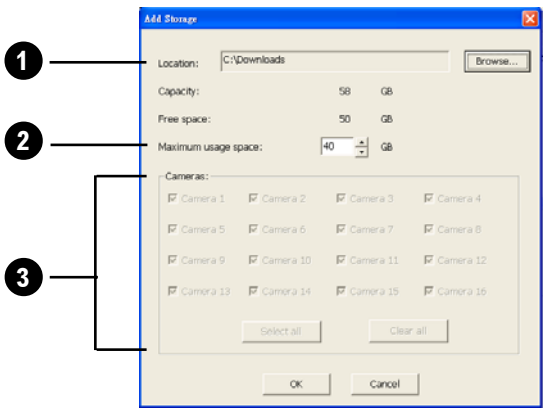
download four split screens web page to watch camera video.

When the "**Web Server**" option is enabled, also specify the TCP "**Port**" to be used. The specified TCP port must not be used by other applications

❻ **Restart Computer at a Specific Time**	Select this option to restart the Site Server computer after a specified number of days at specify the time, accurate in minute, to restart computer.
❼ **Enable dynamic IP**	Select this option if the Site Server uses a dynamic IP address instead of a static IP address when connecting to the Internet. Set the dynamic IP options by clicking **Settings**. (See page 30 for more details.)
❽ **Reports**	Generate and e-mail reports about detected events periodically - in a daily, weekly, or monthly basis. (See page 29 for more details.)
❾ **Date & Time**	Specify the current date and time.

Allocating disk storage

To digitally record live video, disk storage needs to be allocated for saving the recordings. Add multiple hard disks to use as storage, and assign each hard disk to save recordings from selected cameras. Click the **Add** button in the **General** tab to assign disk storages.



1 Location

Specify the folder location to use for saving recordings. To choose a folder, click **Browse**.

Note: A root folder cannot be used to save recordings. Please create a subfolder inside the root folder.

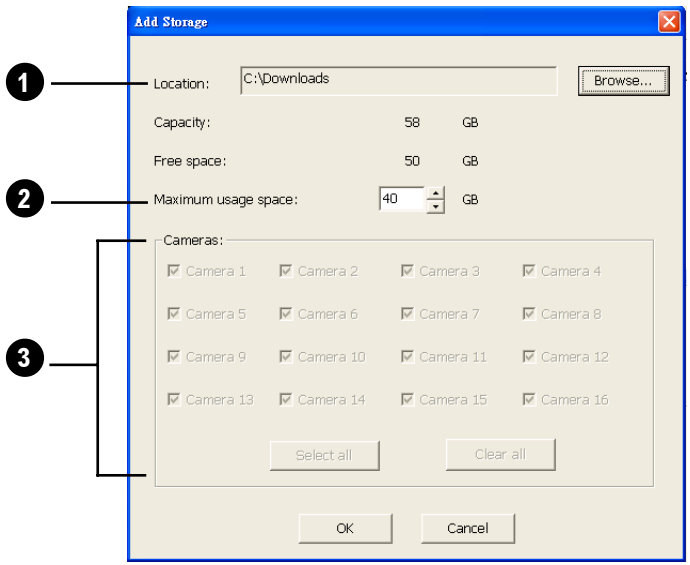
2 Maximum usage space

Specify the amount of disk space to allocate to the selected folder. If you add a folder that is not in the storage list and it contains previous video recordings, the default maximum usage space is the total file size of the video recordings inside the selected folder .

3 Cameras

Select the checkboxes of the cameras whose recordings you want to save to the selected folder. Click the **Select all** button to select all checkboxes. Click the **Clear all** button to deselect all checkboxes first before selecting the desired checkboxes.

Details of the allocated disk space, remaining disk space, and the specific cameras assigned to each folder are displayed in the "**Storage for surveillance video recordings**" list in the **General** tab. To change the assignments of a folder, click on its item number, then click **Modify** and make your changes.



1 Location

The folder location cannot be changed. (The only way to change the folder is to delete it and add a new folder.)

2 Maximum usage space

The allocated disk space can be increased/decreased.

3 **Cameras** — Camera assignments can be changed by selecting/deselecting checkboxes.

Managing disk storage the smart way

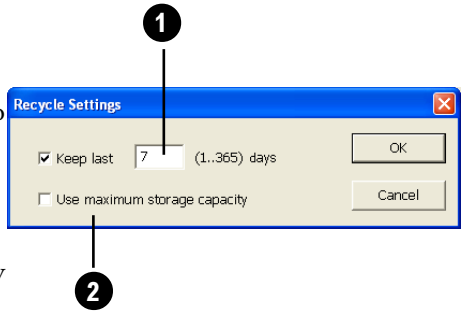
Smart file allocation and auto-recycle enable efficient management of disk storage.

Smart file allocation

To avoid disk fragmentation, **Smart file allocation** enables Site Server to manage disk storage space intuitively when storing and purging recorded data.

Auto-recycle

Allocate as much disk space as necessary for saving digital recordings, but take note that video files are large in size and may eat up disk space fast. When the "**Auto-recycle**" option is selected, Site Server deletes old recordings and frees up disk space for reuse. Click the **Settings** button to open the **Recycle Settings dialog box** and specify how to recycle used disk space.



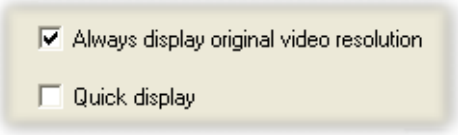
1 **Keep last __ days** — Specify how many days of recordings to retain before deleting old video records. It can be from 1 to 365 days.

2 **Use maximum storage capacity** — Select this option to automatically recycle disk storage when there is no more free space in the assigned storages for saving new recordings.

A single recycling instance can free up your storage space to record approximately 6 more hours of video.

Configuring the video display

The following two options in the **General** tab determine how live and recorded videos are displayed on the monitor screen.



Always display original video resolution

In some split screen layouts, videos may not appear in their original video dimensions and may be scaled to fit into the split screens. Scaling is handled generally by the VGA display card's hardware acceleration feature. If the VGA card does not support scaling, Windows resizes the video size through software scaling.

However, software scaling uses more CPU power and is slower as compared to hardware scaling. To speed up the display of video images using VGA cards that don't have scaling capabilities, disable scaling by selecting the "**Always display original video resolution**" option. This is how Site Server displays video when this option is selected:

- When displaying a single split screen in full-screen view, video screen resolution will be changed to 640x480.
- When displaying 4 split screens in full-screen view, the whole screen resolution will be changed to 640x480 and each of the four split screens will be displayed in 320x240 resolution.
- When displaying 9 split screens in full-screen view, keep the video screen resolution in 1024x768 and display each camera window in 320x240. This keeps the 9 split screens close to each other and displays black borders between them. The 9 split screens occupy a 960x720 space at the center of the display screen.

Quick display

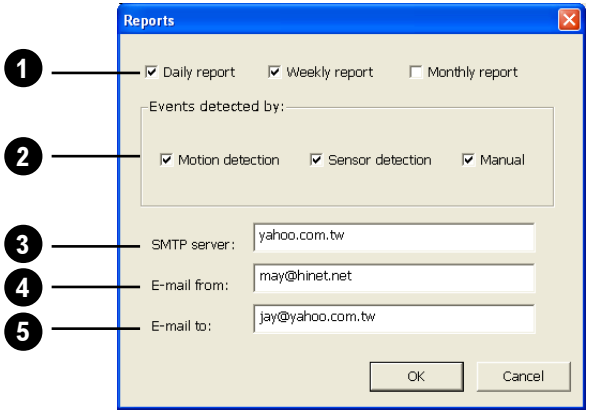
Select this option to render YUV data to the VGA display card. Clear this option to convert first YUV data to RGB, and then render to the VGA display card.

Setting the date and time

If the system's date and time are not configured correctly, click the **Date & Time** button to make proper adjustments. This is crucial for Site Server to accurately record the date and time of detected events.

Scheduling reports

Site Server can send by e-mail periodic reports that show information about detected events. Click the **Report** button to specify what types of events to include in the reports and to whom the reports will be sent.

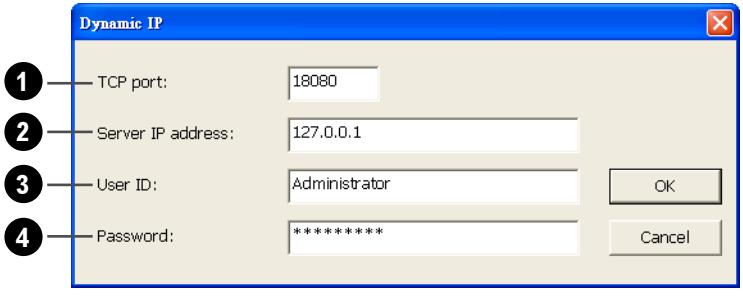


❶ **Daily/Weekly/Monthly report**	Choose whether to send reports on a daily, weekly, or monthly basis.
❷ **Events detected by**	Select which events to include in the reports (that is, events which have been detected by Motion detection, Sensor detection, Manual trigger, or all of the above).
❸ **SMTP server**	Specify the name of the SMTP server that will handle e-mail deliverance.
❹ **E-mail from**	Specify the sender's e-mail address.
❺ **E-mail to**	Specify the recipient's e-mail address. If there are multiple recipients, separate each of their e-mail addresses with a semicolon.

Configuring dynamic IP settings

If your computer connects to the internet using a dynamic IP adress and you want other people to be able to locate your computer over the internet, you need to configure the dynamic IP settings. Click **Setting** to set the dynamic IP options.

The **Enable dynamic IP** option only needs to be selected and configured when you intend to have people access your computer from a remote location. If you do not want other people to be able to locate your computer over the Web, clear this option.



1	**TCP Port**	Specify the port of the dynamic Web server.
2	**Server IP address**	Specify the IP address of the dynamic Web server.
3	**User ID**	Specify a user ID for the person you will give authorization to have access to your computer.
4	**Password**	Specify a password for the user ID.

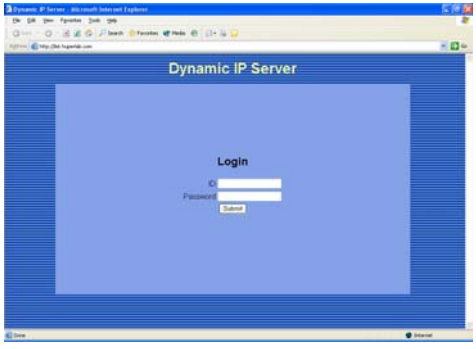
It is strongly recommended that a user ID and password be defined when the **Enable Dynamic IP** option is selected. By specifying a user ID and password, your computer will be more secure and only personnel you have given authorization to will be able to access your computer.

Accessing the dynamic IP server site

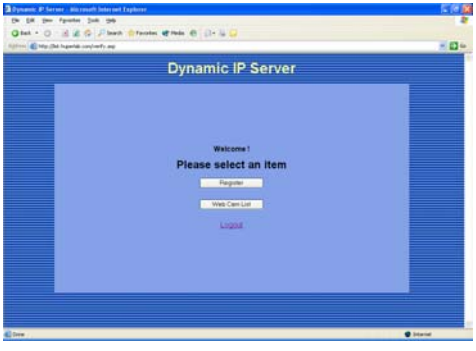
After configuring the dynamic IP settings, the Site Server automatically registers the IP address, user ID and password.

To view Web cameras in the dynamic IP server site:

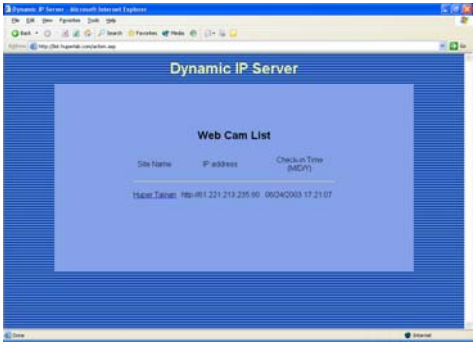
1. Launch your Web browser then enter the dynamic IP server address in the URL field.
2. Enter the user ID and password. If no user ID and password are specified in the dynamic IP settings, click the "**Submit**" button.



3. Click the button that opens the page where the available Web cameras that can be viewed are listed. For example, click the "**Web Cam List**" button.



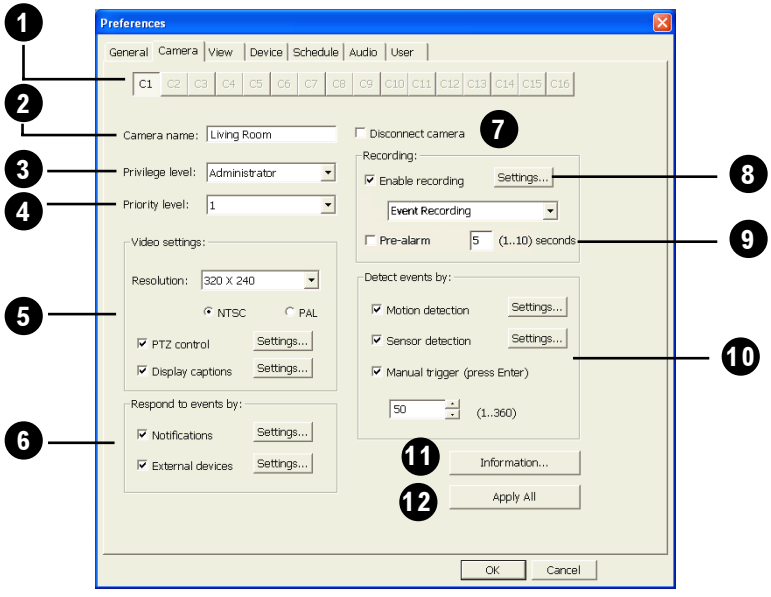
4. Click a Web camera from the list to view the live feed from that camera.



Video camera settings (Camera tab)

Click the **Camera** tab in the Preferences dialog box to configure settings for up to 16 video cameras. Each camera is identified by a camera number (C1 to C16). Click each camera button to set up options for a video camera.

The following are the settings that can be configured for each camera:

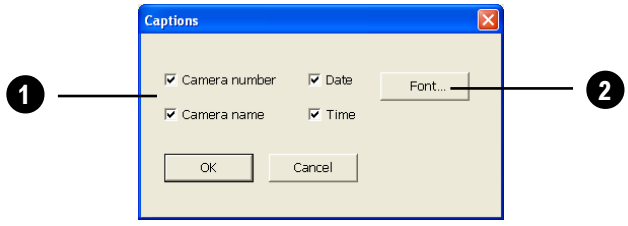


1	**Camera buttons**	Each button corresponds to a video camera. Click a button to configure settings for a video camera.
2	**Camera name**	Type in a name for identifying a video camera (for instance, the location where the camera is installed).
3	**Privilege level**	Assign each camera with a privilege level to restrict unauthorized users from viewing the camera. (Refer to the section "User Accounts (User tab)" on page 48 for details on the different privilege levels.)
4	**Priority level**	The prioritylevel determines which video camera will be given the highest priority and displayed in single view when multiple simultaneous events have been detected from several cameras. The range for priority level is from 1 to 16, level 1 being the highest priority.

5	**Video settings**	Choose the desired video resolution (320 x 240, 640 x 240, 640 x 480, 720x480 or 720x240) and video standard (NTSC or PAL) to display live video. If the camera is a PTZ camera, specify how it will be controlled. Also determine whether or not to display captions on the camera window.
6	**Respond to events by**	Set up how Site Server will react to detected or manually triggered events. (See page 36 for details.)
7	**Disconnect camera**	Select this option to disable the connection to a camera and stop all tasks. Clear this option to re-establish camera connection.
8	**Enable recording**	Select this option to enable digital recording. (See page 41 for more details.)
9	**Pre-alarm Video Recording**	Pre-alarm video recording starts to record video before the event occurred. The start recording time can be before the event trigger time from 1 second to 10 seconds. The pre-alarm option is only available in the event recording mode. How to enable the pre-alarm recording 1. Go to the Preference/Camera page, select the camera you want to enable the pre-alarm recording. 2. Check the Enable recording option. 3. Select the Event Recording mode. 4. Check the Pre-alarm option and specify the duration between 1 second and 10 seconds. 5. When DVR detects an event and start to record, the video in the pre-alarm duration is added into the event record also.
10	**Detect events by**	Specify the methods to use for detecting events. There are three methods: sensor detection, motion detection, or manual trigger. (See page 42 for more details.)
11	**Information**	When you are done configuring settings for cameras, click the **Information** button to check your settings first before saving them.
12	**Apply All**	Click this button to use the same camera settings (except

Configuring caption display settings

To display information (such as camera name, number, etc.) on the split screens, select the "**Display captions**" option and click **Settings**. Then in the **Captions dialog box**, choose the information to be displayed.



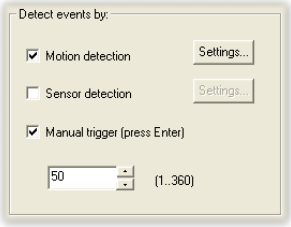
1	**Caption checkboxes**	Select the checkboxes of the information that needs to be displayed on split screens.
2	**Font**	Click this button to select a font to use for displaying captions.

Note: The selected font will be displayed in the actual font size only when the video dimension is set at 640x480. If, for instance, 32-point is the selected font size and the video dimension is set at 320x240, font will be scaled down to 16-point size.

When the "**Display captions**" option is enabled, a "**REC**" indicator will also be displayed on the split screens when the respective cameras are in the progress of recording video.

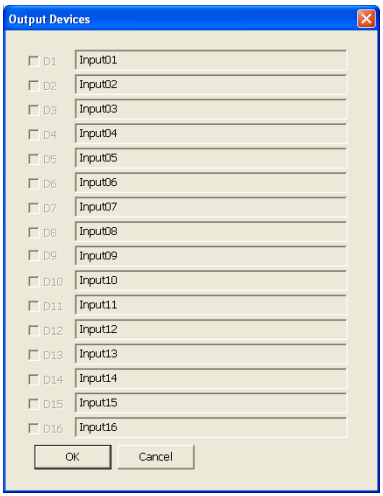
Specifying the methods for detecting events

Select the checkboxes of the methods to use for detecting events. There are three methods:



Motion detection

This allows video cameras to detect the presence of movement from a sequence of consecutive video frames. You can adjust the sensitivity level, noise tolerance, event interval, and ignored event duration. (See page 47 for more details.)



Sensor detection

This allows sensors in the site to monitor and detect suspicious activities. Click the **Setting** button to choose which sensors in the site will be used for detection.

Note: The sensor names here cannot be modified.

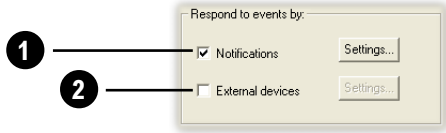
Manual trigger

This allows you to manually monitor activities in the site. You can press "**Enter**" to log and/or digitally record ongoing activities.

Note: Manual event duration is predefined in seconds.

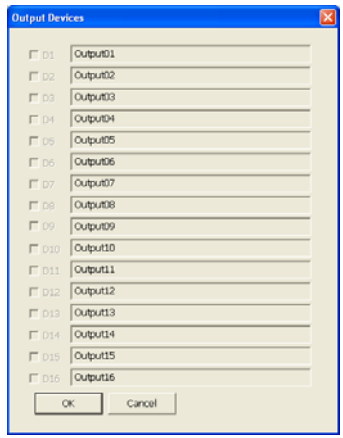
Responding to events

Site Server can be configured to automatically respond to detected or manually triggered events. There are 2 options:



1 Notifications Select this option to enable Site Server to send out notifications when events have been auto-detected or manually triggered. Click the **Settings** button to select the types of notifications to send. (See the next section, "Types of notifications" for more details.)

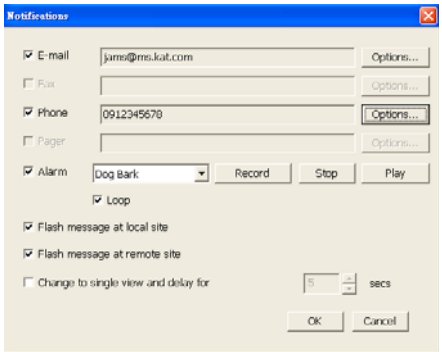
2 External devices Select this option to enable Site Server to send out signals to external devices when events have been auto-detected or manually triggered. Click the **Settings** button to choose which external devices to send signals to.



Note: The external device names here cannot be modified.

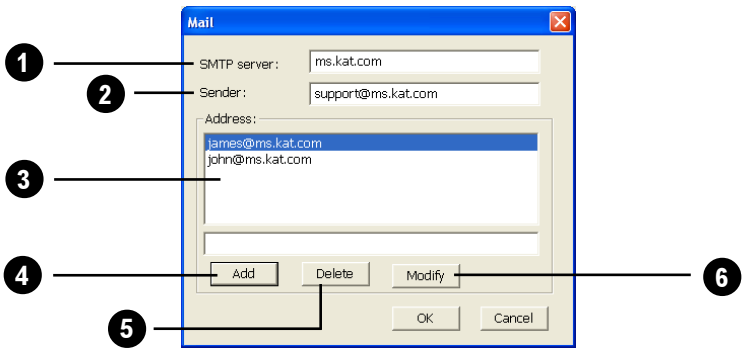
Types of notifications

In the Notification dialog box, choose from the different types of notifications by selecting some or all of the checkboxes. For each selected type of notification, click its corresponding **Options** button to configure settings.



Email

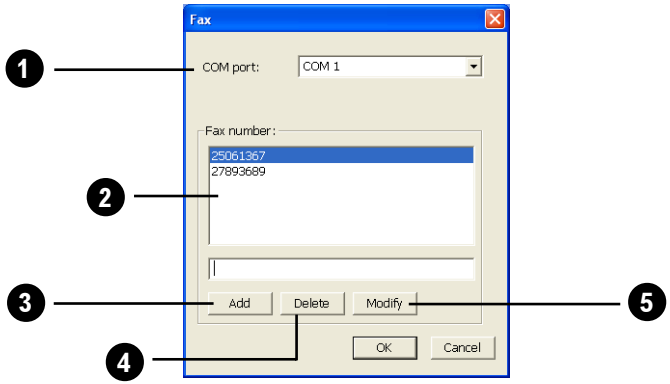
Sends out an e-mail message. Configure the following settings to enable notification e-mails to be sent:



1	**SMTP server**	Specify the name of an existing mail server that supports the SMTP protocol.
2	**Sender**	Specify the sender's e-mail address.
3	**Address**	List the e-mail addresses that will receive the event notification. Click on an e-mail address to select it for deletion or modification.
4	**Add**	Enter the e-mail address in the blank field then click this button to add the e-mail address to the Address list.
5	**Delete**	Click this button to remove the selected e-mail address from the address list.
6	**Modify**	To modify an e-mail address, first select that e-mail address in the address list, then make the changes in the edit box at the bottom. Click the **Modify** button to update the e-mail address.

Fax

Sends out a fax message. Configure the following settings to send fax:

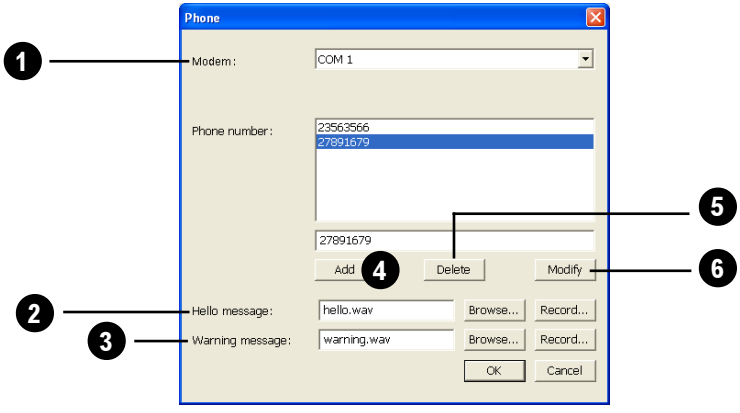


1	**Com port**	Select one available Com port that connects to a modem device.
2	**Fax number**	List the fax numbers that will receive the event notification. Click on a fax number to select it for deletion or modification.
3	**Add**	Enter the fax number in the blank field then click this button to add the fax number to the Fax number list.
4	**Delete**	Click this button to remove the selected fax number from the fax number list.
5	**Modify**	To modify a fax number, first select that number in the fax number list, then make the changes in the edit box at the bottom. Click the **Modify** button to update the fax number.

Phone

Notifies by phone and sends out a voice message. Configure the following settings to be able to dial out and send voice messages.

1. **Modem** — Select an available modem driver that has the voice support.
2. **Hello message** — Select a wave file or click the **Record** button to record a hello message.
3. **Warning message** — Select a wave file or click the **Record** button to record a warning message.



4. **Add** — Enter the phone number in the blank field then click this button to add the number to the Phone number list.
5. **Delete** — Click this button to remove the selected telephone number from the telephone number list.
6. **Modify** — To modify a telephone number, first select that number in the telephone number list, then make the changes in the edit box at the bottom. Click the **Modify** button to update the telephone number.

You will hear the Hello message first when they pick up the phone. To skip the Hello message and go to the Warning message, press any key on the phone.

Flash message at local site

An "Event" indicator will be displayed if and only if the "**Flash message at local site**" checkbox is selected in the **Notification dialog box**. A blinking "Event" indicator will be displayed on the bottom left corner of a split screen on Site Server when an event is detected.

Flash message at remote site

Displays an "Event" indicator on the Remote Viewer interface of users who are remotely viewing your video cameras from a Web browser. A blinking "Event" indicator will be displayed on the top, central portion of a split screen on the Remote Viewer when an event is detected.

Change to single view and delay for __ seconds

Switches the Site Server screen to single view to display live the camera from which an event has been detected. Specify the duration (in number of seconds) for retaining the display in single view (after the event occurs) before changing Site Server back to split-screen view.

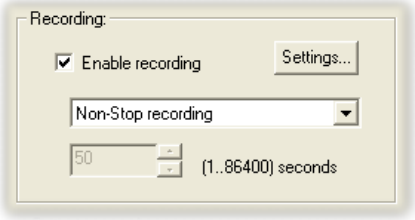
Alarm

Plays an alarm sound. From the drop-down list, select from the available sounds, or select "**Custom**" and then click **Record** to record your own alarm sound. To listen to a preview of your recorded sound, click **Play**. You can also select the "**Loop**" option to sound the alarm until the event terminates.

Note: Each camera can have its own customized alarm sound.

Digital recording

Select the "**Enable recording**" option to enable digital video recording. Choose the desired recording method from the drop-down list.

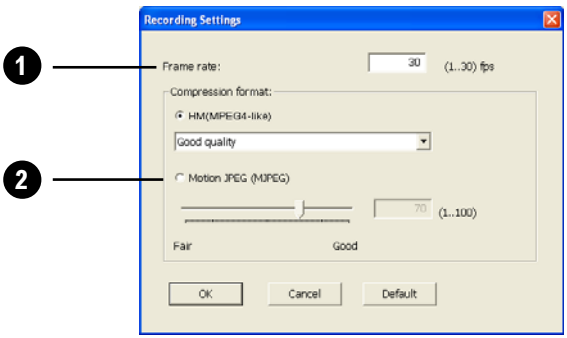


There are 4 recording methods:

Non-stop recording	Allows round-the-clock digital recording.
Non-stop smart recording	Records live events in full recording speed. If no event has been detected, by default, the recording frame rate will be 1 frame per second. If there is an event detected, the recording frame rate specified in the **Setting dialog box** will be applied.
Event recording	Records detected events.
Time-lapse recording	Records video with specified frame rate below 1 fps. The range can be from 1 frame per second to 1 frame per day (86,400 seconds).

Specifying recording settings

Click the **Settings** button to define recording settings.



1 Frame rate

This is the number of images recorded per second, that is, frames per second (fps). A low frame rate makes the video appear "choppy". For smoother video playback, choose at least 15 fps. Higher frame rate requires more storage space.

2 Compression format

This determines the recorded video quality and the resulting video file size. There are 2 compression formats to choose from:

HM

This is proprietary format for compressing video data. It has three levels of video quality you can choose from.

Fast quality is the most efficient but has a large file size. **Best Quality** offers the best quality video but also the largest files. The default value, **Good Quality**, gives you acceptable video quality and the smallest file size.

Motion-JPEG

This records video in Motion-JPEG format. The video quality is adjustable, ranging from value 1 to 100. The higher the value, the better is the video quality.

Fine tuning motion detection settings

If you selected the "**Motion detection**" option in the **Camera** tab to enable motion detection, click the **Setting** button that appears next to this option to display the **Motion Detection Settings dialog box** and fine tune settings for detecting motion. Basically, Site Server detects motion by comparing consecutive frames to see if there is any change between the frames.

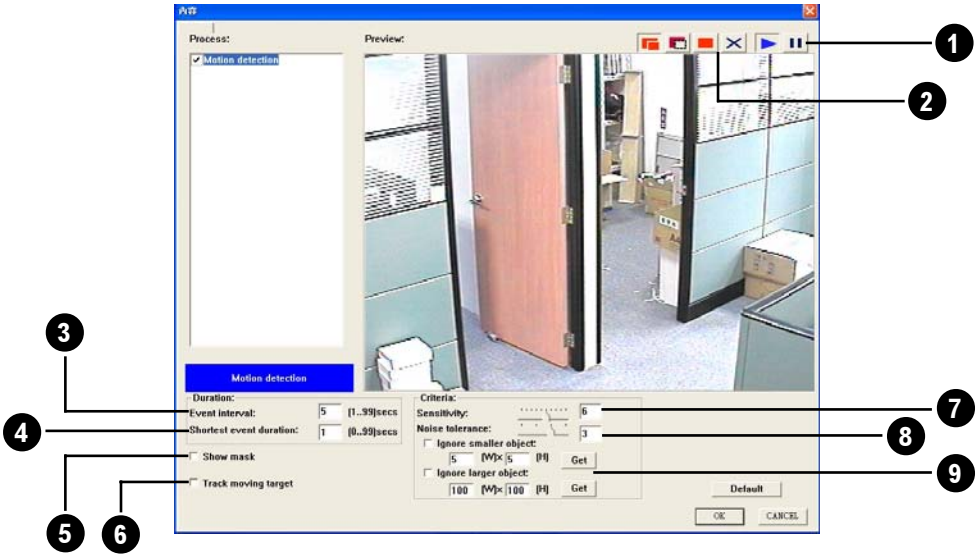
If there are areas within a camera's view which do not need to be monitored and detected for the presence of motion, these insignificant areas can be masked out. The following options and controls in the **Motion Detection Settings dialog box** can be adjusted to mask out areas and exclude them from motion detection.

1 

By default, the "**Play**" button is pressed and live video is displayed at a frame rate of one frame per second on the preview window. You can click the "**Pause**" button to freeze the video.

2 

Use these buttons to select or remove selected areas.



3	**Event interval**	Specify the minimum interval between events.
4	**Shortest event duration**	Set the minimum time duration for each event. If the duration of a detected event is shorter than the defined shortest event duration, it will not be treated as an event.
5	**Sensitivity**	Set the level of sensitivity to motion. Low sensitivity means that minimal motion will be ignored, and that only dramatic changes in movement will be detected. However, this may result in loss of event. High sensitivity means that even the smallest movement will be detected, but it could be a false event. Careful testing and fine tuning of the sensitivity setting is recommended.
6	**Noise tolerance**	Set the tolerance level to noise.
7	**Track moving target**	Select this option to easily identify objects in motion. A bounding box will appear on moving objects.
8	**Show mask**	Select this option to visually mask out the major areas where motion will be ignored.
9	**Size Filtering in Motion Detection**	Detects moving objects that match the specified size criteria to reduce false alarm activations. You can click the Get button, then hold down the left mouse button and drag to draw a rectangle for measuring the object size.

Masking out an area

To mask out an area and ignore motion in that area:

1. On the preview window, you will see live video from the currently selected video camera. To select an area, click the "+" button, and then drag your mouse over the area that will be excluded from motion detection.
2. To add or remove areas, use these buttons:

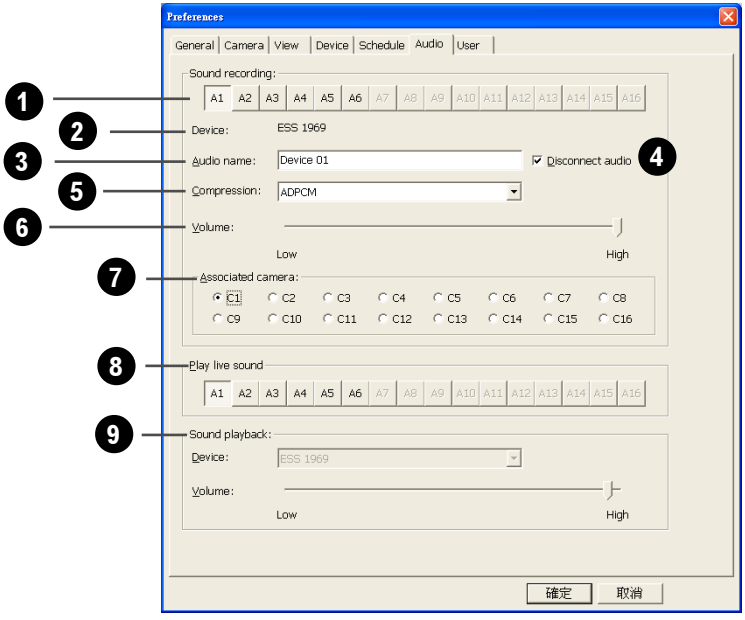
	Allows you to add an area. Click this button and then drag your mouse over the desired area.
	Reduces parts from a marked area. Drag your mouse over the part you want to remove.
	Selects the entire camera view as the area to be ignored.
	Removes all selections.

3. Adjust the other options in the dialog box to fine tune settings for the marked areas.
4. To visually mask out the marked areas where motion will be ignored, select the "**Show mask**" option.

Audio capturing device settings (Audio tab)

Click the **Audio** tab in the Preferences dialog box to configure the settings for up to 16 audio devices. Please be sure to associate video cameras and audio input devices according to their correct practical deployment.

1 **Audio buttons**	Each button corresponds to an audio input device. Click a button to configure settings for an audio recording device.
2 **Device**	Displays the audio input device name.
3 **Audio name**	Type in a name for identifying the audio recording from the audio input device (for instance, the location where the audio recording device is installed).
4 **Disconnect audio**	Select to stop recording audio from this particular audio input device. Clear to reconnect to the audio input device.



5 Compression

This determines the recorded audio quality and the resulting file size. Currently, only the Microsoft® ADPCM compression scheme is available.

6 Volume

Determines the record volume level of the audio input device. Use the slider to adjust the volume level.

7 Associated camera

Each radio button corresponds to a video camera. Select a video camera you want to associate with the audio input device (A1 to A16). You can only associate one camera per audio recording device.

8 Play live sound

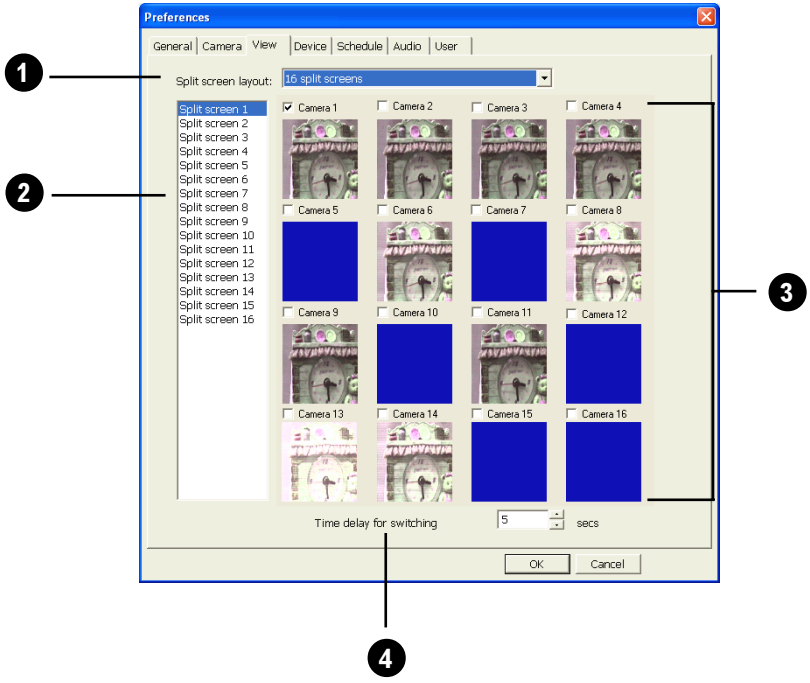
Each button corresponds to an audio input device. Click a button to hear the audio when viewing the camera associated with the audio recording device.

9 Sound playback

Displays the audio device used by your computer to play back audio from the audio recording device. You can also adjust the playback device's volume here. If you have more than one audio device installed, select the device you want to use from the drop-down menu.

Split screen settings (View tab)

Click the **View** tab in the Preferences dialog box to assign several video cameras per split screen. The assigned video cameras will take turns, and each camera will be displayed for a specified amount of time.



1 Split screen

Choose a split screen layout on which to assign video cameras for display. Select any of Site Server's preset layouts: **Single View**, **4 Split Screens**, **9 Split Screens**, or **16 Split Screens**.

2 Split screens list

This lists the split screens that are displayed on a given screen layout.

3 Camera assignments

When you highlight a split screen number on the list at the left, the right side of the dialog box shows the video cameras that are currently assigned to that split screen. Assigned video cameras are indicated by the selected checkboxes.

Select/clear checkboxes to change the assignment of video cameras.

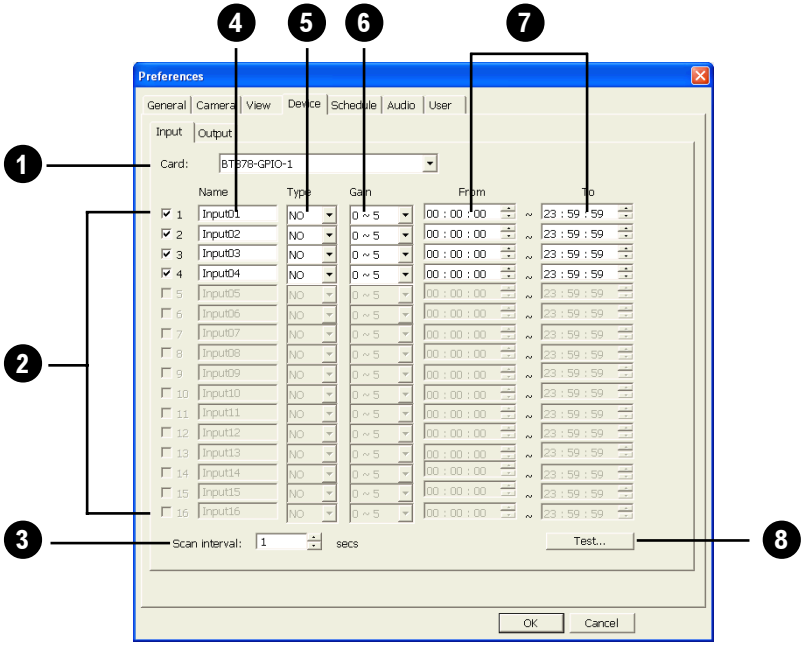
4 **Time delay for switching cameras** Per split screen, specify the time duration for displaying each of the assigned video cameras. The duration can be set from 5 seconds up to to 360 seconds.

Input/Output device settings (Device tab)

Click the **Device** tab in the Preferences dialog box to select an I/O card and set up the connections to security devices such as sensors and alarms. Under the **Device** tab, click the "**Input**" tab to configure sensor devices, and click the "**Output**" tab to enable devices to receive signals from Site Server.

Configuring input devices (Input tab)

In the "**Input**" tab, at most 16 sensor devices can be enabled and customized. The following describes the settings that can be customized.

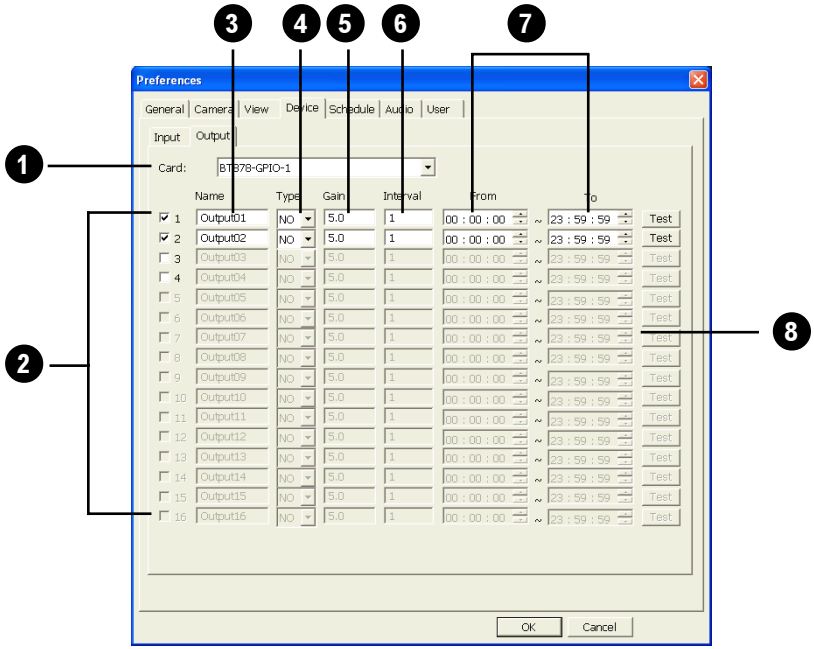


❶ **Card**	Select an I/O card from the drop-down list. Different I/O cards have different number of analog input ports.
❷ **Enable/Disable checkboxes**	Select the checkboxes of sensors whose analog input will be monitored. Or, clear the checkboxes to disable connections to the sensors.
❸ **Scan interval**	Specify the interval (in seconds) for scanning input ports periodically.
❹ **Name**	Specify the sensor name (for instance, the location where the sensor is installed).
❺ **Type**	Select an input type: NC (Normal Close) or NO (Normal Open).
❻ **Gain**	Specify the sensor's input voltage range.
❼ **From/To**	Specify the time period for monitoring the sensor's analog input.
❽ **Test**	Click this button to open the "Sensor test" dialog box to view the actual analog input voltage value. The **Sensor test dialog box** allows you to check the connection status of input devices. The sensor input type and the current voltage value are displayed. You can try each input devices and inspect the voltage to check if the connections between input devices and Site Server are well connected.

Configuring output devices (Output tab)

In the "**Output**" tab, at most 16 output devices can be enabled and customized. The following describes the settings that can be customized.

❶ **Card**	Select an I/O card from the drop-down list. Different I/O cards have different number of analog output ports.
❷ **Enable/Disable checkboxes**	Select the checkboxes of devices to connect to, or clear the checkboxes to disable connections to the devices.



3	**Name**	Specify the output device name (for instance, the location where the output device is installed).
4	**Type**	Select an output type: NC (Normal Close) or NO (Normal Open).
5	**Gain**	Specify the output voltage.
6	**Interval**	Specify the interval for sending the specified output voltage to the device.
7	**From/To**	Specify the valid time period for activating the output device.
8	**Test**	Click this button to output the specified voltage to NO-type devices and output 0 voltage to NC-type devices during the specified interval.

Timed surveillance settings (Schedule tab)

Click the **Schedule** tab in the Preferences dialog box to set up a surveillance schedule for each video camera. Timed surveillance can be scheduled in a daily, weekly, or monthly basis.

By Day

To set up a daily surveillance schedule for each video camera:

1. Choose a video camera by clicking the number button that corresponds to that camera.
2. Select the "**Enable scheduling**" option.
3. From the "**Type**" drop-down list, select "**By Day**".
4. To add a new schedule, click "**Add**".
5. In the dialog box that opens, set a time schedule for monitoring the camera and select the checkboxes of tasks to be performed within the scheduled time. (See next page for more details.)
6. Repeat steps 1 to 5 to add more schedules.
7. All created time schedules will be added to the schedule list in the **Schedule** tab.

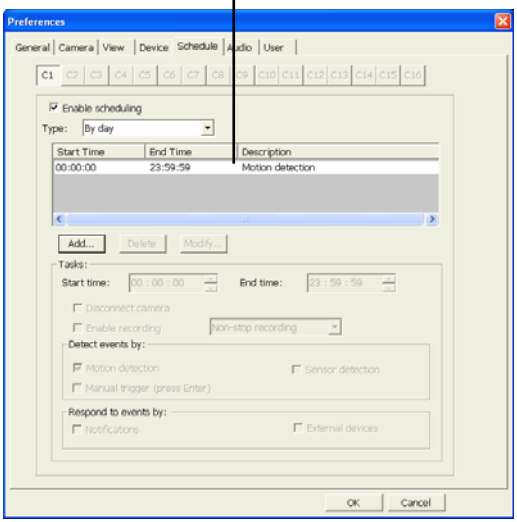
   To select a schedule and view details, click its "**Start Time**" entry.

   To delete a schedule, select it and click the **Delete** button.

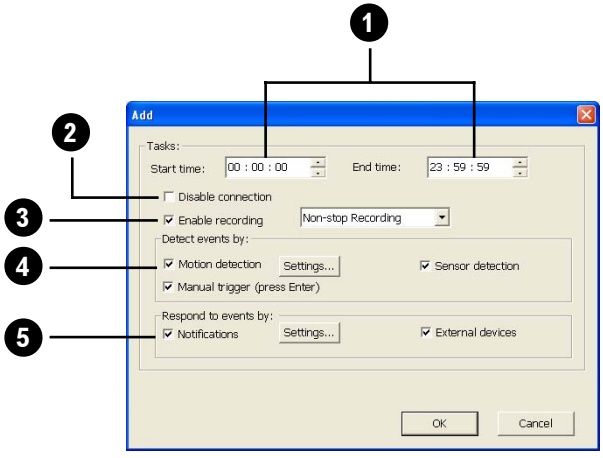
   To modify a schedule, select it and then click the **Modify** button.
8. Repeat steps 1 to 7 to create daily schedules for other video cameras.

   Note: Time segments that are not listed in the **Schedule list** will use the options set in the **Preference - Camera Tab**.

Schedule list



Daily surveillance settings

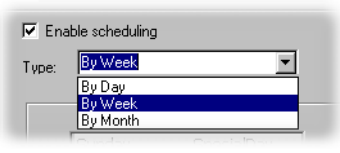


1	**Start / End time**	Specify what time to monitor and detect events.
2	**Disable connection**	Select this option to disable connection to the camera during the time period specified by the "**Start / End**" time settings.
3	**Enable recording**	Select this option to enable digital recording during the scheduled time period. Choose a recording method from the drop-down list. (See page 41 for more details on digital recording.)
4	**Detect events by**	Select the detection methods: motion detection, sensor detection, or Manual trigger. (See page 42 for details on detection methods.)
5	**Respond to events by**	Choose the methods for responding to detected or manually triggered events. (See page 36 for more details.)

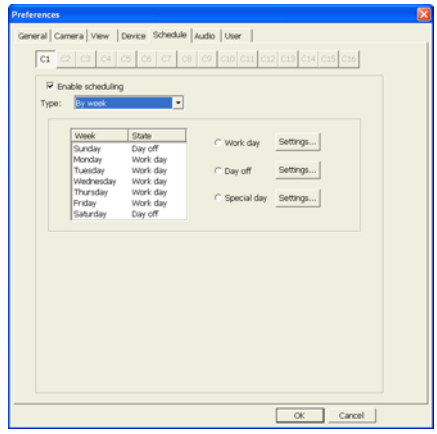
By Week

To make a weekly surveillance schedule for each video camera:

1. Choose a video camera by clicking the number button that corresponds to that camera.
2. Select the "**Enable scheduling**" option.
3. From the "**Type**" drop-down list, select "**By Week**".



4. By default, the weekday list shows Saturday and Sunday as the days off and the other days as workdays. You may change the type of day for the days listed. For instance, to change Sunday to be a special day, click "**Sunday**" and then select the "**Special day**" option.



5. You can create different surveillance schedules for weekdays, offdays, and special days. Click the "**Settings**" button beside each of the three options to set the surveillance schedule for each.

   The procedure for setting the weekly surveillance schedule is just the same as that for setting the daily surveillance. (See page 50 for details.)

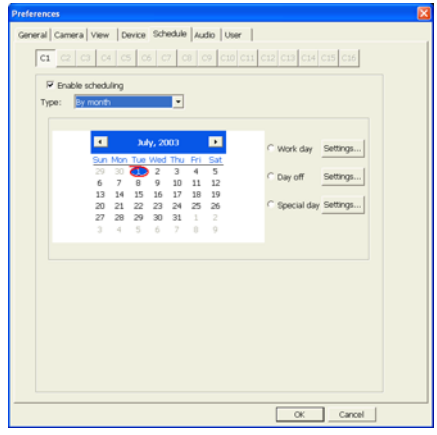
6. Repeat steps 1 to 5 to create weekly schedules for other video cameras.

By Month

To make a monthly surveillance schedule for each video camera:

1. Choose a video camera by clicking the number button that corresponds to that camera.
2. Select the "**Enable scheduling**" option.
3. From the "**Type**" drop-down list, select "**By Month**".
4. The calendar shows the current month, with the current day highlighted. Also, by default, Saturday and Sunday are defined as the days off and the other days as workdays.

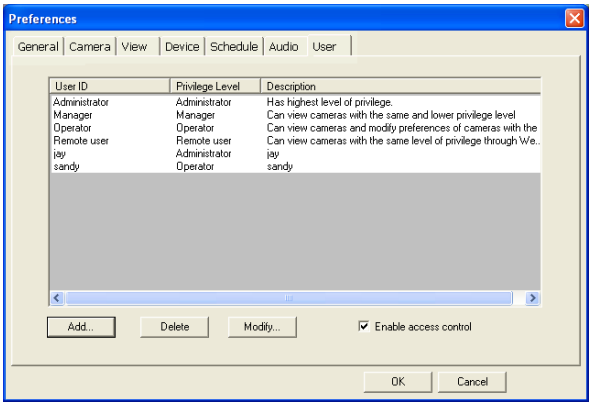
   You may change the type of day for any day of the month. Just click on a day in the month calendar, then click the type of day ("**Weekday**", "**Day off**", or "**Special day**") at the right.



5. To change the type of day in other months, move to the other months by clicking the arrow buttons on top of the calendar. Do the process mentioned in step 4 to change the type of day for any day of the month.
6. The procedure for seting the surveillance schedule for days of a given month is just the same as that for setting the daily surveillance. (See page 50 for details.)

User accounts (User tab)

Click the **User** tab in the Preferences dialog box to create user accounts with varying privileges. Site Server categorizes users into four levels of privileges as described below.

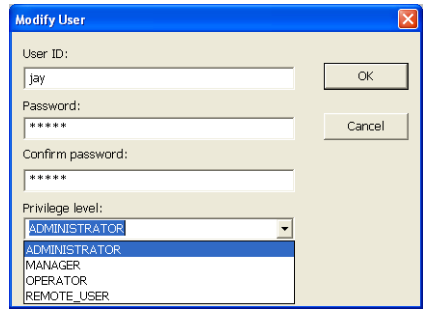


User	Privilege
Administrator	Highest level of privilege. A user who is assigned with an "**Administrator**" privilege will be able to view all cameras, customize preference options, and add/delete/modify user accounts.
Manager	A user who is assigned with a "**Manager**" privilege can view cameras that were assigned with "Manager", "Operator" or "Remote user" privilege, but does not have rights to customize preference options.
Operator	A user who is assigned an operator privilege: • Can view cameras that were assigned with "**Operator**" or "**Remote user**" privilege. • Does not have access rights to the **User** tab in the Preferences dialog box. • Does not have rights to modify preference settings of cameras that were assigned with "**Manager**" or "**Administrator**" privilege.
Remote user	• Can view cameras that were assigned with "Remote user" privilege. • Does not have rights to modify preference settings.

To create a new user account:

1. In the **User** tab, click "**Add**".

   The Add User dialog box then appears.
2. Enter a "**User ID**", and enter the "**Password**" twice in the provided text boxes.
3. Select a "**Privilege level**" to assign to the user account.
4. Enter a textual "**Description**" about the user account.



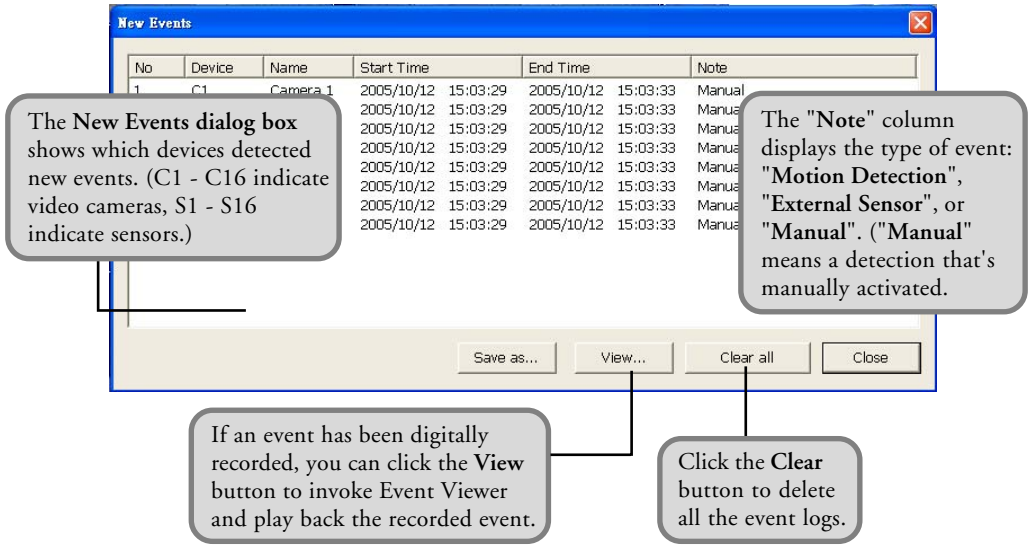
To restrict the Site Server program's access rights only to privileged users, select the "**Enable access control**" option. When access control is enabled, **Site Server** (as well as the other programs) will always prompt for the User ID and Password when the program is launched.

Viewing logs and disk usage information

Use the following button controls to check recorded logs of events and inspect the hard disk storage space in the server computer that runs Site Server.

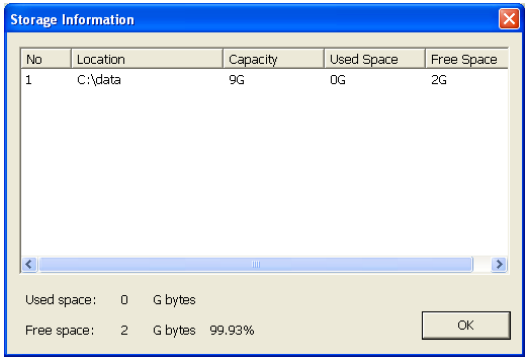
Event Log

This button shows the number of new events that have been detected. Click this button to open the **New Events dialog box** and view details of detected events.



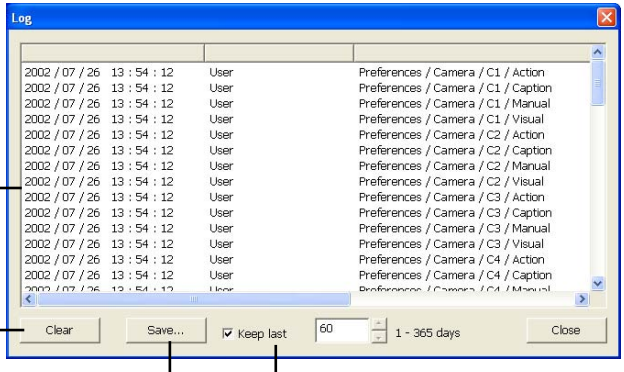
Disk Information

This button displays the amount of remaining disk space. Click this button to open the **Storage Information** dialog box and view details on disk usage.



Operation Logs

Site Server records login/logout sessions, preferences modification date and time, as well as date and time logs of connections from remote sites. To view these operation logs, first click the **About** button on the Site Server program screen. Then, in the **About dialog box**, click the **Log** button to open the **Log dialog box**.



The Log list shows the date and time, user account name, and the action performed.

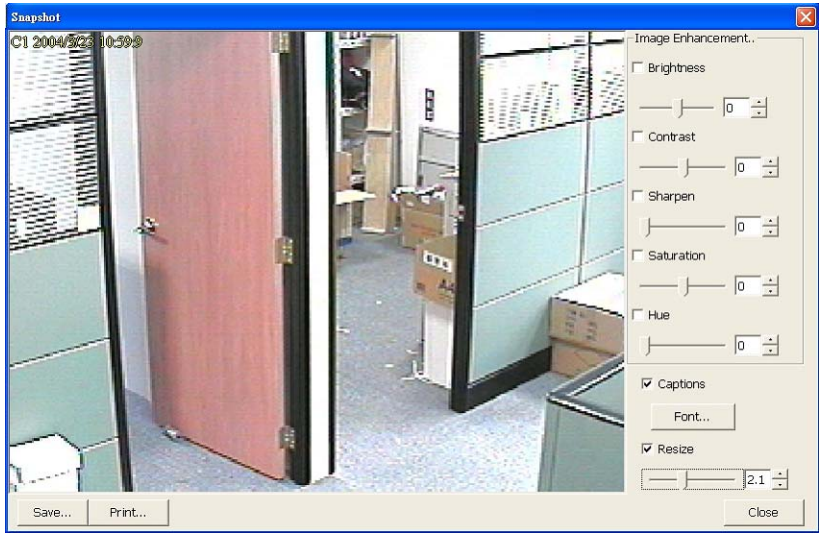
Click the **Clear** button to delete all recorded logs. Only users with "**administrator**" privileges have rights to delete operation logs.

Click the **Save** button to save operation logs as a text file.

Select this option and specify how many days of operation logs to maintain. This enables Site Server to purge old logs after the specified number of days and free up disk space.

Live Video Snapshot

When find out something abnormal or an intrusion from a camera view, right click on the camera video to take a snapshot. You then save the snapshot picture to an image file or print it out for reference. There are five image adjustments to enhance the picture quality and the digital zooming to navigate the snapshot.



How to take a snapshot:

1. Right click on a split screen to display the Snapshot popup menu. Select the Snapshot menu to open the Snapshot dialog box. The snapshot picture is the video frame that you just right clicked.
2. You can save snapshot to an image file in JPEG or BMP format, or print it out to a printer.
3. Five image adjustments are available to improve the picture quality. They are brightness, contrast, sharpness, saturation and hue.
4. Caption display is optional. You can assign the font face, size and color.
5. Digital zoom in /out the snapshot picture.

Chapter 3

Record Player

Record Player lets you retrieve and view videos that have been digitally recorded by Site Server. It lists history records by time segments or by the actual occurrence of events. At most, recordings from 16 different video cameras or 16 recorded events can be simultaneously played on the program screen.

Launching Record Player

To launch Remote Player, click on the Site Server program screen. You can also run this program from the Windows "**Start**" menu by selecting **Start - Programs - DVR 2400 - Record Player**.

Program Interface: An Overview

Basically, these are the controls that you will need to use when you retrieve history records and play back previously recorded videos:

From the "**Record type**" drop-down list, choose whether to search for video recordings by time segments or by the type of events.

Choose all or a single camera where you want to retrieve records from the "**Camera**" drop-down list.

To access a specific day's history records, specify the date and retrieve its records by using these controls.

Click the **Locate** button to open a backed-up database from which to retrieve history records.

This is the Navigation Panel.

The controls here will change when you switch to displaying history records by type of events.

Types of databases

There are two types of databases that can be loaded into Record Player and from which history records can be retrieved:

Main database

This is the default database that is opened in Record Player, and it is the video database that the Site Server program uses to save recorded surveillance video. The record storage allocated in Site Server's **Preferences dialog box: General tab** comprises the entire Main database. (See page 24 for details on allocating record storage.)

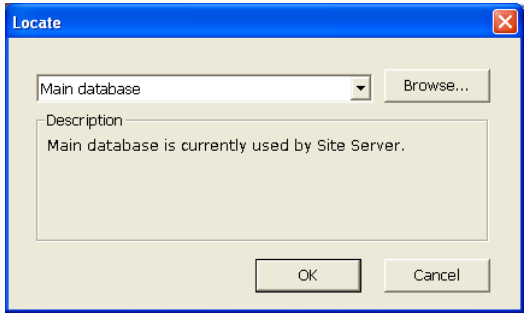
Backed-up databases

These databases contain daily/manual backup copies of recorded surveillance video. Each day's digital recordings can be backed up in a separate database using DVR 2400's **Backup Scheduler** program. (Refer to Chapter 4 for more information on Backup Scheduler.)

Loading a backed-up database

To load a backed-up database:

1. Click the button.
2. In the **Locate dialog box**, the paths of previously backed-up databases will be listed in the drop-down list. Select one of these databases, or if the desired database is not listed, click **Browse** to locate it.



3. After loading a backed-up database, you can select the "**Main database**" in the Locate dialog box to return to the Main database.

Viewing recorded video

To search for recorded surveillance videos and view them, first choose the date of recording, select the video camera, and retrieve the history records of the selected date and camera. Then, use the **Navigation Panel** to play back recorded videos.

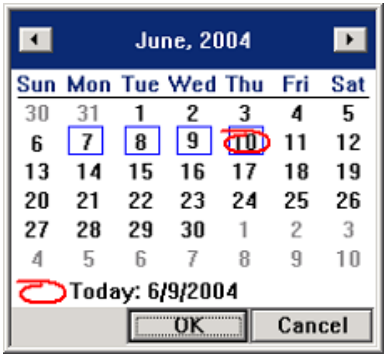
Selecting the date of recording

There are two ways of selecting the recording date:

- Enter the date of recording in the text box beneath the history record list, and click to retrieve the history records of the selected date.

Or,

- Click . The **Calendar dialog box** opens, displaying the current month.



To select a date:

1. Click the left/right arrow button to display the previous/next month.
2. Click a date on the calendar to select it.
3. Click **OK** to close the **Calendar dialog box**.
4. The history records of the selected date are automatically retrieved.
5. If a day has video recordings, the day in the calendar dialog box is marked by a blue rectangular outline.

History records of the selected date are then displayed in the **History list**. To find and play back video recordings from the history list much faster, you can refine the search by limiting the search to time segments or to specific type of events.

Retrieving records from a specific camera

To retrieve records from a specific camera:

1. Choose the camera number where you want to retrieve records from the "**Camera**"drop-down list.
2. From the "**Record**" type drop-down list, choose the type of record you want to retrieve. (Please see page 60 for more details.)

Viewing records by time segments

To view records by time segments:

1. Select "**All Records**" from the "**Record type**" drop-down list.

2. By default, the **History list** displays time segments in intervals of one hour.

   To change the interval, click . In the **Preferences dialog box**, specify the desired interval for displaying time segments.

3. Click a desired time segment in the **History list**.

4. Select **All** in the **Camera** drop-down list then in the **Camera Selection Panel**, click the cameras whose video recordings you want to access for the selected time segment. As you select more cameras, the number of split screens increases. (See "Selecting video cameras" below for more details on **Camera buttons** and split screens.)

Camera Selection Panel

   Note: To have different combinations of camera selections and store each set of combinations, use the **Memory** buttons. (See "Memory buttons" on page 61 for details.)

5. When you click the **Play** button on the **Navigation Panel**, video recordings from the selected cameras will simultaneously be played on-screen. (See page 64 for details on the Navigation Panel.)

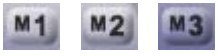
Selecting video cameras

The **Camera buttons** in the **Camera Selection Panel** are only enabled when **All** is selected in the **Camera** drop-down list. The Camera buttons on the Camera Selection Panel are toggle buttons and allow multiple selection of video cameras. To view recorded videos from selected cameras, choose the video cameras by clicking the corresponding number buttons. To deselect video cameras, click on their corresponding number buttons again.

The number of selected cameras determines the split screen layout of the Record Player program screen, as depicted in the table next page.

To deselect all selected cameras and allow single camera selection only, click the button. The color of the camera image on the button then changes to green, indicating that the **Camera Selection Panel** is now in single camera selection mode.

Number of selected cameras	Split screen layout
1 camera	Single view
2 to 4 cameras	4 split screens
5 to 9 cameras	9 split screens
10 to 16 cameras	16 split screens

Memory buttons 

When you need to select different video cameras per time segment, it could be tedious to keep on selecting and deselecting the **Camera buttons** on the **Camera Selection Panel**. To save you the trouble of reselecting and deselecting cameras, Record Player provides three **Memory buttons** that can be used to store three different combinations of camera selections. These memory buttons are only enabled when **All** is selected in the **Camera** drop-down list.

To store a combination of camera selections to a Memory button:

1. Select the desired cameras (or deselect unwanted cameras) by clicking the **Camera buttons** on the **Camera Selection Panel**.
2. Click and hold your mouse over a Memory button for 2 seconds. The **Memory button** flashes slowly as it stores your camera selections. Release your mouse button when you see the **Memory button** flashes more quickly.
3. Repeat the above steps to store other combinations of camera selections to the other **Memory buttons**.

Next time you click on the **Memory buttons**, **Camera buttons** will automatically be selected according to the stored combinations.

Viewing records by events

To search for video recorded events, select any of these three options from the "**Record type**" drop-down list:

- **Event records**

  When selected, the program searches for all events that were recorded on a specified date and displays them in the **History list**.

  The **History list** displays these 3 types of recorded events: motion events, sensor events, and manually triggered events. The list shows the actual time of recording, the camera device that recorded the event, and the type of event.

The type of event is indicated as follows:

(Mo)	Motion event
(S"n")	Sensor event, where "n" represents the sensor number
(Ma)	Manually triggered event

- **Motion events**

  When selected, the program searches for all motion detected events that were recorded on a specified date and displays them in the **History list**.

  The History list shows the actual time of recording and the camera device that recorded the event.

- **Sensor events**

  When selected, the program searches for all sensor detected events that were recorded on a specified date and displays them in the **History list**.

  The History list shows the actual time of video recording and the sensor device that detected the event.

- **Manual events**

  When selected, the program searches for all manually triggered recordings of a specified date and displays them in the **History list**.

  The **History list** shows the actual time of video recording and the camera device from which surveillance video was recorded.

Viewing video recorded events

When you switch to displaying history records by event, Record Player provides the following button controls for setting the split screen layout and for navigating between records in the **History list**.

Split Screen Layout buttons

Set the number of split screens to use for event playback by clicking one of these buttons. Up to 16 split screens can be selected.

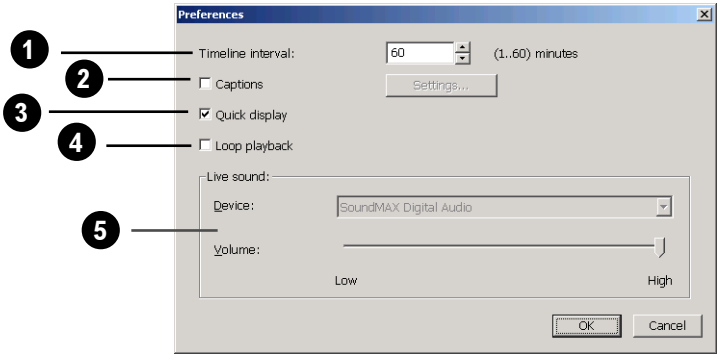
Record Navigation buttons

When playing back events in single view, click these buttons to move up or down one record in the **History list**.

Whereas when playing events in split screen view, the event that is currently selected in the **History list** will be played back in the first split screen, and the events that follow it in the **History list** will be played simultaneously in the other split screens. Clicking the **Record Navigation** buttons will allow you to move up or down the **History list** by multiples of 4, 9 or 16 records, depending on the number of split screens selected for event playback.

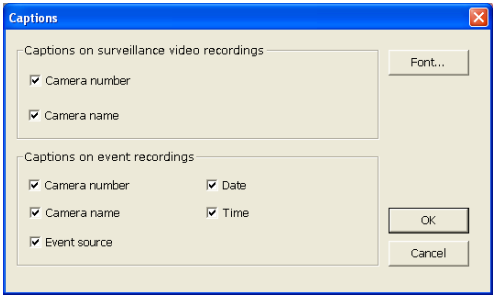
Setting display and audio playback preferences

When viewing recorded videos, you can choose to display information on-screen, enable quick display and loop the recorded video. Play the audio associated with the recorded video by setting the appropriate options. Click the  button to open the **Preferences** dialog box and customize these settings.



1 Timeline interval This setting determines the interval of time segments that are displayed in the **History list**.

2 Captions Select this option to show information on the split screens. Click the **Settings** button to open the **Captions dialog box** and select which information to display on the split screens.



When displaying records by time segments, select the information checkboxes in the upper group box in the **Captions dialog box**. Whereas when displaying records by event, select the information checkboxes in the lower group box. Click the **Font** button to choose a font size and style for the displayed information.

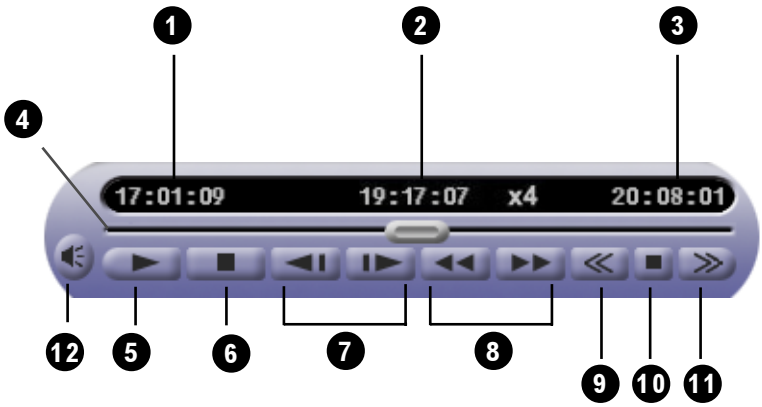
3 **Quick display** Select this option to render video data to the VGA display card. Clear this option to convert first video data to RGB, and then render to the VGA display card.

4 **Loop playback** Select this option to continuously replay the recorded videos.

5 **Live sound** Displays the audio device used by your computer to play back the audio of the recorded video. You can also adjust the playback device's volume here. If you have more than one audio device installed, select the device you want to use from the drop-down menu.

Navigation Panel

Use the **Navigation Panel** to control the playback of recorded video.



1 **Start Time**	When playing records that were selected from the "**All records**" list, this shows the start time of the selected time segment. When playing events, 00:00:00 will be shown as the "**Start Time**".
2 **Current Timecode**	Shows the timecode of the current video scene.
3 **End Time**	When playing records that were selected from the "**All records**" list, this shows the end time of the selected time segment. When playing events, the maximum time length between events will be shown as the "**End Time**".
4 **Navigation Bar**	Allows you to jump directly to any part of the recorded video. Drag the slider tab to the desired part of the recorded video.
5 **Play / Pause**	Plays/Pauses the playback at the current frame.
6 **Stop**	Terminates the playback and moves to the starting frame.
7 **Previous / Next Frame**	Moves to the previous/next video frame. (Only available in single view.)
8 **Backward / Forward**	Moves back/forward one or more video frames.
9 **Slow Motion**	Slows down video playback. Click once to play the recorded video at half (1/2 x) the normal speed. Click again to play the video at a quarter (1/4 x) of the normal speed. The slowest speed is 1/8 x.
10 **Normal Speed**	Plays the recorded video at its original speed.
11 **Fast Motion**	Increases the playback speed of the video. Click once to double (2 x) the playback speed. Click again to quadruple (4 x) the playback speed. The maximum speed is 16 x.
12 **Mute**	Toggles between playing/muting the audio associated with the recorded video.

Zooming the video during playback

When playing recorded surveillance video in single view, you can zoom in or out of the video with ease. Click the button repeatedly to cycle through different video frame sizes: "**320 x 240**", "**640 x 480**", and "**Fit into Split Screen**".

Detecting motion in the recorded video

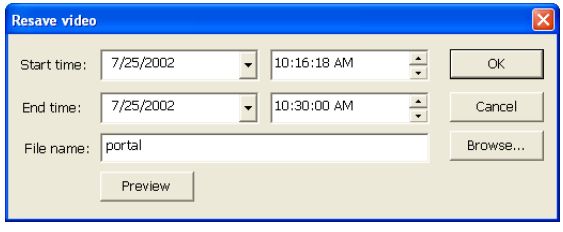
When playing back recorded video, motion detection can be applied to the video. This allows you to instantly spot movements on video.

To detect motion on the recorded video more accurately, you can fine tune motion detection settings. Click the button to adjust settings and mask out parts of the video where motion can be ignored. (Refer to "Fine tuning motion detection settings" on page 42 for more details on motion detection.)

Note: Motion detection can be applied only when the recorded video is played in single view mode.

Saving video

The whole or part of a recorded surveillance video can be saved as a video file. Click to open the following dialog box and specify the desired part of the video to save.



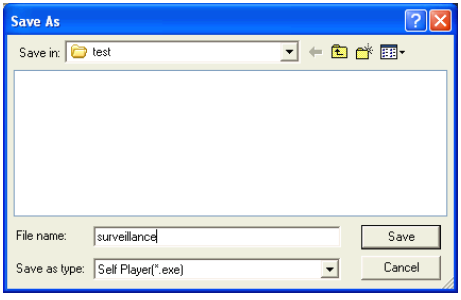
By default, the "**Start time**" and "**End time**" values are set to the actual start and end times of recording. To choose a portion from the recorded video, change the "**Start time**" and "**End time**" settings to the desired start and end timecodes.

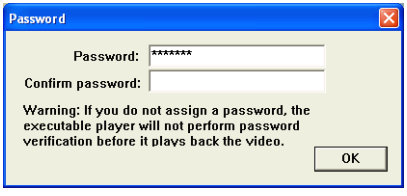
To check whether you have selected the appropriate part of the video, click the **Preview** button. After previewing, you can then choose to save the video as an AVI or a self-executable video file.

After selecting the video file format, enter the file name and folder path where you want to save the video file then click **OK**.

Self-executable Player

Saving the video as a self-executable file gives an added protection to the video content. Watermarking and a password will be embedded in the file. The user who receives the video file will be required to enter a password first before the video can be played. This ensures that the video is viewed only by the people you have authorized. Also, saving it in this format frees the user of having to use another video player to view the video. If password verification is not required, the video will automatically play when accessed.





Capturing image snapshots

If a video recording clearly shows suspicious activities or an intruder in the monitored site, you can notify police authorities and provide them with actual image snapshots. To take a snapshot, first play back the recorded video, and then click the button. The **Snapshot dialog box** then opens, allowing you to enhance the captured image by adjusting brightness. You can also choose to add captions on the captured image as well as print and save the captured image.

Note: When you click **Print** and you don't have a printer installed, it will prompt a message asking you if you want to install a printer first.

Chapter 4

Backup Scheduler

Use the **Backup Scheduler** program to make regular backups of the recorded surveillance videos. This program allows both manual and scheduled backups. Manual backup allows you to specify the date and time range of video recordings to back up. Whereas when scheduled backup is enabled, the program automatically performs daily backups of surveillance videos that were recorded during a specific time frame in a day.

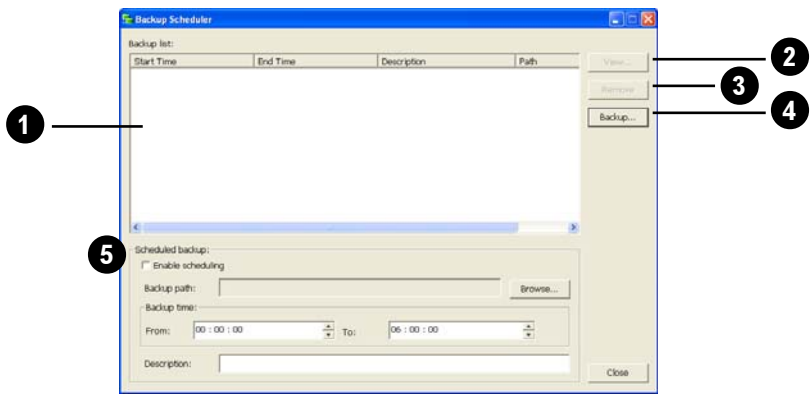
Launching Backup Scheduler

To launch Backup Scheduler, click **Start - Programs - DVR 2400 - Backup Scheduler**.

If access control is enabled in Site Server's **Preferences dialog box - Users tab**, users who run the Backup Scheduler program will be prompted to provide login information. To be able to use the Backup Scheduler program, the login name and password entered must belong to an existing user account that has been assigned with either the "**Administrator**" or "**Operator**" privilege level. Only users with either of these two privilege levels are allowed to configure backup settings.

Program Interface: An Overview

Upon entering the program, you will see a list of past backups displayed on the program screen. From the program screen, you can manage the backed up files and initiate manual backups or set up automatic backups.

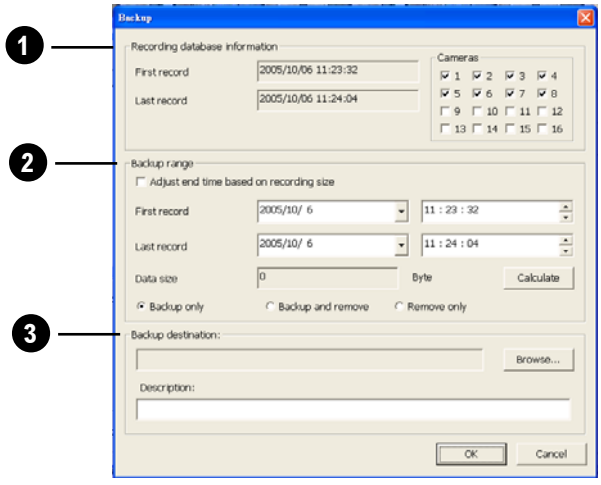


1	**Backup list**	Keeps a record of past backups. Each backup entry in the list corresponds to an actual backup database file. Each backup entry shows the date and time range of the surveillance videos that were backed up, a textual description, and the folder location where the backup database was saved.
2	**View**	Plays back the surveillance videos that are stored in a backup database. To view the backed up surveillance videos, select the appropriate entry from the Backup list and then click View to play back the videos in the Record Viewer program.
3	**Remove**	Deletes one or more selected entries in the Backup list. Deleting entries will also physically delete their corresponding backup database files. To select multiple entries, hold down the Ctrl key and click each entry you want to delete. Then, click Remove to delete them.
4	**Backup**	Allows you to manually initiate a backup when there are recorded surveillance videos in Site Server's Main database. (See "Performing manual backups" below for more details.)
5	**Scheduled backup**	Enables the Backup Scheduler program to perform automatic backups on a daily basis. (See "Setting up automatic backups" on page 71 for more details.)

Performing manual backups

Manual backup allows you to selectively back up surveillance videos that were recorded by Site Server within a date and time range. To perform a manual backup, click the Backup button to open the following dialog box and configure backup settings:

1	**Record database information**	This displays information about the video recordings that are currently stored in Site Server's Main database. The information here shows the first surveillance video's date/time of recording, the last video's date/time of recording, the total file size of recordings, and the cameras from which surveillance videos were recorded.
2	**Backup range**	The options here determine which video recordings to backup and whether to remove them from the Main database after the backup process is complete.



Adjust end time based on recording size

When selected, you can specify the data file size of the video recording you want to back up or delete.

After you enter the file size in the "**Data size**" text box and the starting date/time of the video recording in the "**First record**" text box, the "**Last record**" text box will be filled in with the ending date/time based on your specified file size after clicking **Calculate**.

First / Last record

Allows you to specify the date and time range of video recordings to back up.

If you selected the "**Base on record size to adjust the last time**" option, there is no need to specify the ending date/time range in the "**Last record**" text box. It will automatically be determined.

Backup only

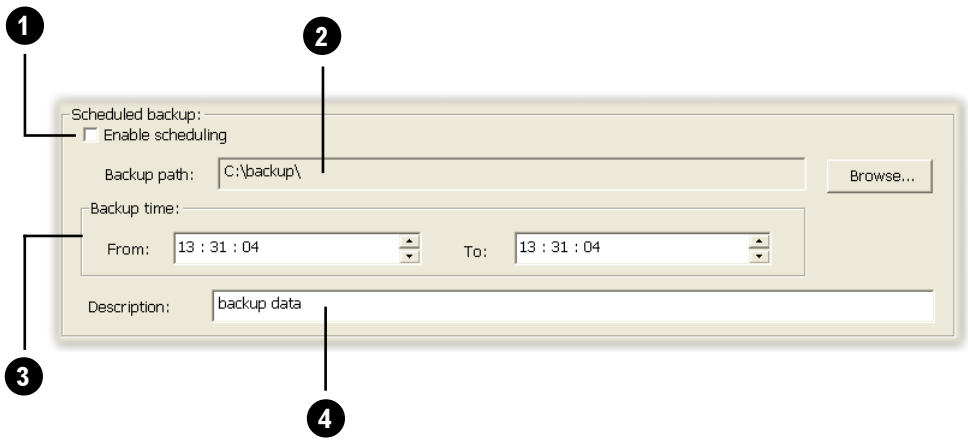
When selected, the program backs up the video recordings that fall within the specified date and time range, and retains them in the Main database after the backup process is complete.

Backup and Remove	When selected, the program deletes the video recordings that fall within the specified date and time range after backing them up.
Remove only	When selected, the program deletes video recordings without performing a back up first.
Calculate	Click this button to automatically determine the data file size of the video recording to be backed up (or removed) based on the date and time range specified in the "**First record**" and "**Last record**" text boxes. This button works only when the "**Base on record size to adjust the last time**" option is not selected.

3 Backup destination Specify the folder location in which to save the backup database, and enter a textual description that identifies the contents of the backup database.

Setting up automatic backups

Backups can be automatically performed by Backup Scheduler according to your preset schedule. At most, you can set up the program to back up surveillance videos that were recorded by Site Server for the last 24 hours. Configure these settings to set up a schedule for automatic backups:



1	**Enable scheduling**	Select this option to activate automatic backups.
2	**Backup path**	Specify the destination folder for saving the daily backups. Each day's surveillance videos recorded by Site Server will be saved as an individual backup database.
3	**Backup time**	Specify the time period to back up the previous day's video recordings.
4	**Description**	Enter a textual description that identifies the contents of the backup database files.

Note: Backup processes are given lesser priority than digital video recording when both operations are performed simultaneously. When backup storage is not enough or an entire backup process cannot be completed within the specified period, a warning message will be displayed.

Chapter 5

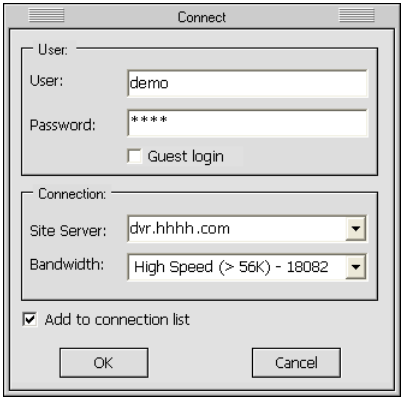
DVR-Remote

DVR-Remote provides up to 16 split screens on the user interface for you to simultaneously monitor remote cameras from multiple DVR sites. Each DVR site will have a DVR server computer that is connected to surveillance cameras and other security devices. You need to first specify the URL addresses and the login details of the DVR servers that you would like to connect to.

Connecting to Remote DVR Sites

To add and connect to a remote DVR site:

1. Click to open the **Connect** dialog box.
2. Enter the DVR site's URL address in the **Site Server** text box.
3. Clear the **Guest** login checkbox, then type in the valid **User name** and **Password** for connecting to the DVR site.
4. Select **Add to connection list** to add the DVR site to DVR-Remote's **Camera List Panel**, then click **OK**. DVR-Remote will then connect to the specified DVR site and display the remote cameras.
5. The DVR site will be added to the Camera List Panel. Click to open this panel. To see the names of the different cameras in the DVR site, click on the "+" sign.
6. By default, the site is named with the site name that has been specified in the remote DVR site. To rename it, click on the text and type in the desired name.
7. DVR-Remote allows you to connect to multiple DVR sites at the same time. Repeat steps 1 to 6 to add more DVR sites.



Note: If you want to change the information of a DVR site, select then right-click the DVR site name in the Camera List Panel. The **Site Information** dialog box will then open where you can make modifications.

Another way of adding DVR sites is to click in the Camera List Panel. The **Add Site/Group** dialog box will then be displayed where you can add a new DVR site. This dialog box also allows you to create a group name for grouping existing DVR sites. (See page 86 for information on how to group DVR sites.)

To connect and disconnect an existing DVR site:

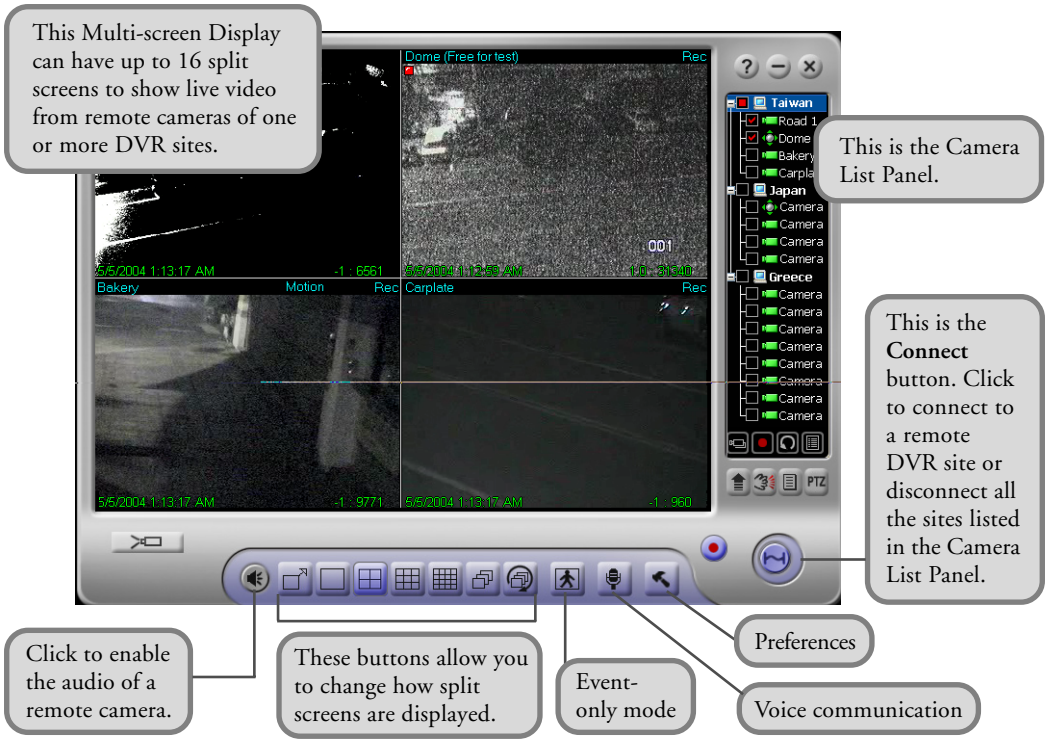
To connect to a DVR site, double-click the site name in the Camera List Panel. Double-click the site name again to disconnect from the DVR site.

To disconnect all connected DVR sites:

Click . This closes all connections.

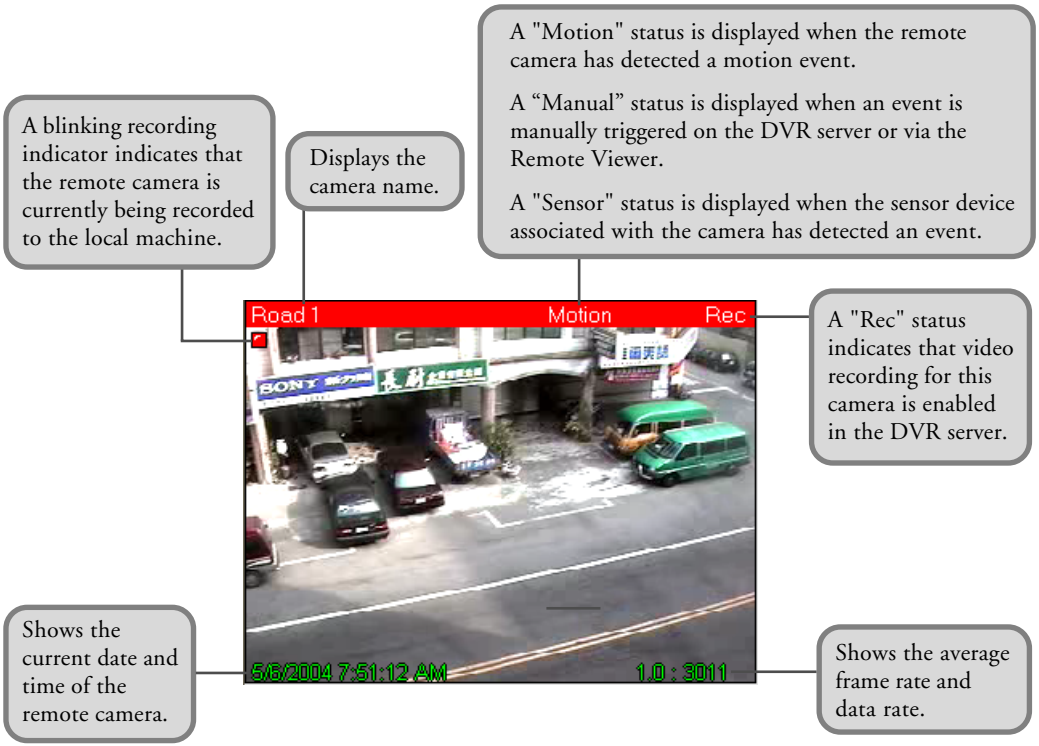
Monitoring Remote Cameras

When **DVR-Remote** has successfully established connection with the DVR site(s) that you added to the Camera List Panel, you will be able to see real-time video from the remote cameras on the site(s).



Split Screens

Split screens show live video from the video cameras that are installed in the monitored site or sites. On the split screens, the video camera number, current date and time, etc. can be displayed. If video recording for a certain camera is enabled on the DVR server, a "**REC**" indicator will appear at the upper right corner of the corresponding screen. When you have initiated video recording locally on your computer, you will a red blinking indicator on the split-screen window.



Note: Information displayed on split screens can be enabled or disabled in the **Preferences dialog box: Caption tab**. (See page 102 for details.)

Changing Split Screen Position

Drag a split screen and drop it to another split screen to exchange their positions.

Maximizing Split Screen Size

If there are 4, 9, or 16 split screens displayed, double-click a split screen to enlarge its size and temporarily cover its three neighboring screens. If you continue to double-click, the split screen will be enlarged to the full window size.

Right-click on the split screen to restore it back to the previous size. When you continue to right-click on the split screen, it will return to its original size.

Split Screen Controls

Use these buttons to change how split screens are displayed on the program screen.

Toggles between **Full-screen** and **Normal** display modes.

Displays a split screen in full window size.

Splits the Multi-screen Display into 4 split screens.

Splits the Multi-screen Display into 9 split screens.

Splits the Multi-screen Display into 16 split screens.

If there are more remote cameras from other DVR sites that cannot be fit within the program screen, click this button to switch the display to the next group of cameras.

If there are more remote cameras from other DVR sites that cannot be fit within the program screen, click this button to loop the display of the cameras. After an elapsed time, the window screen will automatically switch to the next group of cameras or sites.

Displaying Cameras with Detected Events Only

Click  to display only the remote cameras that have been detected with events. The split-screen display of the other cameras will temporarily be turned off. In this mode, only detected events will be recorded if video recording is enabled.

To switch back and display all cameras, click  again.

Note: In the **Preferences dialog box: Alarm tab**, you can set up **DVR-Remote** to sound an alarm in your computer when there are detected events. (See page 103 for details).

Enabling Audio from Remote Cameras

In case you see abnormal activities while monitoring a remote camera, you can enable the audio from the camera and listen to it through your computer speakers.

To do so, first click the split screen that displays the remote camera, then click  .
Click this button again to turn off the audio.

Voice Communication with a DVR Server

If the DVR server on the DVR site is enabled to accept two-way communication requests from remote client computers that are running **DVR-Remote**, you will be able to initiate voice communication with the person who is operating the DVR server.

Simply click  to initiate voice communication.

Note: You can specify which sound card to use for audio input and make adjustments to the sound volume in the **Preferences dialog box: Voice Communication tab**. (See page 104 for details).

Remote Camera Controls

Use these buttons to have access to the different DVR sites and their respective remote cameras, and to control how video from these cameras are displayed on the **DVR-Remote** program window.

 Increases the display frame rate of a selected camera. If your network connection bandwidth is limited, it may be helpful to increase the frame rate of the selected camera.

 Triggers a manual event to a remote camera. (See page 84 for details).

 Expands the Camera List Panel. More button controls in the Camera List Panel will then be displayed. Click again to retract and change the panel back to its original size. (See page 85 for more details on the Camera List Panel).

Click to change to the PTZ Camera Control Panel. (See page 87 for details).

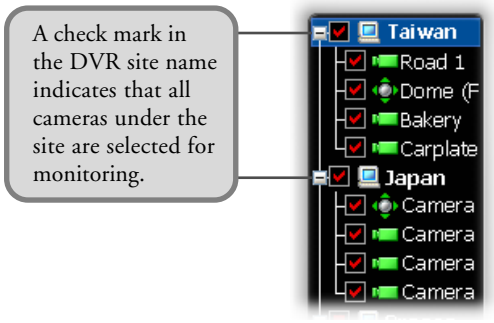
Triggering Manual Events to Remote Cameras

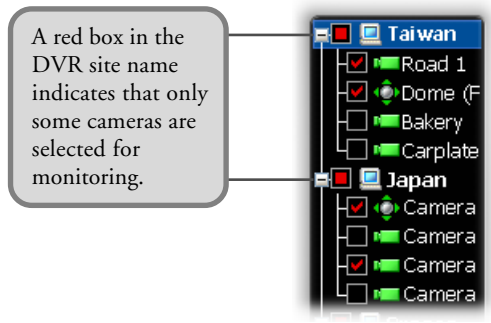
If you see abnormal activities on one of the remote cameras, you can manually trigger an event to that camera. To do so, first click the split screen that displays the remote camera. Then click to trigger a manual event to the camera. This allows the abnormal activities to be logged and/or digitally recorded.

Note: The "Manual trigger" option of the remote camera must be enabled first at the DVR server.

Recording Surveillance Video

After **DVR-Remote** has connected to the DVR sites that you specified, the remote cameras on each site are, by default, all selected for monitoring only. You can record video from all cameras, or choose certain cameras to record video from.





To record video from all remote cameras:

Click . Surveillance video from all remote cameras of the connected DVR sites will be recorded to your local hard drive. Click this button again to stop the recording.

To record video from selected cameras only:

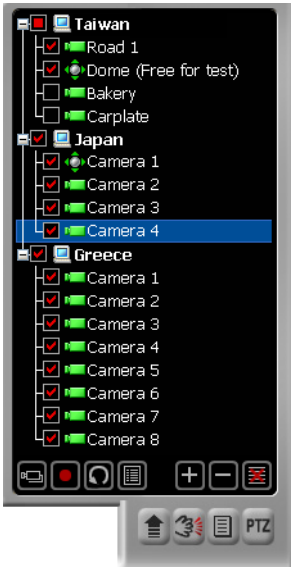
1. Click a camera on the split screen to select it.
2. In the Camera List Panel, click to start the recording. Click this button again to stop the recording.

Note: In the **Preferences dialog box: Storage tab**, you can delete old video recordings, and also specify when you want hard disk space to be recycled to free up disk space for saving new recordings. (See page 101 for details).

The Camera List Panel

The **Camera List Panel** lists the DVR sites and customized camera groups that you can connect to. At the bottom of the panel are button controls for adding DVR sites or camera groups, connecting/disconnecting selected cameras, video recording, and more.

To expand the Camera List Panel, click . To retract and change it back to the normal panel size. click again.



Expanded Camera List Panel

Normal-size Camera List Panel

Panel Controls

At the bottom of the Camera List Panel are two sets of button controls:

Allows you to connect to the selected remote cameras (that is, the cameras with check marks in the Camera List Panel).

Starts recording surveillance video from the selected cameras of a DVR site onto your local hard drive. Click again to stop recording.

Click to refresh the camera list of a selected DVR site.

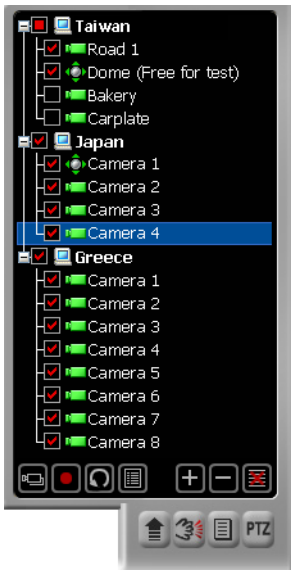
Opens the **Scheduler** where you can create schedules for recording surveillance video. (See page 97 to 99 for details).

Click to add a new DVR site or group to the list.

Click to remove a DVR site or group.

Click to clear the entire Camera List Panel.

Panel Indicators



Description name of DVR site

Group

CCTV camera

PTZ camera

Indicates that the remote camera is selected. A check mark that appears on a DVR site name indicates that all cameras under it are selected.

Indicates that only some cameras in a DVR site are selected.

Grouping DVR Sites or Remote Cameras

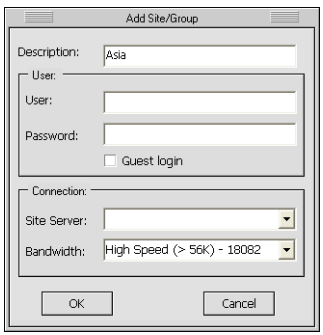
You can create a group name to combine certain DVR sites into the same group.

If you only need to monitor certain cameras from each site, you can also create a group name to combine these cameras under the same group. This allows **DVR-Remote** to connect only to the required cameras instead of all the cameras on each site.

To create a group:

1. Click + to open the **Add Site/Group** dialog box.
2. Enter a group name in the **Description** text box, then click **OK**.

   The new group name will be added to the first entry in the Camera List Panel.



3. You can add a whole DVR site or only selected cameras into the group:
   - To add a whole DVR site, first make sure that there is a check mark in its check box (which means that all cameras under this site are selected). If there is no check mark, click the check box. Then, drag and drop the DVR site into the group.
   - To add only certain cameras of a site to the group, first select the desired cameras. The check box on the DVR site will then be marked with a red box. Now drag and drop the DVR site into the group.
   - If you want to add only a single camera from a site into the group, select that camera then drag and drop it into the group.
4. Repeat step 3 to add more DVR sites or cameras into the group.

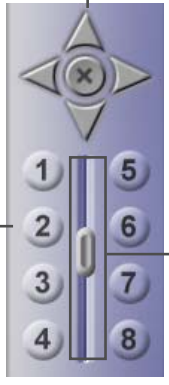
Group of DVR sites

Group of cameras from multiple sites

The PTZ Camera Control Panel

If there are PTZ cameras in any of the DVR sites, you can use the **PTZ Camera Control Panel** to zoom in or out and pan around the monitored areas.

Click PTZ to open the PTZ Camera Control Panel.



This is the **Pan and Tilt** control. Click one of the four arrow buttons to adjust the camera angle up, down, left, or right. Click the "cross" button to stop movement.

The number buttons are **Preset buttons** that store different camera angle positions. Click a number button to quickly adjust the PTZ camera to a predefined position.

This is the **Zoom** control. Drag the slider tab up to zoom in, or down to zoom out.

When you release the mouse button, the slider tab moves back to the middle position automatically.

Using Remote Player

DVR-Remote's **Remote Player** lets you retrieve and view surveillance videos that have been digitally recorded by a DVR server. You can play back the recordings directly from the server over the Web, or you can download them first to your hard drive and play them locally on your computer. Surveillance video that you recorded locally on your computer hard drive can also be played in **Remote Player**. At most, surveillance video from 16 different video cameras that were recorded at the same time can simultaneously be viewed on-screen.

To change to the **Remote Player** screen, click  in the **DVR-Remote** program window.

The User Interface

1 Split-screen Window

Shows the recordings from selected cameras, or shows a single recording only when a specific recording time from a camera is selected in the Camera List Panel.

2 DVR Site List

Lists the URL addresses of remote DVR sites from which history records of video recordings can be retrieved.

3	**Camera List Panel**	Lists the names of cameras in the currently selected DVR site. Under each camera, history records are listed by time. (See the next section for details).
4	**Calendar**	Allows you to select the desired date of surveillance recording.
5	**Play / Pause**	Click to start/pause the playback.
6	**Navigation Panel**	Provides playback controls. (See page 118 to 119 for details).
7	**Audio**	Click to enable/disable audio during playback.
8	**Preferences**	Click to define settings in the **Preferences** dialog box.
9	**Back to DVR-Remote**	Click to change back to the **DVR-Remote** screen.

The Camera List Panel

The **Camera List Panel** lists the names of remote cameras from a connected DVR site and displays the history records of the video recordings of these cameras. History records of a chosen date of recording will be displayed under each camera.

Panel Controls

To download certain surveillance recordings for local playback from your hard drive, first choose the desired cameras and recording times in the Camera List Panel then click this button.

Opens a menu where you can choose the type of history records to display in the Camera List Panel. (See page 120 to 121 for details).

Deletes selected history records from the Camera List Panel. If local history records are selected in the list, the video files will also be deleted from the hard drive.

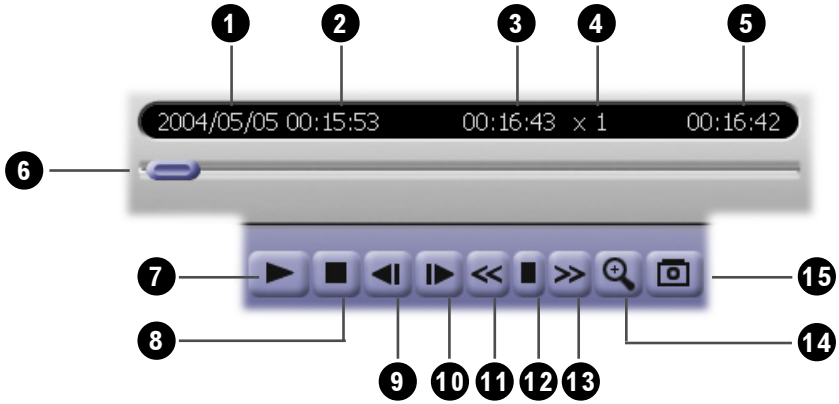
While in the process of downloading video recordings, you can click this button to cancel the download.

Click to define the desired range of hisory records to

 display in the Camera List Panel.

 Click to refresh the history records in the Camera List Panel.

The Navigation Panel



1	**Date of history records**	Shows the calendar date of the history records that are listed in the Camera List Panel.
2	**Start time**	Shows the start time of the selected record.
3	**Current timecode**	Shows the timecode of the current video frame.
4	**Current display speed**	Shows the currently used playback speed.
5	**End time**	Shows the end time of the selected record.
6	**Jog Bar**	Allows you to jump directly to any part of the recorded video. Drag the slider tab to the desired part of the recorded video.
7	**Play / Pause**	Starts/Pauses the playback.
8	**Stop**	Cancels the playback and moves to the starting frame.
9	**Previous Frame**	Moves to the previous video frame. (Available for both single and multiple video recordings)
10	**Next Frame**	Moves to the next video frame. (Available for both single and multiple video recordings)

11 Decrease display speed	Slows down video playback. Click once to play the recorded video at half (1/2 x) the normal speed. Click again to play the video at a quarter (1/4 x) of the normal speed. The slowest speed is 1/8 x.
12 Normal display speed	Plays the recorded video at its original speed.
13 Increase display speed	Increases the playback speed of the video. Click once to double (2 x) the playback speed. Click again to quadruple (4 x) the playback speed. The maximum speed is 16 x.
14 Zoom in/out	When playing video recordings, you can change the zoom ratio of the video by clicking this button. To zoom in a video, first click the split screen that displays the video, then click this button. Click this button again to zoom out.
15 Snapshot	Click this button to capture the current video frame and save it as a JPEG or BMP file. To capture the current frame from a video, first click the split screen that displays the video, then click this button. This opens the **Snapshot** dialog box where you can enhance the image first before saving, printing, or sending it out by e-mail. (See page 96 for details).

Viewing Recorded Video

To search for recorded surveillance videos and play them, there are four major steps that you need to do:

1. First, connect to the DVR server where the recordings are stored.
2. Choose the date of recording.
3. Specify the type of history records to access, then search and retrieve the history records.
4. If the recordings are stored in the DVR server, stream the videos from the server, or download them first for local playback from your hard drive.

   Whereas if the recordings are locally stored in your computer, play back the videos from your hard drive.

The succeeding sections explain each of these steps in detail.

Connecting to a DVR Site

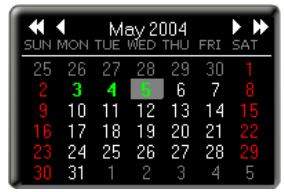
The **DVR Site List** keeps track of the URL addresses of DVR servers that you added to **DVR-Remote**. (See page 79 to 80 for details on how to add DVR sites).

Select the URL address of the DVR server from this list. **Remote Player** then establishes connection with the DVR site and displays the names of its remote cameras in the Camera List Panel.

Selecting the Date of Recording

On the **Calendar** below the Camera List Panel, choose the desired date of video recording.

By default, the current month is displayed and the current date is highlighted in the Calendar. Green-marked dates on the Calendar indicate that there are video recordings on those dates.



To select the date of recording:

1. To change to another year, click the left or right double-head arrow repeatedly until you reach the desired year.
2. To change the month, click the left or right arrow single-head arrow repeatedly until you reach the desired month.
3. On the selected month, click the desired date.

Retrieving and Searching History Records

Before you can retrieve, download and play back surveillance video recordings from a DVR site, you first need to specify the type of history records to access.

After you have connected to a DVR server and selected a calendar date, click . A pop-up menu then opens, displaying three types of history records of surveillance video recordings: **Normal**, **Event**, and **Local**.

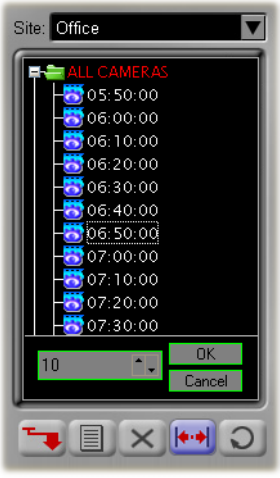
Normal Lists the history records of all surveillance videos that were recorded during the selected calendar date.

Event	Lists the recording time of events only.
Local	Lists the recording time of surveillance videos that were recorded and stored in the local hard drive.

History records of the selected type will then be retrieved from the DVR server or your local drive and then displayed in the **Camera List Panel**.

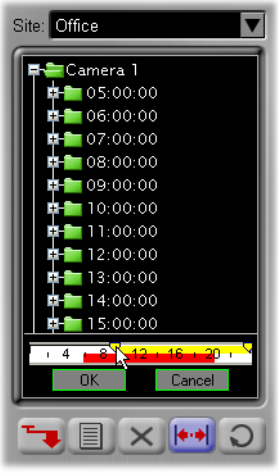
Retrieving a Specified Range of History Records

If you chose "**Normal**" or "**Event**" as the type and the retrieved history records are quite long, you can limit the history list by specifying a desired range.



To specify a range of "Normal" history records:

1. Click . A time interval text box will then appear at the bottom of the Camera List Panel.
2. By default, **Normal**-type history records are listed in intervals of one hour. To change the interval, click the Up/Down arrow button or enter the desired time interval.
3. Click **OK** to confirm the change. (To retain the original interval, click **Cancel**.)



To specify a range of "Event" history records:

1. Click . A time ruler will then appear at the bottom of the Camera List Panel.
2. By default, all **Event**-type history records on the selected calendar date will be retrieved and listed in the Camera List Panel. To limit the history list to a certain time period, drag the two handles on the time ruler to set the desired start and end time.
3. Click **OK** to confirm the change. (To keep the original history list, click **Cancel**.)

Playing the Video Recordings

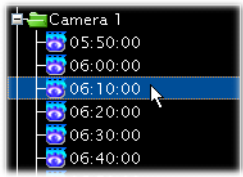
After you have retrieved the desired history records of surveillance video recordings, you can now play and view them on **Remote Player**.

If you retrieved Normal-type or Event-type history records, you can play the videos directly from the DVR server by streaming. However, if your Internet bandwidth is slow or overloaded, it is recommended that you download the video recordings first to your computer for local playback from your hard drive.

If you retrieved Local-type history records, the videos from these history records are locally stored in your computer. You can just play back the videos directly from your hard drive.

To play back recordings from a DVR server:

1. Click and choose the type of history records from which to retrieve video recordings. To retrieve all recordings of the selected calendar date, select **Normal**. Otherwise, to retrieve only the recordings of events, select **Event**.
2. To view a single video recording only, click the "+" to display first the history records of a desired camera. Then, click the time segment of the recording that you want to view.



If you want to view multiple video recordings simultaneously, hold the [Shift] or [Ctrl] key then click the time segments of recordings that you like to view.

3. To download the video recordings first to your local hard drive, click .

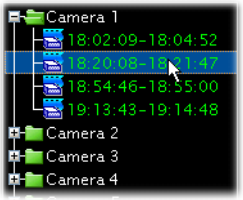
   If you want to directly stream the video recordings from the DVR server, go to the next step.
4. Click to play the video.

   This allows you to view the video from start to finish. To pause playback, click this button again.

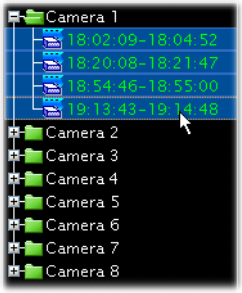
5. To scrub through the video, drag the Jog bar. You can also use the other controls in the Navigation Panel to move back and forth through the video. (See page 90 to 91 for details on the different button controls of the Navigation Panel).

To play back recordings in the local drive:

1. Click then select **Local**.
2. To view a single video recording only, click the "+" to display first the history records of a desired camera. Then, click the time segment of the recording that you want to view.



If you want to view multiple video recordings simultaneously, hold the [Shift] or [Ctrl] key then click the time segments of recordings that you like to view.



3. Click to play the video.

   This allows you to view the video from start to finish. To pause playback, click this button again.

4. To scrub through the video, drag the Jog bar. You can also use the other controls in the Navigation Panel to move back and forth through the video. (See page 90 to 91 for details on the different button controls of the Navigation Panel).

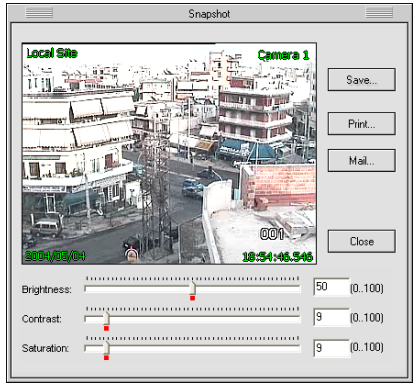
Capturing Image Snapshots

If a video recording clearly shows suspicious activities or an intruder in the monitored site, you can notify police authorities and provide them with actual image snapshots.

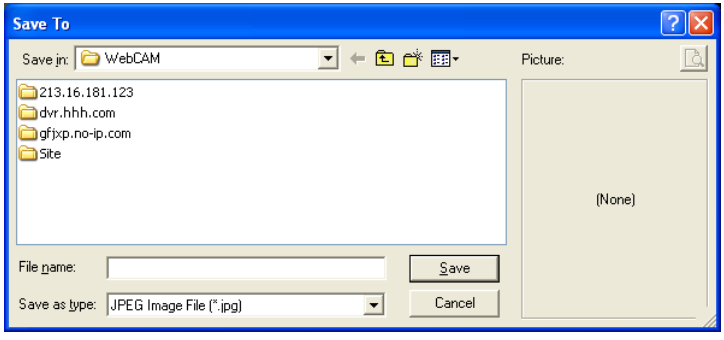
To take a snapshot:

1. First, play back the recorded video, then click  .
2. The **Snapshot** dialog box then opens, allowing you to enhance the captured image first before saving, printing or sending the image by e-mail.

   To enhance the image, drag the **Brightness**, **Contrast** and **Saturation** sliders until you get desirable results.



3. To save the image, click the **Save** button. The **Save To** dialog box then opens. Type in the file name to use for saving the image and choose whether to save it in JPEG or BMP format. Then, click **Save**.



4. If you want to print a hardcopy of the image, click the **Print** button.

Note: When you click **Print** and you don't have a printer installed, it will prompt a message asking you if you want to install a printer first.

5. To send the image by e-mail, click the **Mail** button. Your default e-mail program will then open, with the image file automatically attached to a new e-mail message. Enter the recipient's e-mail address, and type in the subject and body of your e-mail message then send it.

Using the Scheduler

DVR-Remote can be configured to record surveillance videos on a regular basis. It has a built-in **Scheduler** that allows you to set up specific day and time schedules for continuous recording of surveillance video from remote cameras on your local drive.

Before opening the Scheduler, you first need to connect to the DVR sites that you want to set up recording schedules for.

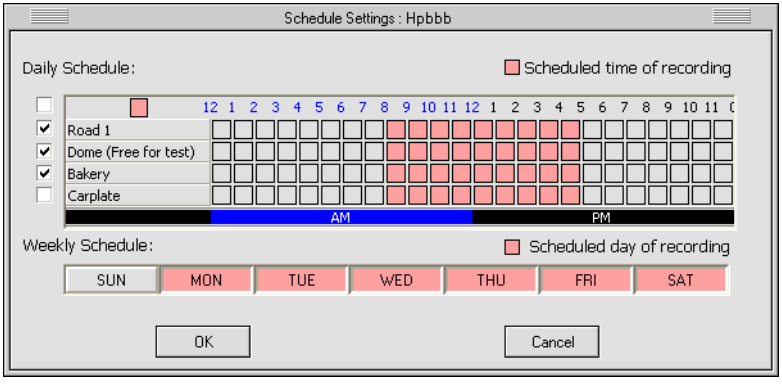
Setting up the Recording Schedule

To set up a regular schedule for video recording:

1. In the **DVR-Remote** program window, click to open the **Connect** dialog box and connect to a DVR site. (See page 79 to 80 for more details on adding and connecting to DVR sites).

   Or, if you are already connected to a DVR site, click the site name in the **Camera List Panel** to select the site.
2. Click to open the **Scheduler**.
3. In the **Scheduler** dialog box, the names of the remote cameras on the DVR site will be displayed. Choose the remote cameras that you want to record video from by clicking the check boxes at the left side of the camera names.

   Selected cameras are indicated by a check mark on check boxes.
4. The numbers that are lined up in columns represent the hours of a day. For each selected camera, choose the desired hours when you want surveillance video to be recorded by clicking the boxes underneath the hour columns.



Selected hours are indicated by color boxes. Non-selected (or deselected) hours are indicated by gray boxes.

5. Next, choose the days of the week when you want surveillance video to be recorded by clicking the buttons containing the names of the days of the week.

   Selected days are indicated by colored buttons. Non-selected (or deselected) days are indicated by gray boxes.

6. When you have finished setting up the cameras and the time and day of recording, click **OK**.
7. Repeat steps 1 to 6 to set up the recording schedule for another DVR site.

Removing Schedules

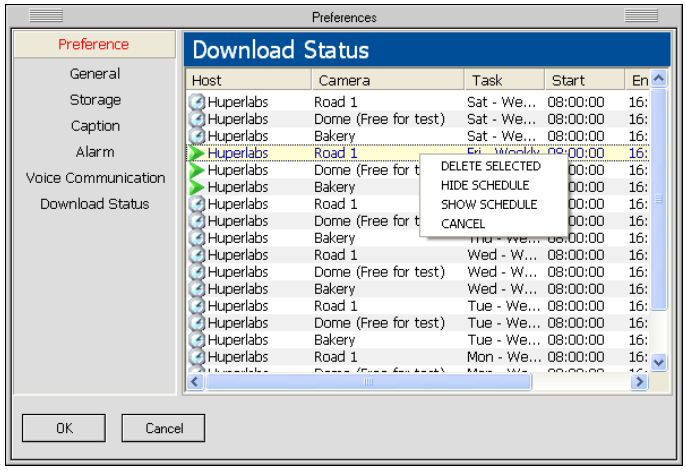
There are three alternative ways you can do to remove some or all of the set recording schedules.

To remove recording times or days in Scheduler:

Click  to open the **Scheduler**. In the **Scheduler** dialog box, deselect the unwanted hours or days of the week.

To remove recording times or days in Preferences:

Click  to open the **Preferences** dialog box, then click **Downloads & Schedules**. (See the image below). This part of the Preferences dialog box lists the recording times per scheduled day and the current recording status. (The entries in the list that show a clock icon indicate that they are scheduled times of recording).

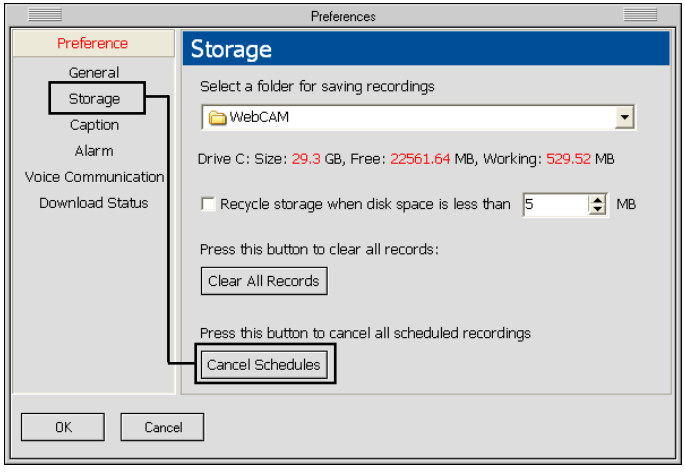


To remove a recording time, right-click the entry that shows the camera name and the unwanted recording "**Start**" time. Then in the pop-up menu that appears, click **DELETE SELECTED**.

To remove several entries from the list, press **Ctrl** and click each unwanted entry. Multiple-selected entries will be highlighted in yellow. To remove them, right-click and then click **DELETE SELECTED**.

To cancel all scheduled recordings:

Click  to open the **Preferences** dialog box, click **Storage**, then click **Cancel Schedules**.

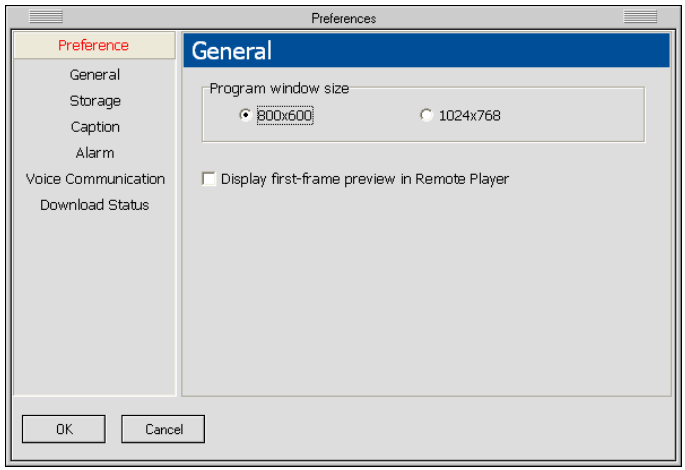


Configuring DVR-Remote

Click  in the **DVR-Remote** program window to open the **Preferences** dialog box where you can set up the working environment for the **DVR-Remote** program. You can choose to enable disk storage recycling for video recordings, enable/display caption display on split screens, set up alarms in your local computer when there are detected events, and more.

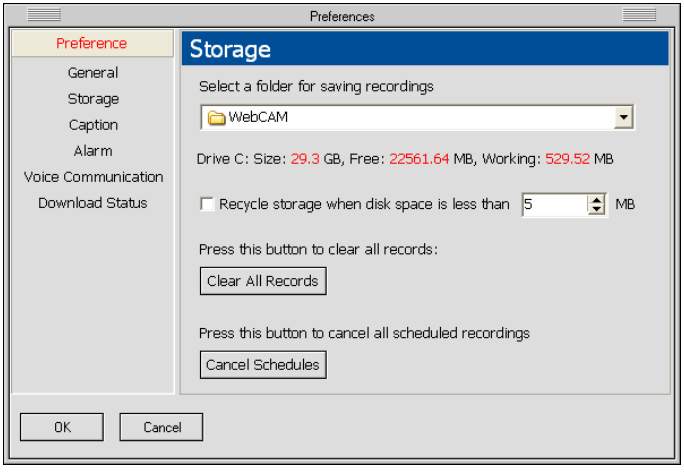
Preferences Dialog Box

General



1. **Program window size** Choose the appropriate program window size for **DVR-Remote** based on the resolution of your Windows display.
2. **Display first-frame preview in Remote Player** When this option is selected, the first frame of each of the video recordings you chose in Remote Player's Camera List Panel will be shown. This gives you a preview image of each selected video recording.

Storage



1 Select a folder for saving recordings

Click the drop-down arrow button to browse through your hard drive, then choose a working folder where to save locally recorded videos and downloaded recordings.

2 Drive (Size, Free, Working)

This indicates your local hard drive capacity, the remaining disk space, and the amount of disk space already used.

3 Recycle storage when disk space is less than

When this option is selected, old video recordings will be deleted when the hard disk space has reached the specified limit. This will free up hard disk space for saving new recordings.

In the text box provided, set the disk space limit.

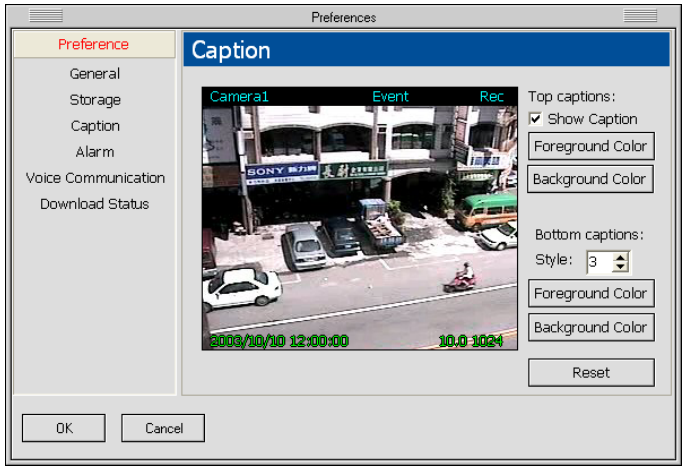
4 Clear All Records

Click this button to delete all video recordings from the working folder in your local hard drive.

5 Cancel Schedules

Click this button to cancel all scheduled recordings.

Caption



1 Top captions

These are the captions that appear on top of the split-screen windows. They display the camera name, detected event, and recording status.

Show caption

When this option is selected, the top captions will be displayed on the split-screen windows. To hide these captions, clear this option.

Foreground Color

Click this button to set the text color for the captions.

Background Color

Click this button to set the color of the text bar.

2 Bottom captions

These are the captions that appear at the bottom of the split-screen windows. They display the date and time, average frame rate, and data rate.

Style

There are four display styles for the bottom captions:
Style 0: Hides the captions.
Style 1: Displays the captions with a text bar.
Style 2: Displays the captions without a text bar.
Style 3: Displays the captions in outline style.

Foreground Color

Click this button to set the text color for the captions.

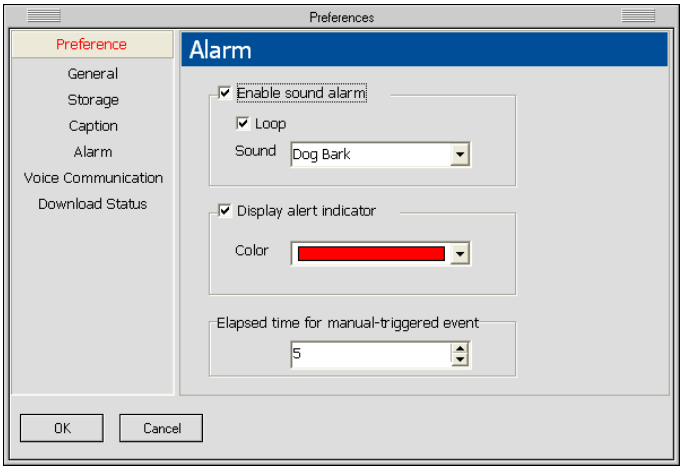
Background Color

Click this button to set the color of the text bar.

3 Reset

Click this button to change back to the default settings.

Alarm



1 Enable sound alarm

Select this option if you want your computer to sound an alarm when there is a detected event.

Loop

When this option is selected, your computer will sound the alarm continuously.

Sound

Click the drop-down arrow button then choose the type of sound to use as the alarm.

2 Display alert indicator

Select this option if you want a blinking alert indicator to be displayed on the split-screen window when there is a detected event.

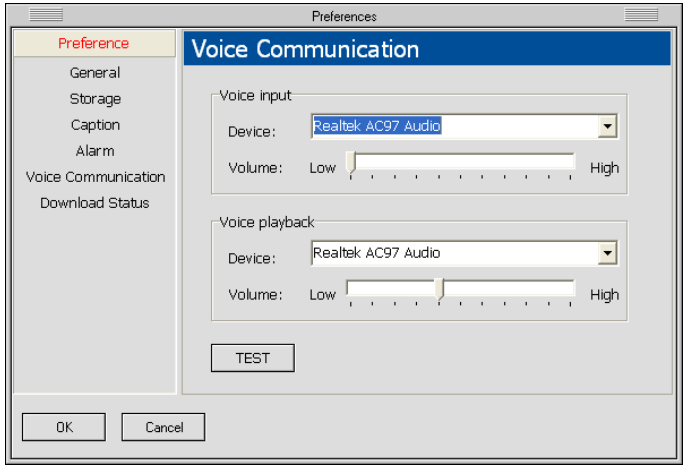
Color

Click the drop-down arrow button, then choose a color to use for the alert indicator.

3 Elapsed time for manual-triggered event

Set the time duration for manually triggered events (initiated from your local computer to the remote camera).

Voice Communication



1 Voice input

Device	Displays the audio device used by your input device (e.g. microphone) to capture your voice. If you have more than one audio device installed, select the device you want to use from the drop-down menu.
Volume	Drag the slider to adjust the input device's volume.

2 Voice playback

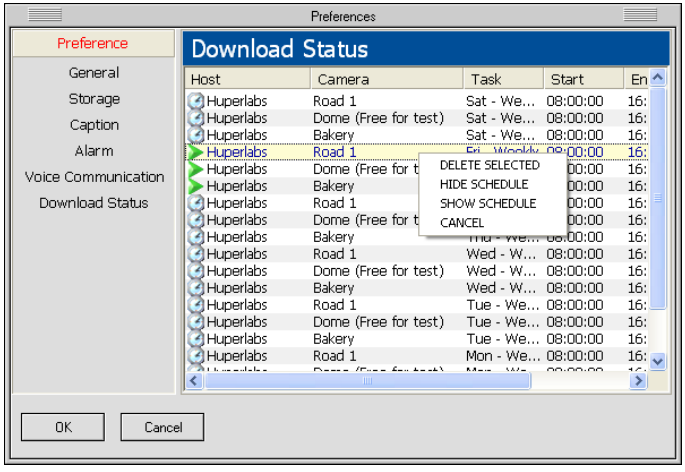
Device	Displays the audio device used by your playback device (e.g. speakers) to play back the voice from your counterpart. If you have more than one audio device installed, select the device you want to use from the drop-down menu.
Volume	Drag the slider to adjust the playback device's volume.

3 TEST Click this button to test the volume of the voice input/output device.

Downloads & Schedules

The **Downloads & Schedules** section in the Preferences dialog box displays two types of information:

- The entries that are indicated by a "clock" icon are the preset schedules for video recording.
- The entries that are indicated by a "play" icon are either scheduled recordings which are currently in progress, or file downloads which are in progress.



When you select an entry and then right-click on it, a pop-up menu will appear. From this menu, you can delete a schedule, show or hide the information list, cancel a scheduled recording, or terminate a file download.

The columns in the information list show the following:

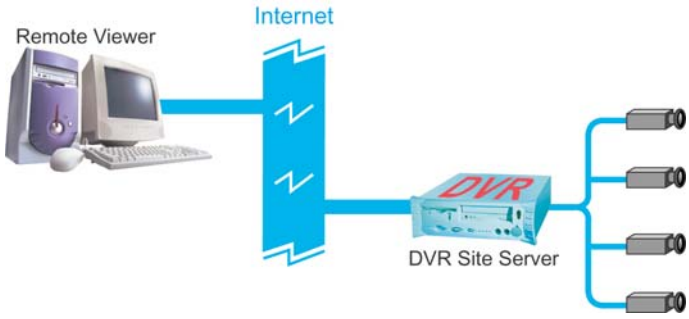
1	**Host**	Shows the name of the remote server.
2	**Camera**	Shows the name of the remote camera.
3	**Task**	Shows the preset recording schedule. When downloading, this column shows "HTTP" to indicate that the file is being downloaded via the Internet.
4	**Start**	Shows the start time of a schedule, or the start time of a video recording.
5	**End**	Shows the end time of a schedule. or the end time of a video recording.
6	**Progress**	Shows the current progress of a scheduled recording or file download (in percentage).

Chapter 6

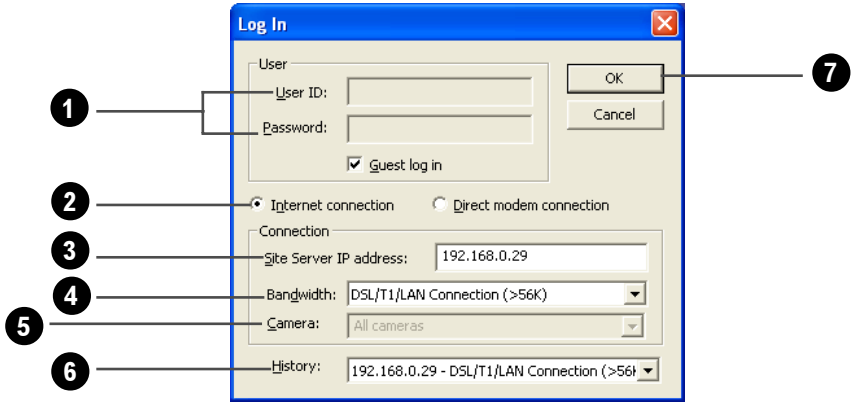
Remote Viewer

Remote Viewer allows you or any user to view remote video cameras, control remote PTZ cameras, remotely record videos on the local drive, talk with another person through two-way voice communication and play back video recordings on the local drive via a Web browser. Users who have user accounts in the Site Server that are assigned with at least the "Remote User" privilege level can access cameras remotely over the Internet, Intranet, or through direct modem connection.

Using Remote Viewer through an Internet connection



Launch **Remote Viewer** by clicking **Start - Programs - DVR 2400 Remote Viewer - Remote Viewer**. When the program opens, click the button to open the "**Log In**" dialog box and configure the settings to be able to connect to the DVR site server using an Internet connection.



To configure the settings in the "Log In" dialog box:

1. Enter a valid user ID and password.

Note: If the remote DVR Site Server does not enable the access control, select the "Guest log in" check box.

2. Select "**Internet connection**."
3. Enter the IP address or domain name of the remote DVR Site Server.
4. Select the bandwidth speed of the Internet connection.
5. By default, **All cameras** is selected.
6. You can select a past connection from the drop-down list to fill out the Connection information.

7. Click **OK** to connect to the DVR site server.

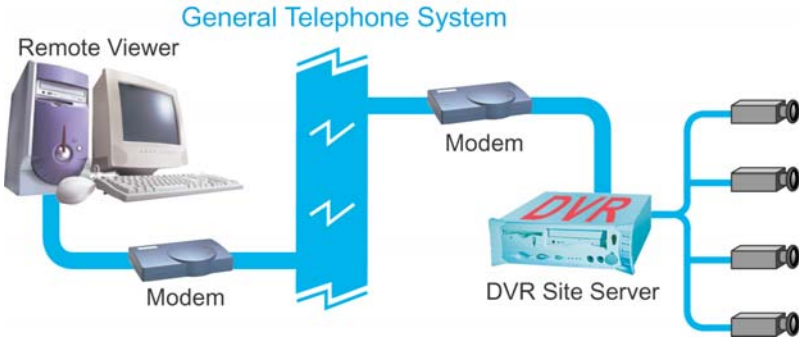
After clicking **OK**, you should be able to see live video feed from the remote camera(s) on the split screen display.

Note: 1. Before using Remote Viewer through an Internet connection, make sure that the remote DVR Site Server has "**Allow remote access**" and "**Enable Web server**" selected in **Preferences - General** tab (valid TCP port must also be entered), the DVR machine has been assigned a unique IP address, and your client machine that runs Remote Viewer can connect to the Internet.

2. The Web browser version you have should either be Microsoft Internet Explorer version 5.5 or a later version.

Using Remote Viewer through a direct modem connection

Direct Modem Connection is a connection between two modem devices through the General Telephone System that allows users to view remote cameras. Follow the steps on the next page to set up the direct modem connection at the DVR Site Server machine and a remote client machine."



Setting up the DVR Site Server machine

1. Install a modem device (card) to the DVR machine if the machine doesn't have a modem installed.
2. Connect a valid telephone line to the "**Line**" port of modem device (card).
3. Set up an advanced connection in Windows for receiving incoming calls. Please refer to the section "**How to set up an Advanced Connection**" for the details.

Make sure to assign a fixed IP address to your LAN card, whether it is a global IP address or a local IP address. If you don't want to assign a fixed IP address to your LAN card, try to disable the LAN card when enabling the direct modem connection.

Setting up a client machine for remote watch

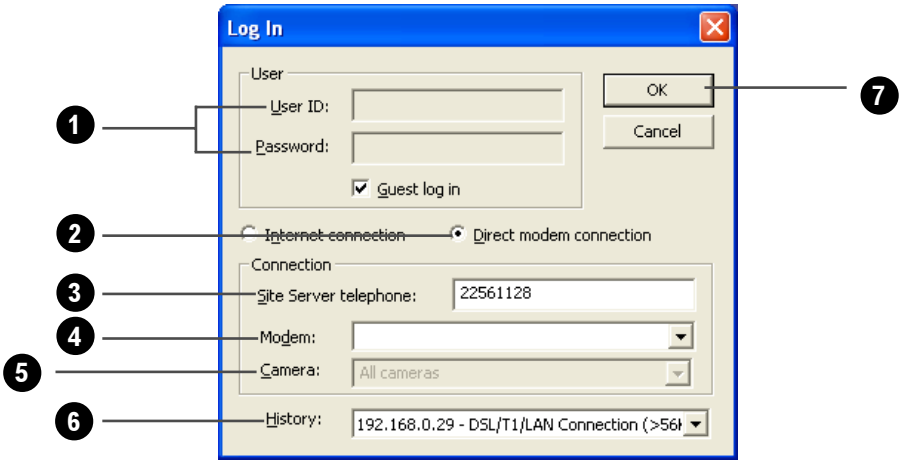
1. Install a modem device (card) to the client machine if the machine doesn't have a modem installed.
2. Connect a valid telephone line to the "**Line**" port of modem device (card).
3. Install the Remote Viewer program from the product CD.

Building a direct modem connection

Launch **Remote Viewer** by clicking **Start - Programs - DVR 2400 Remote Viewer - Remote Viewer**. When the program opens, click the button to open the "**Log In**" dialog box and

configure the settings to be able to connect to the DVR site server using a direct modem connection.

To configure the settings in the "Log In" dialog box:



1. Enter a valid user ID and password.

Note: If the remote DVR Site Server does not enable the access control, select the "Guest log in" check box.

2. Select "**Direct modem connection.**"
3. Specify the telephone number of the DVR Site Server that you want to watch via remote.
4. Specify the modem driver at the local machine.
5. By default, **All cameras** is selected.
6. You can select a past connection from the drop-down list to fill out the Connection information.

7. Click **OK** to connect to the DVR site server.

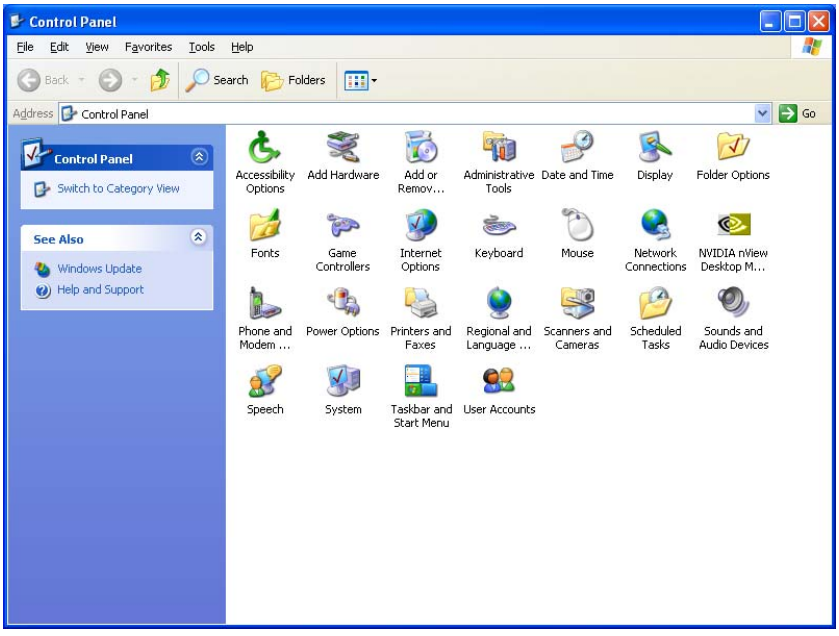
After clicking **OK**, you should be able to see live video feed from the remote camera(s) on the split screen display.

Setting up an Advanced Connection

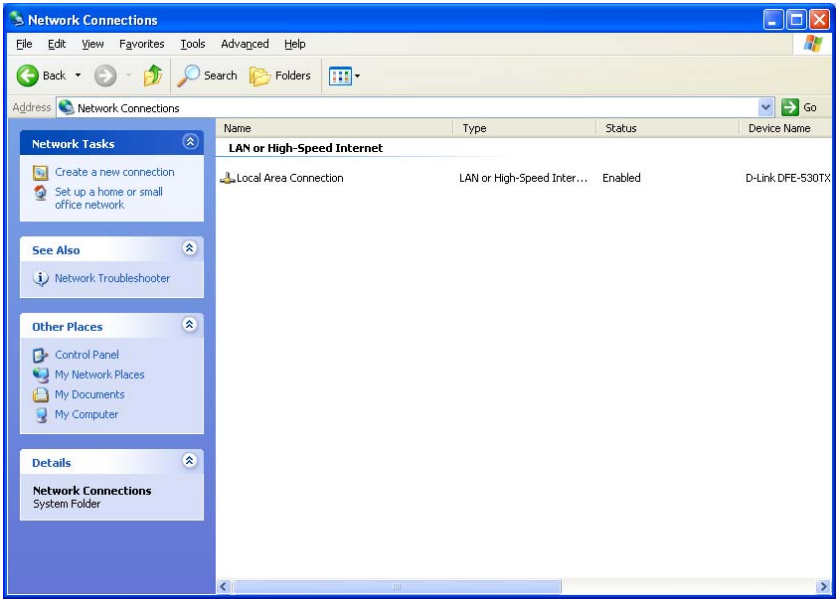
For Windows XP

1. Plug a modem device into a COM port of the DVR Site Server machine.

2. Install the driver for the modem device.
3. Click the "Start" button on your Windows taskbar and select "Control Panel" to open the Control Panel window.



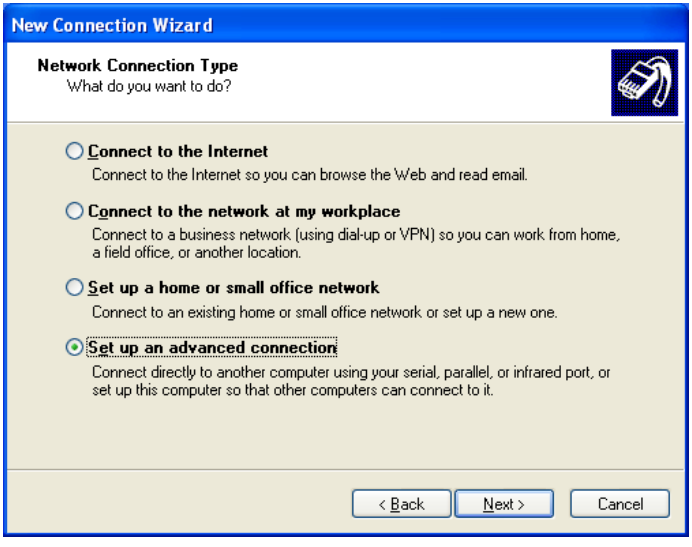
4. Click the "Network Connections" icon in the "Control Panel" window to open "Network Connections" window.



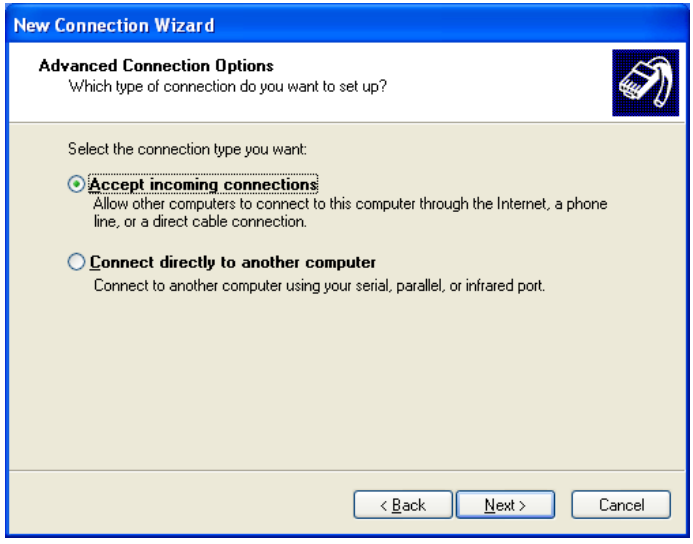
Note: If the "**Location Information**" dialog box opens, please fill in the area code and the telephone number of the telephone line connected to the modem.

5. Click the "Create a new connection" item to launch the "New Connection Wizard" window. Click the "Next" button.

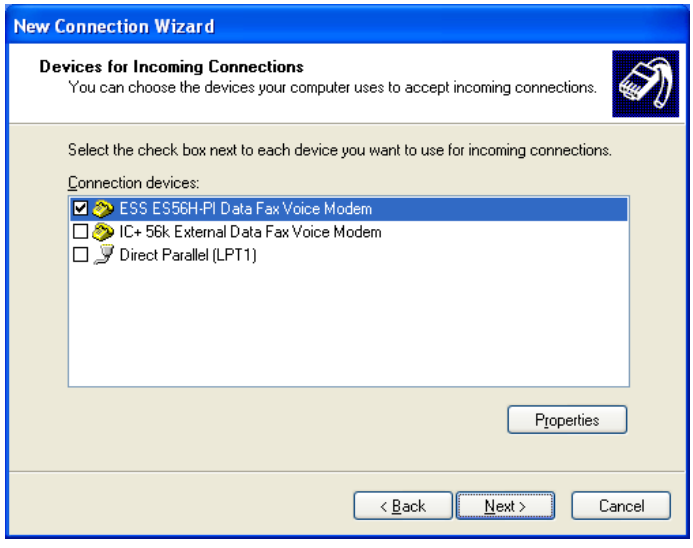
6. Select the "Set up an advanced connection" option then click the "Next" button.



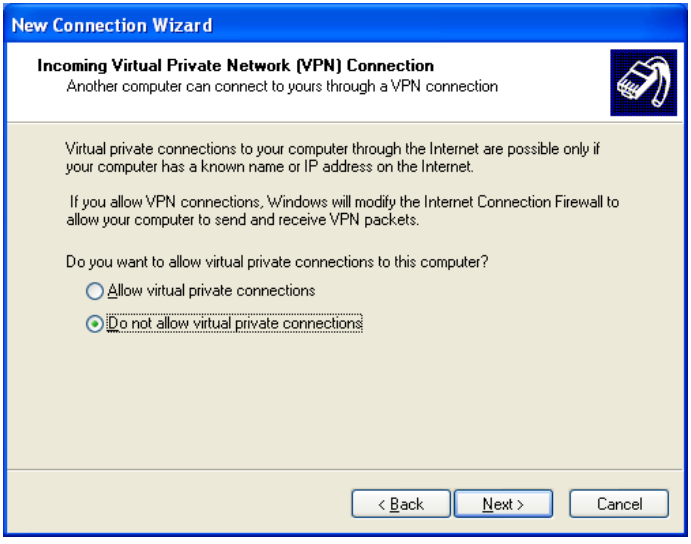
7. Select the "Accept incoming connections" option then click the "Next" button.



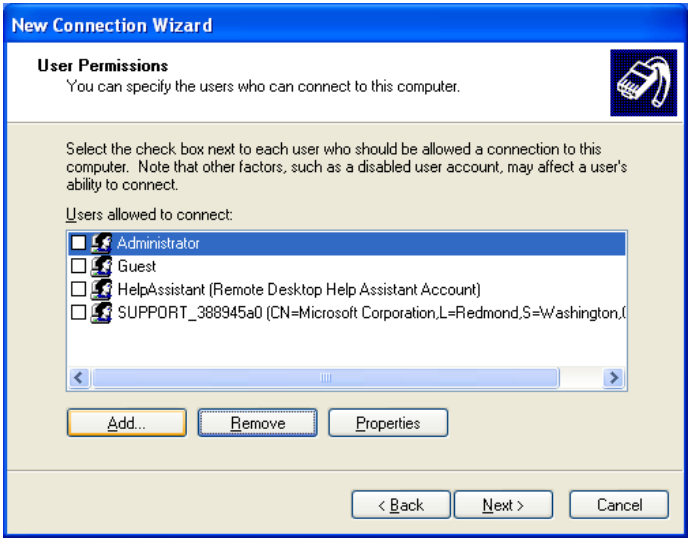
8. In the "Connection devices" list, select the modem driver then click the "Next" button.



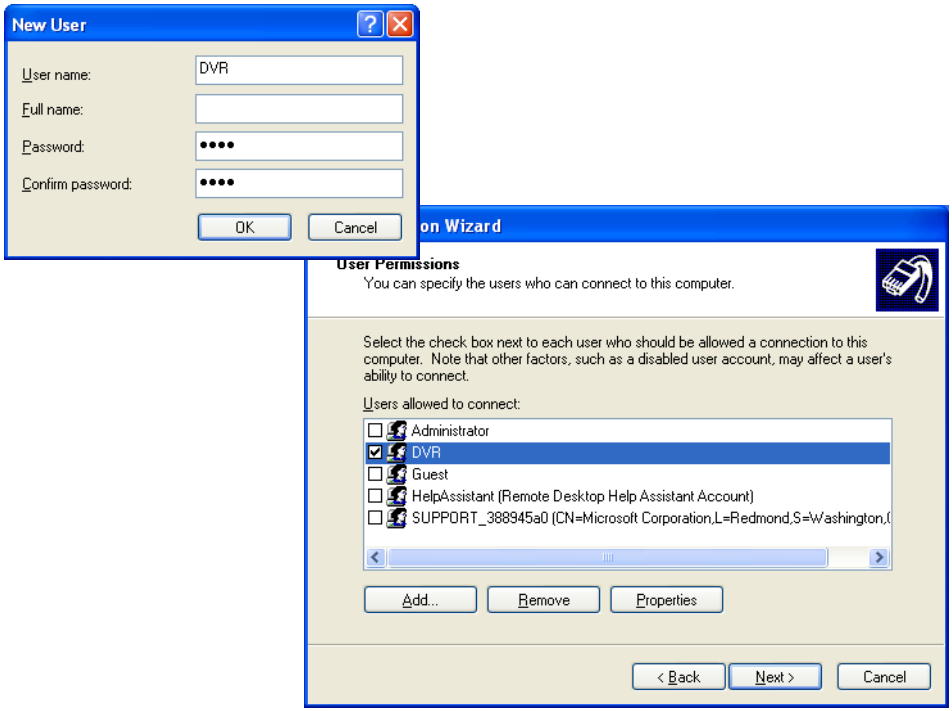
9. Select the "Allow virtual private connections"or "Do not allow virtual private connections" option then click the "Next" button.



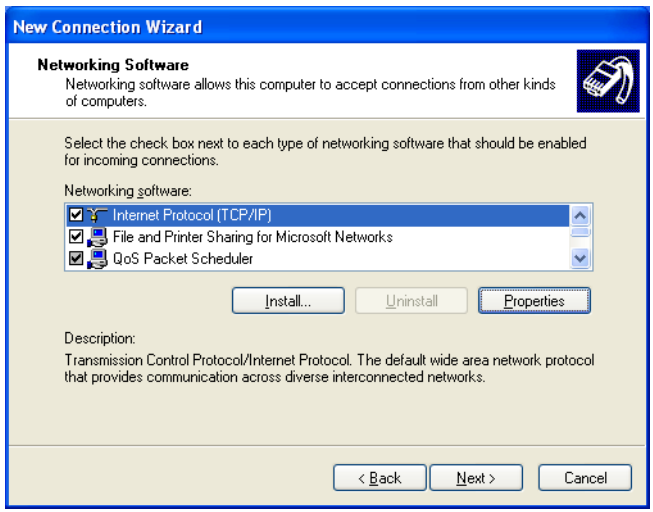
10. Click the "Add" button to open the "New User" dialog box.



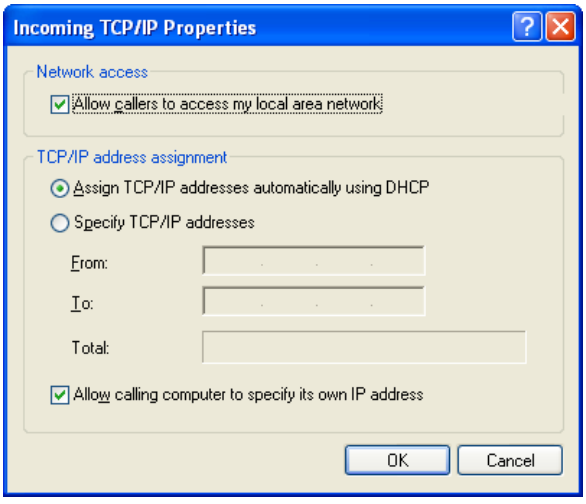
11. Type in “DVR” for "User name", "Password" and "Confirm password” then click the "OK" button to close the dialog box. Click the "Next" button.



12. In the "Networking software" list, select the "Internet Protocol (TCP/IP)" item and click the "Properties" button to open the "Incoming TCP/IP Properties" dialog box.



13. Select the "Allow calling computer to specify its own IP address" option then click the "OK" button to close the dialog box.

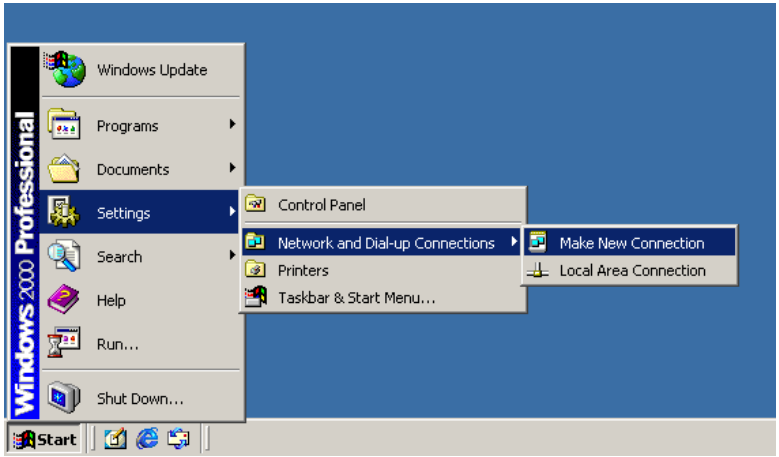


14. Click the "Next" button then click the "Finish" button to complete the setup process.

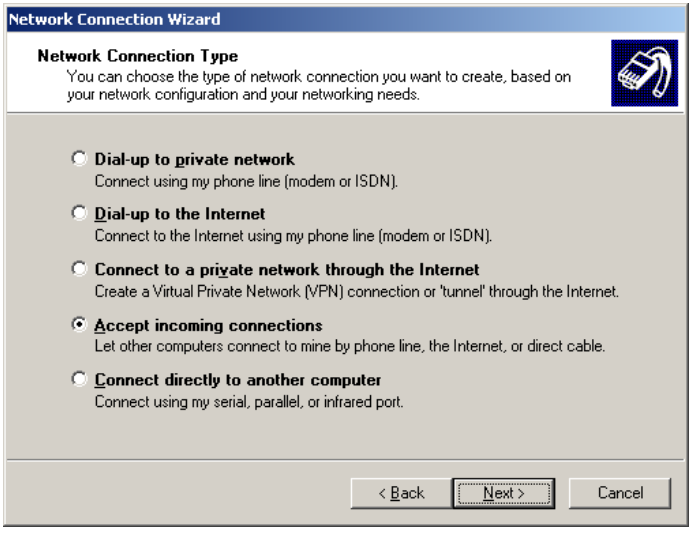
For Windows 2000

1. Plug a modem device to a COM port of DVR Site Server machine.
2. Install the driver for the modem device.
3. Click the "Start" button then select Settings > Network and Dial-up Connections > Make New Connection to open the "Network Connection Wizard" dialog window. Click the "Next" button.

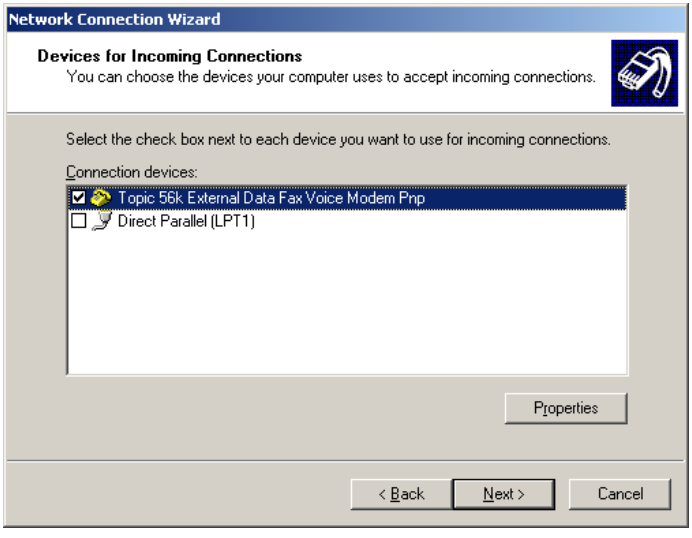
Note: If the "**Location Information**" dialog box opens, please fill in the area code and the telephone number of the telephone line connected to the modem.



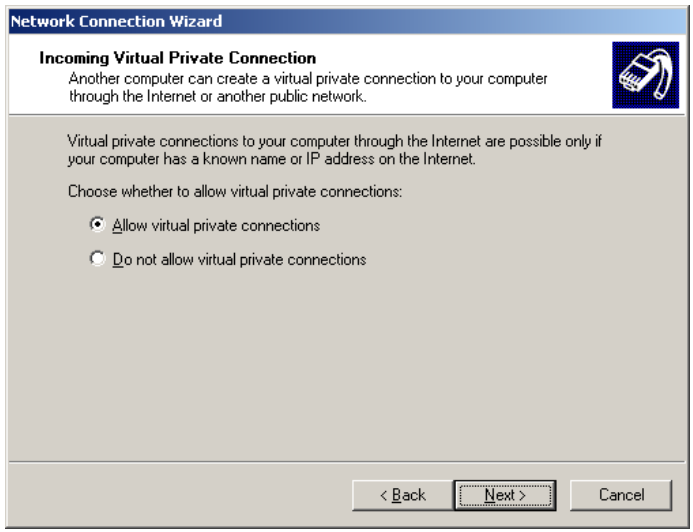
4. Select the "Accept incoming connections" option then click the "Next" button.



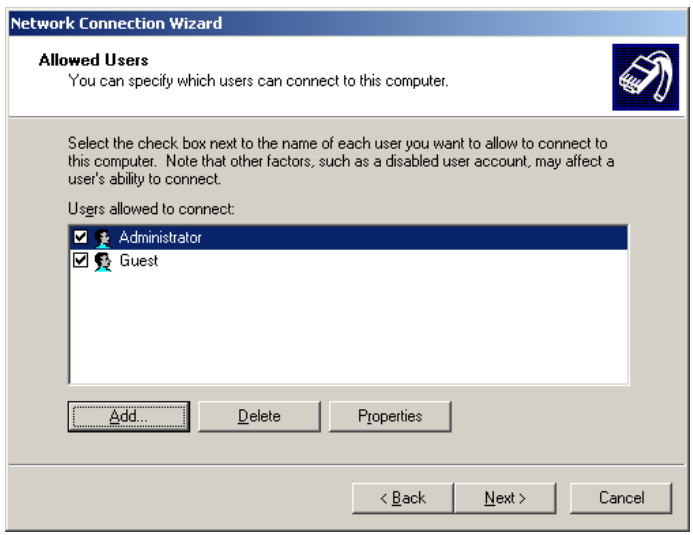
5. In the "Connection devices" list, select the modem driver then click the "Next" button.



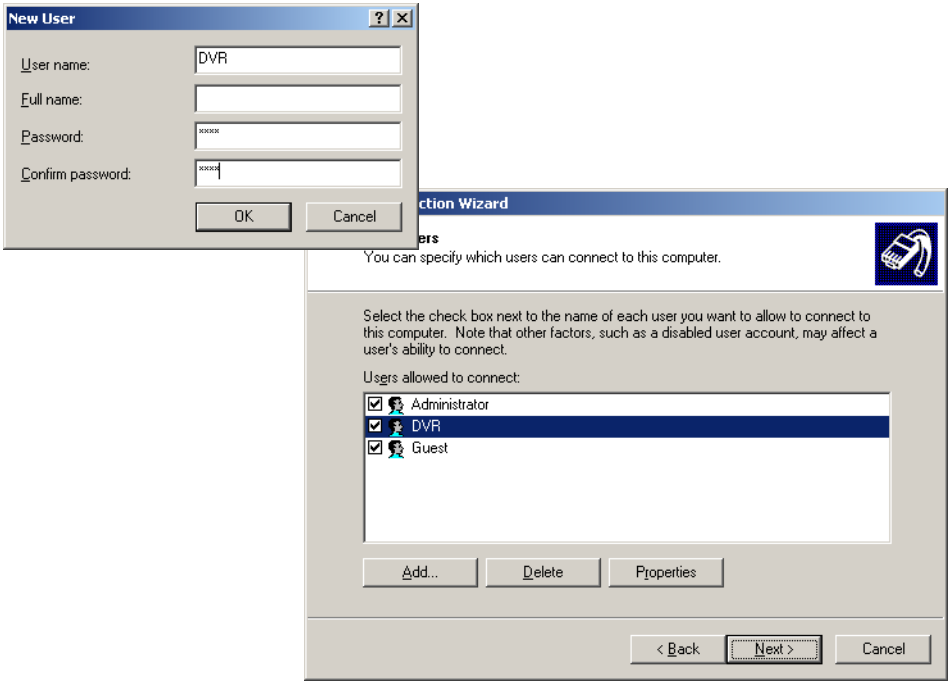
6. Select the "Allow virtual private connections"or "Do not allow virtual private connections" option then click the "Next" button.



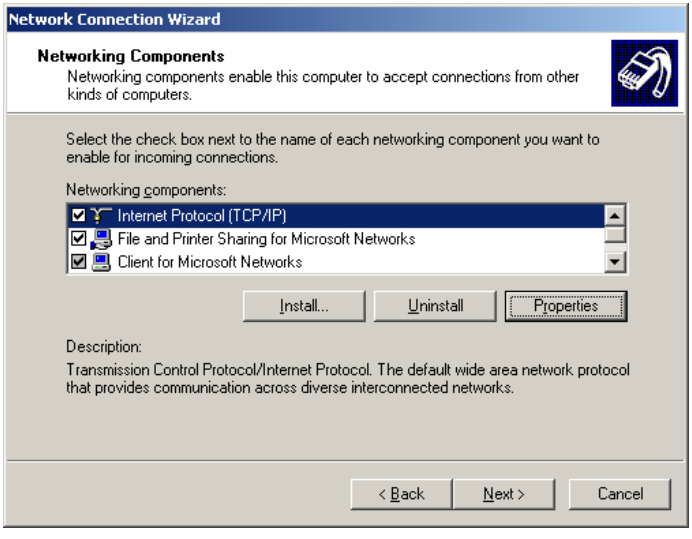
7. Click the "Add" button to open the "New User" dialog box.



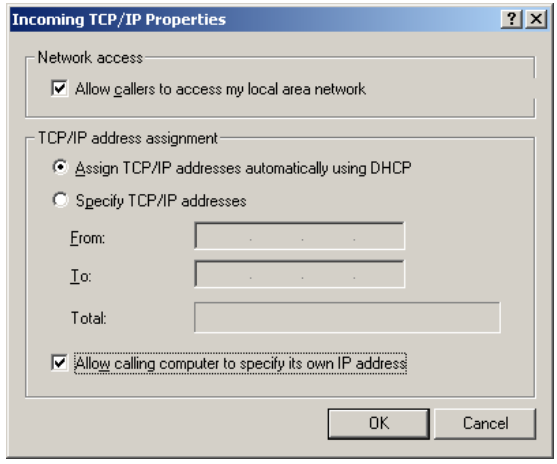
8. Type in “DVR” for "User name", "Password" and "Confirm password” then click the "OK" button to close the dialog box. Click the "Next" button.



9. In the "Networking components" list, select the "Internet Protocol (TCP/IP)" item and click the "Properties" button to open the "Incoming TCP/IP Properties" dialog box.



10. Select the "Allow calling computer to specify its own IP address" option then click the "OK" button to close the dialog box.



11. Click the "Next" button then click the "Finish" button to complete the setup proces.

The Operations of Remote Viewer

This displays the name (the location name, for instance) of the remote DVR site.

This Multi-screen Display can have up to 16 split screens to show live video from video cameras on the remote DVR site.

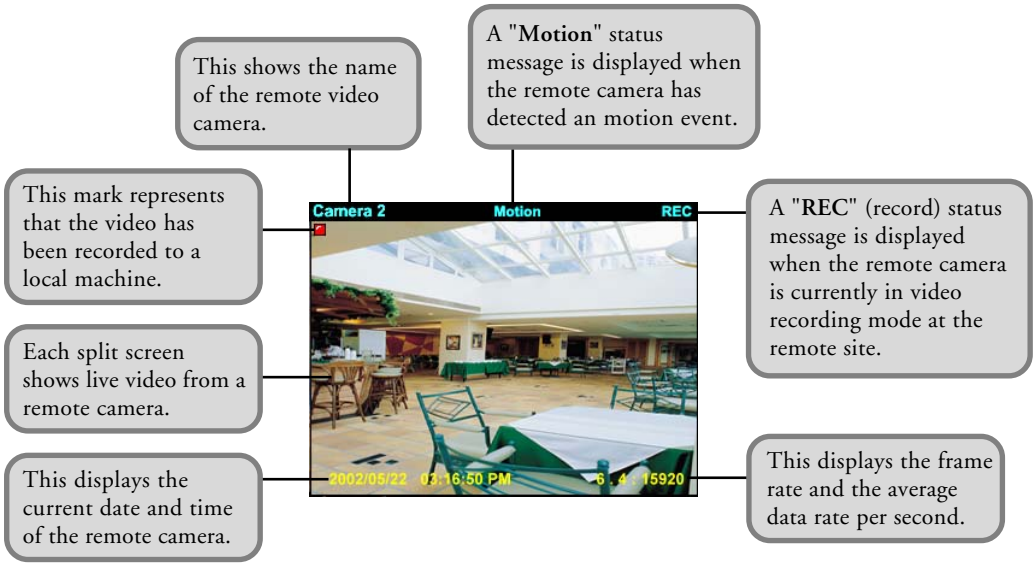
Use the Camera Control Panel to select a camera, connect/ disconnect a camera, control PTZ camera, and record video. (See "Camera Control Panel" for more details.)

Use the General Control Panel to choose how split screens are displayed, enable voice communication, play recorded video and customize preference settings. (See "General Control Panel" for more details.)

Click this button to connect to a remote DVR site.

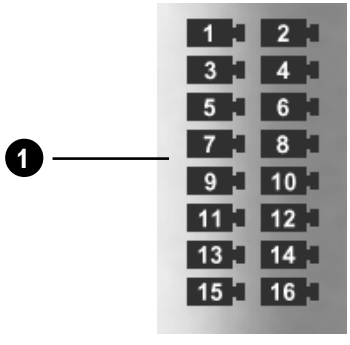
Split screens

Each split screen on the Remote Viewer interface shows the camera name and the current status of the video camera.



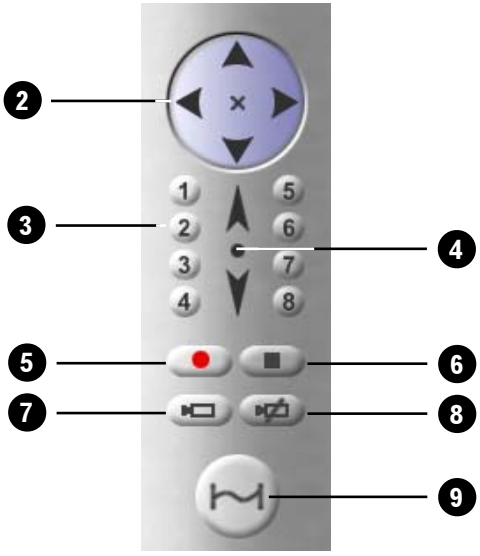
Camera Control Panel

The Camera Control Panel provides button controls for connecting to the remote site, selecting/viewing remote cameras, and controlling PTZ cameras.



1 Camera buttons

Click a camera button to select the corresponding remote camera. You need to select a remote camera first to record camera video, control a PTZ camera, or connect/disconnect the camera.



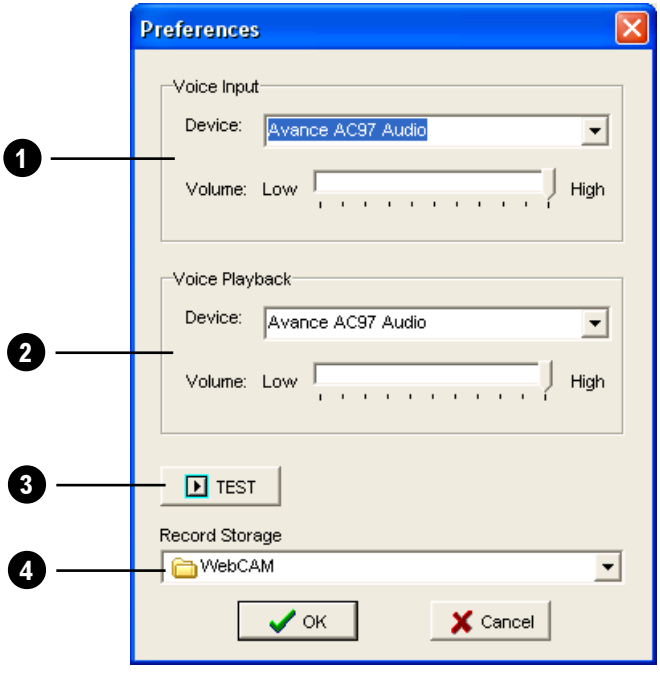
2	**Pan & Tilt control**	This is the Pan and Tilt control. Click one of the four arrow buttons to adjust the camera angle up, down, left, or right. Click the "cross" button to stop movement.
3	**Preset buttons**	The number buttons are Preset buttons that let you store camera angle positions. Click a preset button and hold for 2 seconds to record the current PTZ camera's angle position.
4	**Zoom control**	Click the up arrow to zoom in, or the down arrow to zoom out. Or, click the circle button to go back to the default zoom ratio. If the PTZ camera does not provide zoom scaling feature, click the up or down arrow continuously to zoom in or out.
5	**Record button**	Click this button to start recording video from the selected camera.
6	**Stop button**	Click this button to stop recording the video from the selected camera.
7	**Connect Camera button**	Click to display the "Log In" dialog box to connect to the selected remote camera.
8	**Disconnect Camera button**	Click to disconnect the selected camera.
9	**Connect Site button**	Click to display the "Log In" dialog box to connect to a remote DVR site. Click again to disconnect all camera connections.

General Control Panel

The General Control Panel provides button controls for switching between 1/4/9/16 split screens display, playing video recordings, and customizing preference settings.

1	**Full Screen button**	Toggles between full-screen and normal display mode.
2	**Single View button**	Click to display the split screen in single view.
3	**4 Split Screens button**	Click to split the Multi-screen display into 4 split screens.
4	**9 Split Screens button**	Click to split the Multi-screen display into 9 split screens.
5	**16 Split Screens button**	Click to split the Multi-screen display into 16 split screens.
6	**Next Page button**	If there are more active video cameras than the selected split screen view, click to display the next set of video feed from the cameras.
7	**Loop Page button**	If there are more active video cameras than the selected split screen view, click to loop the video feed from the cameras on the split screens.
8	**Play Remote Live Sound**	Click to hear remote live sound coming with remote live video.
9	**Record List button**	Click to display the list of video recordings.
10	**Voice button**	Click to enable the two-way voice communication to a remote DVR site. Click again to disable it. If there is a camera selected, the target of the voice communication is to the DVR site where the selected camera is on. If there is no camera selected, the first connected camera's DVR site is the target of the voice communication.
11	**Preference button**	Click to open the Preference dialog box.

Preference Settings



❶ **Voice Input**	Displays the audio device used by your input device (e.g. microphone) to capture your voice. You can also adjust input device's volume here. If you have more than one audio device installed, select the device you want to use from the drop-down menu.
❷ **Voice Playback**	Displays the audio device used by your playback device (e.g. speakers) to play back the voice from your counterpart. You can also adjust the playback device's volume here. If you have more than one audio device installed, select the device you want to use from the drop-down menu.
❸ **Test button**	Press the button to test the volume of the voice input/ output device.
❹ **Record Storage**	Specify the folder where you want to save video recordings.

Connecting to multiple cameras from different DVR Site Servers

1. Install the Remote Viewer program in your client machine.
2. Launch the Remote Viewer program.
3. Click a split screen.
4. Click the "**Connect Camera**" button to launch the "**Log in**" dialog box.
5. Enter the site server information and select a camera that you want to view.
6. Click the "**OK**" button in the "**Log in**" dialog box to connect.

Repeat steps 3-5 to connect to other cameras. At most, you can connect to 16 cameras from 16 different DVR Site Servers.

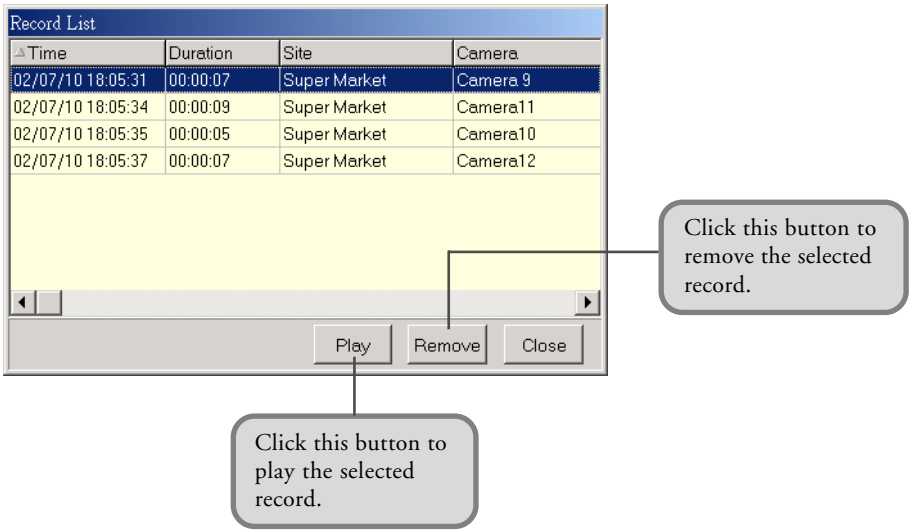
Controlling the DVR Site Server desktop remotely

1. Provide a password to the Administrator account in Site Server.
2. Install the Remote Viewer program in your client machine.
3. Launch the Remote Viewer program.
4. Click a split screen.
5. Click the "**Connect Camera**" button to launch the "**Log in**" dialog box.
6. Enter the site server information, administrator account and password.
7. Select "**Control**" from the Camera list.
8. Click the "**OK**" button in the "**Log in**" dialog box to connect.

If you want to view the DVR Site Server desktop in full screen, switch to the single view layout then select full screen as the display mode.

Viewing recorded videos

When recording surveillance videos from remote cameras, Remote Viewer saves them on the local computer's hard drive. To retrieve and view the recorded videos, click the button. A **Record list** window then appears, displaying logs of video recordings.



Select a log entry that shows details about the recorded surveillance video you want to view. Then click the **Play** button to open the **Playback Web page** and play back the recorded video.

Playback Web page

The Playback Web page allows you to control the playback of the selected recorded video and take an image snapshot.

❶ **Displayed information**	This shows the remote site name and camera name.
❷ **Date and Timecode**	This shows the recording date and timecode of the current video frame.

3	**Navigation controls**	The buttons from left to right are: "**Play**", "**Pause**", "**Stop**', "**Previous Frame**" and "**Next Frame**".
4	**Snapshot button**	Click this button to capture the current video frame, save it as a JPEG file, and then display it on the Snapshot Web page.

Snapshot Web page

The Snapshot Web page displays the captured image. The site name, camera name, date and timecode are shown on the image. Press the **Print** button to send the image out to a printer.

Chapter 7

Remote Record Player

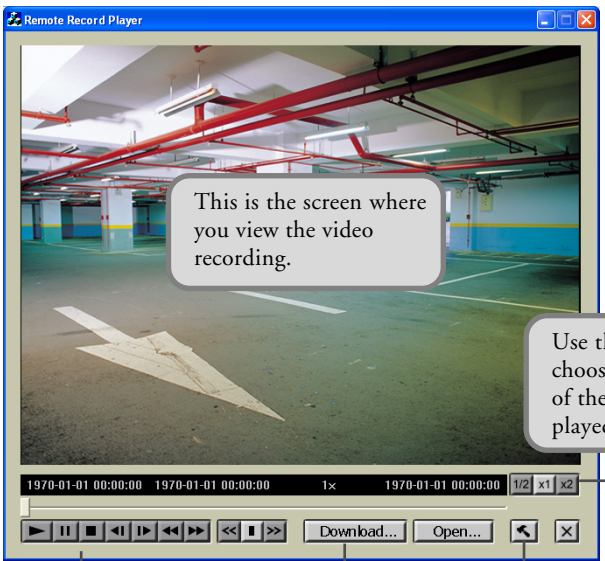
Remote Record Player allows you to download video recordings from a remote DVR site server and then view them on your local computer. Only downloaded video recordings from a remote DVR site server can be played back in Remote Record Viewer.

Launching Remote Record Player

Launch **Remote Record Player** by clicking **Start - Programs - DVR 2400 Remote Viewer - Remote Record Player**.

Program Interface: An Overview

The program is like a video player. These are the controls that you need to download and play back video recordings.



This is the screen where you view the video recording.

Use these buttons to choose the zoom ratio of the video being played back.

This is the Navigation panel.

Use these buttons to download and play back video recordings from the remote site server.

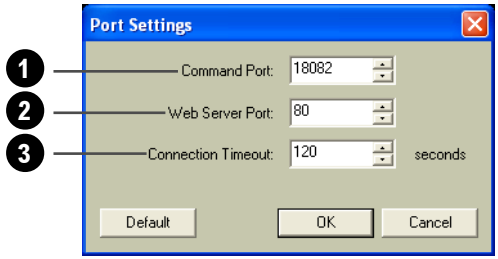
Click this button to open the Port Settings dialog box.

Downloading and playing back video recordings from a remote site server

You can download video recordings from a remote site server to your local computer then play it back. You may need access rights to the remote site server to be able to download video recordings.

Configuring Port settings

Click the "**Preference**" button to open the "**Port Settings**" dialog box where you can configure Remote Record Player to connect to the DVR site server.

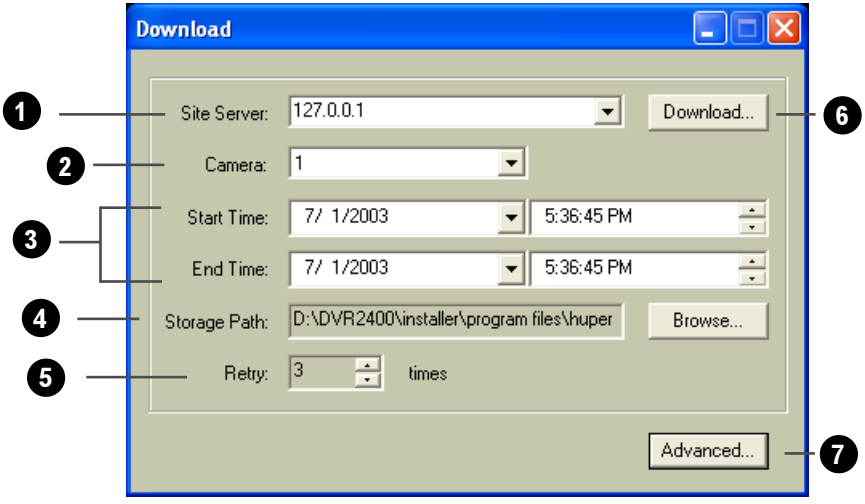


1	**Command port**	Specify the Command Port of the DVR site server.
2	**Web server port**	Specify the Web Server Port of the DVR site server. This should be the same as the TCP port in the Site Server program.
3	**Connection timeout**	Specify how long (in seconds) Remote Record Player will wait for a response from the DVR site server before Remote Record Player stops trying to connect.

It is recommended to use the default values for "**Command port**" and "**Web Server port**." Click the "**Default**" button to restore the default values in the dialog box.

Downloading video recording from a remote site server

Click the "**Download Record**" button to open the "**Download**" dialog box then configure the settings below.



1	**Site Server**	Specify the IP address or domain name of the DVR Site Server. Click the drop-down arrow to select from previous Site Servers that were accessed.
2	**Camera**	Click to select the camera number in the remote site server from where you want to download video recordings.
3	**Start/end Time**	Specify the date and time range of the video recording you want to download from the remote site server.
4	**Storage path**	Click the "**Browse**" button to specify the folder location where you want to save the downloaded video recording.
5	**Retry**	Use the arrow keys to specify how many times to retry downloading the video recording when the initial download try fails.
6	**Download**	Click to download video recordings. Opens the "**Login**" dialog box where you may need to specify a valid user ID and password in order to connect to the remote site server.
7	**Advanced**	Click this button to open the "**Port Settings**" dialog box to configure site server port settings.

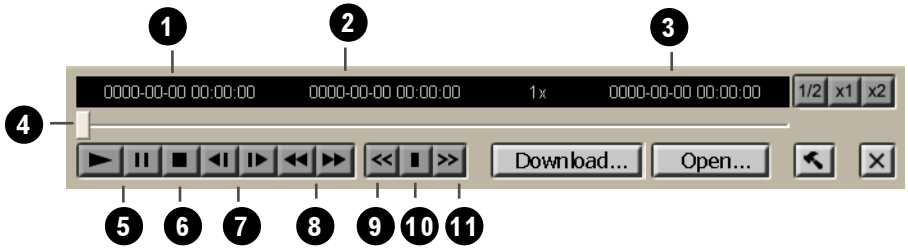
After clicking the "**OK**" button (valid User ID and Password may be required before you can click the OK button) in the "**Login**" dialog box, a dialog box will open showing you details of the video recording that is being downloaded. Click the "**Cancel**" button if you want to stop the download process.

Playing back downloaded video recordings

Click the "**Open Record**" button to open the "**Open**" dialog box and select the downloaded video recording file then click the "**OK**" button. The video recording file is displayed on the Remote Record Player screen.

Navigation Panel

Use the **Navigation Panel** to control the playback of recorded video.



1	**Start Time**	This shows the start time of the downloaded video recording.
2	**Current Timecode**	Shows the timecode of the current video scene.
3	**End Time**	This shows the end time of the downloaded video recording.
4	**Navigation Bar**	Allows you to jump directly to any part of the recorded video. Drag the slider tab to the desired part of the recorded video.
5	**Play / Pause**	Plays/Pauses the playback at the current frame.
6	**Stop**	Terminates the playback and moves to the starting frame.
7	**Previous / Next Frame**	Moves to the previous/next video frame.

8	**Backward / Forward**	Moves back/forward one or more video frames.
9	**Slow Motion**	Slows down video playback. Click once to play the recorded video at half (1/2 x) the normal speed. Click again to play the video at a quarter (1/4 x) of the normal speed. The slowest speed is 1/32 x.
10	**Normal Speed**	Plays the recorded event at its original speed.
11	**Fast Motion**	Increases the playback speed of the video. Click once to double (2 x) the playback speed. Click again to quadruple (4 x) the playback speed. The maximum speed is 64 x.

Changing the zoom ratio of the video during playback

When playing downloaded video recordings, you can change the zoom ratio of the video recording by clicking one of the "**Zoom Ratio**" button. Besides being able to view your video in its actual size, you can choose to view the video recording at 1/2 or 2x the original size.

Appendix 1

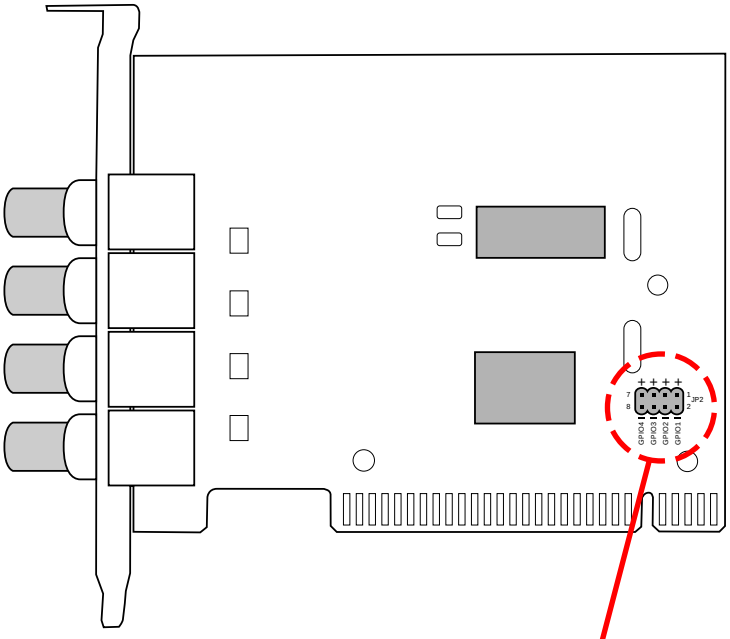
How to Use the I/O Ports of a Video Capture Card

1. The Specification of I/O Ports

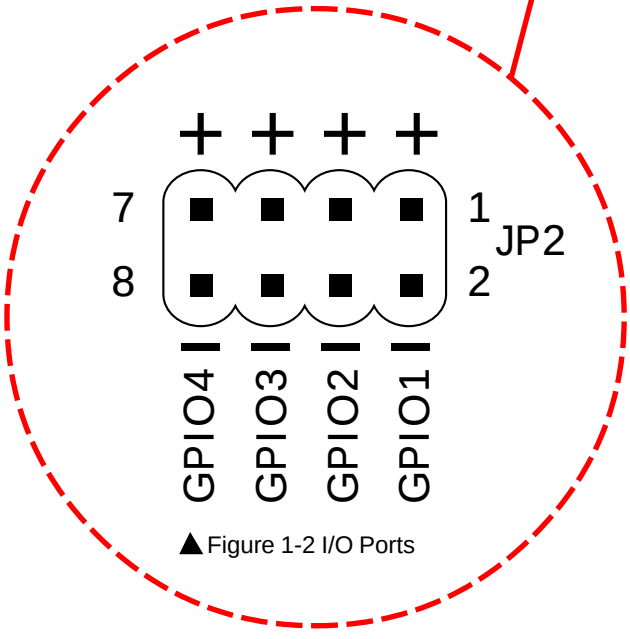
Each video capture card provides four I/O ports. Each I/O ports can connect to an Input Device (e.g. Infra-red sensor) or an Output Device (e.g. Alarm). The H1004S video capture card has four I/O ports, each marked by "GPIO1", "GPIO2", "GPIO3" and "GPIO4" (Please refer Figure 1-1 and 1-2). Every I/O port has two pins, a positive pole pin marked with "+" and a negative pole pin marked with "-". For other models of video capture cards (Please refer Figure 1-3 and 1-4), positive pole pins are at the side marked with "GPIO1-GPIO4", negative pole pins are at the opposite side marked with "G". The left-most pin pair are the first I/O port, the following pin pairs are numbered accordingly (second I/O port, third I/O port...). The IO ports link directly to the BT878 GPIO* ports. Below is their specifications.

Digital Input/Output		Min.	Max.
GPIO Input	Input High Voltage	2.0V	5.5V
	Input Low Voltage	-0.5V	0.8V
GPIO Output	Output High Voltage (I=-1.2mA)	2.4V	5V
	Output Low Voltage (I=8mA)	-	0.4V

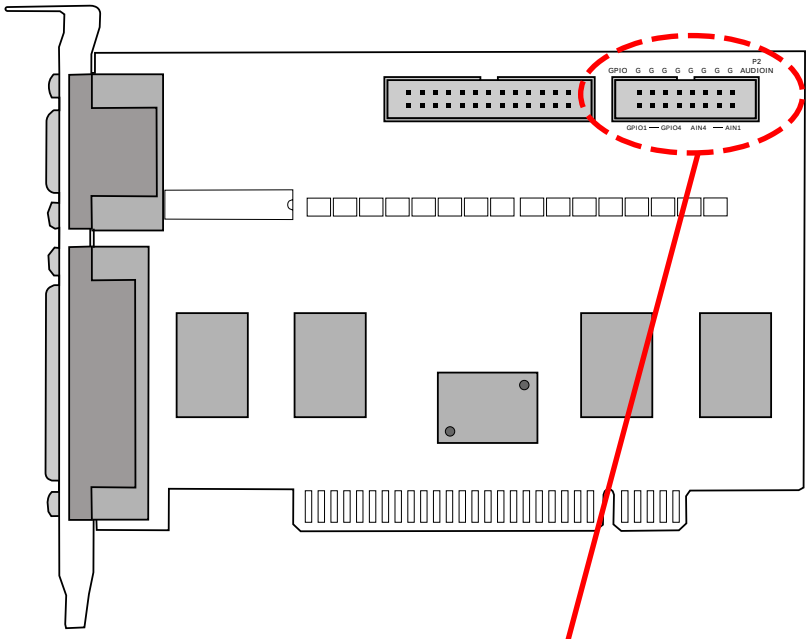
Note:
- GPIO: General Purpose Input/Output ports.
- Detail GPIO specification.Please read the specifications of the Bt878 chip.



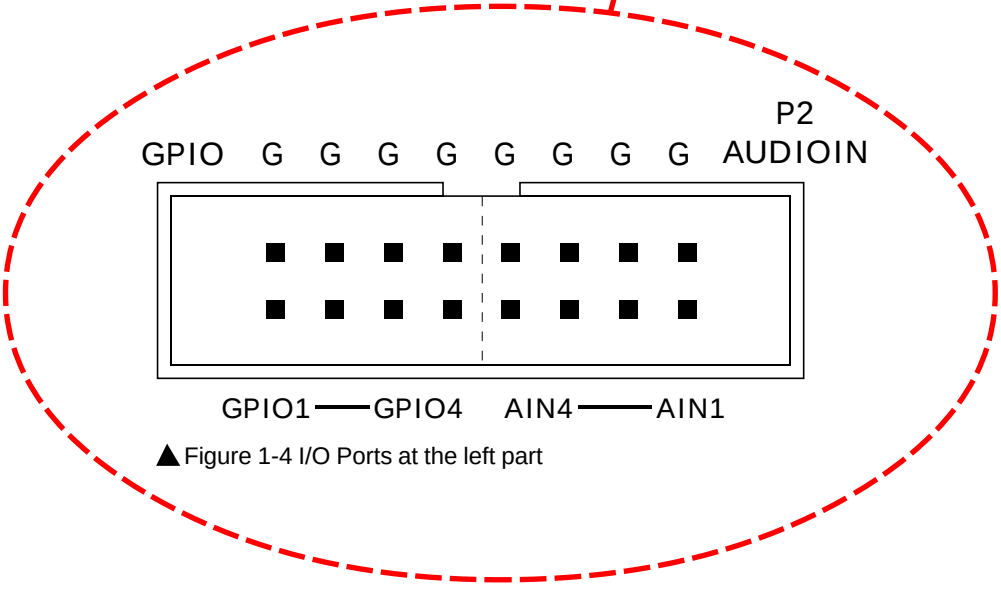
▲Figure 1-1 H1004S Video Capture Card



▲Figure 1-2 I/O Ports



▲Figure 1-3 H4004Q Video Capture Card



▲Figure 1-4 I/O Ports at the left part

2. Installing the Cable

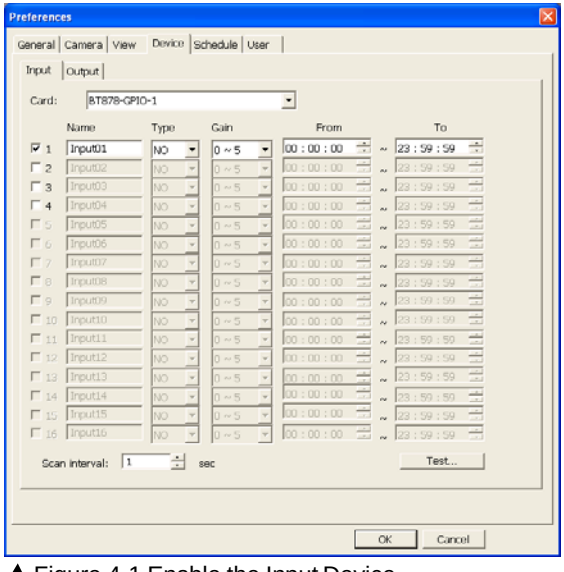
You need to install a cable to connect I/O ports to I/O devices. You can purchase a cable from any PC accessory store or use the cable that comes with the video capture card. Please note that some models of video capture cards do not include cables. You can purchase the cable from the dealer where you purchased the product.

3. Connecting to I/O Devices

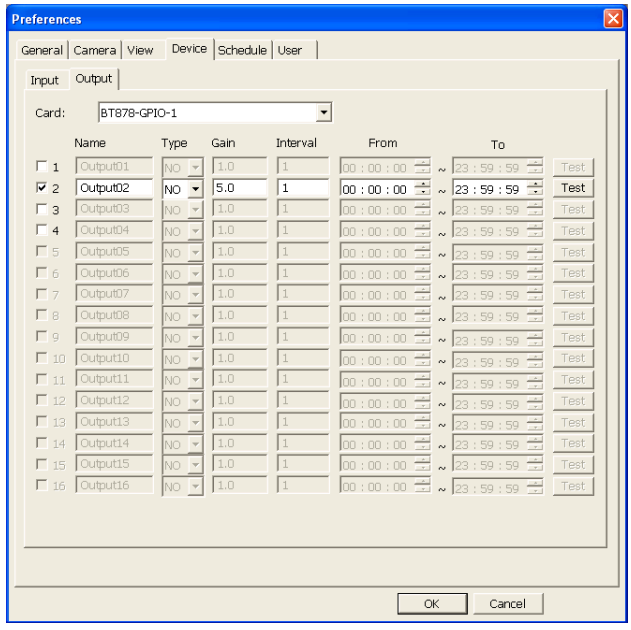
Each I/O ports can connect to an input device or an output device. If the input/output voltage from/to the I/O devices does not match the specifications of I/O ports, the video capture card or output devices may be damaged due to overrunning of the voltage limit. An extra circuit for increasing/decreasing the voltage from the input device or to the I/O port can solve the problem. Please note that I/O ports can only accept DC (Direct Current).

4. Setting I/O Devices

I/O devices and I/O ports should have their corresponding positive pole pins connected and corresponding negative pole pins connected. If the first I/O port is connected to an input device, please select the first option on the "**Device/Input**" page of the "**Preference**" dialog box then specify the device type (either NC or NO). (Please refer to Figure 4-1.) If the first I/O port is connected to an output device, please select the first option on the "**Device/Output**" page of the "**Preference**" dialog box then specify the device type (either NC or NO). (Please refer to Figure 4-2.) If you installed other I/O devices, follow the rule above for the "**Preference/Device.**" page.



▲ Figure 4-1 Enable the Input Device



▲ Figure 4-2 Enable the Output Device

5. Testing the I/O Device Connection

After connecting the I/O ports to I/O devices and finalizing the settings, click the "**Test**" button on the "**Preference/Device**" page to check the connection and settings. Click the "**Test**" button on the "**Preference/Device/Input**" page to launch a dialog box displaying the current input voltage of input devices. (Please refer to Figure 5.) You can trigger the input device and track the changes of input voltage in this dialog box. Click the "**Test**" button on the "**Preference/Device/Output**" page to change the output voltage. You can check the behavior of output devices to make sure the connections and settings are correct.

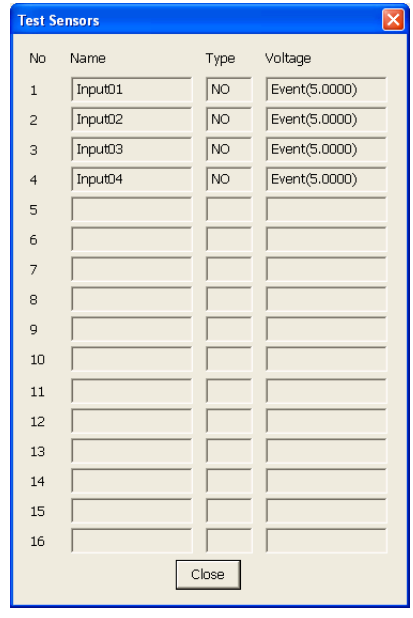


Figure 5 Test Sensors ▶

6. Including I/O Devices to the operation of DVR Site Server

When an input device has been triggered to issue an event, Site Server can have three reactions:

1. In the event recording mode, starts the video recording and Site Server keeps recording till the event ends.
2. In non-event recording mode, the event time segment is recorded to enable searching of video recordings later.
3. Issue event notifications.

In order to include input devices to the normal operation of Site Server, you need to select the "**Sensor detection**" option in the "**Detect events by**" group on the "**Preference/ Camera**" page for certain cameras. Then click the "**Settings**" button behind the option "**Sensor detection**" to assign input devices.

Output devices are for event notification. You can select the "**External devices**" option in the "**Respond to events by**" group on "**Preference/Camera**" page for certain cameras. Then click the "**Settings**" button behind the option "External devices" to assign output devices.

Appendix 2

The profile settings of LiveTag.ini

What is the profile settings for?

Some settings of DVR 2400 are related to the product models and hardware environments. These settings are put on the "LiveTag.Ini" file with default values. Installers and users can modify the settings for customization or performance/quality tuning.

Where is the file for the setting?

The file "LiveTag.Ini" is placed at the product installed folder. The default location of the file is at "Drive:\ Program Files\DVR 2400\Bin", where Drive could be C, D, etc.

How to Modify the Settings?

Prior to the modification, you need to know each setting standing for. Below explain the settings one by one.

1. [SYSTEM] Section

Key Name	Default	Description
Field_sync	1	Enable it if the capture board has the Field Sync Circuit for field sync. Disable it if the capture board has no Field Sync Circuit. 1 for enable and 0 for disable. Not to enable the setting on capture board without the Field Sync Circuit, otherwise, frozen video may happen.
Smart_Saving_interval	1	Specify the recording frame rate while no motion video in No-stop Smart recording mode. 1 for 1fps, 2 for 0.5 fps, etc.
Quick_display_format	1	Enable/disable the quick video display. 1 for enable, 0 for disable. If the video display card cannot display image correctly, please update to newest display card driver or disable the quick video display function.

NORESPONSETIME	130	(Available since version 1.3) Specify the delay time in seconds to restart the computer when hardware watchdog has detected a system halt.
BCSOFT	1	(Available since version 1.4) Enable/disable the software adjustmen of brightness and contrast on camera video. 1 for enable and 0 for disable.

2. [DROP_FIELD] Section

Key Name	Default	Description
CHIP01 ~ CHIP16	0	Specify the number of drop fields. Increase the number will reduce the frame rate but keep better video image quality. Disable by default.

3. [FRAME_RATE] Section

Key Name	Default	Description
CHIP01 ~ CHIP16	30	Specify the maximum capturing frame rate for each Bt878 chip. 30 fps by default.

4. [COMPRESSOR_FAST] Section

Key Name	Default	Description
GOP	30	Specify the frame rate of I-frame. Larger value gains smaller data size but may reduce the image quality.
QP	7	Specify the QP value. Smaller value gains better image quality but has larger data size.
Search_level	1	Specify the motion searching method. Value 1 has better performance but has larger data size. Value 2 has smaller data size but a bit slow.

PS: Settings for HM Fast compression.

5. [COMPRESSOR_GOOD] Section

Key Name	Default	Description
GOP	30	Specify the frame rate of I-frame. Larger value gains smaller data size but may reduce the image quality.
QP	7	Specify the QP value. Smaller value gains better image quality but has larger data size.
Search_level	2	Specify the motion searching method. Value 1 has better performance but has larger data size. Value 2 has smaller data size but a bit slow.

PS: Settings for HM Good Quality compression.

6. [COMPRESSOR_BEST] Section

Key Name	Default	Description
GOP	30	Specify the frame rate of I-frame. Larger value gains smaller data size but may reduce the image quality.
QP	5	Specify the QP value. Smaller value gains better image quality but has larger data size.
Search_level	2	Specify the motion searching method. Value 1 has better performance but has larger data size. Value 2 has smaller data size but a bit slow.

PS: Settings for HM Best Quality compression.

7. [MODEL_RECORDING_RATE] Section

Key Name	Default	Description
ENABLE	0	Set the value to 1 to take effect while you modify the [MODEL_RECORDING_RATE] settings.
M04S	30	Specify the default frame rate for DVR 2404S
M08S	30	Specify the default frame rate for DVR 2408S
M12S	30	Specify the default frame rate for DVR 2412S
M16S	30	Specify the default frame rate for DVR 2416S
M04D	30	Specify the default frame rate for DVR 2404D

M08D	30	Specify the default frame rate for DVR 2408D
M12D	30	Specify the default frame rate for DVR 2412D
M16D	30	Specify the default frame rate for DVR 2416D
M04Q	30	Specify the default frame rate for DVR 2404Q
M08Q	30	Specify the default frame rate for DVR 2408Q
M12Q	30	Specify the default frame rate for DVR 2412Q
M16Q	30	Specify the default frame rate for DVR 2416Q

8. [AUDIO_FORMAT] Section (Available since version 1.4)

Key Name	Default	Description
SAMPLE	8000	Specify the audio smapling rate. 8KHz by default.
BIT	8	Specify the sample resolution, 8 bits by default. It cound be 8 bits or 16 bits.

9. [MAILDIMENSION] Section (Available since version 1.4)

Key Name	Default	Description
ATTACH_PICTURE	0	Enable/disable attaching event snapshot to email notification. 1 for enable, 0 for disable. Disabled by default.
XDIMENSION	320	Specify the width of event snapshot.
YDIMENSION	240	Specify the height of event snapshot.

10. [DRAW_FRAME] Section (Available since version 1.4)

Key Name	Default	Description
OPEN	0	Enable/disable the support of web browse by mobile phone. 1 for enable, 0 for disable. Disable by default.

Appendix 3

IOC-0404P Card Guide

Introduction

The IOC-0404P is a 4-ch digital input and 4-ch. relay output module. IOC-0404P supports two interfaces with host controller, general-purpose input/output interface and RS232 interface, to meet different requirement from host controller.

IOC-0404P digital input module built with 5000VDC optical isolation, it is suitable for noise environment or floating potential. Also, the 4 isolated inputs provide the best method to prevent the ground loop problem. The IOC-0404P supports dry contact wiring for simply implement. Moreover, users can read the current input status from the green LED indicators on the board. Each input channel is jumper selectable to either isolated or non-isolated input.

The IOC-0404P provides four channels with Form C relay. IOC-0404P is excellent for ON/OFF control or low-power switching applications.

For easy monitoring, each relay is equipped with one yellow LED to reflect its ON/OFF status.

Technical Specification

Digital input:

- Channel: 4-channel/ digital inputs
- Optical Isolation: 5000 VDC
- Optical-isolator response time: 18 us
- Over-voltage Protect: 70 VDC
- ESD (Electro Static Discharge): 5000 VDC
- LED Indicator: On: Active; Off: Non-active
- Input Voltage:
  Dry Contact Logic level 0: Close to GND
  Logic level 1: Open
  Optical Isolation: 24VDC (Normal)
  Dry Contact & Optical Isolation Selectable
- Power consumption: 200 mW each channel

Relay output:

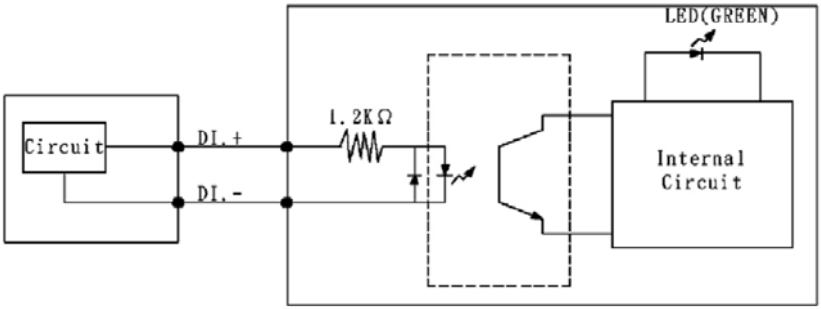
- Channel: 4-channel/ relay output with Form C
- LED Indicator: On: Active; Off: Non-active
- Contact Rating:
  AC 125 V @ 0.6 A; 250 V @ 0.3 A
  DC 30 V @ 1 A; 110 V @ 0.6 A
  NO & NC selectable by jumper

Application Wiring

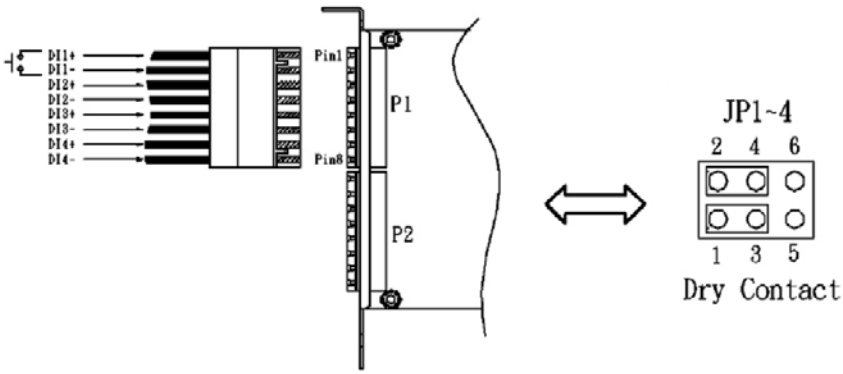
The following gives you examples on how to connect the cable to your IOC-0404P modules.

Input wiring

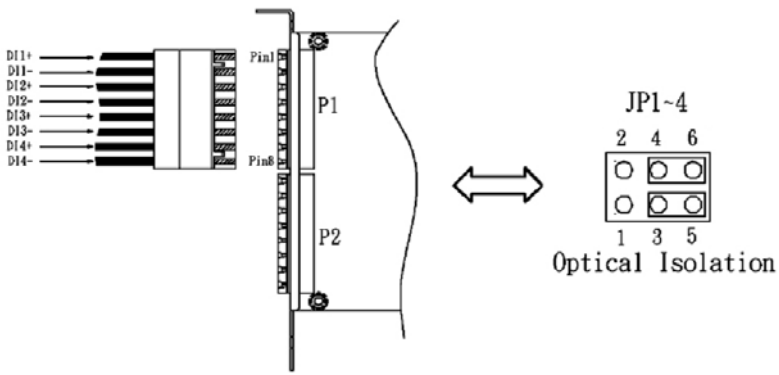
Diagram



Dry Contact Input

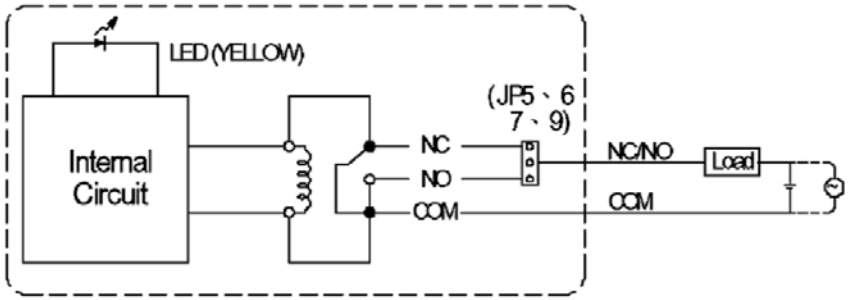


Isolation Digital Input

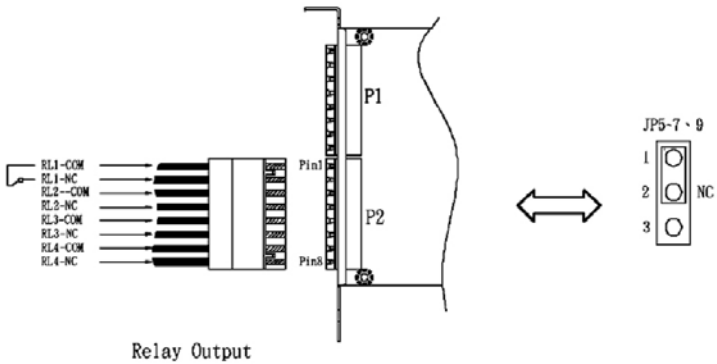


Output wiring

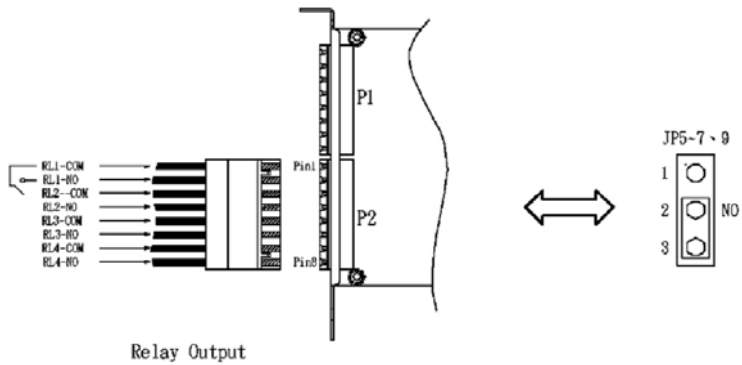
Diagram



NC (Normal Close) setting



NO (Normal Open) setting



Installation

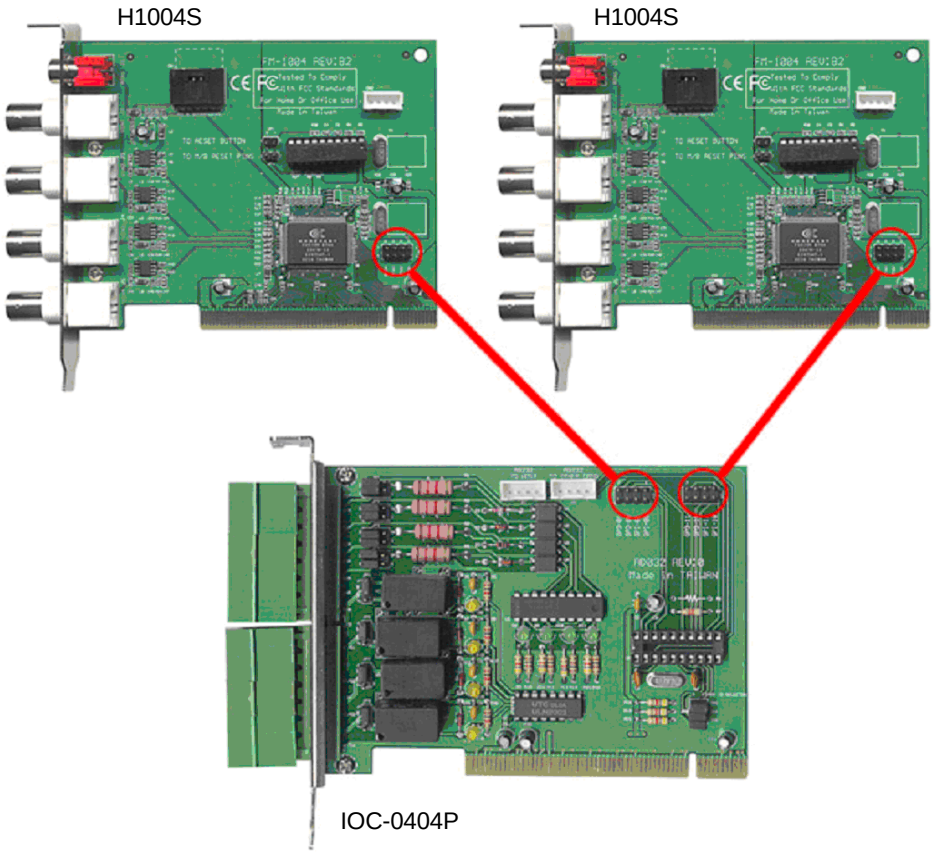
1. Before install IOC-0404P into system, remove the terminator housing from IOC-0404P as figure 1.
2. Fix the IOC-0404P using screw.
3. Connect the cable of input / output to terminator block as desired.
4. Plug terminal block into IOC-0404P as figure 2.
5. Check the INPUT/ OUTPUT module is fitted in right terminal and right position.

Figure 1

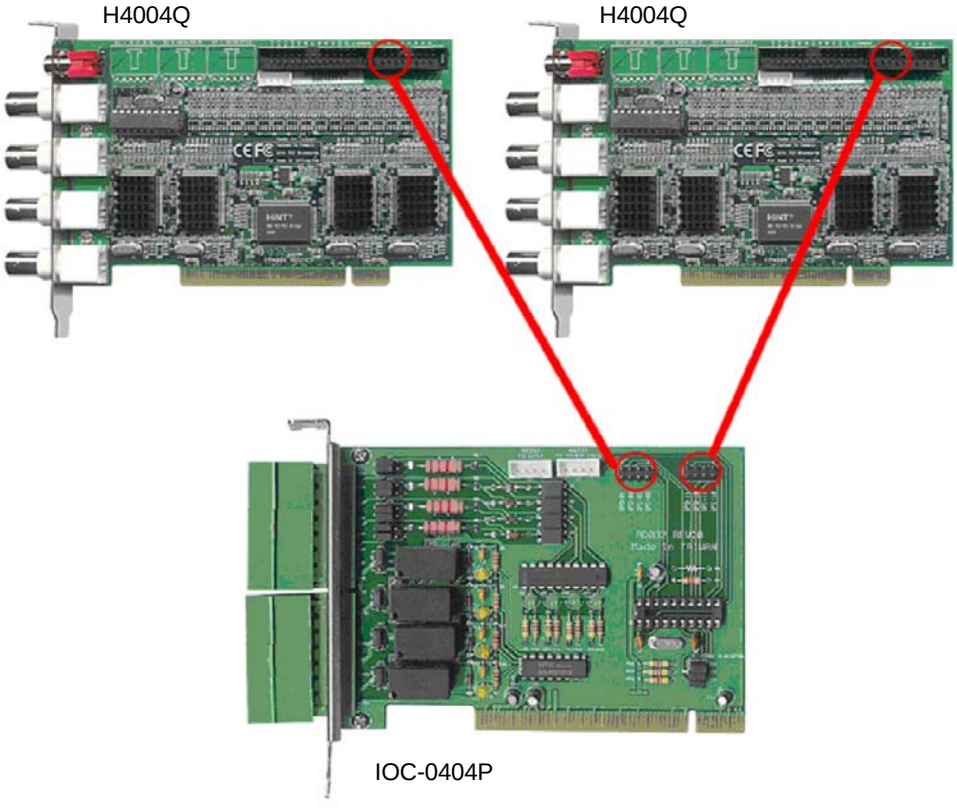
Figure 2

Host wiring

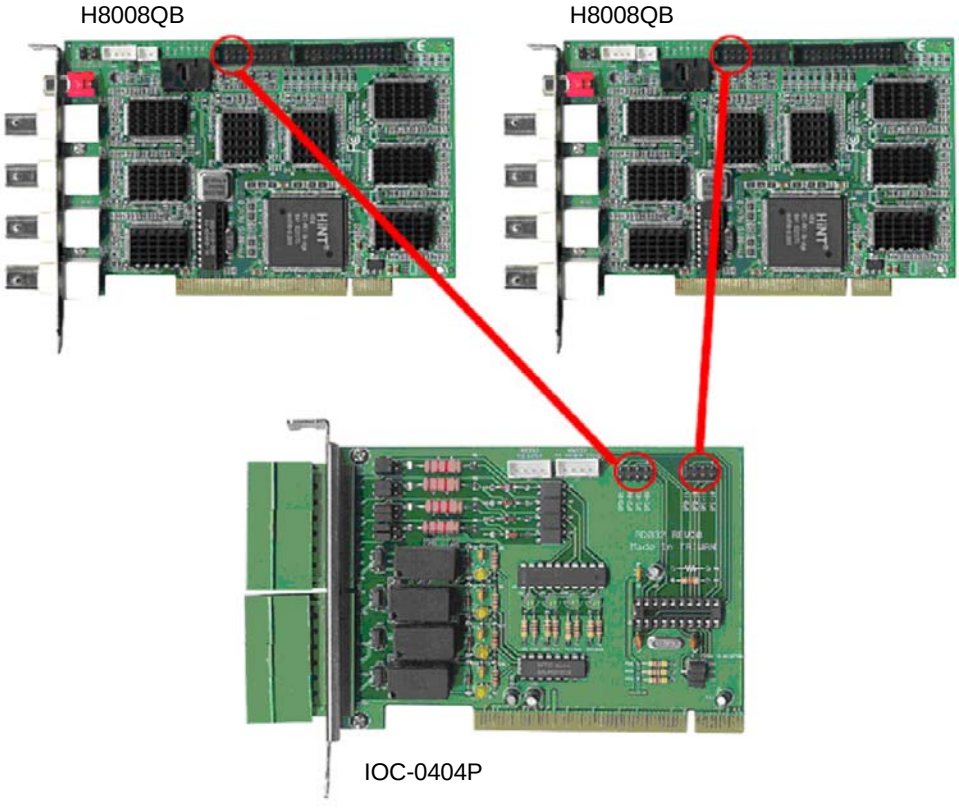
1. IOC-0404P to H1004S: Please be noted that the red line of cable should connect to the pin2 at the IOC-0404P card and the H1004S card.



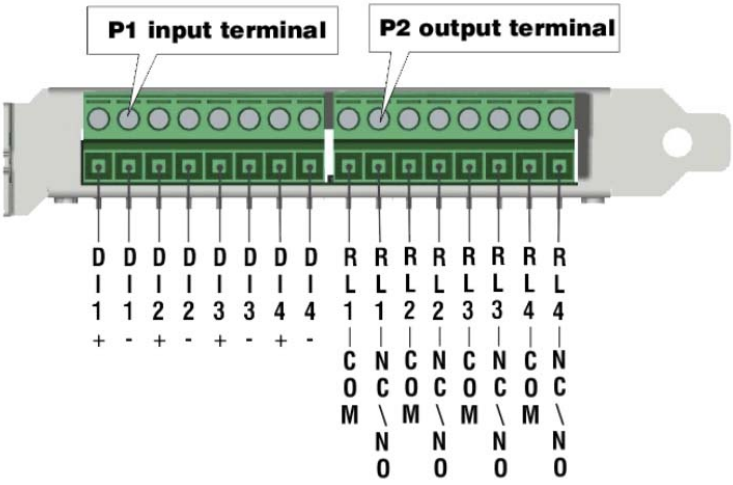
2. IOC-0404P to H4004Q: Please be noted that the red line of cable should connect to the pin2 at the IOC-0404P card and the "G" pin at the H4004Q card.
   (The same wiring for H4016SB, H4008DB, H416SG and H408DG)



3. IOC-0404P to H8008QB: Please be noted that the red line of cable should connect to the pin2 at the IOC-0404P card and the "G" pin at the H8008QB card.



Pin Assignment



Pin no.	P1 General purpose input	Description
1	DI1+	Input channel 1 +
2	DI1-	Input channel 1 -
3	DI2+	Input channel 2 +
4	DI2-	Input channel 2 -
5	DI3+	Input channel 3 +
6	DI3-	Input channel 3 -
7	DI4+	Input channel 4 +
8	DI4-	Input channel 4 -

Pin no.	P2 Relay output	Description
1	RL1-COM	Relay output channel 1- common
2	RL1-NC/NO	Relay output channel 1- NC or NO
3	RL2-COM	Relay output channel 2- common
4	RL2-NC/NO	Relay output channel 2- NC or NO
5	RL3-COM	Relay output channel 3- common
6	RL3-NC/NO	Relay output channel 3- NC or NO
7	RL4-COM	Relay output channel 4- common
8	RL4-NC/NO	Relay output channel 4- NC or NO

Jumper & connector

Input module dry contact / optical isolation select (JP1 ~ 4)

Channels	Dry contact	Optical isolation
Channel 1 (JP1)	1-3,2-4	3-5,4-6
Channel 2 (JP2)	1-3,2-4	3-5,4-6
Channel 3 (JP3)	1-3,2-4	3-5,4-6
Channel 4 (JP4)	1-3,2-4	3-5,4-6

Relay output NC / NO select (JP5 ~7, 9)

Channels	Normal close (NC)	Normal open (NO)
Channel 1 (JP5)	1-2	2-3
Channel 2 (JP6)	1-2	2-3
Channel 3 (JP7)	1-2	2-3
Channel 4 (JP9)	1-2	2-3

ID selector (JP8)

Card ID	JP8
Card ID 0	1-2,3-4,5-6
Card ID 1	3-4,5-6
Card ID 2	1-2,5-6
Card ID 3	5-6
Card ID 4	1-2,3-4
Card ID 5	3-4
Card ID 6	1-2
Card ID 7	Open

Host interface-RS232 (J1)

Signals	J1
Transmission data (TXD)	1
Ground	2,3
Receive data (RXD)	4

Interface to next IOC-0404P-RS232 (J2)

Signals	J2
Transmission data (TXD)	1
Ground	2,3
Receive data (RXD)	4

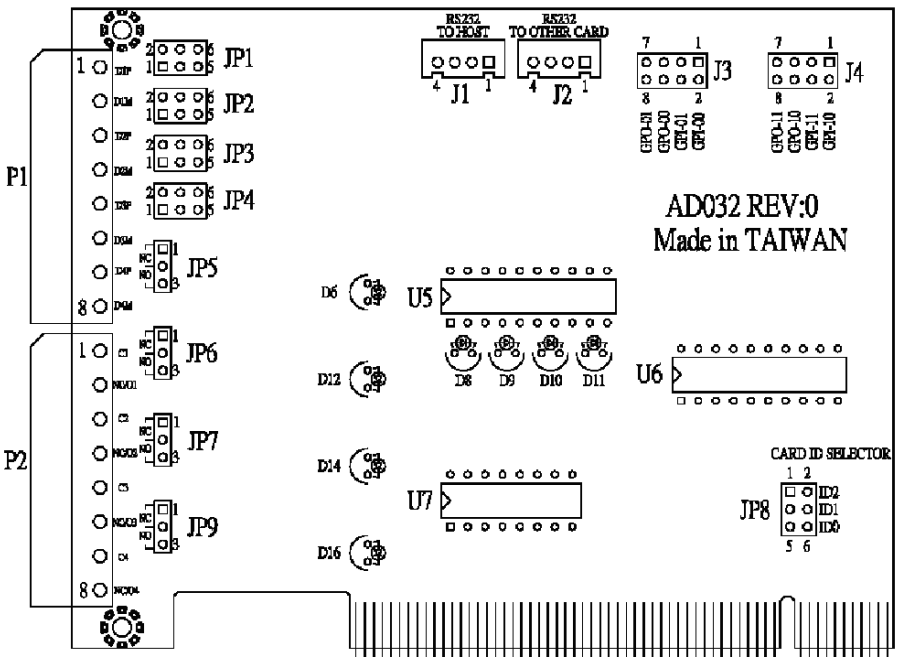
Host interface-GPIO (J3)

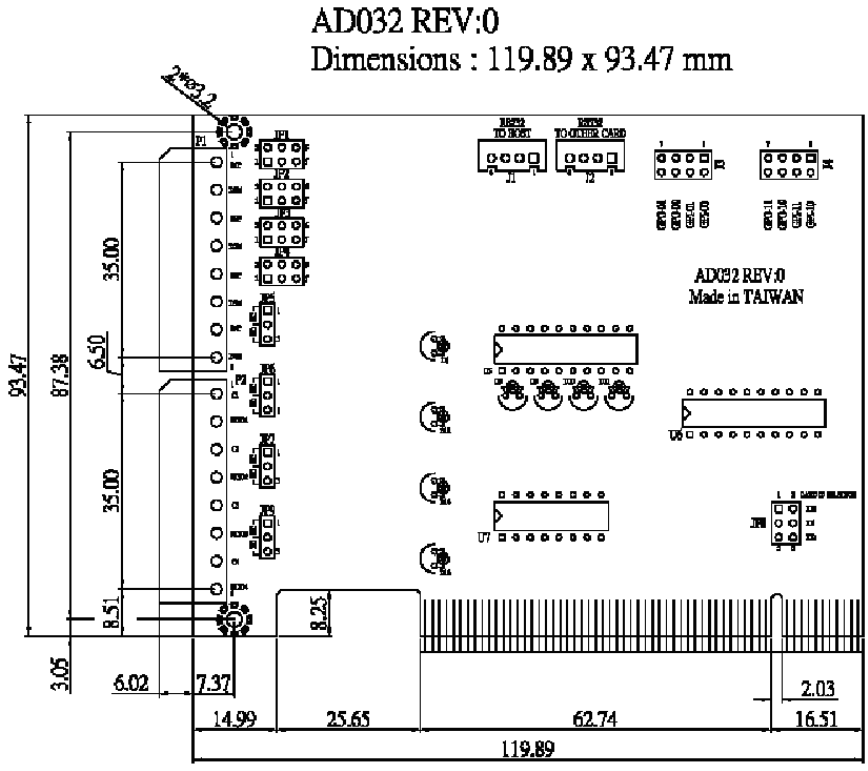
Signals	J3
Input channel 1-data	1
Input channel 1-ground	2
Input channel 2-data	3
Input channel 2-ground	4
Output channel 1-data	5
Output channel 1-ground	6
Output channel 2-data	7
Output channel 2-ground	8

Host interface-GPIO (J4)

Signals	J4
Input channel 3-data	1
Input channel 3-ground	2
Input channel 4-data	3
Input channel 4-ground	4
Output channel 3-data	5
Output channel 3-ground	6
Output channel 4-data	7
Output channel 4-ground	8

Drawing and connection





Settings at DVR 2400

After installed the IOC-0404P I/O card, you can invoke the Preference/Device setting page of DVR to customizing the I/O settings.

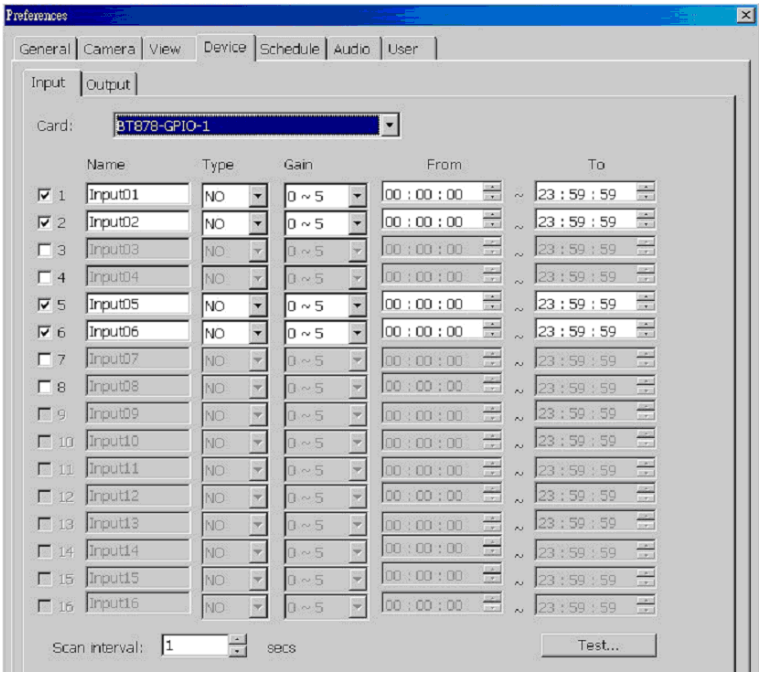
Input Settings

Step 1: Invoke the Preference/Device/Input setting page.

Step 2: Select "BT878-GPIO-1" item from the card list.

Step 3: The 4 input ports of IOC-0404P maps to input 1, 2, 5 and 6 in the settings. Please do not select input 3, 4, 7 and 8 in the setting page.

Step 4: Click the "Test" button to open the "Sensor test" dialog box to examine correct input value and status.



PS: If IO-0404P connect to two capture cards, the number of input pins are 8. They are input 1, 2, 5, 6, 9, 10, 13 and 14.

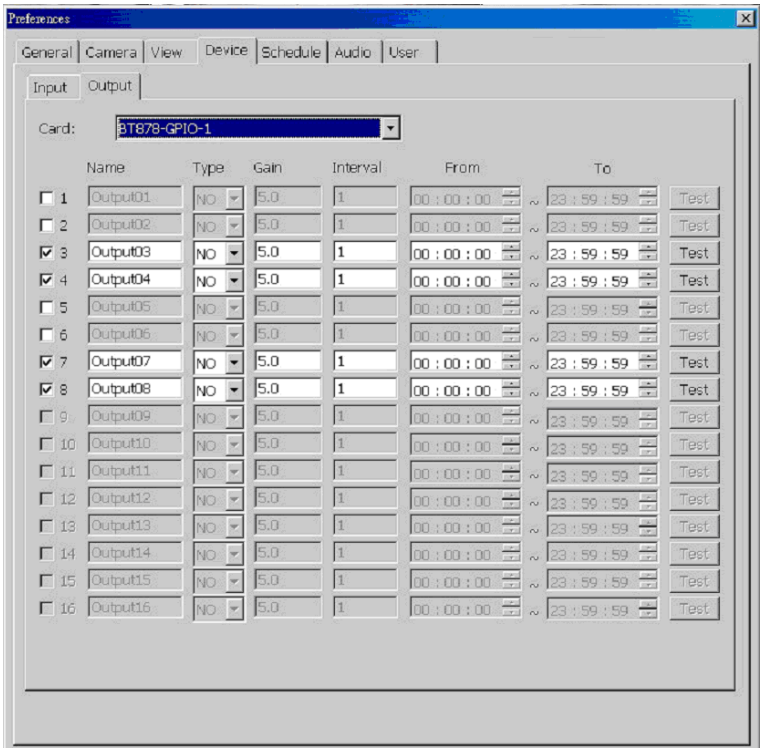
Output Settings

Step 1: Invoke the Preference/Device/Output setting page.

Step 2: Select "BT878-GPIO-1" item from the card list.

Step 3: The 4 output ports of IOC-0404P maps to output 3, 4, 7 and 8 in the settings. Please do not select output 1, 2, 5 and 6 in the setting page.

Step 4: Click the "Test" button to examine the response of connected output devices.



PS: If IO-0404P connect to two capture cards, the number of output pin are 8. They are output 3, 4, 7, 8, 11, 12, 15 and 16.

Appendix 4

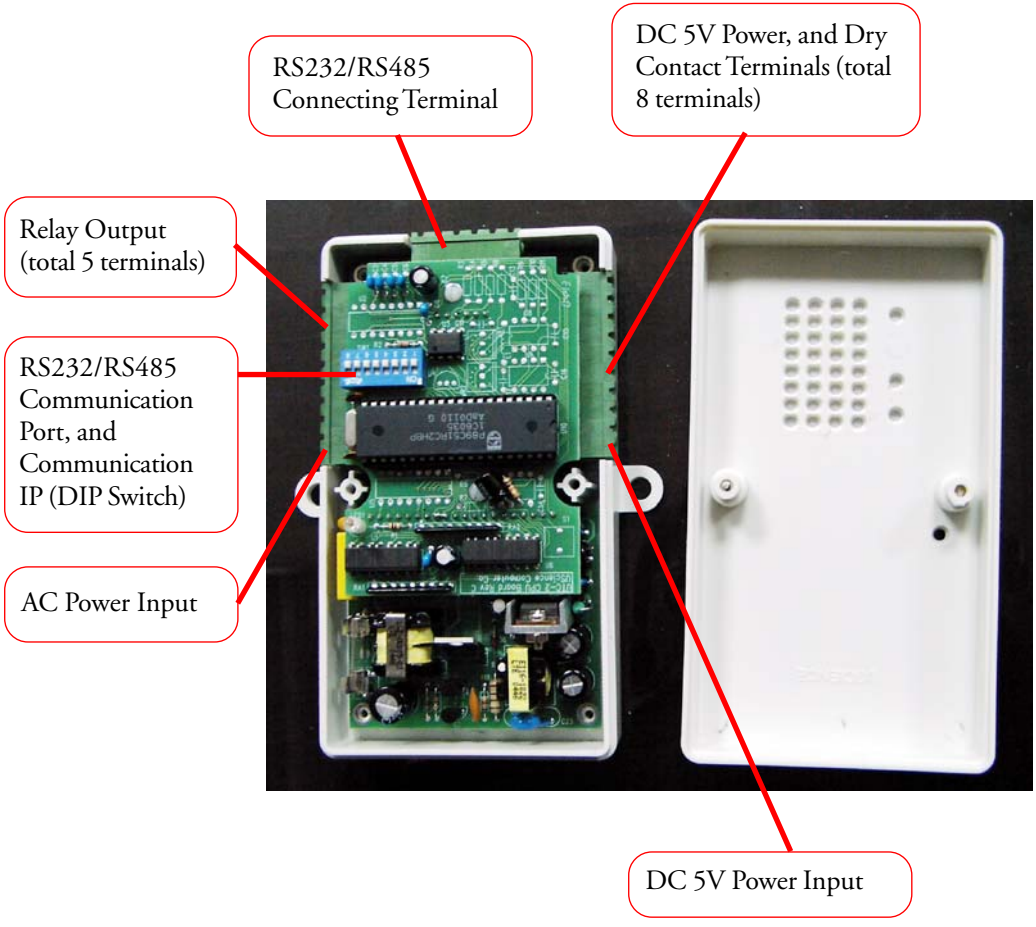
IOB-0805 BOX Guide

CE Approved

Technical Specification

Digital Contact Input	8
Isolation	5000Vrms
Digital Level 0	Open
Digital Level 1	Close
Relay Output	5
Relay Type	Form A
Contact Rating	10A@125VAC, 5A@250VAC/30VDC
Operate Time	8 ms
Release Time	5 ms
Dielectric Strength	2500VAC
Electrical life(min.)	1×10^5
Mechanical life(min.)	1×10^7
Power Consumption	110 / 220 VAC or 5VDC, 5W¡C
Communication Port	RS232 / RS485 (Protocol : Huper RTU ASCII) RS232:1200 – 115, 200 bps; RS485 : 1200 – 921.6K bps
Communication Distance	RS232: 50 feet RS485: 4000 feet
Input Power Supply	110 / 220 VAC or 5VDC, Digital Input¡G 5/12/24 VDC
Dimension	150 x 100 x 40 mm
Weight	360 g
Approved Standards	CE

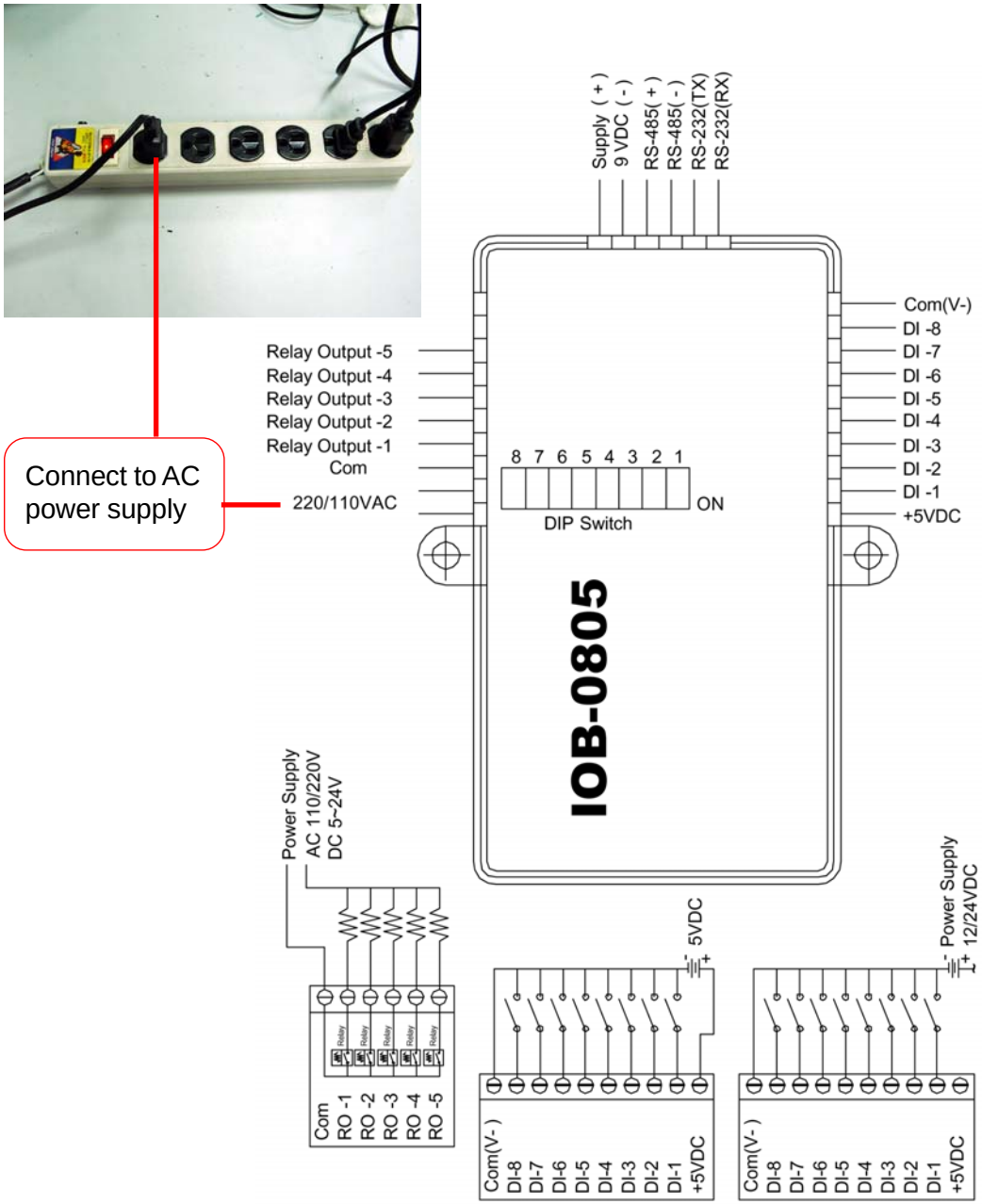
Introduction



Installation

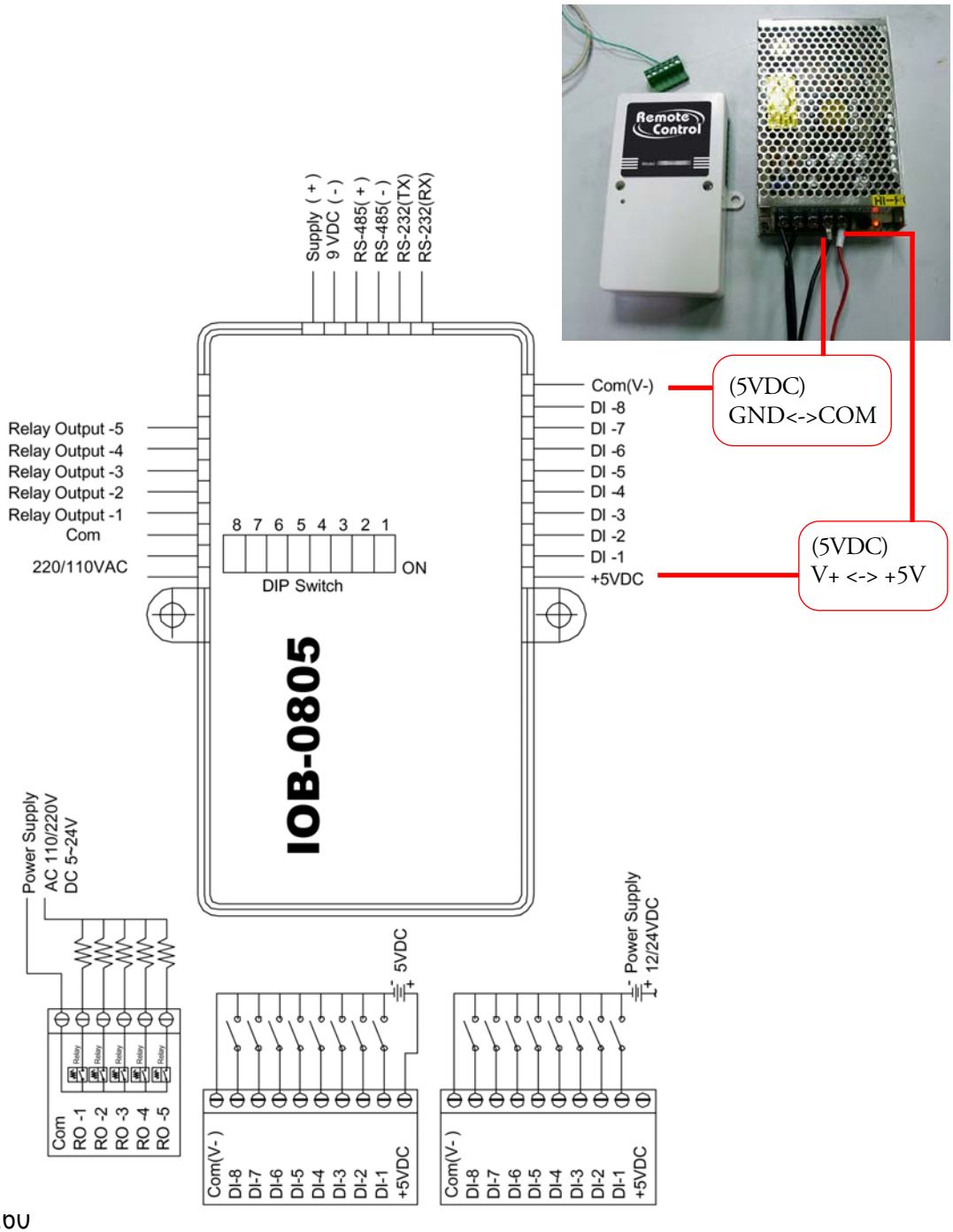
110 / 220 VAC Power Supply Wiring

DC+5V power supply CAN NOT be in use together with the AC power supply.

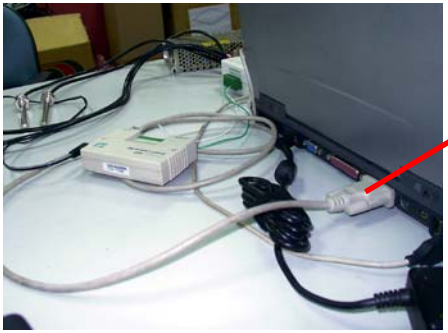


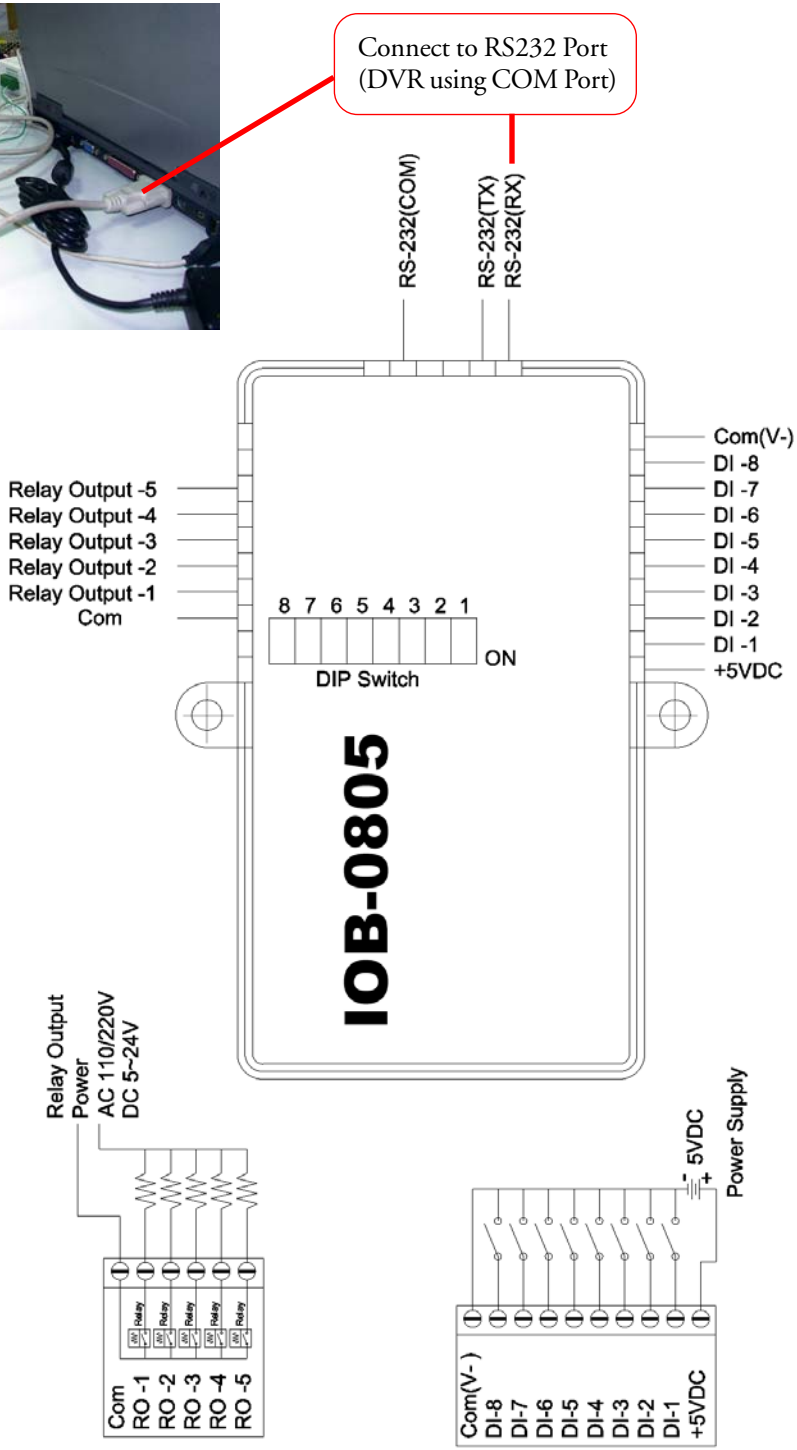
DC +5V Power Supply Wiring (When 5 relays are concurrently in use for a long time)

DC+5V power supply CAN NOT be in use together with the AC power supply.

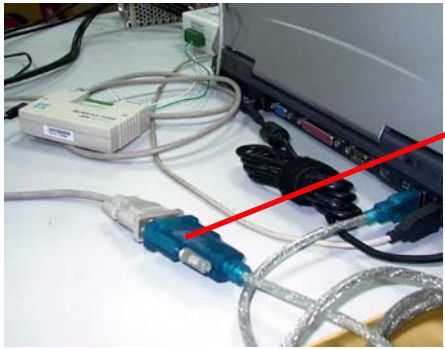


DVR Using RS232 Com Port

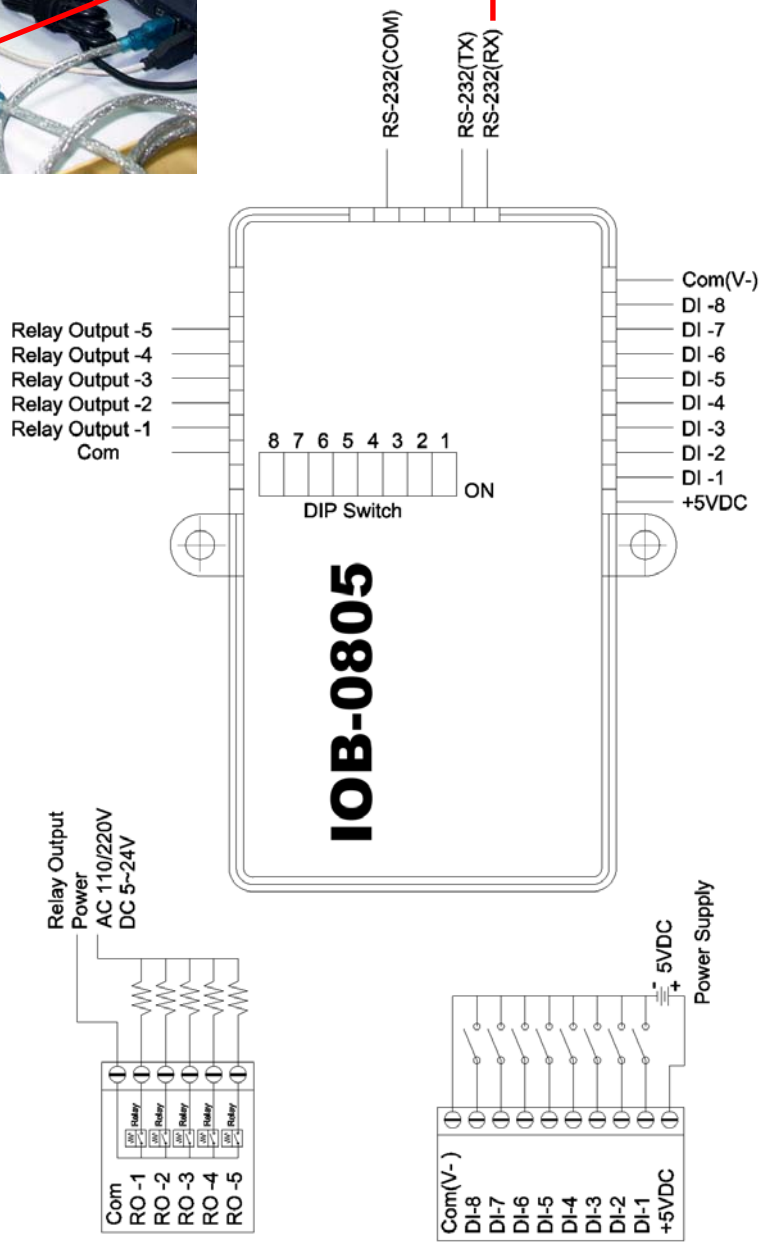




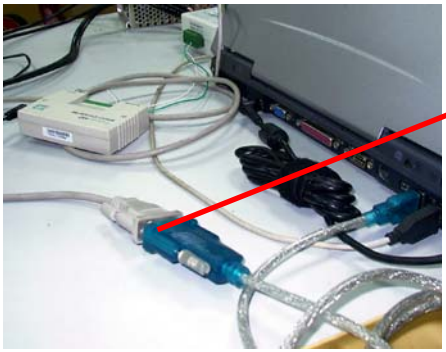
DVR Using USB to Connect to RS232 Com Port



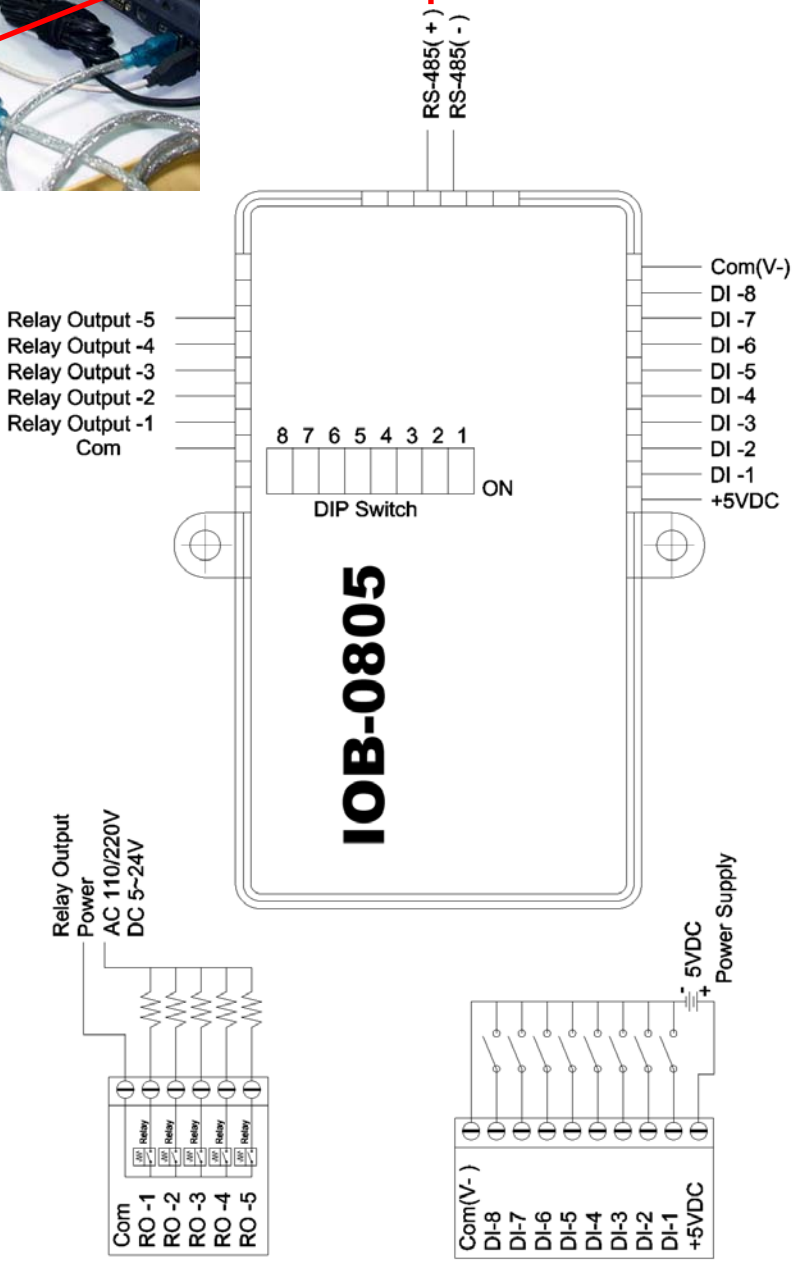
Connect to USB/RS232 converter (DVR without COM Port)



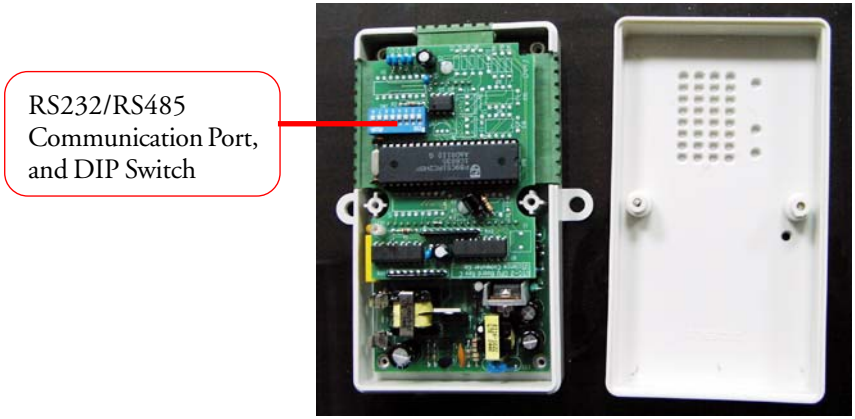
DVR Using USB to Connect to RS485 Com Port



Connect to USB/RS485 converter (DVR without COM Port or for long distance usage)



RS232/RS485 Communication Port and IP (DIP Switch) Settings



(1) **DIP Switch Default:** RS232, ID=1
(2) **DIP Switch Setting:** The default of DIP Switch is "OFF" which locates at the ID display side. Shit to the other side to turn the DIP Switch "ON."

Options for Communication Ports

DIP Switch / Comm. Port	NO. 1	NO. 2
RS-232	OFF	ON
RS-485	ON	OFF

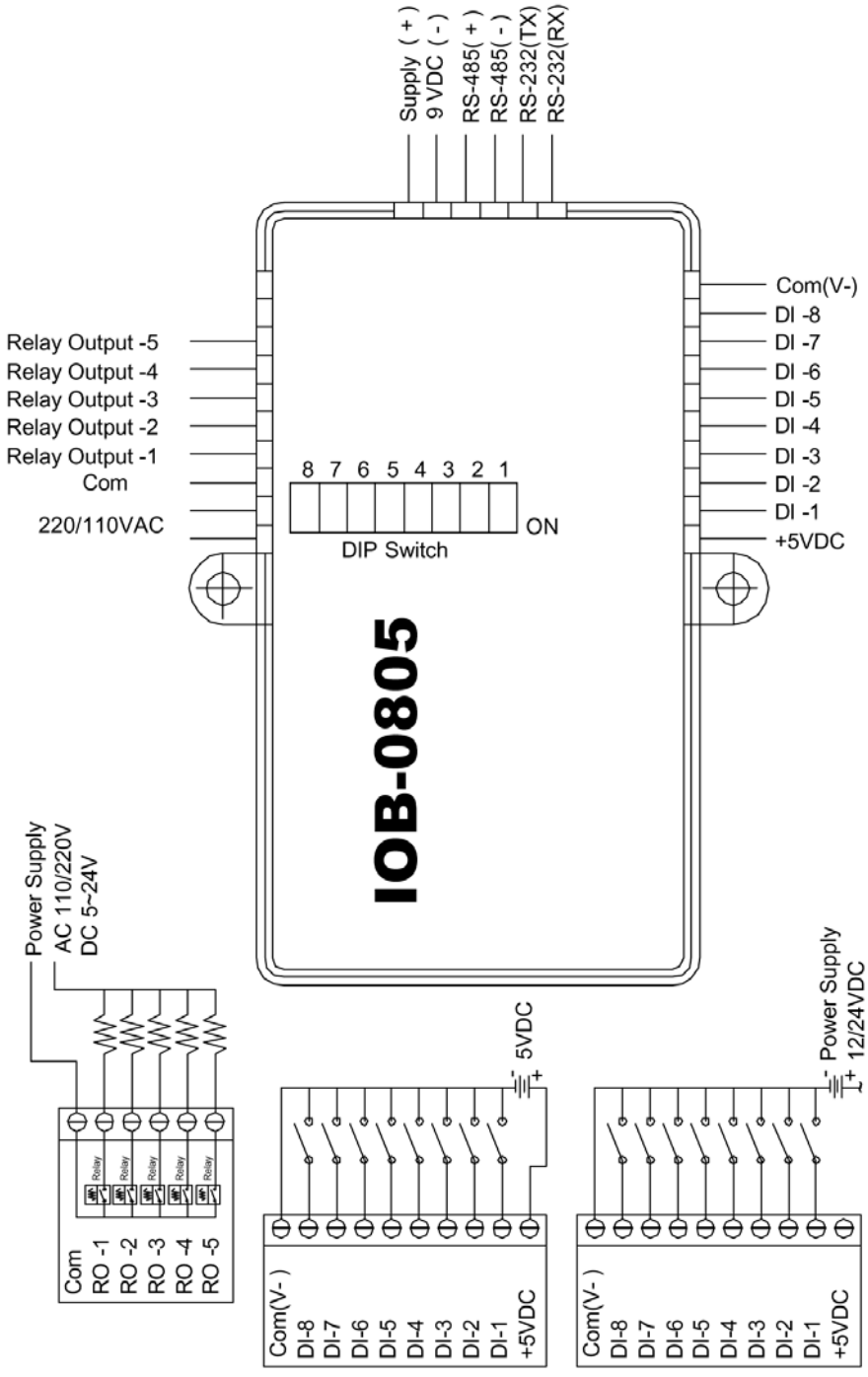
Note: NO.1 and NO.2 can not be turned on at the same time; i.e. RS-232 and RS-485 can not be is use concurrently.

(1) NO.3 ~ NO.8 are node ID (a binary system)
(2) If NO.3 is ON and others are OFF, it means 01.
(3) If NO.4 is ON and others are OFF, it means 02.
(4) If NO.5 is ON and others are OFF, it means 04.
(5) If NO.6 is ON and others are OFF, it means 08.
(6) If NO.7 is ON and others are OFF, it means 16.
(7) If NO.8 is ON and others are OFF, it means 32.

Example

- If node ID is 1, the DIP Switch setting should be NO.3 is ON and others are OFF.
- If node ID is 3, the DIP Switch setting should be NO.3 and NO.4 are ON, and others are OFF.
- If node ID is 5, the DIP Switch setting should be NO.3 and NO.5 are ON, and NO.4 and others are OFF.
- If node ID is 7, the DIP Switch setting should be NO.3~NO.5 are ON, and NO.6 ~ NO.8 are OFF.
- The Node ID is the sum of DIP Switch NO.3 to NO.8.

Input/Output Pin



DI Input Control

(1) Connect the COM port to –VDC. The COM port cannot be connected to +VDC. The acceptable voltage is DC5V~DC24V.

(2) 8 DI controls share the same power supply which accepts different levels of voltage starting from DC5V to DC24V.

(3) IOB-0805 provides 5VDC for DI input control when the power supply is 110/220 VAC. No extra DC power supply is necessary.

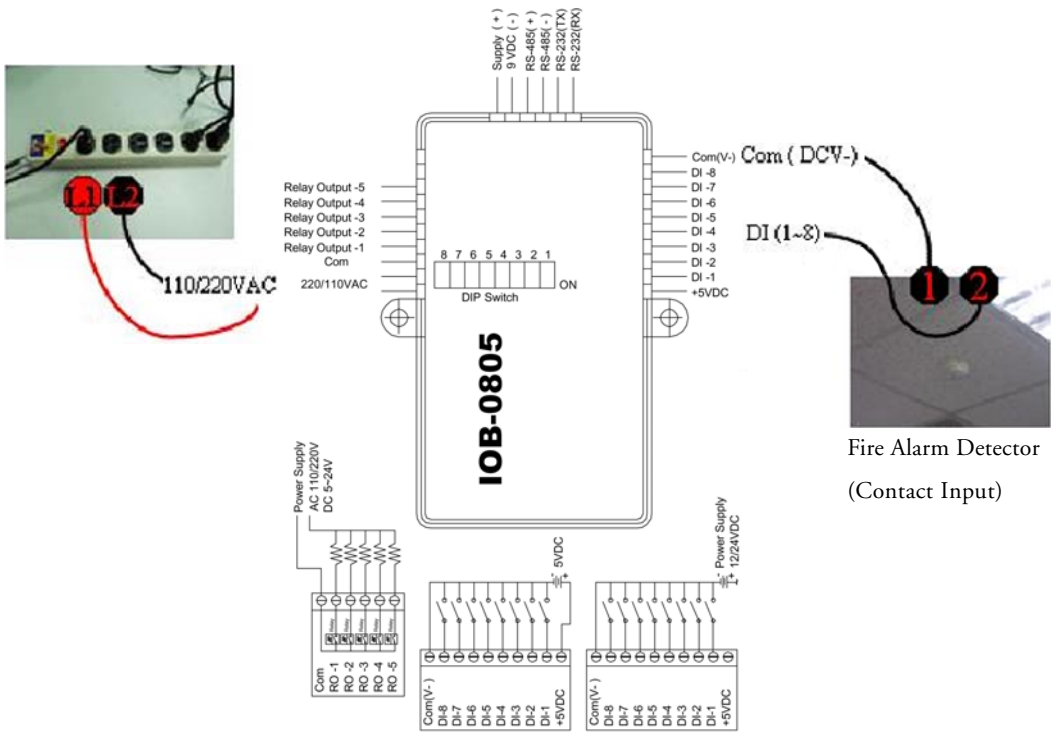
(4) When 5 relay output controls are in long-term use, an extra 5VDC power supply is necessary.

(5) Please DO NOT turn on the AC power supply while the DC +5V is in use.

Application Example: Alarm Detection (Contact Input)

IOB-0805 provides 5VDC for DI input control when the power supply is 110/220 VAC. No extra DC power supply is necessary.

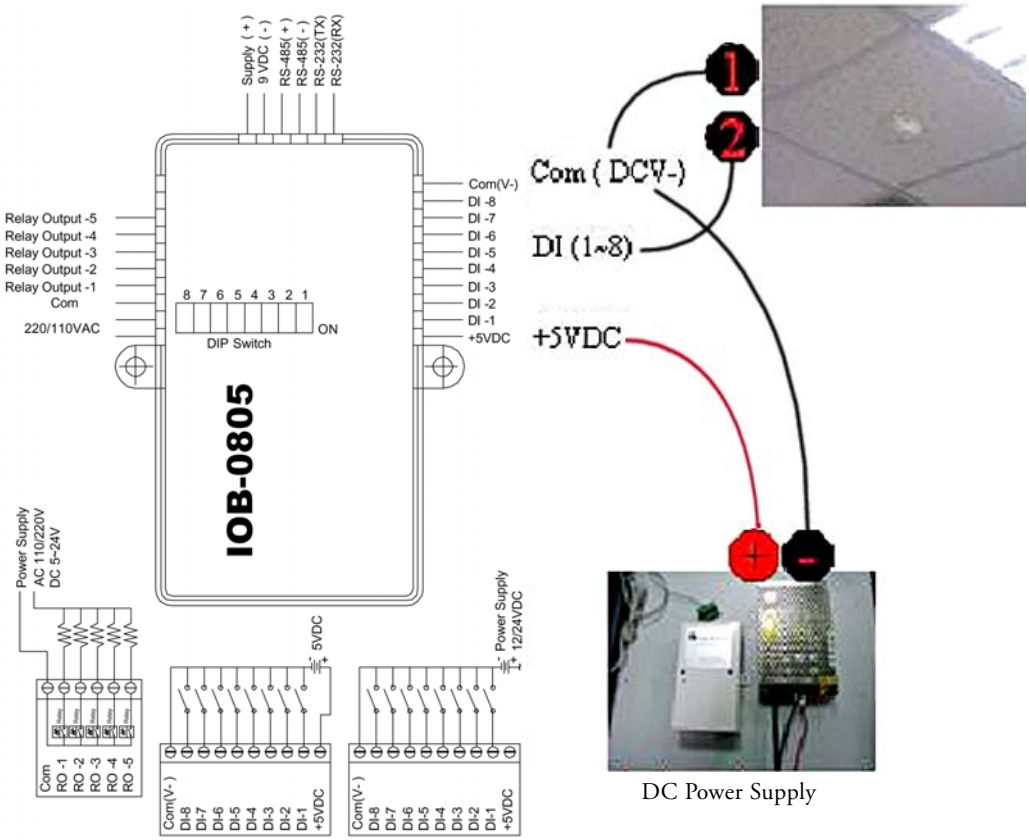
IOB-0805 DI Wiring Example A: Fire Alarm Detection (Contact Input) Using AC Power Supply



Application Example: Alarm Detection (Contact Input)

When 5 relay output controls are in long-term use, an extra 5VDC power supply is necessary.

IOB-0805 DI Wiring Example B: Fire Alarm Detection (Contact Input) Using DC Power Supply



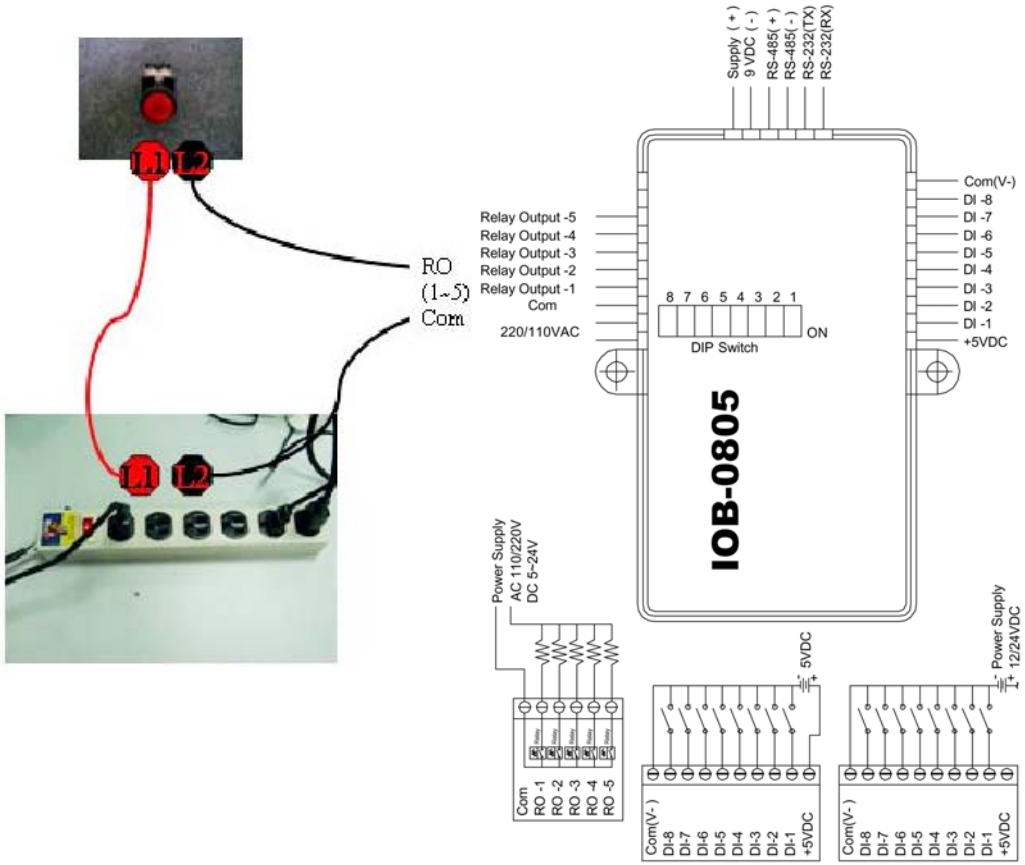
DC Power Supply

RO (5A Relay Dry Contact) Output Control

5 RO controls share the same power supply, and accept different levels of voltage. All the power supplies must be the same type, i.e. AC or DC.

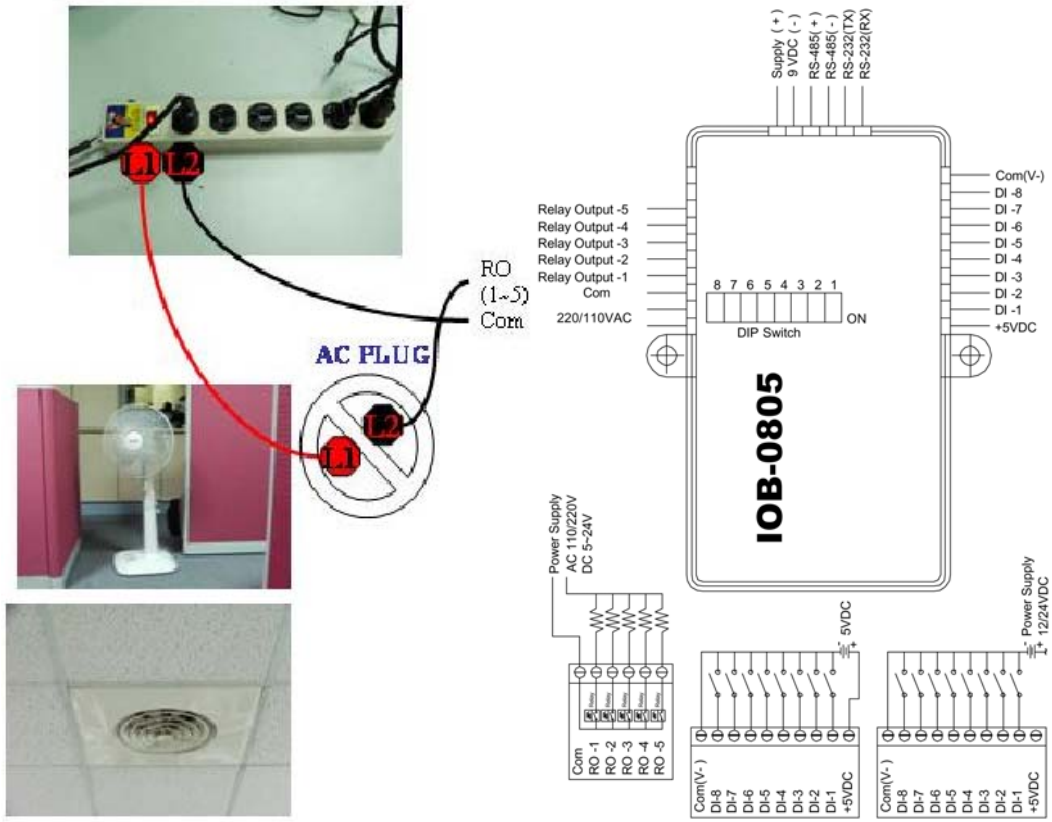
Application Example: Alarm Indicator (AC)

IOB-0805 RO Wiring Example A: Alarm Indicator (AC)



Application Example: Small Fan or TV Set (under 5A)

IOB-0805 RO Wiring Example B: Small Fan or TV Set (under 5A)

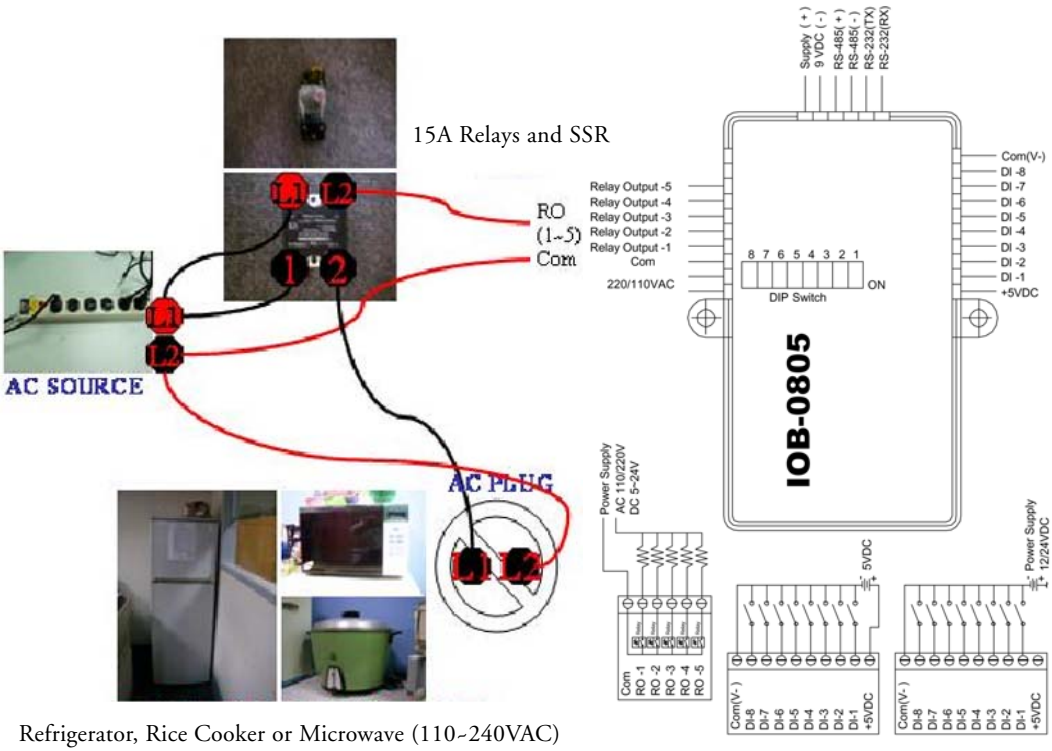


Application Example: Refrigerator, Rice Cooker or Microwave (70~240VAC)

Note: Please use the relay, SSR or AC power supply with enough contact ratings to avoid danger. The AC wire should be 3.5 mm when the power consumption is above 15A.

1. For the appliances whose power consumption is under 15A, such as refrigerators, rice cookers, microwaves, washers, small coolers and heaters, the AC wire needs to be 2.0 mm.
2. As for the large-sized appliances, like air conditioners and heaters, etc. whose power consumption is above 15A, the AC wire must be at least 3.5 mm or above.

IOB-0805 RO Wiring Example C: 15A/240V AC SSR or Relay (AC Control)



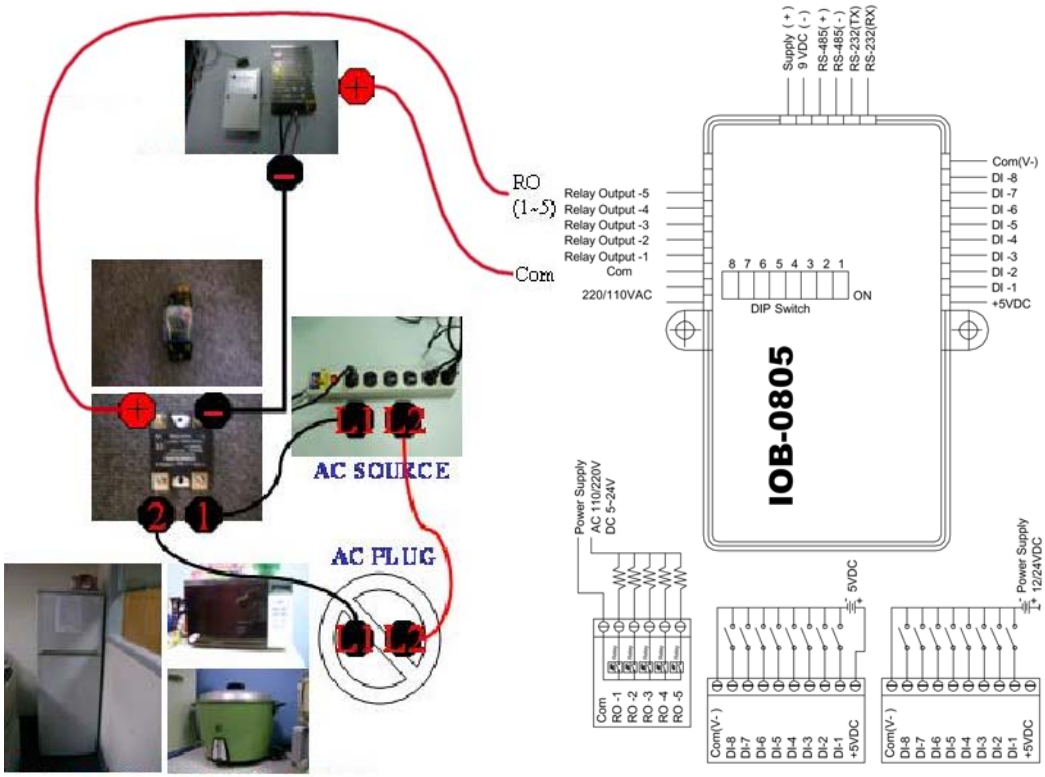
Refrigerator, Rice Cooker or Microwave (110~240VAC)

Application Example: Refrigerator, Rice Cooker or Microwave (70~240VAC)

Note: Please use the relay, SSR or AC power supply with enough contact ratings to avoid danger. The AC wire should be 3.5 mm when the power consumption is above 15A.

1. For the appliances whose power consumption is under 15A, such as refrigerators, rice cookers, microwaves, washers, small coolers and heaters, the AC wire needs to be 2.0 mm.
2. As for the large-sized appliances, like air conditioners and heaters, etc. whose power consumption is above 15A, the AC wire must be at least 3.5 mm or above.

IOB-0805 RO Wiring Example D: 15A/240V AC SSR or Relay (DC Control)

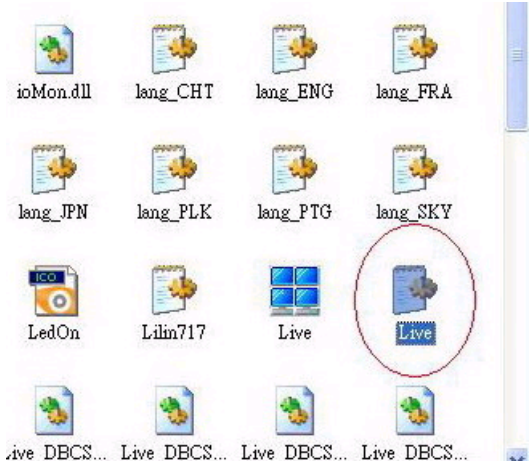


Refrigerator, Rice Cooker or Microwave (110~240VAC)

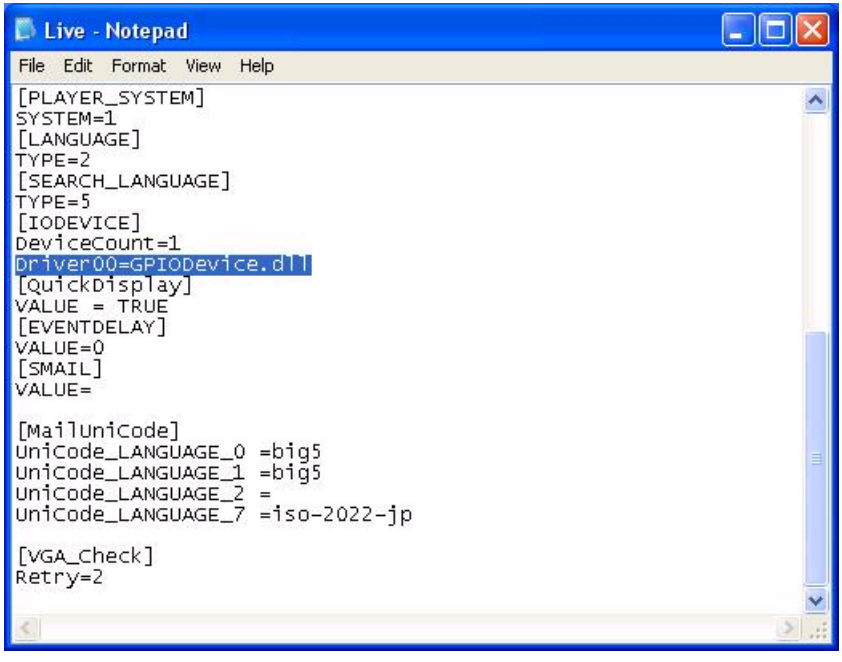
Settings at huperDVR 2400

After installing the IOB-0805 I/O box, see below :

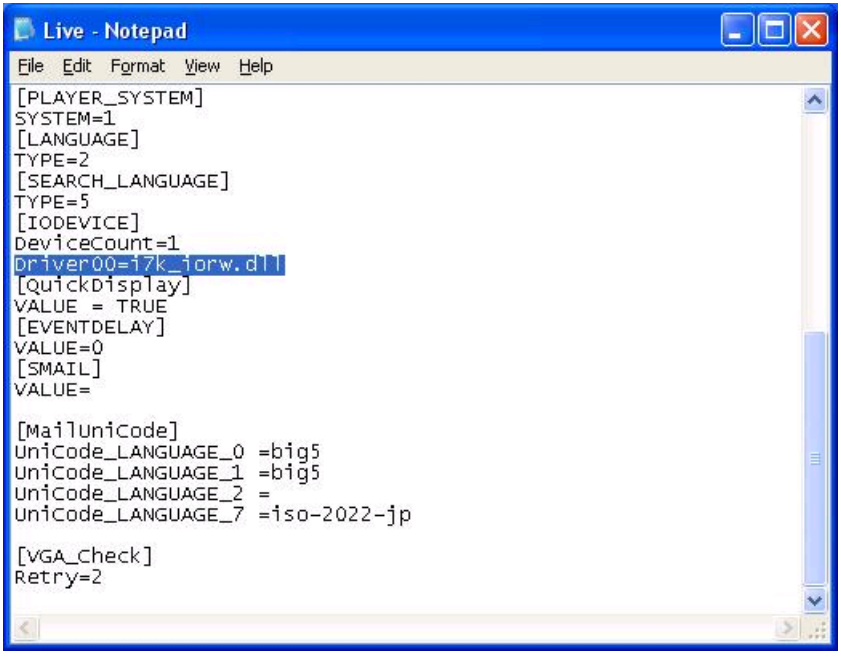
1. Please find the folder bin in the directory C:/Program Files/huperLab/huperDVR2400/bin after installation.(close DVR server)
2. Open bin then find the file Live.ini.(see below)



3. Click to open Live.ini then find Driver00=GPIODevice.dll(see below).



4. Change Driver00=GPIODevice.dll to Driver00=i7k_iorw.dll (see below)



5. Close and save this section.
6. After restart DVR site server. IO Box can be detected by DVR in the Devices page in Preference. (see below).

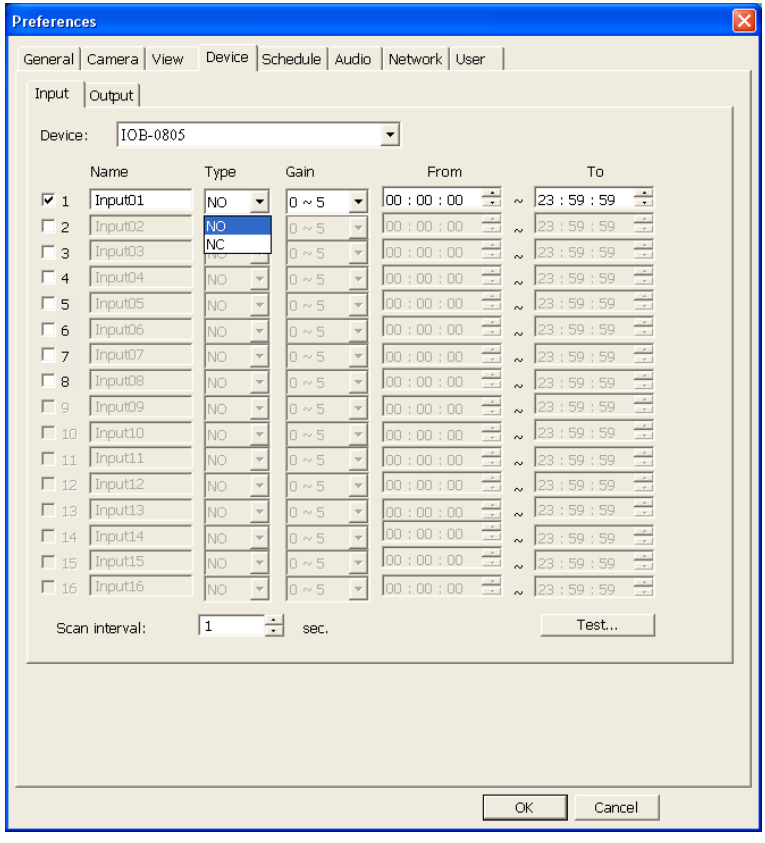
Input Settings

Step 1: Invoke the Preference/Device/Input setting page.

Step 2: Select the item “IOB-0805-I” from the controller list.

Step 3: 8 input ports appear in the setting page, and their assigned numbers start from 1 to 8.

Step 4: Click the “Test” button to open the “Sensor test” dialog box to examine correct input value and status.



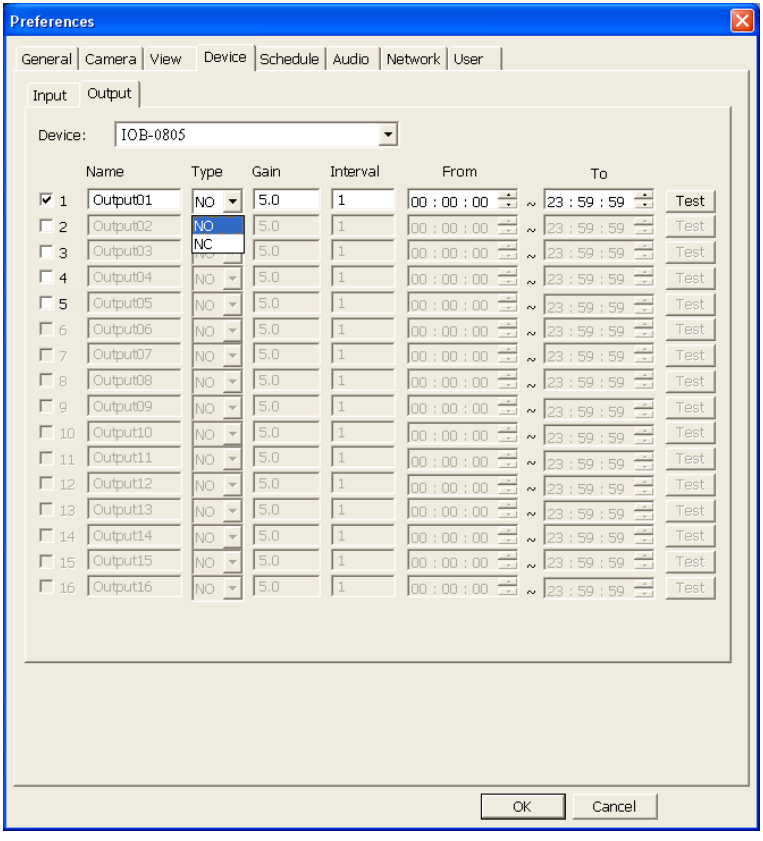
Output Settings

Step 1: Invoke the Preference/Device/Output setting page.

Step 2: Select the item “IOB-10805-O” from the controller list.

Step 3: 5 input ports appear in the setting page, and their assigned numbers start from 1 to 5.

Step 4: Click the “Test” button to examine whether the connected output devices respond accordingly.



Appendix 5

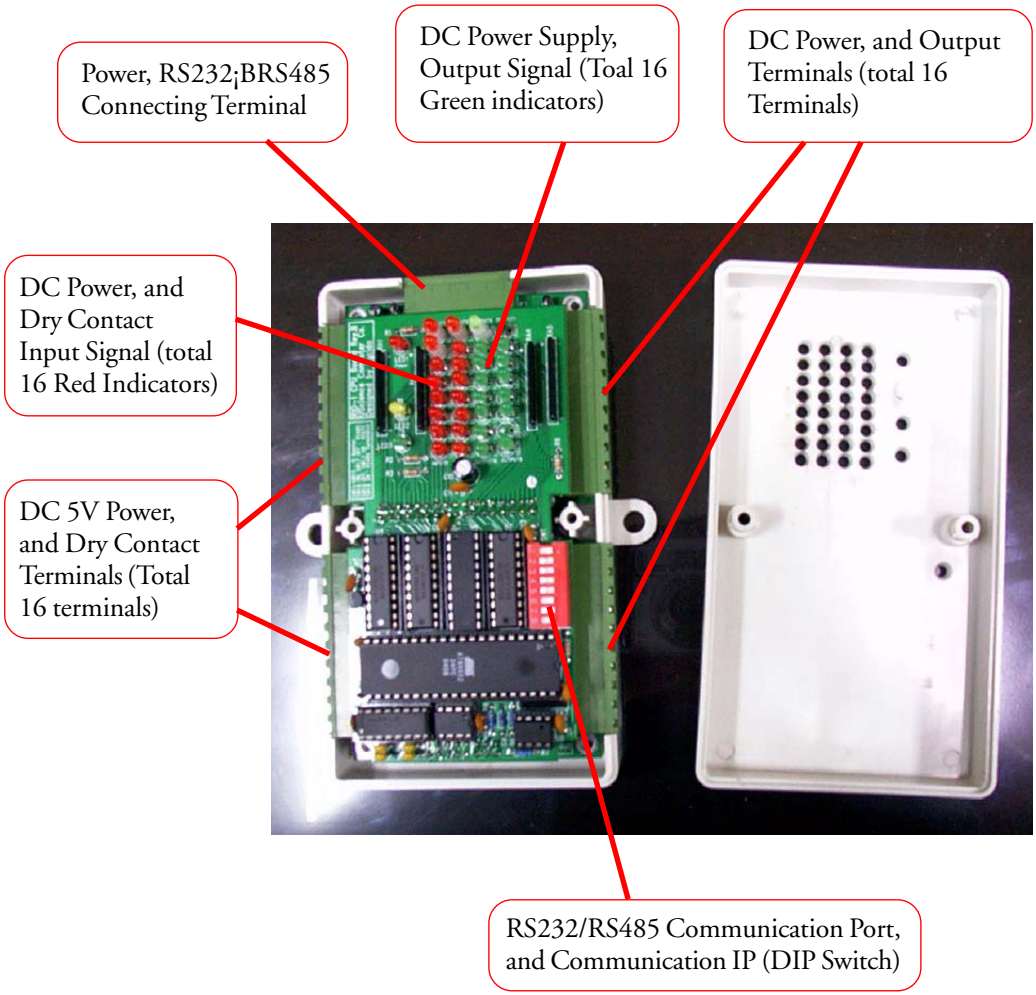
IOB-1616 BOX Guide

CE Approved

Technical Specification

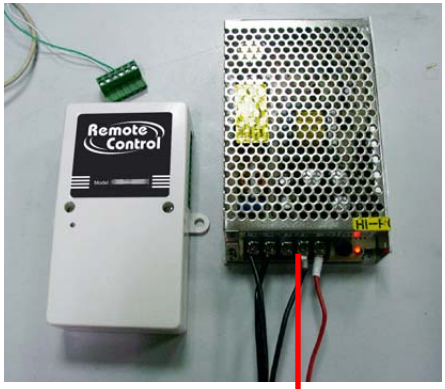
Digital Contact Input	16
Isolation	5000Vrms
Digital Level 0	Open
Digital Level 1	Close
Open Collector Output	16
Isolation	5000 Vrms
Load Voltage	5/12/24 VDC
Max Load Current	500 ma (2A Per Common Group)
Power Consumption	5W
Communication port	RS232 / RS485 ¡]Protocol : Huper RTU ASCII¡^ RS232 : 1200 – 115,200 bps ¡FRS485 : 1200 – 921.6K bps
Communication distance	RS232¡G50 feet RS485¡G4000 feet
Input Power Supply	12 VDC¡]9 ~ 12V¡ÂA 5 W
Dimension	150 x 100 x 40 mm
Weight	360 g
Approved Standards	CE

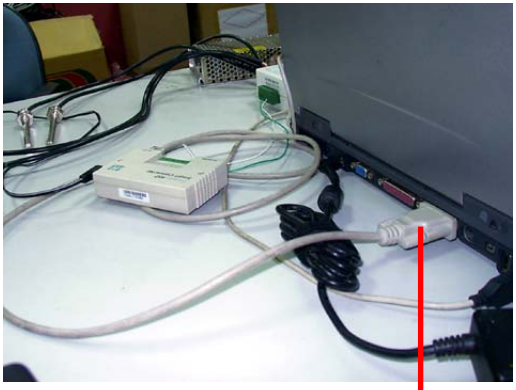
Introduction



Installation

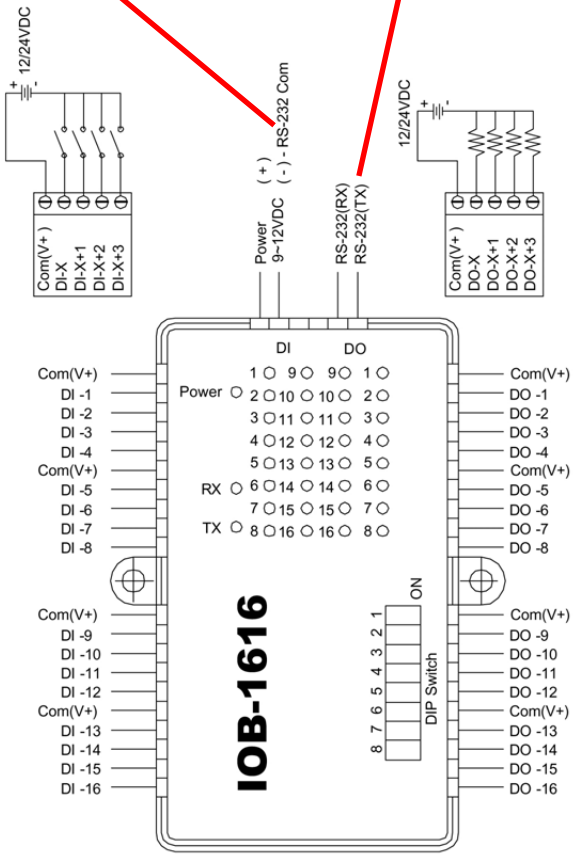
DVR Using RS232 Com Port



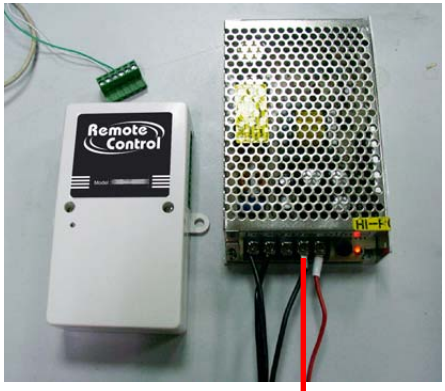


Connect to DC power supply (Power consumption: 12VDC)

Connect to RS232 Port (DVR using COM Port)

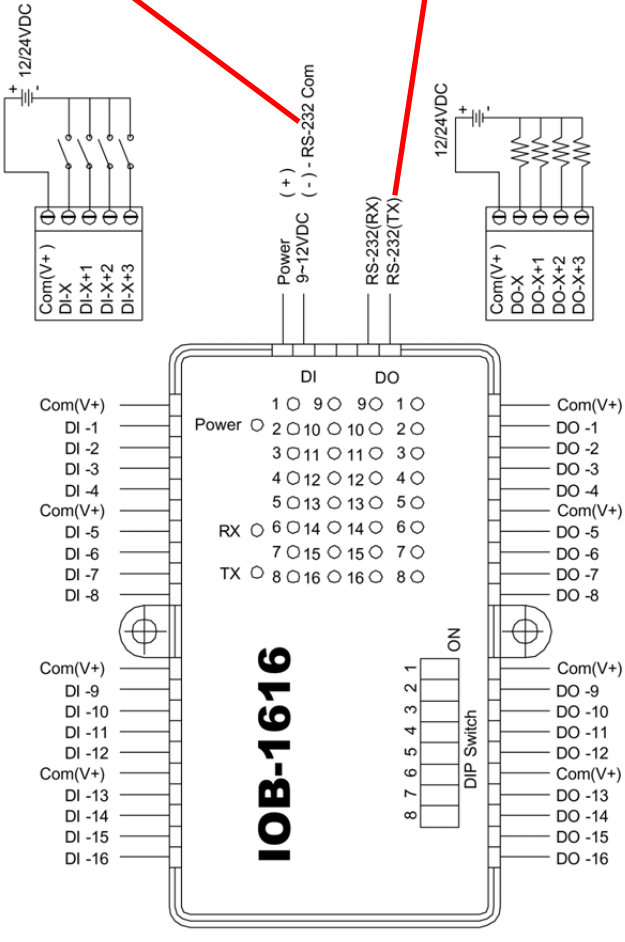


DVR Using USB to Connect to RS232 Com Port

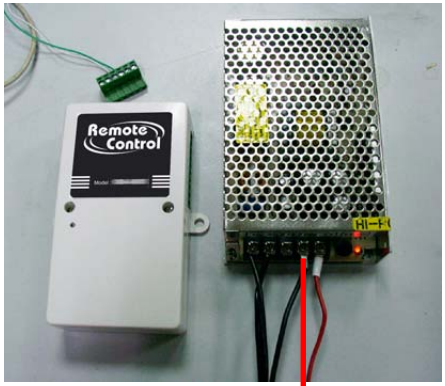


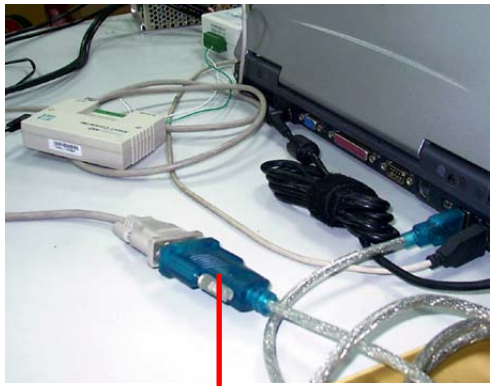
Connect to DC power supply (Power consumption: 12VDC)

Connect to USB/RS232 converter (DVR without COM Port)



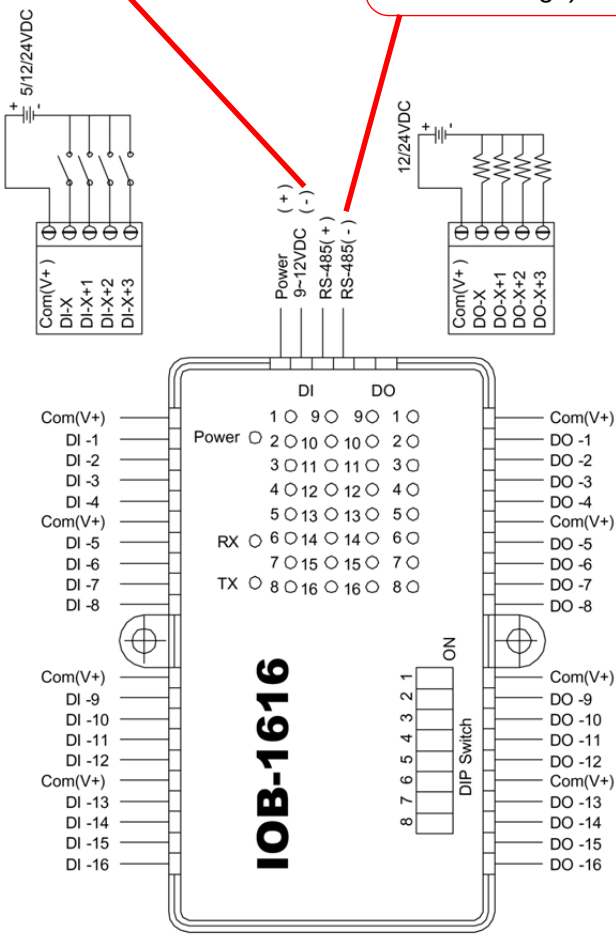
DVR Using USB to Connect to RS485 Com Port



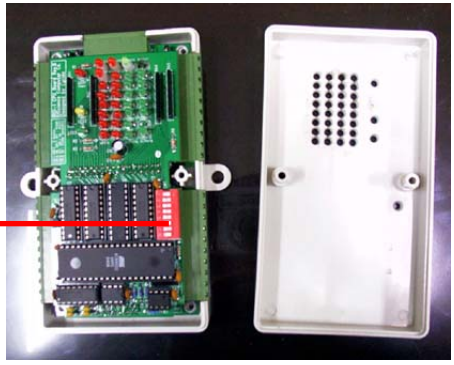


Connect to DC power supply
(Power consumption: 12VDC)

Connect to USB/RS485 converter
(DVR without COM Port or for long distance usage)



RS232/RS485 Communication Port and IP (DIP Switch) Settings



(1) DIP Switch Default: RS232, ID=1

(2) DIP Switch Setting: The default of DIP Switch is "OFF" which locates at the ID display side. Shit to the other side to turn the DIP Switch "ON."

Options for Communication Ports

DIP Switch / Comm. Port	NO. 6	NO. 7	NO. 8
RS-232	OFF	ON	OFF
RS-485	ON	OFF	ON

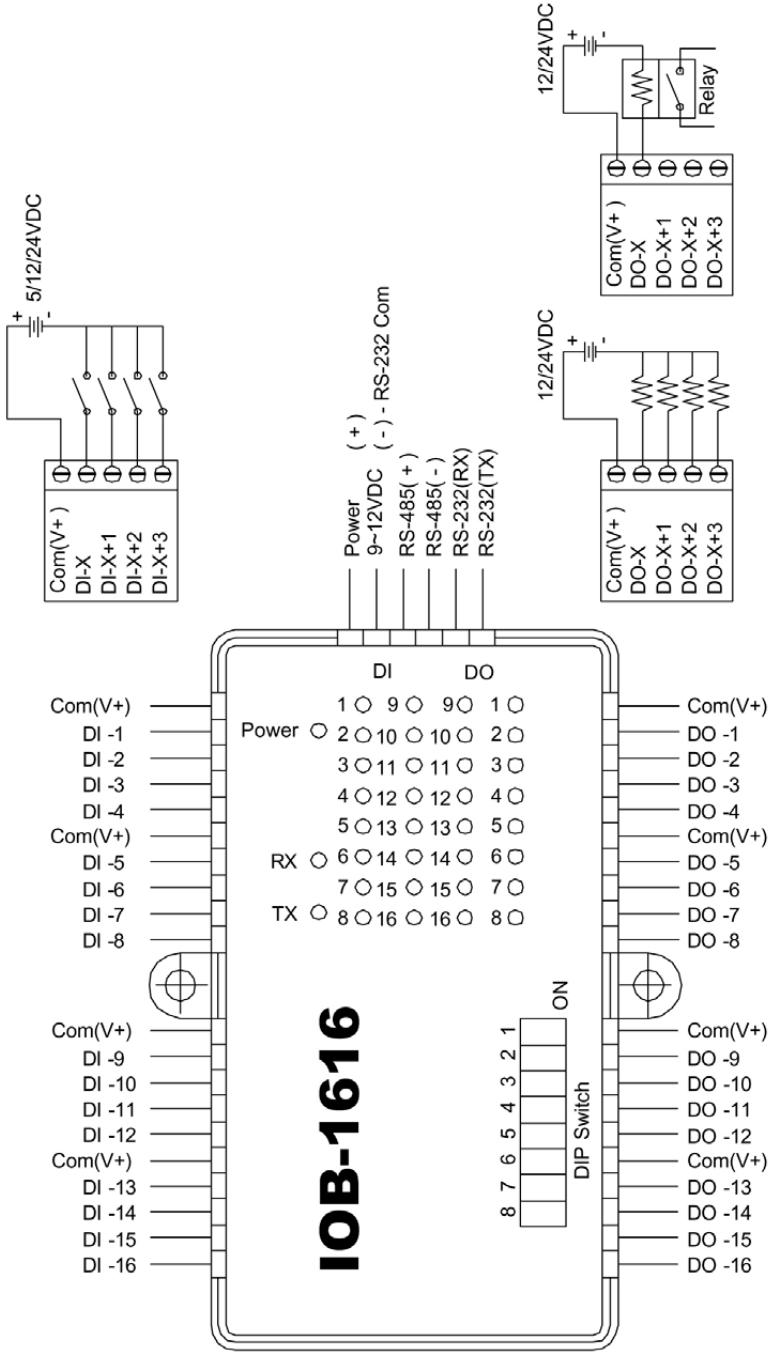
Note: NO.6, NO.7 and NO.8 can not be turned on at the same time; i.e. RS-232 and RS-485 can not be in use concurrently.

(1) NO.1 ~ NO.5 are node ID (a binary system)
(2) If NO.1 is ON and others are OFF, it means 01.
(3) If NO.2 is ON and others are OFF, it means 02.
(4) If NO.3 is ON and others are OFF, it means 04.
(5) If NO.4 is ON and others are OFF, it means 08.
6) If NO.5 is ON and others are OFF, it means 16.

Example

- If node ID is 1, the DIP Switch setting should be NO.1 is ON and others are OFF.
- If node ID is 3, the DIP Switch setting should be NO.1 and NO.2 are ON, and others are OFF.
- If node ID is 5, the DIP Switch setting should be NO.1 and NO.3 are ON, and NO.2, NO. 4 and NO.5 are OFF.
- If node ID is 7, the DIP Switch setting should be NO.1~NO.3 are ON, and NO.4 and NO. 5 are OFF.
- The Node ID is the sum of DIP Switch NO.1 to NO.5.

Input/Output Pin



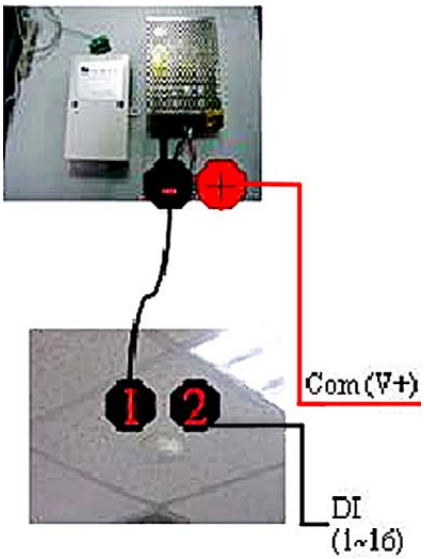
DI Input Control

(1) Connect the COM port to +VDC. It's not allowed to connect to –VDC. The acceptable voltage is DC5V~DC24V.

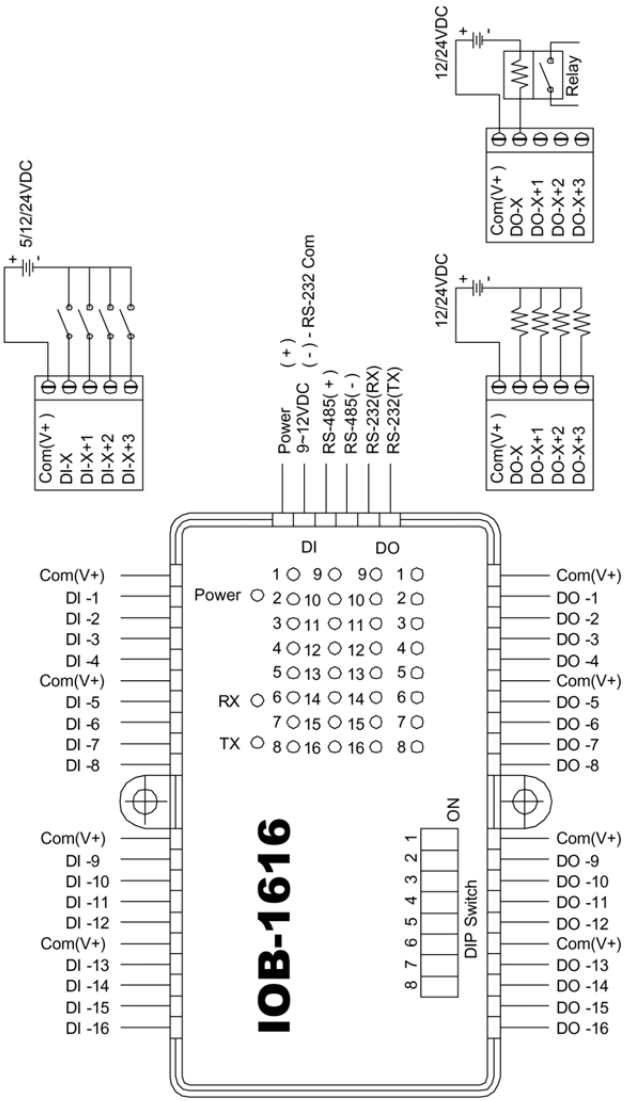
(2) 4 DI controls share the same power supply which accepts different levels of voltage starting from DC5V to DC24V

Application Example: Alarm Detection (Contact Input)

IOB-1616 DI Wiring Example A: Fire Alarm Detection (Contact Input)



Fire Alarm Detector (Contact Input)



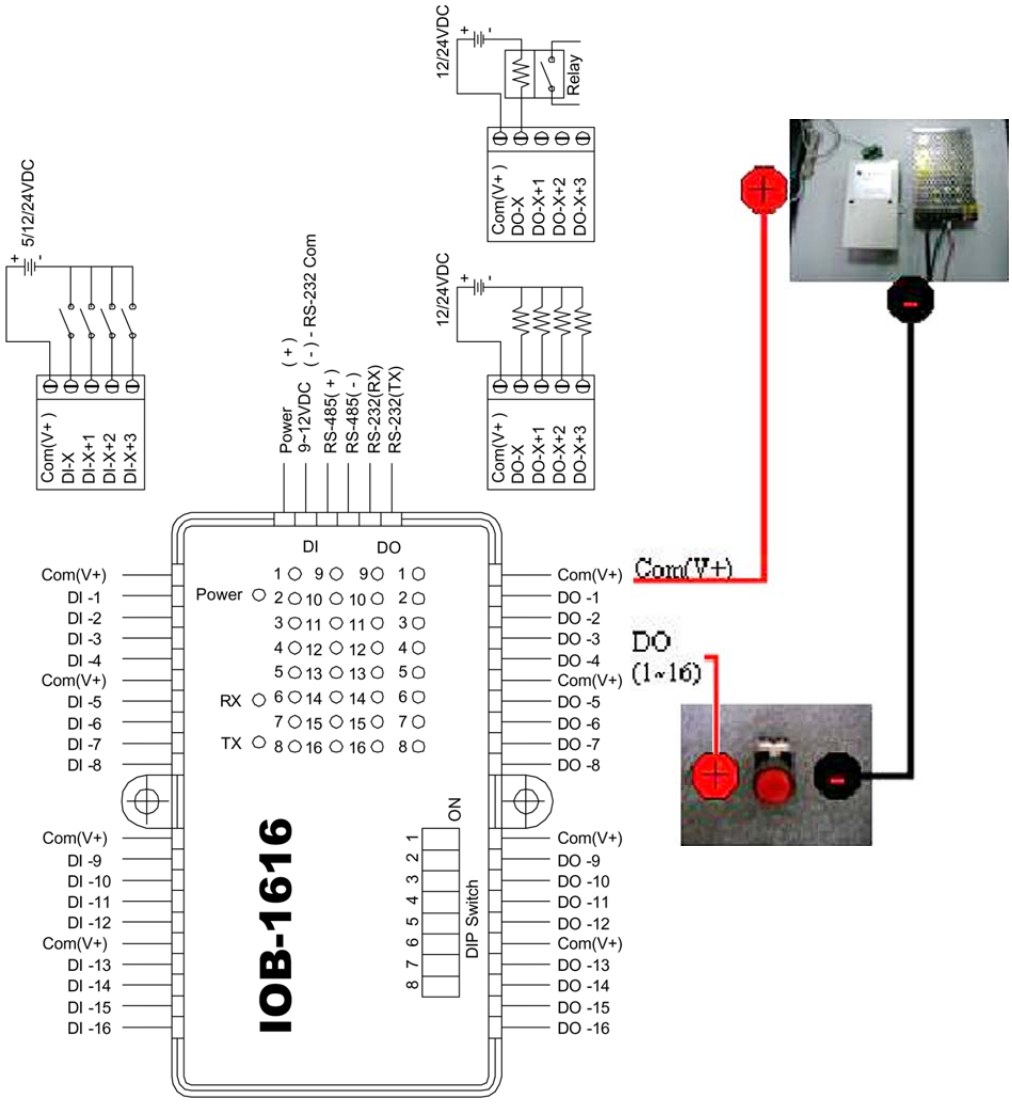
DO Output Control

(1) Connect the COM port to +VDC. It's not allowed to connect to –VDC. The acceptable voltage is DC5V~DC24V.

(2) 4 DI controls share the same power supply which accepts different levels of voltage starting from DC5V to DC24V

Application Example: Alarm Indicator (DC)

IOB-1616 DO Wiring Example A: Alarm Indicator (DC)

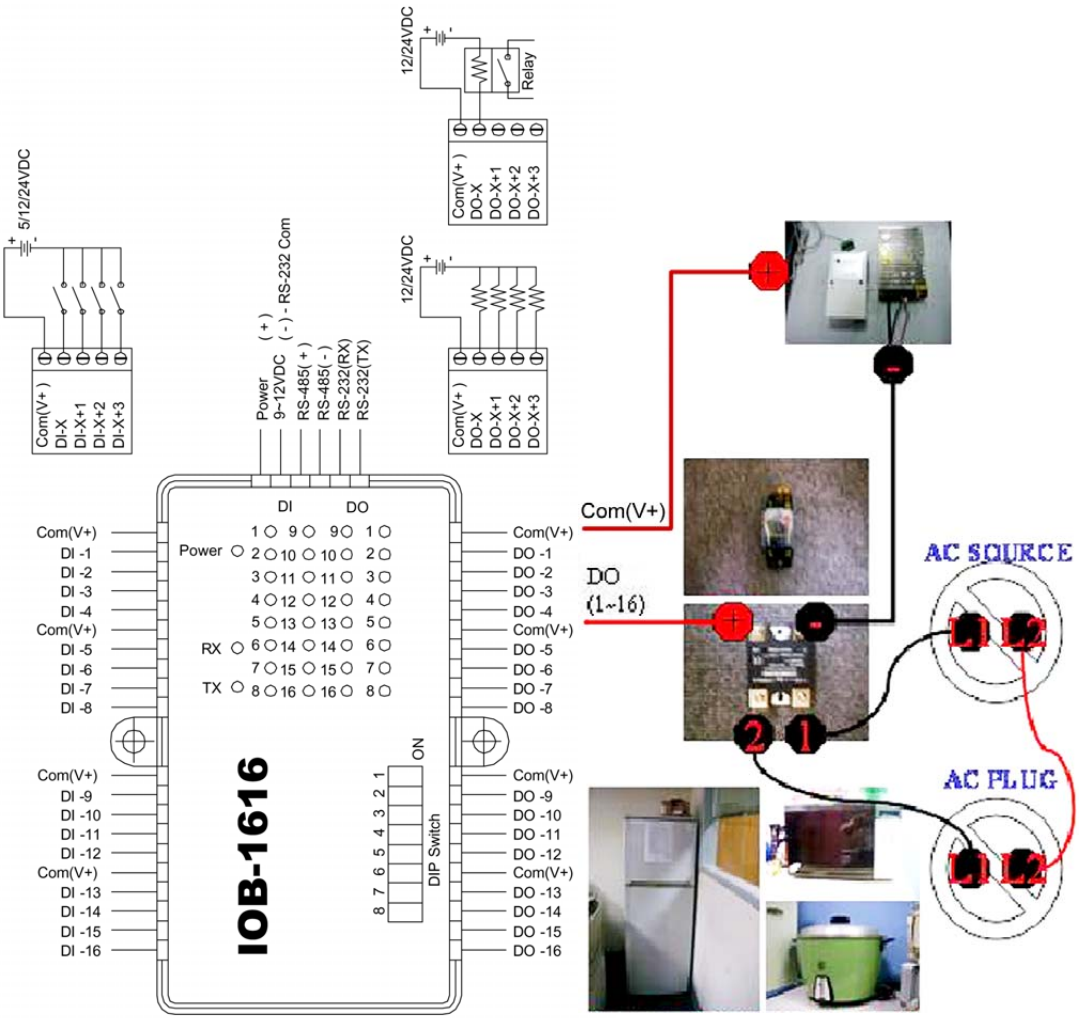


Application Example: Refrigerator, Rice Cooker or Microwave (70~240VAC)

Note: Please use the relay, SSR or AC power supply with enough contact ratings to avoid danger. The AC wire should be 3.5 mm when the power consumption is above 15A.

1. For the appliances whose power consumption is under 15A, such as refrigerators, rice cookers, microwaves, washers, small coolers and heaters, the AC wire needs to be 2.0 mm.
2. As for the large-sized appliances, like air conditioners and heaters, etc. whose power consumption is above 15A, the AC wire must be at least 3.5 mm or above.

IOB-1616 DO Wiring Example B: 15A/240V AC SSR or Relay (DC Control)

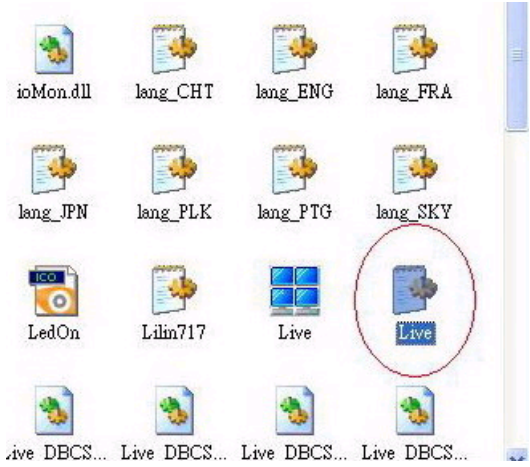


Refrigerator, Rice Cooker or Microwave (110~240VAC)

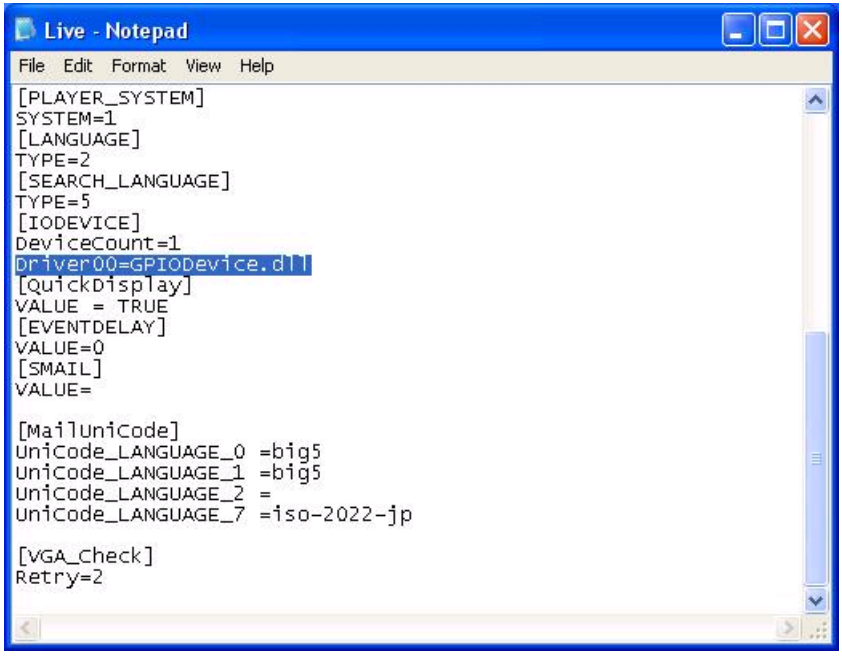
Settings at huperDVR 2400

After installing the IOB-1616 I/O box, see below :

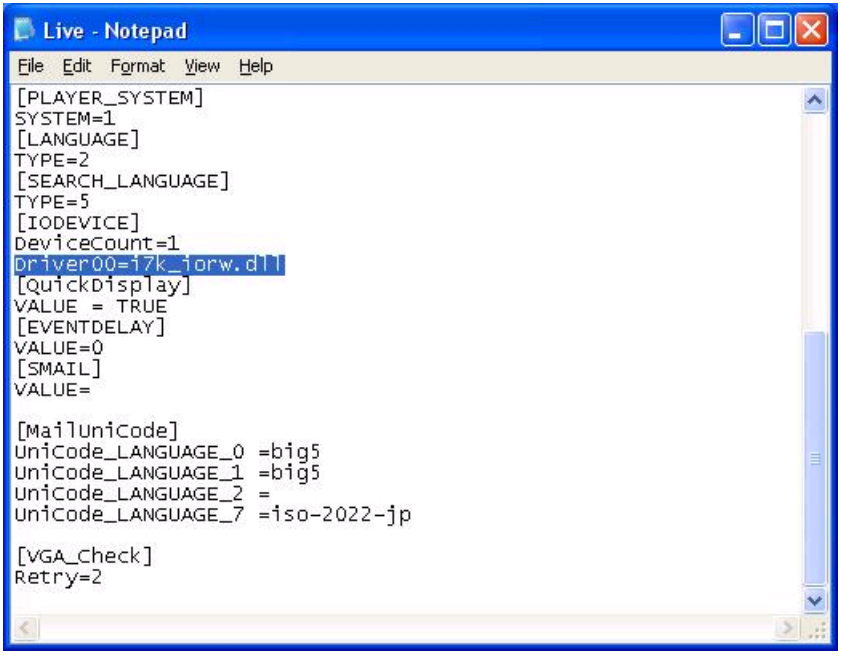
1. Please find the folder bin in the directory C:/Program Files/huperLab/huperDVR2400/bin after installation.(close DVR server)
2. Open bin then find the file Live.ini.(see below)



3. Click to open Live.ini then find Driver00=GPIODevice.dll(see below).



4. Change Driver00=GPIODevice.dll to Driver00=i7k_iorw.dll (see below)



5. Close and save this section.
6. After restart DVR site server. IO Box can be detected by DVR in the Devices page in Preference. (see below).

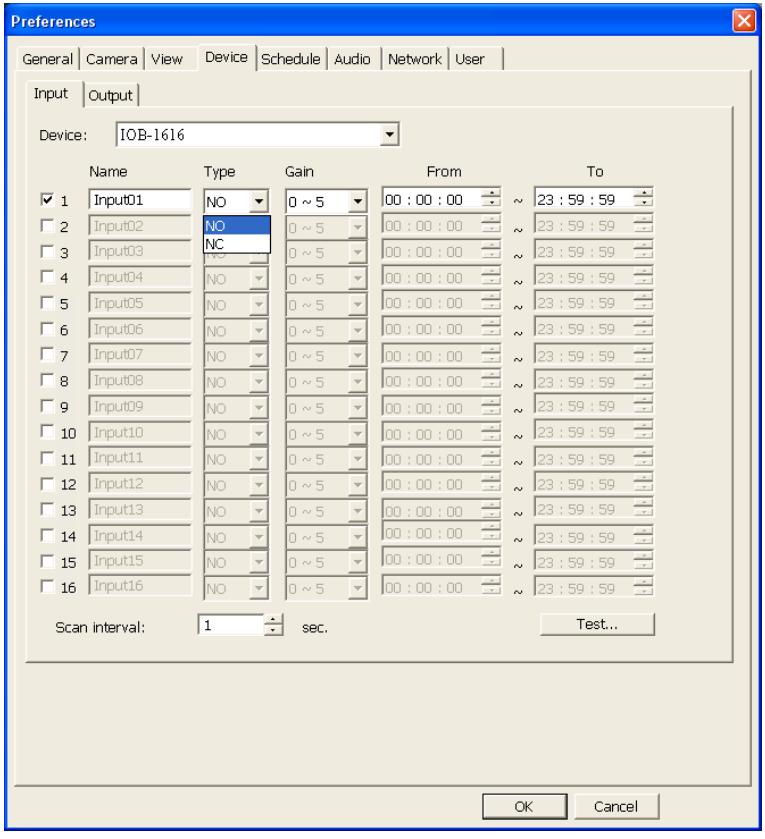
Input Settings

Step 1: Invoke the Preference/Device/Input setting page.

Step 2: Select the item “IOB-1616-I” from the controller list.

Step 3: 16 input ports appear in the setting page, and their assigned numbers start from 1 to 16.

Step 4: Click the “Test” button to open the “Sensor test” dialog box to examine correct input value and status.



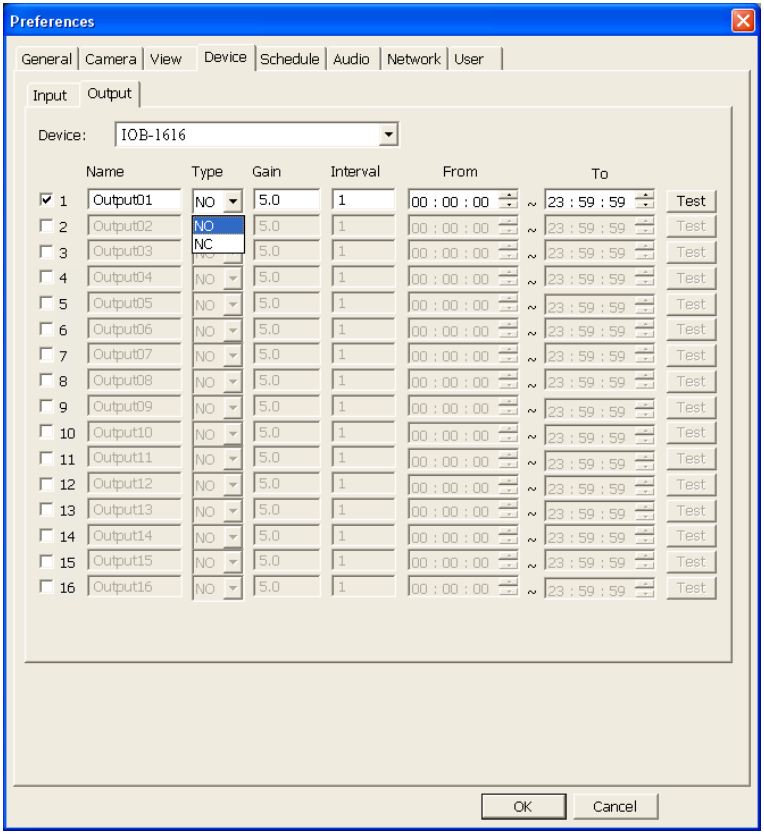
Output Settings

Step 1: Invoke the Preference/Device/Output setting page.

Step 2: Select the item “IOB-1616-O” from the controller list.

Step 3: 16 input ports appear in the setting page, and their assigned numbers start from 1 to 16.

Step 4: Click the “Test” button to examine whether the connected output devices respond accordingly.



Appendix 6

Wide Dynamic Vision Card

Introduction

The Wide Dynamic Vision Card provides four extra functions to the DVR 2400 surveillance system, which include night vision, sharpness adjustment, noise reduction and size filtering of moving objects. These features are optional to be applied on video sources that are connected to the Wide Dynamic Vision Card.

Functions	Description
Visibility Enhancement	Makes the video visible even though the field of view is in a low illuminated environment, especially for night and backlighted situations.
Sharpness	Sharpens blurred images or text caused by loss of focus.
Noise Reduction	Reduces video signal noise to improve the video quality and minimize the record size.
Size Filtering	Detects moving objects that match the specified size criteria to reduce false alarm activations.

Table 1: Four major functions of the Wide Dynamic Vision Card

Deployment and Configuration Tips

The tips listed below are for your reference when using the Wide Dynamic Vision cards.

1. The minimum illumination for a camera is very important to make the Visibility Enhancement effect most effective. In general, 0.1 LUX or below is recommended. In a closed environment without any light sources, Visibility Enhancement applied to a general camera cannot work the same way as an infrared camera.
2. If the field of view of a camera contains light sources or light reflection spots, mask them out to get better Visibility Enhancement results.
3. If you are only interested in one portion of the camera view, apply Visibility Enhancement on that portion only. The result will be better than applying Visibility Enhancement to the whole camera view.
4. Sharpness adjustment helps sharpen a blurred field of view caused by focus loss, especially if you want to sharpen blurred images or blurred text. Sharpness adjustment cannot further enhance a clear field of view nor make it more visible.
5. Object size filtering during motion detection may have outstanding effects in certain cases. For example, size filtering can be configured to ignore small-size objects such as flashing stars and distant street lamps, and also configured to ignore camera shaking caused by wind blasting or car passing by.
6. General camera devices in low lighting environments produce video signal noises. Video signal noises always result in bad video quality and larger record size. Noise reduction helps eliminate video signal noises to improve the video quality and minimize the record size.

Using Visibility Enhancement

The Visibility Enhancement option is available in the "Motion Detection" dialog box. Open the "Motion Detection" dialog box to customize Visibility Enhancement settings. (See Figure 1)

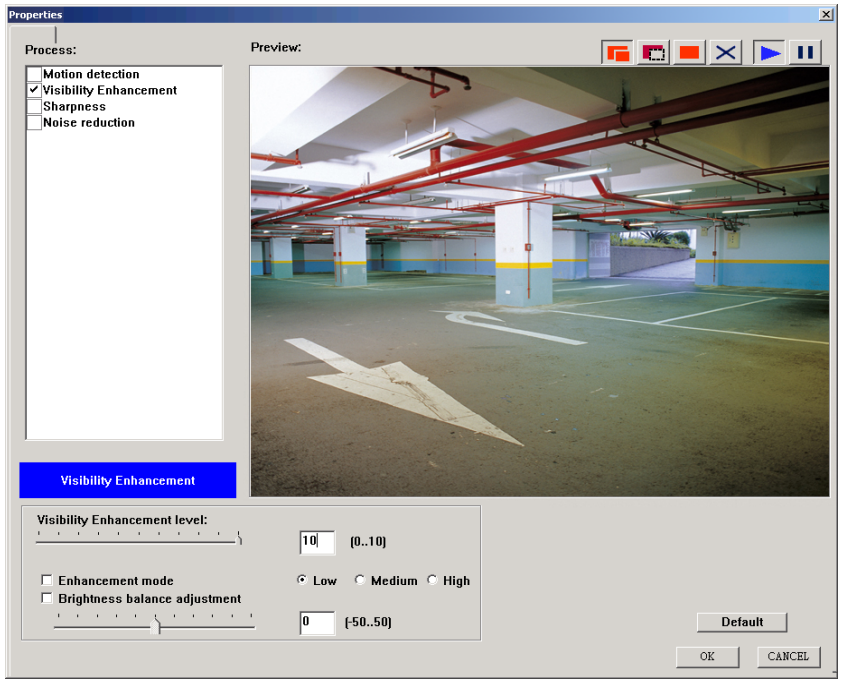


Figure 1: Visibility Enhancement Settings

Step 1: Select the "Visibility Enhancement" item in the "Process" list box to display its settings.

Step 2: Select/deselect the "Visibility Enhancement" check box to enable/disable the Visibility Enhancement effect.

Step 3: Adjust the "Visibility Enhancement level" slider to control the level of Visibility Enhancement to be applied on the camera video.

Step 4: If the scenario is in a low light or backlighted environment, select the "Visibility Enhancement enhancement mode" option, or select the "Brightness balance adjustment" option and adjust the value to get a better result.

Step 5: If you still cannot get a better result after performing Step 4, consider deselecting the "Visibility Enhancement enhancement mode" option and selecting only the "Brightness balance adjustment" option. Adjust the brightness balance value to get a better picture.

Step 6: If there are some light sources and reflection spots in the field of view, you can mask them out to get a better result. Mask buttons are at the right corner of the "Preview" window. They are, from left to right, "Add mask" button, "Remove mask" button, "Mask all" button and "Clear all" button. You can use them to define the applied area.

How to Apply Visibility Enhancement

Table 2 illustrates Visibility Enhancement solutions for different environmental situations. Please refer to the table below for guidance if this is your first time to use the Visibility Enhancement feature.

Environmental Situations	Solution 1	Solution 2	Indoor Situations	Outdoor Situations
1. Low Lighting Environment	Apply "Visibility Enhancement" and adjust the "Visibility Enhancement level" value (setting the value to 6 or lower is recommended).		Example A1-1	Example A1-2
2. Fixed Light Sources in Low Lighting Environment	1. Apply "Visibility Enhancement" and adjust the "Visibility Enhancement level" value (setting the value to 6 or lower is recommended). 2. Enable the "Brightness balance adjustment" option and adjust its value. 3. If the video quality is not good enough, enable the "Visibility Enhancement enhancement" option.	1. Apply "Visibility Enhancement" and adjust the "Visibility Enhancement level" value (setting the value to 6 or lower is recommended). 2. Mask out the area nearby light sources to exclude that area when applying the Visibility Enhancement effect. On the other hand, if you want to get a better result within the area of the light sources, select the area where to apply the Visibility Enhancement effect.	Example A2-2 for solution 1 Example A2-3 for solution 2	Example A2-1 for solution 1
3. Moving Light Sources in Low Lighting Environment	1. Apply "Visibility Enhancement" and adjust the "Visibility Enhancement level" value (setting the value to 6 or lower is recommended). 2. Enable the "Brightness balance adjustment" option and set the value in the positive range. 3. If the video quality is not good enough, enable the "Visibility Enhancement enhancement" option.			Example A3-1
4. Backlighted Environment	1. Apply "Visibility Enhancement" and adjust the "Visibility Enhancement level" value (setting the value to 6 or lower is recommended). 2 Enable the "Brightness balance adjustment" option and set the value in the positive range.		Example A4-1	Example A4-2
5. Overexposure in Lighting Conditions	1. Apply "Visibility Enhancement" and adjust the "Visibility Enhancement level" value (setting the value to 6 or lower is recommended). 2. Enable the "Brightness balance adjustment" option and set the value in the negative range.			Example A5-1

Table 2: Combinative Settings for Visibility Enhancement

Please see the Appendix for examples of Visibility Enhancement.

Adjusting Sharpness

The Sharpness option is used to enhance the edges of the image; it is available in the "Motion Detection" dialog box. Open the "Motion Detection" dialog box to customizing Sharpness settings. (See Figure 2).

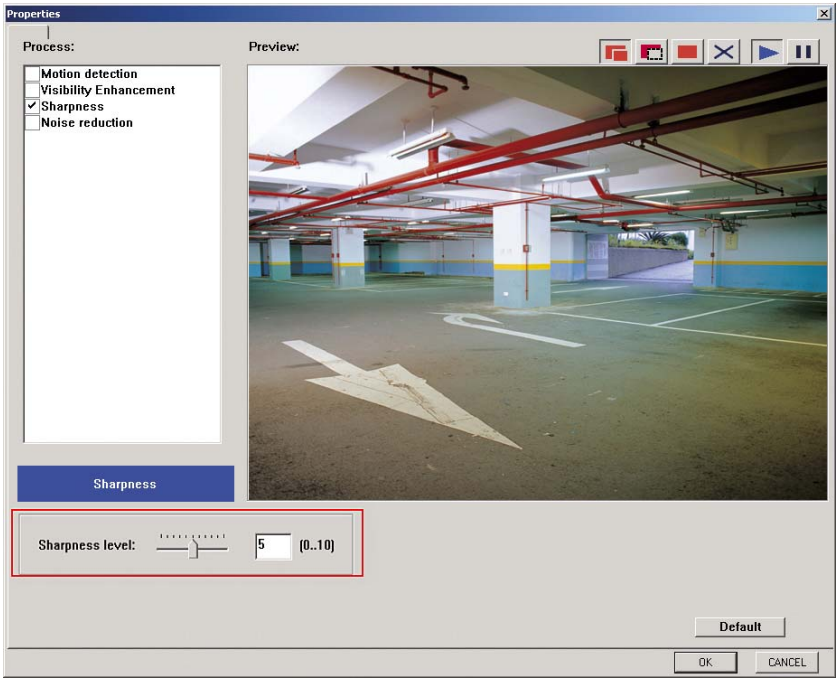


Figure 2: Sharpness function

Step 1: Select the "Sharpness" item in the "Process" list box to display its settings.

Step 2: Select/deselect the "Sharpness" check box to enable/disable sharpness adjustment.

Step 3: Adjust the "Sharpness level" slider to control the level of sharpness to be applied on the camera video.

Sharpness adjustment example:

Figure 3 (a) shows the original picture, and Figure 3 (b) is the result after applying sharpness.

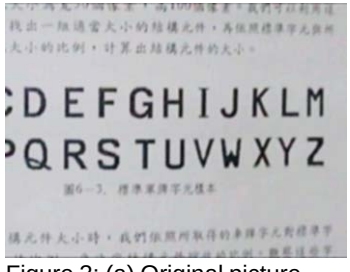


Figure 3: (a) Original picture

(b) Sharpness level = 3

Applying Noise Reduction

The Noise Reduction option helps eliminate the noise signal of the camera input. It is more efficient to be applied in night conditions, or after you have enabled the Wide Dynamic Vision feature.

Noise Reduction does not only reduce the recording video size (in average 10%~50% reduction ratio), but also maintains the same video quality before and after applying Noise Reduction. This option is available in the "Motion Detection" dialog box. Open the "Motion Detection" dialog box to customize Noise Reduction settings. (See Figure 4).

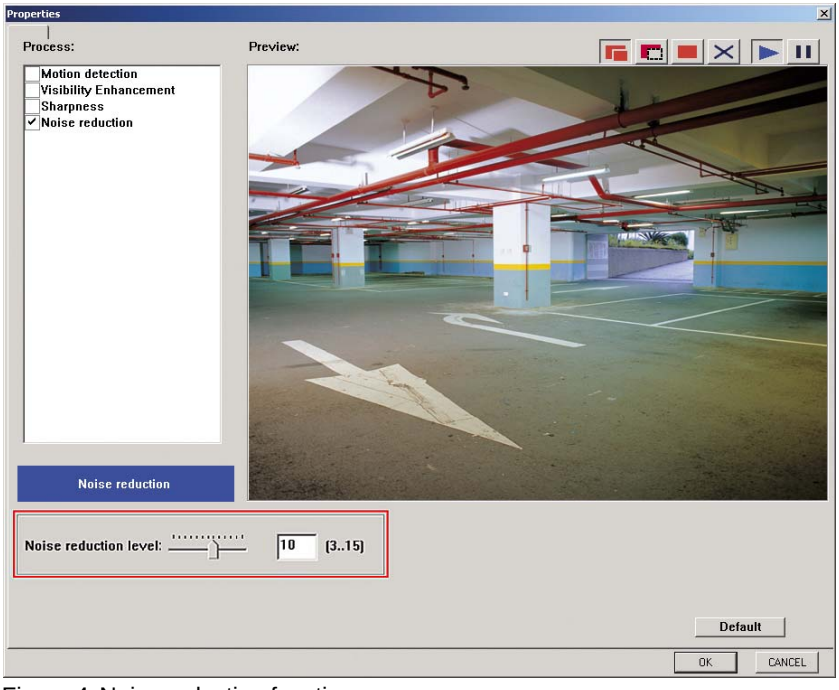


Figure 4: Noise reduction function

Step 1: Select the "Noise reduction" item in the "Process" list box to display its settings.

Step 2: Select/deselect the "Noise reduction" check box to enable/disable noise reduction.

Step 3: Adjust the "Noise reduction level" slider to control the level of noise reduction to be applied on the camera video.

Reduction Ratio of the Recording Size

The reduction ratio of the video recording size varies from day to night and depends on whether the content captured by the camera is static or not. In general, the reduction ratio at nighttime is higher than daytime. Lesser-motion video is also higher than heavy-motion video, and HM compression is higher than M-JPEG compression.

Figures 5-1 to 5-4 show a comparison of video recording sizes, using a video dimension of 320x240 pixels and the HM compression method. The camera will generate many noise signals in the nighttime because of low lighting, and will always create significantly large-size video recordings.

Figure 5-1 shows the original picture at nighttime. Figure 5-2 illustrates that the noise reduction process can reduce the video recording size, but still maintain the same video quality as Figure 5-1. Figure 5-3 is the original picture in daytime, and Figure 5-4 shows that the size reduction ratio is 24.8%.

[Nighttime: Noise Reduction ratio is 45.3%]

Figure 5-1: Original picture
(Size: 7524 bytes/frame)

Figure 5-2: After applying Noise Reduction
(Size: 4116 bytes/frame)

[Daytime: Noise reduction ratio is 24.8%]

Figure 5-3: Original picture
(Size: 5356 bytes/frame)

Figure 5-4: After applying Noise Reduction
(Size : 4026 bytes/frame)

Applying Size Filtering

Size filtering is an extra option in the "Motion Detection" dialog box. Open the "Motion Detection" dialog box to customizing size filtering settings. (See Figure 6).

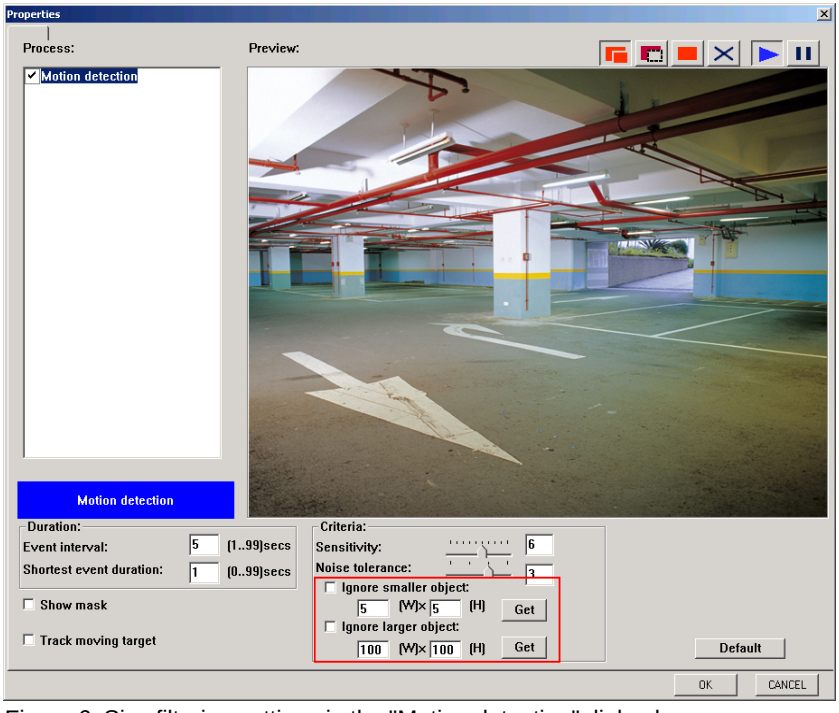


Figure 6: Size filtering settings in the "Motion detection" dialog box

Step 1: Select the "Motion detection" item in the "Process" list box to display its settings.

Step 2: Select/deselect the "Motion detection" check box to enable/disable motion detection.

Step 3: Select the "Ignore smaller object" check box to ignore moving objects whose sizes are smaller than the specified size. Click the "Get" button, then hold down the left mouse button and drag to draw a rectangle for measuring the size of the small object on the image. The width and height values will be displayed.

Step 4: Select the "Ignore larger object" check box to ignore moving objects whose sizes are larger than the specified size. Click the "Get" button, then hold down the left mouse button and drag to draw a rectangle for measuring the size of the large object on the image. The width and height values will be displayed.

Step 5: You can specify an area on which to apply motion detection by masking others out. Mask buttons are at the right top corner of the "Preview" window. They are, from left to right, "Add mask" button, "Remove mask" button, "Mask all" button and "Clear all" button.

Appendix

Table 2 illustrates solutions for different environmental situations including low lighting environment, fixed light sources in low lighting environment, moving light source in low lighting environment, backlighted environment, and overexposure in lighting conditions. In this Appendix, detailed examples are provided to explain how to use the Wide Dynamic Vision card effectively.

1. Low Lighting Environment.

Example A1-1(Indoor Situation)

A business card in Figure A1-1 is placed in a low lighting environment for testing. The left image in Figure A1-1 is the original picture. The right image in Figure A1-1 was applied with "Visibility Enhancement". The company logo and the text in the right image are more visible. Figure A1-3 shows the Visibility Enhancement settings used in this example.

Figure A1-1: Indoor

Example A1-2(Outdoor Situation)

The car in Figure A1-2 is parked in a low lighting environment. The left image in Figure A1-2 is the original picture. The right image in Figure A1-2 was applied with "Visibility Enhancement". In the right image, the digits of the car plate are more visible and the shape of the car is clearer. Figure A1-3 shows the Visibility Enhancement settings used in this example.

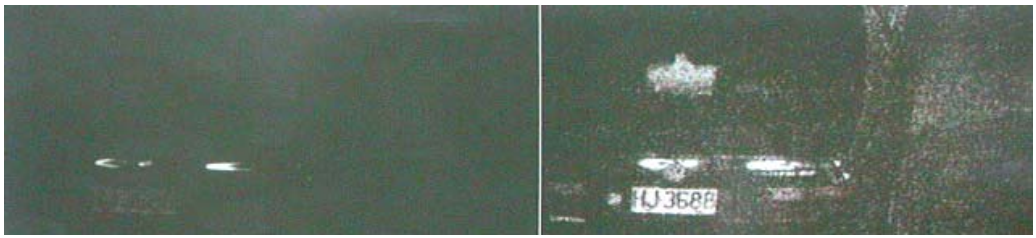


Figure A1-2: Outdoor

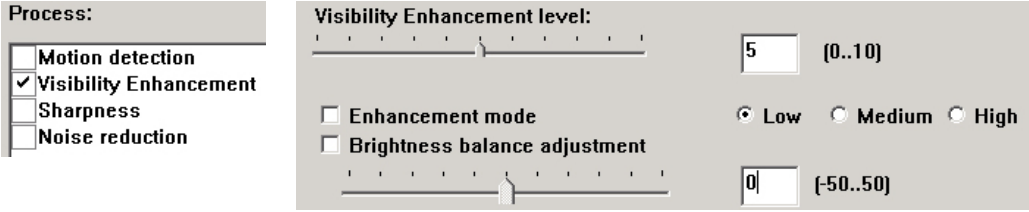


Figure A1-3: Settings used in Figure A1-1 and A1-2

2. Fixed Light Sources in Low Lighting Environment

Example A2-1(Outdoor Situation)

There are some shopping stores and light sources along the street at night. Figure A2-1 is the original picture without Visibility Enhancement applied; Figure A2-2 was applied with Visibility Enhancement and "Brightness balance adjustment" was set to a positive range. The content of the billboard in Figure A2-2 is clearer than Figure A2-1. Figure A2-3 shows the Visibility Enhancement settings used in Example A2-1.

Figure A2-1: Original

Figure A2-2: Visibility Enhancement applied

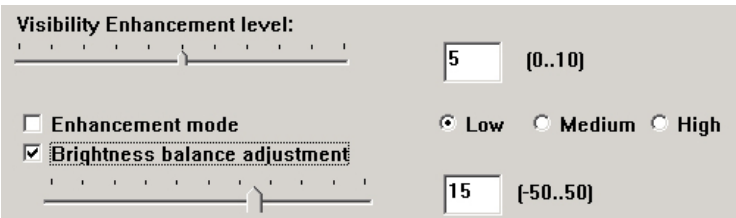


Figure A2-3: Settings used in Figure A2-2

Example A2-2(Indoor Situation 1)

The images in this example were captured from a backlighted environment. Figure A2-4 is the original picture from the camera, whereas Figure A2-5 was applied with Visibility Enhancement using the settings shown in Figure A2-6. It looks like we can hardly see any visual differences between Figure A2-4 and Figure A2-5. In this case, we can try to increase "Brightness balance

adjustment" to the positive range for Figure A2-7 using the settings shown in Figure A2-9, or apply "Visibility Enhancement Enhancement- Mode High" for Figure A2-8 using the settings shown in Figure A2-10 to get a clearer picture quality.


Figure A2-4: Original


Figure A2-5: Visibility Enhancement applied

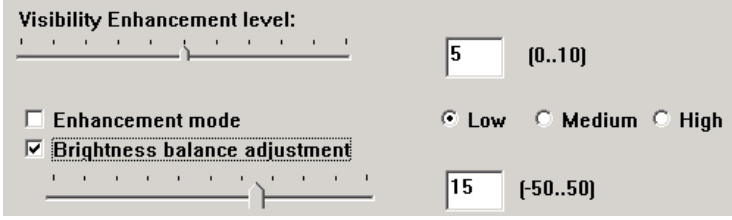


Figure A2-6: Settings used in Figure A2-5


Figure A2-7: More Brightness balance


Figure A2-8: Enhancement mode applied

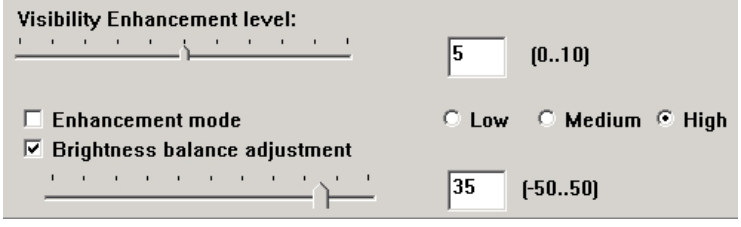


Figure A2-9: Settings used in Figure A2-7

Figure A2-10: Settings used in Figure A2-8

Example A2-3(Indoor Situation 2)

Figure A211 is the original picture; the sunlight spreads out through the window. Due to the auto-iris adjustment of camera, the interior of the house is underexposed and many objects cannot be identified clearly, especially the advertisement paper at the lower half part of the image.

Figure A2-11: Original

Figure A2-12 : Visibility Enhancement was applied to the whole picture. The advertisement paper at the lower half part of the image is more visible, but both the left and right sides of the window are overexposed.

Figure A2-12: Visibility Enhancement applied

Figure A2-13 : You can mask out the upper half part of the picture to apply Visibility Enhancement for the lower half part. The advertisement paper is clearer and the other part appears the same as in the original video.

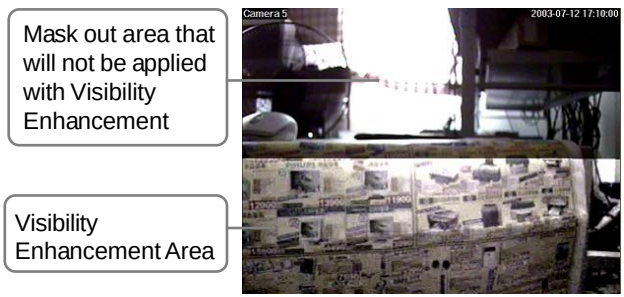


Figure A2-13: Masking area for Visibility Enhancement

3. Moving Light Source in Low Light Environment

Example A3-1 (Outdoor Situation)

Figure A3-1 shows a car running in a low lighting environment. This is the original picture that has not been applied with Visibility Enhancement. Figure A3-2 was applied with Visibility Enhancement and "Brightness balance adjustment" was set to the positive range above zero using the settings shown in Figure A3-3. The digits of the car plate and the shape of the car in Figure A3-2 is clearer than Figure A3-1.

Figure A3-1: Original

Figure A3-2: Visibility Enhancement applied

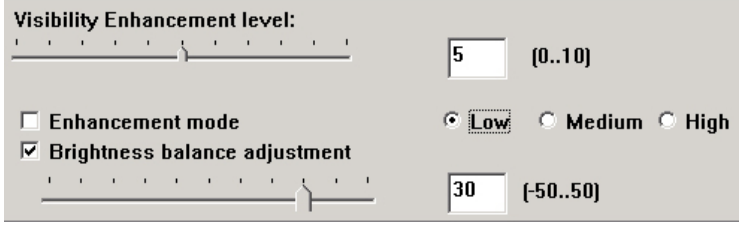


Figure A3-3: Settings used in Figure A3-2

4. Backlighted Environment

Example A4-1(Indoor Situation)

In Figure A4-1, the sunlight spreads through the French windows behind the camera and there is another light source through the window just above the cabinet. Figure A4-1 is the original picture; Figure A4-2 was applied "Visibility Enhancement" and "Brightness balance adjustment" was set to a positive range above zero using the settings shown in Figure A4-3. The backlighted area in Figure A4-2 is more visible than in Figure A4-1.

Figure A4-1: Original

Figure A4-2: Visibility Enhancement applied

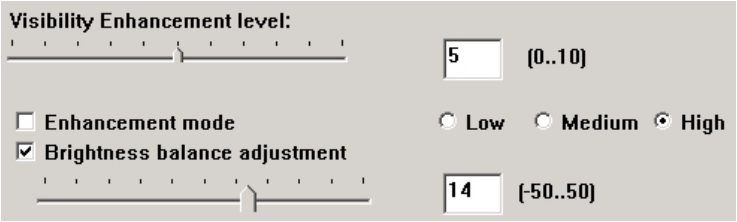


Figure A4-3: Settings used in Figure A4-2

Example A4-2(Outdoor Situation)

The left image in Figure A4-4 is the original picture, where the camera was facing towards the sunlight in a certain angle and position. The picture captured by the camera looks a bit dark even though the sunlight was shining directly on the street in the actual scene. The right image in Figure A4-4 was applied with Visibility Enhancement using the settings shown in Figure A4-5; the right image is almost recovered back to the actual scene.

Figure A4-4: Camera placed in a backlighted environment

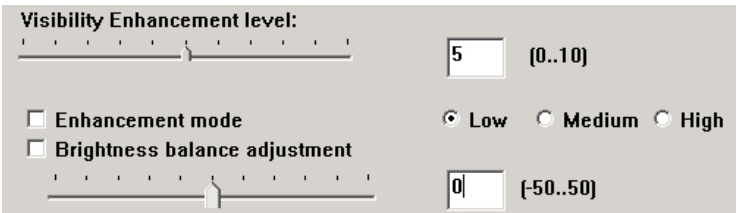


Figure A4-5: Settings used in Figure A4-4

5. Overexposure in Lighting Conditions

Example A5-1(Outdoor Situation)

Figure A5-1 is the original picture, where the camera was facing the sunlight and the car was running. The contrast in Figure A5-1 is weak due to overexposure. Figure A5-2 was applied with "Visibility Enhancement" and the "Brightness balance adjustment" value was set in the negative range below zero using the settings shown in Figure A5-3; the contrast in Figure A5-2 is higher than in Figure A5-1.

Figure A5-1: Original

Figure A5-2: Visibility Enhancement applied

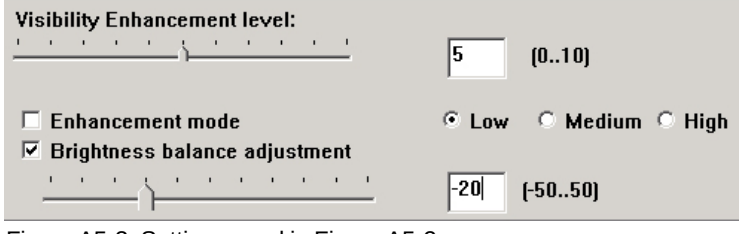


Figure A5-3: Settings used in Figure A5-2

Appendix 7

LB-16 Input Video Loopback Card

Video loop back card connects to DVR capture cards to loop back video signals. Camera video can through the video loop back card to the monitor set or to the quad processor for monitoring purpose or other special applications.

Specifications:

Model name	LB-16 (AD043)
System	32 bits 5V PCI card
Video Input	Four center crimp terminal housing up to 16 channel video input One box header (2*13 pin) support 16 channel video input Two box header (2*13 pin) support 8 channel video input
Video Output	D-sub 25 connector support 16 channel video output
Video signal	1 Vpp, 75Ω switch optional
Dimension	119.88*85.09 mm

Connector Pin Assignment

1. Center crimp terminal housing for 4 channel video input (CN1,2,3,4)

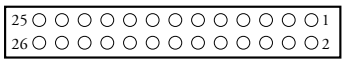
Pin no.(CN1)	Signal	Pin no. (CN1)	Signal
1	X	4	Video 3
2	Ground	5	Video 2
3	Video 4	6	Video 1

Pin no.(CN2)	Signal	Pin no. (CN2)	Signal
1	X	4	Video 7
2	Ground	5	Video 6
3	Video 8	6	Video 5

Pin no.(CN3)	Signal	Pin no. (CN3)	Signal
1	X	4	Video 11
2	Ground	5	Video 10
3	Video 12	6	Video 9

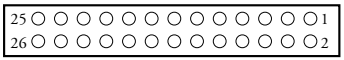
Pin no.(CN4)	Signal	Pin no. (CN4)	Signal
1	X	4	Video 15
2	Ground	5	Video 14
3	Video 16	6	Video 13

2. Box header for 16 channel video input (P1)



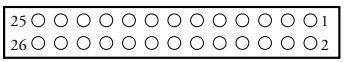
Pin no.(P1)	Signal	Pin no.(P1)	Signal
1	Video 1	14	Ground
2	Video 14	15	Video 8
3	Video 2	16	Ground
4	Video 15	17	Video 9
5	Video 3	18	Ground
6	Video 16	19	Video 10
7	Video 4	20	Ground
8	Ground	21	Video 11
9	Video 5	22	Ground
10	Ground	23	Video 12
11	Video 6	24	Ground
12	Ground	25	Video 13
13	Video 7	26	Ground

3. Box header for 8 channel video input (P2)



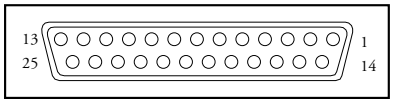
Pin no.(P2)	Signal	Pin no.(P2)	Signal
1	Video 1	14	Ground
2	X	15	Video 8
3	Video 2	16	Ground
4	X	17	X
5	Video 3	18	Ground
6	X	19	X
7	Video 4	20	Ground
8	Ground	21	X
9	Video 5	22	Ground
10	Ground	23	X
11	Video 6	24	Ground
12	Ground	25	X
13	Video 7	26	Grounds

4. Box header for 8 channel video input (P3)



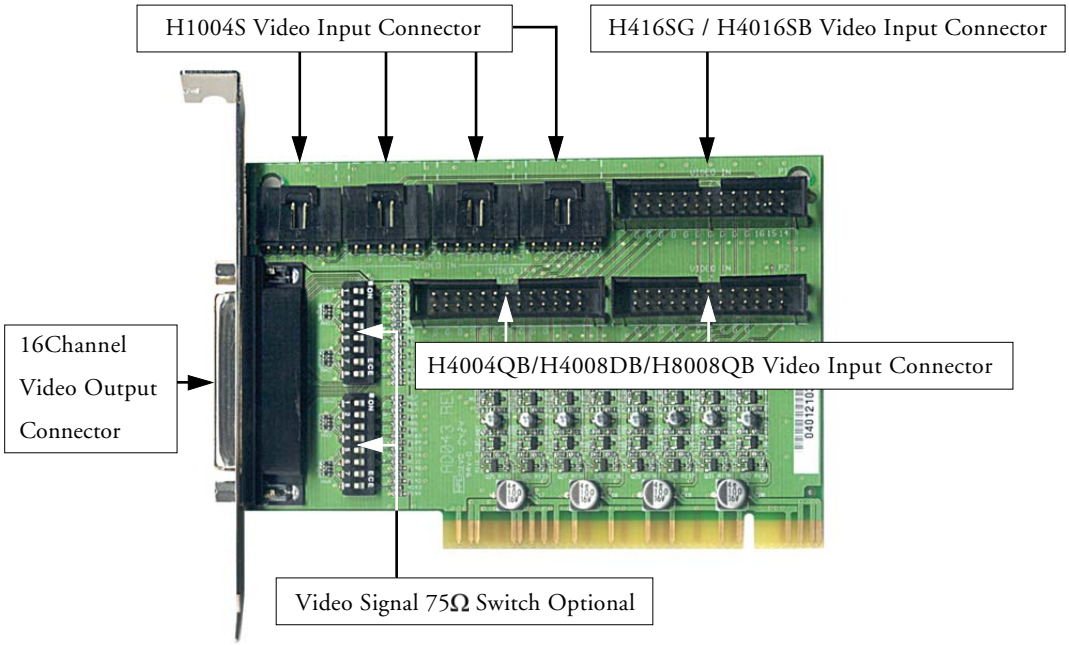
Pin no.(P3)	Signal	Pin no.(P3)	Signal
1	Video 9	14	Ground
2	X	15	Video 16
3	Video 10	16	Ground
4	X	17	X
5	Video 11	18	Ground
6	X	19	X
7	Video 12	20	Ground
8	Ground	21	X
9	Video 13	22	Ground
10	Ground	23	X
11	Video 14	24	Ground
12	Ground	25	X
13	Video 15	26	Ground

5. D-sub 25 connector for 16 channel video output (P4)



Pin no.(P4)	Signal	Pin no.(P4)	Signal
1	Ground	14	Video 1
2	Video 5	15	Ground
3	Video 9	16	Video 13
4	Ground	17	Video 2
5	Video 6	18	Ground
6	Video 10	19	Video 14
7	Ground	20	Video 3
8	Video 7	21	Ground
9	Video 11	22	Video 15
10	Ground	23	Video 4
11	Video 8	24	Ground
12	Video 12	25	Video 16
13	Ground		

6. Connect to video capture card



Capture Card Model / Max Number	Slots for connection	# of Loop Back Channels
H1004S x 4	P4, P5, P6, P7	4, 8, 12, 16
H416SG x 1	P1	16
H4016SB x 1	P1	16
H4004QB x 2	P2, P3	4, 8
H4008DB x 2	P2, P3	8, 16
H8008DB x 2	P2, P3	8, 16

Appendix 8

Guide to Connect PTZ Camera

I. Something you should know first

1. There are two types of RS-232 ports at a computer, serial ports and parallel ports. The serial port, so called COM port, is the one for plugging in the control cable from the PTZ camera.

2. PTZ cameras have a RS-422/485 port to plug in the control cable. In order to connect a control cable from a PTZ camera to a computer, a converter device from RS-422/485 to RS-232 is usually adopted.

   PS: The connection length of RS232 cable is limited in 15 meters. The connection length of RS-422/485 cable can up to 1,200 meters.

3. A serial port at a computer can control multiple PTZ cameras. These PTZ cameras connected to the same computer serial port are each identified by a unique hardware ID. You can assign an ID to a PTZ camera by adjusting the ID switch of PTZ camera device. Detail please refers to the PTZ camera manual.

4. RS-232 pin definition

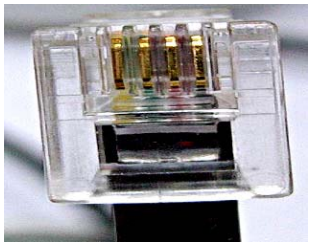
Pin No	Function	
1	CD	
2	RXD	Receive Data
3	TXD	Transport Data
4	DTR	DTE Ready
5	GND	Ground
6	DSR	DCE Ready
7	RTS	Request to Send
8	CTS	Clear to Send
9	RI	Ring Indicator

When we look in front of the female D connector of COM port, the pin at right top is pin 1. There are numbers beside pins at the D female connector. Computer communicates with PTZ cameras by pin 2 and pin 3. The lines of pin 2 (RXD) and pin 3 (TXD) each connect to “Data-“ pin and “Data+” pin of PTZ camera device. Please refer to PTZ camera manual for the actual pin name.

5. RJ11 cable

RJ11 cable is a general telephone cable. Telephone cable has three types, 2 lines inside, 4 lines inside and 6 lines inside. Be sure to use 4 lines inside or 6 lines inside of telephone cable to

connect from PTZ camera to the converter device. When we look in front of the RJ11 connector, the left line is line 1 and the right line is line 6. In the cable, line 4 and line 5 are used for RX+ and RX- lines.



Picture 1: RJ11 connector (four lines inside)

II. Connect the PTZ camera: Use DynaColor dome camera as an example

Step 1: Adjust jumpers at the PTZ camera base.

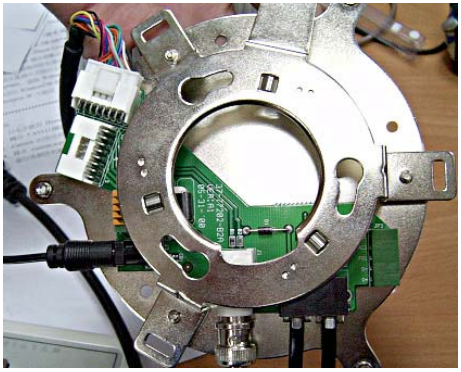
Jumper	Setting
Dome ID	001
Duplex/Simplex	Duplex
S2 & S1	DynaColor protocol

Note:

1. After the PTZ camera has been set up and the pan, tilt and zoom controls seem not very well. You can switch from duplex mode to simplex mode and try again.
2. If there are two more PTZ cameras connect to a serial port at the computer, you must assign each PTZ camera a unique ID.

Picture 2: Jumpers at the bottom side of PZT camera base

Step 2: Connect cable from PTZ camera base to PTZ dome camera.
Connect a cable (comes in the camera pack) from the white connector (at the up-left corner in Picture 3) of PTZ camera base to PTZ dome camera.

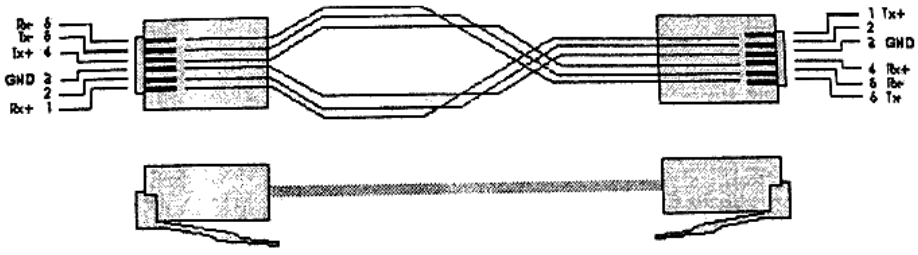


Picture 3: Connectors at the front side of PTZ camera base

Step 3: Connect RJ11 cable from PTZ camera base to the RS-422/485 port of converter device. There are two RJ11 connectors at the camera base (at the right-bottom corner in Picture 3). Connect a RJ11 cable from one RJ11 connector at the PTZ camera base to the RS-422/485 port of converter device. Be sure that the RX+ and RX- lines of RJ11 cable each connects to the DATA+ and DATA- pins of converter device.

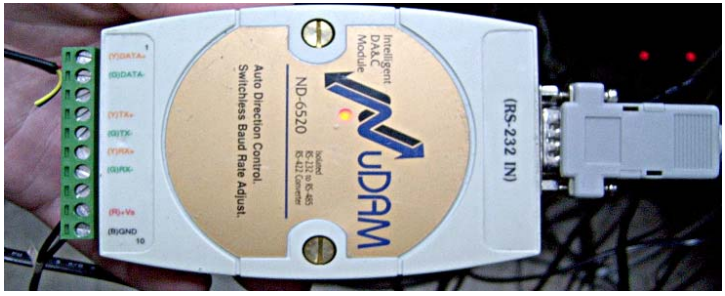
Note:

1. Another RJ11 connector is optional for connecting to control panel device. These two RJ11 connectors are forks from the same cable.
2. The converter device needs a power supply to perform action. Please refer to the device manual for the voltage level.



For D751X Control Keyboard For SpeedDome

Step 4: Connect RS232 cable from the RS-232 port of converter device to the computer.



Appendix 9

An Example of PTZ Custom Command Usage:

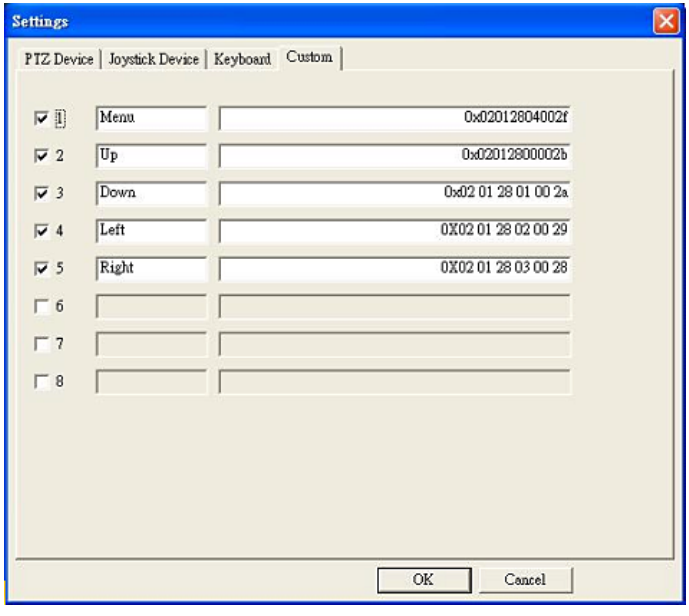
Enable OSD (On Screen Display) of DynaColor Dome Camera

DynaColor dome camera support the OSD (On Screen Display) commands for device setting. Below is an example to use the Custom Command page of Advance PTZ Control Panel to operate the OSD commands of DynaColor dome camera.

Step 1: Click the PTZ icon on the Camera Control Panel of DVR server to display the Advance PTZ Control Panel.

Step 2: Click the button on the Advance PTZ Control Panel to display the "Settings" dialog box. Click the "Custom" tab to go to the "Custom" setting page.

Step 3: Select check boxes, enter command names and command codes as what shows in the below picture.



Step 4: Click the mode button on the Advance PTZ Control Panel and select the “Custom” mode. The Advance PTZ Control Panel switches to the “Custom” panel.

Step 5: Click the “Menu” button to display the OSD commands. Click “Up” and “Down” button to navigate menu commands. Click “Left” and “Right” buttons to change the setting.

DVR-Remote

Manual

Copyright Notice

Table of Contents

Chapter 1

Introducing the DVR-Remote Web Surveillance System

The **DVR-Remote** Web Surveillance System is the perfect solution for digital video surveillance over the Web. It is a standalone software that you can install on a client computer that has Internet access. With this software, you can monitor and record live surveillance video with audio, then download or stream the surveillance recordings from remote DVR sites for playback on your local computer.

DVR-Remote allows you to monitor multiple DVR sites simultaneously. You first need to log onto the DVR server units of the remote DVR sites that have the surveillance cameras and other security devices you would like to monitor. Once you are connected to the DVR sites, you can either monitor all cameras or only those cameras that have detected abnormal events. With **DVR-Remote**, you can also initiate voice communication with the operator on a remote DVR server, trigger manual events, and even control the remote DVR site directly.

Features

General Features:

- ❑ Two program window sizes are available for the user interface: 1024x768 and 800x600. You can choose the proper window size according to the display resolution you have set for your monitor display.
- ❑ Connect to remote sites by the DVR site name or by camera groups.
- ❑ Flexible split-screen display allows you to resize split screens and change their positions on the user interface easily.
- ❑ Meaningful icons are provided for you to easily identify PTZ cameras, CCTV cameras, event recordings, continuous recordings, local recordings, and more.

Remote Monitoring:

- ❑ Always display live video from all remote cameras, or display the camera video only when events have been detected. Audio from the remote cameras can also be enabled.
- ❑ Display at most 16 remote cameras from different DVR sites through your Internet

connection. Display camera video in full-screen, 1/4/9/16 split-screen, or in loop mode.

- Trigger manual events to remote cameras.
- Directly control remote PTZ/DOME cameras.
- Notify events by alarm sound.
- Recycle storage to keep fixed days of video recordings on the local drive and to free up disk space when hard disk space is almost full.

Scheduler:

- **Scheduler** allows you to set up specific day and time schedules for continuous recording of surveillance video from remote cameras on your local drive.

Playback of Surveillance Recordings:

- Retrieve history records from a remote DVR site, and download or stream surveillance recordings for playback on your local computer.
- Search for history records by specifying the date/time of occurence.
- View at most 16 recordings simultaneously. Playback speed can be adjusted from 1/8X speed to 16X speed.
- Download remote video recordings in batches.
- A Calendar window on the user interface clearly indicates which days of the month have surveillance recordings.
- Take a snapshot of video frames, then print them or save them in BMP or JPEG format.

Voice Communication:

- Converse with the operator on a DVR server using the **Voice communication** feature.

Chapter 2

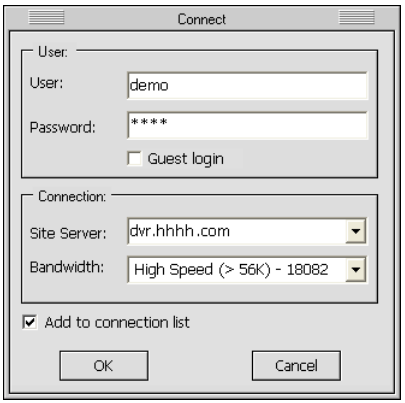
Using DVR-Remote

Remote Viewer provides up to 16 split screens on the user interface for you to simultaneously monitor remote cameras from multiple DVR sites. Each DVR site will have a DVR server computer that is connected to surveillance cameras and other security devices. You need to first specify the URL addresses and the login details of the DVR servers that you would like to connect to.

Connecting to Remote DVR Sites

To add and connect to a remote DVR site:

1. Click  to open the **Connect** dialog box.
2. Enter the DVR site's URL address in the **Site Server** text box.
3. Clear the **Guest** login checkbox, then type in the valid **User name** and **Password** for connecting to the DVR site.
4. Select **Add to connection list** to add the DVR site to DVR-Remote's **Camera List Panel**, then click **OK**. DVR-Remote will then connect to the specified DVR site and display the remote cameras.
5. The DVR site will be added to the Camera List Panel. Click  to open this panel. To see the names of the different cameras in the DVR site, click on the "+" sign.
6. By default, the site is named with the site name that has been specified in the remote DVR site. To rename it, click on the text and type in the desired name.
7. DVR-Remote allows you to connect to multiple DVR sites at the same time. Repeat steps 1 to 6 to add more DVR sites.



Note: If you want to change the information of a DVR site, select then right-click the DVR site name in the Camera List Panel. The **Site Information** dialog box will then open where you can make modifications.

Another way of adding DVR sites is to click in the Camera List Panel. The **Add Site/ Group** dialog box will then be displayed where you can add a new DVR site. This dialog box also allows you to create a group name for grouping existing DVR sites. (See page 13 for information on how to group DVR sites.)

To connect and disconnect an existing DVR site:

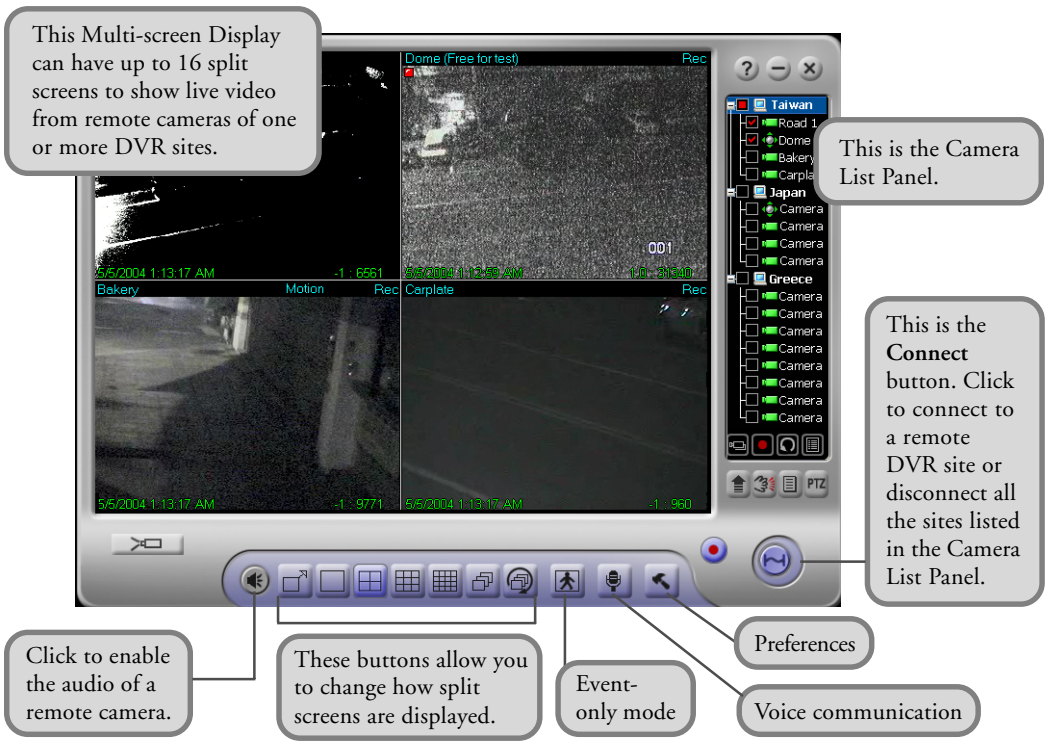
To connect to a DVR site, double-click the site name in the Camera List Panel. Double-click the site name again to disconnect from the DVR site.

To disconnect all connected DVR sites:

Click . This closes all connections.

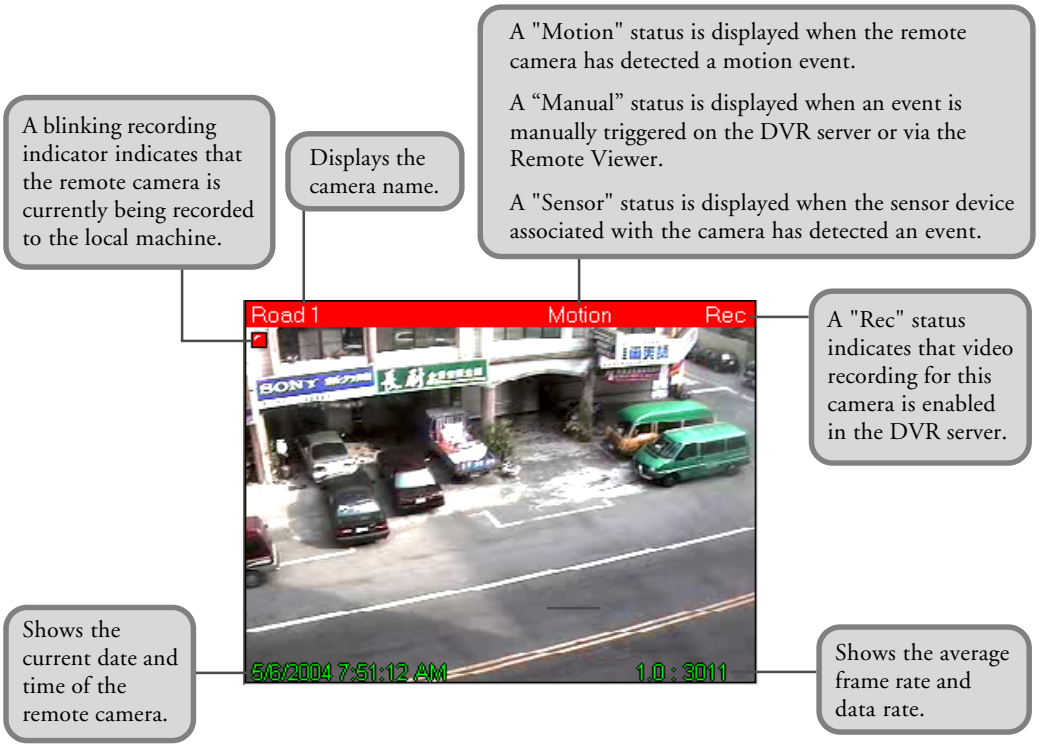
Monitoring Remote Cameras

When **DVR-Remote** has successfully established connection with the DVR site(s) that you added to the Camera List Panel, you will be able to see real-time video from the remote cameras on the site(s).



Split Screens

Split screens show live video from the video cameras that are installed in the monitored site or sites. On the split screens, the video camera number, current date and time, etc. can be displayed. If video recording for a certain camera is enabled on the DVR server, a "**REC**" indicator will appear at the upper right corner of the corresponding screen. When you have initiated video recording locally on your computer, you will a red blinking indicator on the split-screen window.



Note: Information displayed on split screens can be enabled or disabled in the **Preferences dialog box: Caption tab**. (See page 29 for details.)

Changing Split Screen Position

Drag a split screen and drop it to another split screen to exchange their positions.

Maximizing Split Screen Size

If there are 4, 9, or 16 split screens displayed, double-click a split screen to enlarge its size and temporarily cover its three neighboring screens. If you continue to double-click, the split screen will be enlarged to the full window size.

Right-click on the split screen to restore it back to the previous size. When you continue to right-click on the split screen, it will return to its original size.

Split Screen Controls

Use these buttons to change how split screens are displayed on the program screen.

Toggles between **Full-screen** and **Normal** display modes.

Displays a split screen in full window size.

Splits the Multi-screen Display into 4 split screens.

Splits the Multi-screen Display into 9 split screens.

Splits the Multi-screen Display into 16 split screens.

If there are more remote cameras from other DVR sites that cannot be fit within the program screen, click this button to switch the display to the next group of cameras.

If there are more remote cameras from other DVR sites that cannot be fit within the program screen, click this button to loop the display of the cameras. After an elapsed time, the window screen will automatically switch to the next group of cameras or sites.

Displaying Cameras with Detected Events Only

Click  to display only the remote cameras that have been detected with events. The split-screen display of the other cameras will temporarily be turned off. In this mode, only detected events will be recorded if video recording is enabled.

To switch back and display all cameras, click  again.

Note: In the **Preferences dialog box: Alarm tab**, you can set up **DVR-Remote** to sound an alarm in your computer when there are detected events. In this mode, record the detected event only if the video recording is enabled. (See page 30 for details).

Enabling Audio from Remote Cameras

In case you see abnormal activities while monitoring a remote camera, you can enable the audio from the camera and listen to it through your computer speakers.

To do so, first click the split screen that displays the remote camera, then click  .
Click this button again to turn off the audio.

Voice Communication with a DVR Server

If the DVR server on the DVR site is enabled to accept two-way communication requests from remote client computers that are running **DVR-Remote**, you will be able to initiate voice communication with the person who is operating the DVR server.

Simply click  to initiate voice communication.

Note: You can specify which sound card to use for audio input and make adjustments to the sound volume in the **Preferences dialog box: Voice Communication tab**. (See page 31 for details).

Remote Camera Controls

Use these buttons to have access to the different DVR sites and their respective remote cameras, and to control how video from these cameras are displayed on the **DVR-Remote** program window.


Increases the display frame rate of a selected camera. If your network connection bandwidth is limited, it may be helpful to increase the frame rate of the selected camera.


Triggers a manual event to a remote camera. (See page 11 for details).


Expands the Camera List Panel. More button controls in the Camera List Panel will then be displayed. Click again to retract and change the panel back to its original size. (See page 12 for more details on the Camera List Panel).

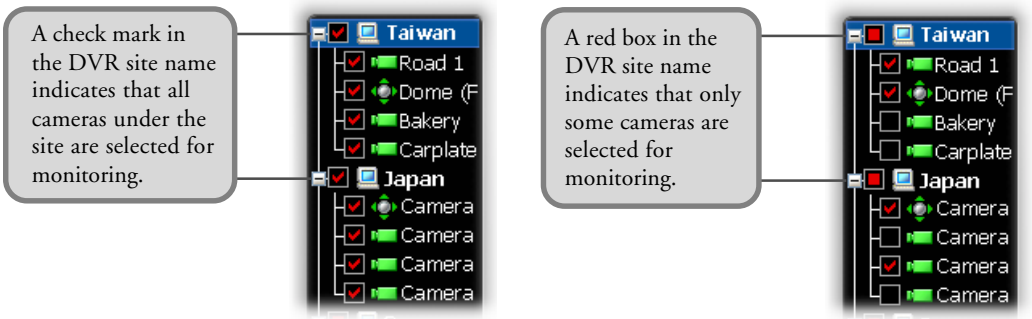
Click to change to the PTZ Camera Control Panel. (See page 14 for details).

Triggering Manual Events to Remote Cameras

If you see abnormal activities on one of the remote cameras, you can manually trigger an event to that camera. To do so, first click the split screen that displays the remote camera. Then click to trigger a manual event to the camera. This allows the abnormal activities to be logged and/or digitally recorded.

Recording Surveillance Video

After **DVR-Remote** has connected to the DVR sites that you specified, the remote cameras on each site are, by default, all selected for monitoring only. You can record video from all cameras, or choose certain cameras to record video from.



To record video from all remote cameras:

Click . Surveillance video from all remote cameras of the connected DVR sites will be recorded to your local hard drive. Click this button again to stop the recording.

To record video from selected cameras only:

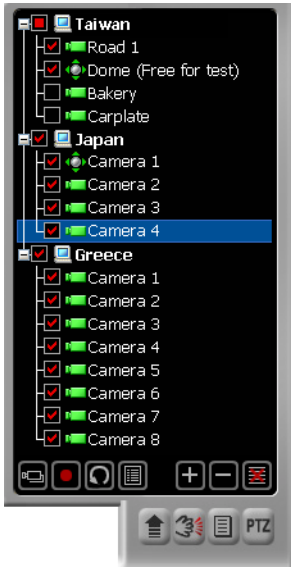
1. Click a camera on the split screen to select it.
2. In the Camera List Panel, click to start the recording. Click this button again to stop the recording.

Note: In the **Preferences dialog box: Storage tab**, you can delete old video recordings, and also specify when you want hard disk space to be recycled to free up disk space for saving new recordings. (See page 28 for details).

The Camera List Panel

The **Camera List Panel** lists the DVR sites and customized camera groups that you can connect to. At the bottom of the panel are button controls for adding DVR sites or camera groups, connecting/disconnecting selected cameras, video recording, and more.

To expand the Camera List Panel, click . To retract and change it back to the normal panel size. click again.



Expanded Camera List Panel

Normal-size Camera List Panel

Panel Controls

At the bottom of the Camera List Panel are two sets of button controls:

Allows you to connect to the selected remote cameras (that is, the cameras with check marks in the Camera List Panel).

Starts recording surveillance video from the selected cameras of a DVR site onto your local hard drive. Click again to stop recording.

Click to refresh the camera list of a selected DVR site.

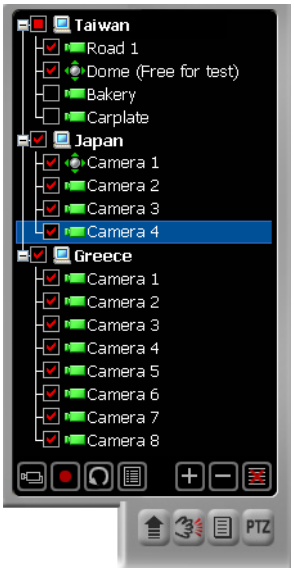
Opens the **Scheduler** where you can create schedules for recording surveillance video. (See page 24 for details).

Click to add a new DVR site or group to the list.

Click to remove a DVR site or group.

Click to clear the entire Camera List Panel.

Panel Indicators



Description name of DVR site

Group

CCTV camera

PTZ camera

Indicates that the remote camera is selected. A check mark that appears on a DVR site name indicates that all cameras under it are selected.

Indicates that only some cameras in a DVR site are selected.

Grouping DVR Sites or Remote Cameras

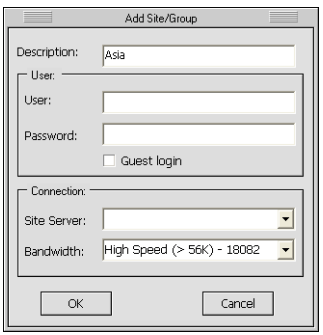
You can create a group name to combine certain DVR sites into the same group.

If you only need to monitor certain cameras from each site, you can also create a group name to combine these cameras under the same group. This allows **DVR-Remote** to connect only to the required cameras instead of all the cameras on each site.

To create a group:

1. Click to open the **Add Site/Group** dialog box.
2. Enter a group name in the **Description** text box, then click **OK**.

   The new group name will be added to the first entry in the Camera List Panel.



3. You can add a whole DVR site or only selected cameras into the group:
   - To add a whole DVR site, first make sure that there is a check mark in its check box (which means that all cameras under this site are selected). If there is no check mark, click the check box. Then, drag and drop the DVR site into the group.
   - To add only certain cameras of a site to the group, first select the desired cameras. The check box on the DVR site will then be marked with a red box. Now drag and drop the DVR site into the group.
   - If you want to add only a single camera from a site into the group, select that camera then drag and drop it into the group.
4. Repeat step 3 to add more DVR sites or cameras into the group.

Group of DVR sites

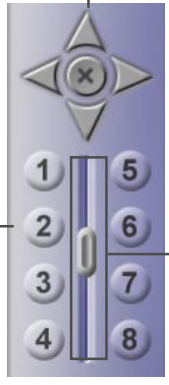
Group of cameras from multiple sites

The PTZ Camera Control Panel

If there are PTZ cameras in any of the DVR sites, you can use the **PTZ Camera Control Panel** to zoom in or out and pan around the monitored areas.

Click  to open the PTZ Camera Control Panel.

This is the **Pan and Tilt** control. Click one of the four arrow buttons to adjust the camera angle up, down, left, or right. Click the "cross" button to stop movement.



The number buttons are **Preset buttons** that store different camera angle positions. Click a number button to quickly adjust the PTZ camera to a predefined position.

This is the **Zoom** control. Drag the slider tab up to zoom in, or down to zoom out.

When you release the mouse button, the slider tab moves back to the middle position automatically.

Chapter 3

Using Remote Player

Remote Player lets you retrieve and view surveillance videos that have been digitally recorded by a DVR server. You can play back the recordings directly from the server over the Web, or you can download them first to your hard drive and play them locally on your computer. Surveillance video that you recorded locally on your computer hard drive can also be played in **Remote Player**. At most, surveillance video from 16 different video cameras that were recorded at the same time can simultaneously be viewed on-screen.

To change to the **Remote Player** screen, click  in the **DVR-Remote** program window.

The User Interface

1 Split-screen Window

Shows the recordings from selected cameras, or shows a single recording only when a specific recording time from a camera is selected in the Camera List Panel.

2 DVR Site List

Lists the URL addresses of remote DVR sites from which history records of video recordings can be retrieved.

3	**Camera List Panel**	Lists the names of cameras in the currently selected DVR site. Under each camera, history records are listed by time. (See the next section for details).
4	**Calendar**	Allows you to select the desired date of surveillance recording.
5	**Play / Pause**	Click to start/pause the playback.
6	**Navigation Panel**	Provides playback controls. (See page 17 for details).
7	**Audio**	Click to enable/disable audio during playback.
8	**Preferences**	Click to define settings in the **Preferences** dialog box.
9	**Back to DVR-Remote**	Click to change back to the **DVR-Remote** screen. (See page 6 for details.)

The Camera List Panel

The **Camera List Panel** lists the names of remote cameras from a connected DVR site and displays the history records of the video recordings of these cameras. History records of a chosen date of recording will be displayed under each camera.

Panel Controls

To download certain surveillance recordings for local playback from your hard drive, first choose the desired cameras and recording times in the Camera List Panel then click this button.

Opens a menu where you can choose the type of history records to display in the Camera List Panel. (See page 19 for details).

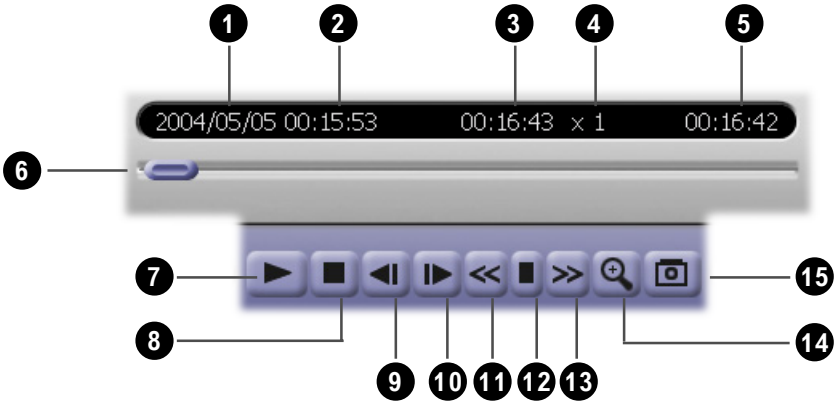
Deletes selected history records from the Camera List Panel. If local history records are selected in the list, the video files will also be deleted from the hard drive.

While in the process of downloading video recordings, you can click this button to cancel the download.

Click to define the desired range of hisory records to display in the Camera List Panel.

Click to refresh the history records in the Camera List Panel.

The Navigation Panel



1	**Date of history records**	Shows the calendar date of the history records that are listed in the Camera List Panel.
2	**Start time**	Shows the start time of the selected record.
3	**Current timecode**	Shows the timecode of the current video frame.
4	**Current display speed**	Shows the currently used playback speed.
5	**End time**	Shows the end time of the selected record.
6	**Jog Bar**	Allows you to jump directly to any part of the recorded video. Drag the slider tab to the desired part of the recorded video.
7	**Play / Pause**	Starts/Pauses the playback.
8	**Stop**	Cancels the playback and moves to the starting frame.
9	**Previous Frame**	Moves to the previous video frame. (Available for both single and multiple video recordings)
10	**Next Frame**	Moves to the next video frame. (Available for both single and multiple video recordings)

11 **Decrease display speed**	Slows down video playback. Click once to play the recorded video at half (1/2 x) the normal speed. Click again to play the video at a quarter (1/4 x) of the normal speed. The slowest speed is 1/8 x.
12 **Normal display speed**	Plays the recorded video at its original speed.
13 **Increase display speed**	Increases the playback speed of the video. Click once to double (2 x) the playback speed. Click again to quadruple (4 x) the playback speed. The maximum speed is 16 x.
14 **Zoom in/out**	When playing video recordings, you can change the zoom ratio of the video by clicking this button. To zoom in a video, first click the split screen that displays the video, then click this button. Click this button again to zoom out.
15 **Snapshot**	Click this button to capture the current video frame and save it as a JPEG or BMP file. To capture the current frame from a video, first click the split screen that displays the video, then click this button. This opens the **Snapshot** dialog box where you can enhance the image first before saving, printing, or sending it out by e-mail. (See page 23 for details).

Viewing Recorded Video

To search for recorded surveillance videos and play them, there are four major steps that you need to do:

1. First, connect to the DVR server where the recordings are stored.
2. Choose the date of recording.
3. Specify the type of history records to access, then search and retrieve the history records.
4. If the recordings are stored in the DVR server, stream the videos from the server, or download them first for local playback from your hard drive.

   Whereas if the recordings are locally stored in your computer, play back the videos from your hard drive.

The succeeding sections explain each of these steps in detail.

Connecting to a DVR Site

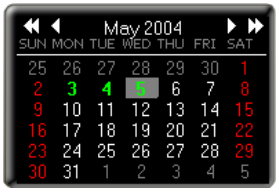
The **DVR Site List** keeps track of the URL addresses of DVR servers that you added to **DVR-Remote**. (See page 6 for details on how to add DVR sites).

Select the URL address of the DVR server from this list. **Remote Player** then establishes connection with the DVR site and displays the names of its remote cameras in the Camera List Panel.

Selecting the Date of Recording

On the **Calendar** below the Camera List Panel, choose the desired date of video recording.

By default, the current month is displayed and the current date is highlighted in the Calendar. Green-marked dates on the Calendar indicate that there are video recordings on those dates.



To select the date of recording:

1. To change to another year, click the left or right double-head arrow repeatedly until you reach the desired year.
2. To change the month, click the left or right arrow single-head arrow repeatedly until you reach the desired month.
3. On the selected month, click the desired date.

Retrieving and Searching History Records

Before you can retrieve, download and play back surveillance video recordings from a DVR site, you first need to specify the type of history records to access.

After you have connected to a DVR server and selected a calendar date, click . A pop-up menu then opens, displaying three types of history records of surveillance video recordings: **Normal**, **Event**, and **Local**.

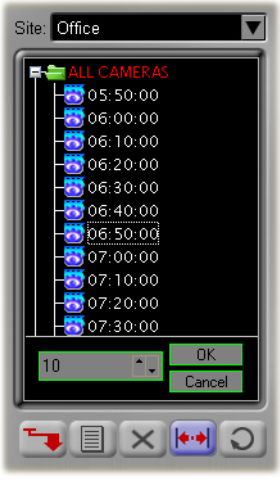
Normal Lists the history records of all surveillance videos that were recorded during the selected calendar date.

Event	Lists the recording time of events only.
Local	Lists the recording time of surveillance videos that were recorded and stored in the local hard drive.

History records of the selected type will then be retrieved from the DVR server or your local drive and then displayed in the **Camera List Panel**.

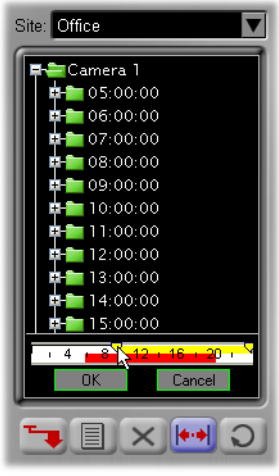
Retrieving a Specified Range of History Records

If you chose "**Normal**" or "**Event**" as the type and the retrieved history records are quite long, you can limit the history list by specifying a desired range.



To specify a range of "Normal" history records:

1. Click . A time interval text box will then appear at the bottom of the Camera List Panel.
2. By default, **Normal**-type history records are listed in intervals of one hour. To change the interval, click the Up/Down arrow button or enter the desired time interval.
3. Click **OK** to confirm the change. (To retain the original interval, click **Cancel**.)



To specify a range of "Event" history records:

1. Click . A time ruler will then appear at the bottom of the Camera List Panel.
2. By default, all **Event**-type history records on the selected calendar date will be retrieved and listed in the Camera List Panel. To limit the history list to a certain time period, drag the two handles on the time ruler to set the desired start and end time.
3. Click **OK** to confirm the change. (To keep the original history list, click **Cancel**.)

Playing the Video Recordings

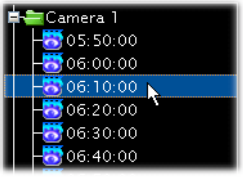
After you have retrieved the desired history records of surveillance video recordings, you can now play and view them on **Remote Player**.

If you retrieved Normal-type or Event-type history records, you can play the videos directly from the DVR server by streaming. However, if your Internet bandwidth is slow or overloaded, it is recommended that you download the video recordings first to your computer for local playback from your hard drive.

If you retrieved Local-type history records, the videos from these history records are locally stored in your computer. You can just play back the videos directly from your hard drive.

To play back recordings from a DVR server:

1. Click and choose the type of history records from which to retrieve video recordings. To retrieve all recordings of the selected calendar date, select **Normal**. Otherwise, to retrieve only the recordings of events, select **Event**.
2. To view a single video recording only, click the "+" to display first the history records of a desired camera. Then, click the time segment of the recording that you want to view.



If you want to view multiple video recordings simultaneously, hold the [Shift] or [Ctrl] key then click the time segments of recordings that you like to view.

3. To download the video recordings first to your local hard drive, click .

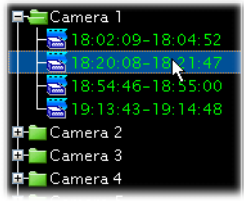
   If you want to directly stream the video recordings from the DVR server, go to the next step.
4. Click to play the video.

   This allows you to view the video from start to finish. To pause playback, click this button again.

5. To scrub through the video, drag the Jog bar. You can also use the other controls in the Navigation Panel to move back and forth through the video. (See page 17 for details on the different button controls of the Navigation Panel).

To play back recordings in the local drive:

1. Click then select **Local**.
2. To view a single video recording only, click the "+" to display first the history records of a desired camera. Then, click the time segment of the recording that you want to view.



If you want to view multiple video recordings simultaneously, hold the [Shift] or [Ctrl] key then click the time segments of recordings that you like to view.

3. Click to play the video.

   This allows you to view the video from start to finish. To pause playback, click this button again.

4. To scrub through the video, drag the Jog bar. You can also use the other controls in the Navigation Panel to move back and forth through the video. (See page 17 for details on the different button controls of the Navigation Panel).

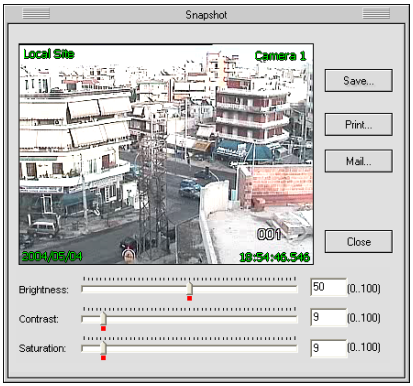
Capturing Image Snapshots

If a video recording clearly shows suspicious activities or an intruder in the monitored site, you can notify police authorities and provide them with actual image snapshots.

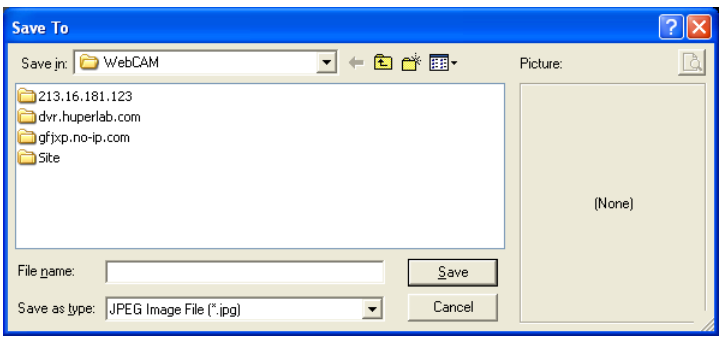
To take a snapshot:

1. First, play back the recorded video, then click .
2. The **Snapshot** dialog box then opens, allowing you to enhance the captured image first before saving, printing or sending the image by e-mail.

   To enhance the image, drag the **Brightness**, **Contrast** and **Saturation** sliders until you get desirable results.



3. To save the image, click the **Save** button. The **Save To** dialog box then opens. Type in the file name to use for saving the image and choose whether to save it in JPEG or BMP format. Then, click **Save**.



4. If you want to print a hardcopy of the image, click the **Print** button.

Note: When you click **Print** and you don't have a printer installed, it will prompt a message asking you if you want to install a printer first.

5. To send the image by e-mail, click the **Mail** button. Your default e-mail program will then open, with the image file automatically attached to a new e-mail message. Enter the recipient's e-mail address, and type in the subject and body of your e-mail message then send it.

Chapter 4

Using the Scheduler

DVR-Remote can be configured to record surveillance videos on a regular basis. It has a built-in **Scheduler** that allows you to set up specific day and time schedules for continuous recording of surveillance video from remote cameras on your local drive.

Before opening the Scheduler, you first need to connect to the DVR sites that you want to set up recording schedules for.

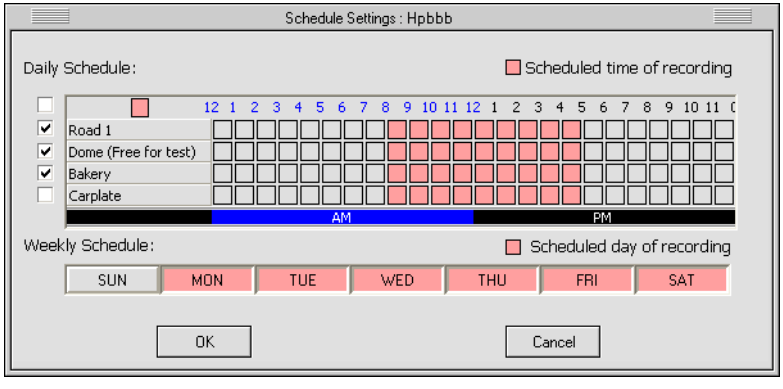
Setting up the Recording Schedule

To set up a regular schedule for video recording:

1. In the **DVR-Remote** program window, click to open the **Connect** dialog box and connect to a DVR site. (See page 6 for more details on adding and connecting to DVR sites).

   Or, if you are already connected to a DVR site, click the site name in the **Camera List Panel** to select the site.
2. Click to open the **Scheduler**.
3. In the **Scheduler** dialog box, the names of the remote cameras on the DVR site will be displayed. Choose the remote cameras that you want to record video from by clicking the check boxes at the left side of the camera names.

   Selected cameras are indicated by a check mark on check boxes.



4. The numbers that are lined up in columns represent the hours of a day. For each selected camera, choose the desired hours when you want surveillance video to be recorded by clicking the boxes underneath the hour columns.

   Selected hours are indicated by color boxes. Non-selected (or deselected) hours are indicated by gray boxes.

5. Next, choose the days of the week when you want surveillance video to be recorded by

   clicking the buttons containing the names of the days of the week.

   Selected days are indicated by colored buttons. Non-selected (or deselected) days are indicated by gray boxes.

6. When you have finished setting up the cameras and the time and day of recording, click **OK**.
7. Repeat steps 1 to 6 to set up the recording schedule for another DVR site.

Removing Schedules

There are three alternative ways you can do to remove some or all of the set recording schedules.

To remove recording times or days in Scheduler:

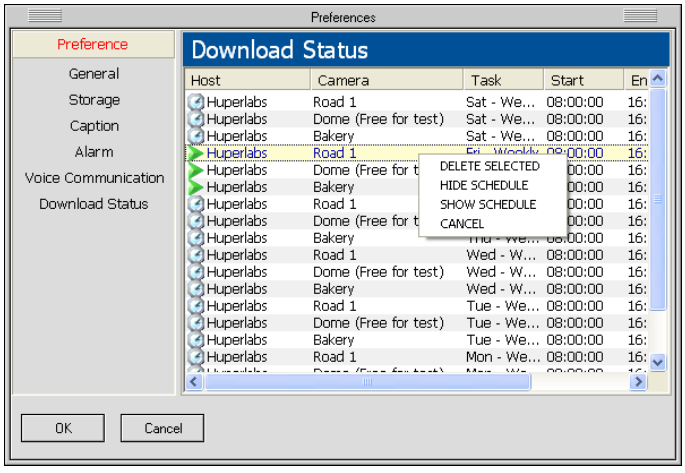
Click  to open the **Scheduler**. In the **Scheduler** dialog box, deselect the unwanted hours or days of the week.

To remove recording times or days in Preferences:

Click  to open the **Preferences** dialog box, then click **Downloads & Schedules**. (See the image next page). This part of the Preferences dialog box lists the recording times per scheduled day and the current recording status. (The entries in the list that show a clock icon indicate that they are scheduled times of recording).

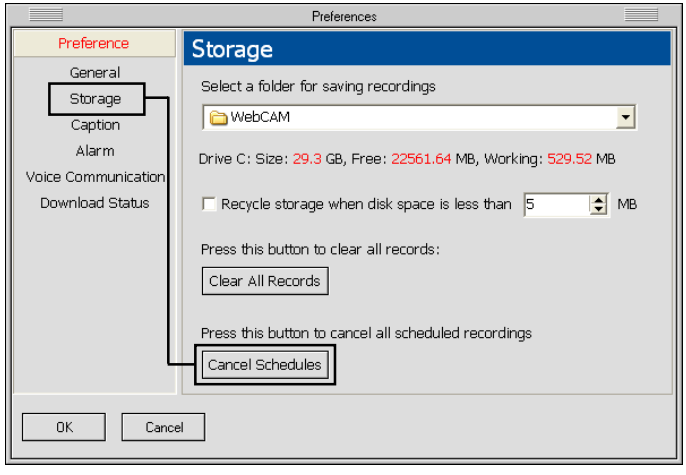
To remove a recording time, right-click the entry that shows the camera name and the unwanted recording "**Start**" time. Then in the pop-up menu that appears, click **DELETE SELECTED**.

To remove several entries from the list, press **Ctrl** and click each unwanted entry. Multiple-selected entries will be highlighted in yellow. To remove them, right-click and then click **DELETE SELECTED**.



To cancel all scheduled recordings:

Click  to open the **Preferences** dialog box, click **Storage**, then click **Cancel Schedules**.



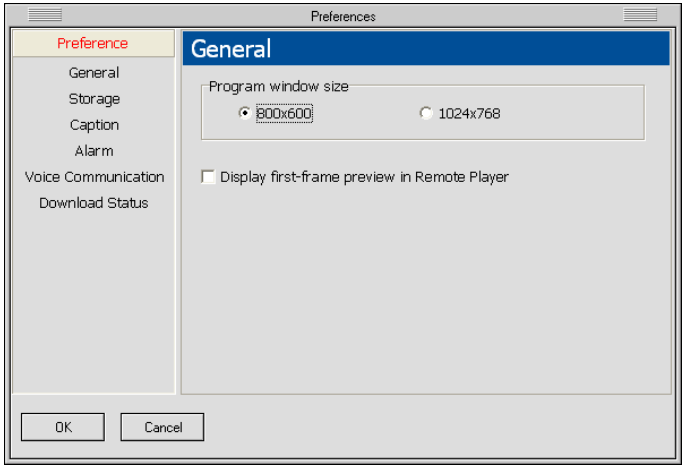
Chapter 5

Configuring DVR-Remote

Click  in the **DVR-Remote** program window to open the **Preferences** dialog box where you can set up the working environment for the **DVR-Remote** program. You can choose to enable disk storage recycling for video recordings, enable/display caption display on split screens, set up alarms in your local computer when there are detected events, and more.

Preferences Dialog Box

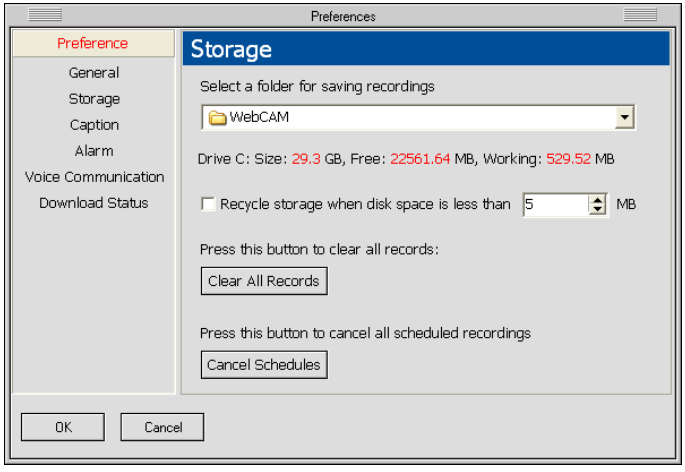
General



❶ **Program window size** Choose the appropriate program window size for **DVR-Remote** based on the resolution of your Windows display.

❷ **Display first-frame preview in Remote Player**
When this option is selected, the first frame of each of the video recordings you chose in Remote Player's Camera List Panel will be shown. This gives you a preview image of each selected video recording.

Storage



1. **Select a folder for saving recordings** — Click the drop-down arrow button to browse through your hard drive, then choose a working folder where to save locally recorded videos and downloaded recordings.

2. **Drive (Size, Free, Working)** — This indicates your local hard drive capacity, the remaining disk space, and the amount of disk space already used.

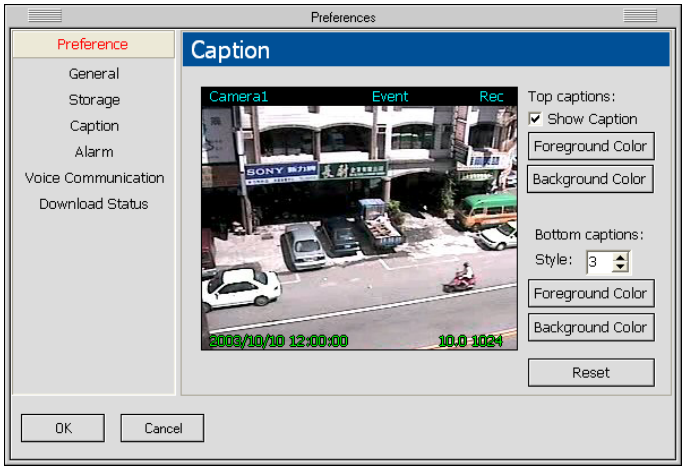
3. **Recycle storage when disk space is less than** — When this option is selected, old video recordings will be deleted when the hard disk space has reached the specified limit. This will free up hard disk space for saving new recordings.

   In the text box provided, set the disk space limit.

4. **Clear All Records** — Click this button to delete all video recordings from the working folder in your local hard drive.

5. **Cancel Schedules** — Click this button to cancel all scheduled recordings.

Caption



1 Top captions

These are the captions that appear on top of the split-screen windows. They display the camera name, detected event, and recording status.

Show caption

When this option is selected, the top captions will be displayed on the split-screen windows. To hide these captions, clear this option.

Foreground Color

Click this button to set the text color for the captions.

Background Color

Click this button to set the color of the text bar.

2 Bottom captions

These are the captions that appear at the bottom of the split-screen windows. They display the date and time, average frame rate, and data rate.

Style

There are four display styles for the bottom captions:
Style 0: Hides the captions.
Style 1: Displays the captions with a text bar.
Style 2: Displays the captions without a text bar.
Style 3: Displays the captions in outline style.

Foreground Color

Click this button to set the text color for the captions.

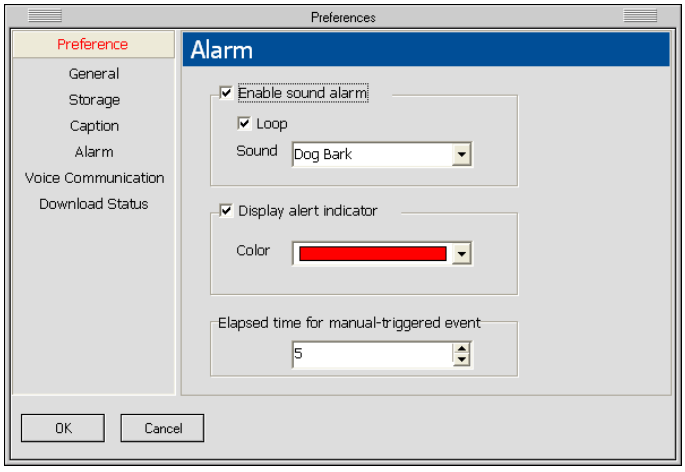
Background Color

Click this button to set the color of the text bar.

3 Reset

Click this button to change back to the default settings.

Alarm



1 Enable sound alarm

Select this option if you want your computer to sound an alarm when there is a detected event.

Loop

When this option is selected, your computer will sound the alarm continuously.

Sound

Click the drop-down arrow button then choose the type of sound to use as the alarm.

2 Display alert indicator

Select this option if you want a blinking alert indicator to be displayed on the split-screen window when there is a detected event.

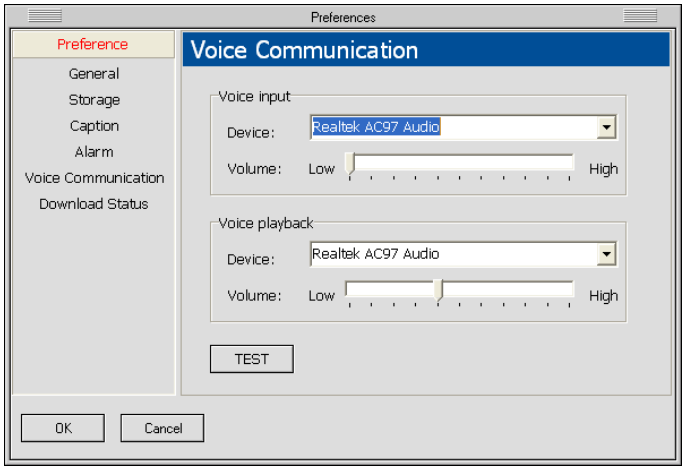
Color

Click the drop-down arrow button, then choose a color to use for the alert indicator.

3 Elapsed time for manual-triggered event

Set the time duration for manually triggered events (initiated from your local computer to the remote camera).

Voice Communication



❶ Voice input

Device — Displays the audio device used by your input device (e.g. microphone) to capture your voice. If you have more than one audio device installed, select the device you want to use from the drop-down menu.

Volume — Drag the slider to adjust the input device's volume.

❷ Voice playback

Device — Displays the audio device used by your playback device (e.g. speakers) to play back the voice from your counterpart. If you have more than one audio device installed, select the device you want to use from the drop-down menu.

Volume — Drag the slider to adjust the playback device's volume.

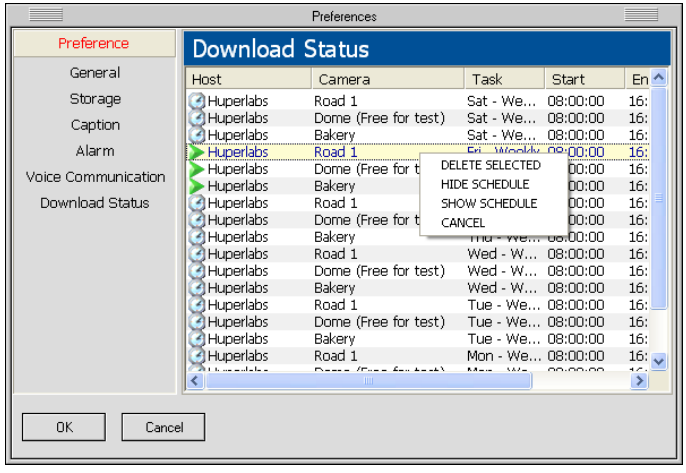
❸ TEST

Click this button to test the volume of the voice input/output device.

Downloads & Schedules

The **Downloads & Schedules** section in the Preferences dialog box displays two types of information:

- The entries that are indicated by a "clock" icon are the preset schedules for video recording.
- The entries that are indicated by a "play" icon are either scheduled recordings which are currently in progress, or file downloads which are in progress.



When you select an entry and then right-click on it, a pop-up menu will appear. From this menu, you can delete a schedule, show or hide the information list, cancel a scheduled recording, or terminate a file download.

The columns in the information list show the following:

1	**Host**	Shows the name of the remote server.
2	**Camera**	Shows the name of the remote camera.
3	**Task**	Shows the preset recording schedule. When downloading, this column shows "HTTP" to indicate that the file is being downloaded via the Internet.
4	**Start**	Shows the start time of a schedule, or the start time of a video recording.

5	**End**	Shows the end time of a schedule. or the end time of a video recording.
6	**Progress**	Shows the current progress of a scheduled recording or file download (in percentage).