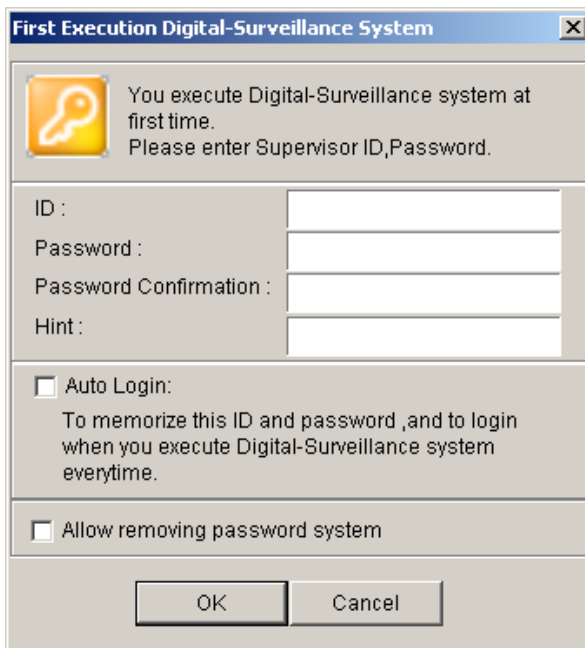


Configuring Main System

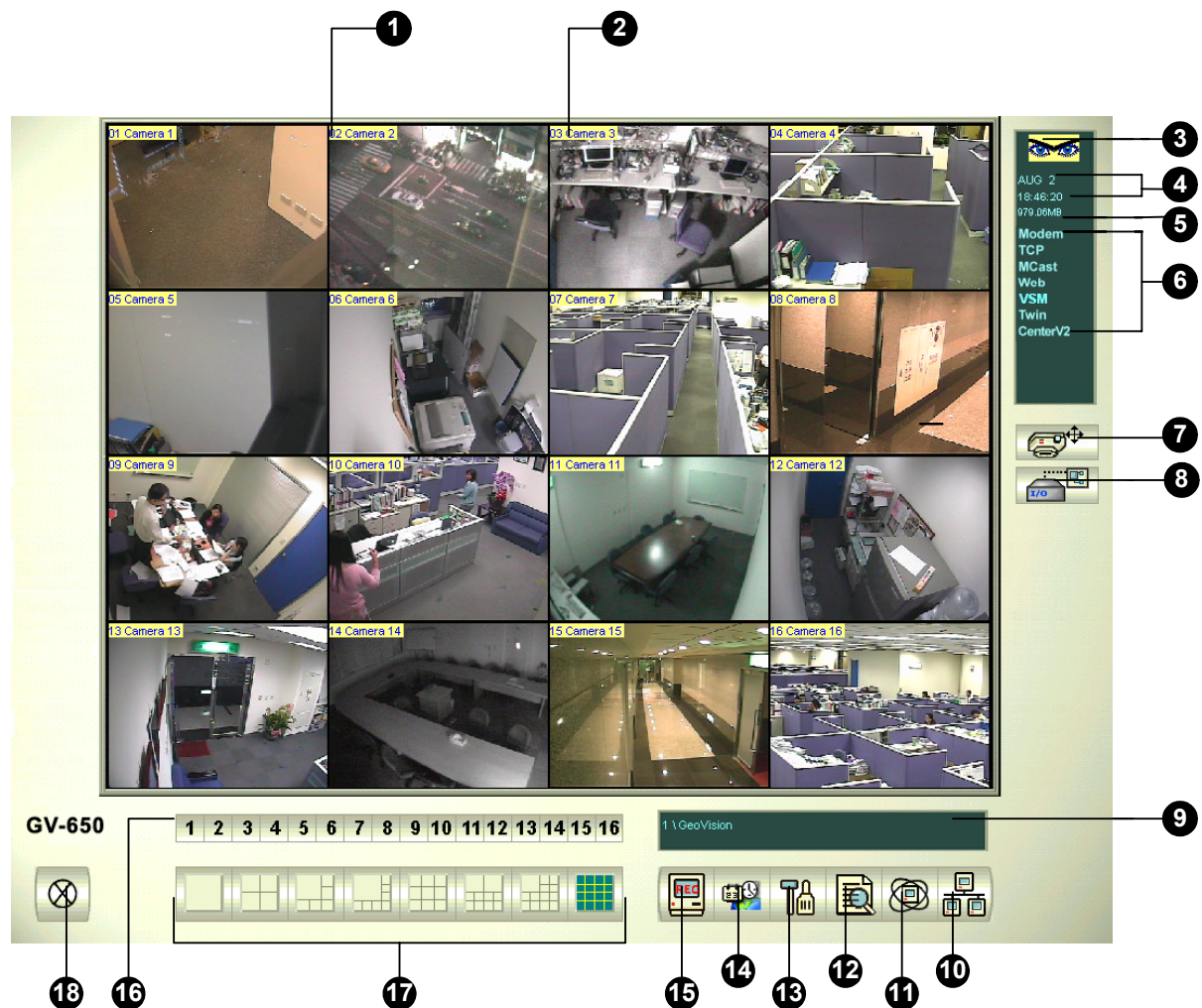
The system prompts you for a Supervisor ID and Password when starting the system for the first time, shown as follows:



Enter a name you wish to be the Supervisor ID in the ID field. Finish the setup by entering Password, Password Confirmation, and a Hint (optional) that would remind you of the password. Messages entered at the Hint field will only pop up when passwords are entered incorrectly.

- **Auto Login:** Enabled to let main system automatically log on as the current user. For security purposes, this feature is only recommended for single-user systems.
- **Allow removing password system:** For this setting, see *Setting Up Password* on page 40.

After setting up the Supervisor ID and Password, launch the program to enter the main system.



The controls in the main screen:

	Name	Description
1	Camera Number	The camera ID corresponding to the port number in the GV card.
2	Camera Name	The name given to the camera.
3	The Eye	Blinking eye means the system is alive.
4	Date/Time	Displays the current date and time.
5	Storage Space	Indicates the amount of remaining disk space.
6	Connection	Displays which remote application is allowed to connect to server.
7	PTZ Control	Controls the movement of your PTZ camera.
8	I/O Control	Controls alarm/sensor inputs and outputs.
9	Location Name	Shows the server's name, usually named by the graphical location of the server.
10	Network	Allows the connection from remote applications to the GV server. Click to enable the connection for remote applications.

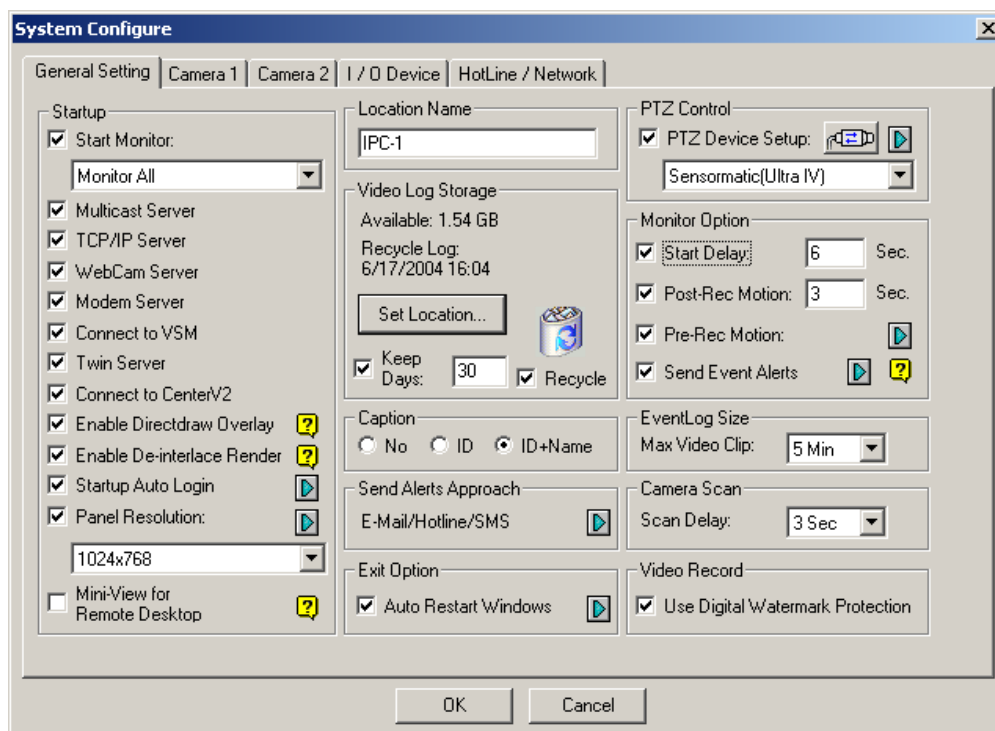
11	Camera Scan	Click to start the rotation through the screen divisions. See page 21 for setup details.
12	Video/Audio Log / System Log/ Object Index/ E-Map	For playback of video files, see Chapter 4. For System Log, see the later section on page 47. For Object Index, see the later section on page 56. For E-Map, see Chapter 7.
13	Configure	Quickly accesses system setup. Buttons No. 13 to 15 are discussed in details through this chapter.
14	Schedule	Sets up video schedule.
15	Monitor	Activates surveillance monitoring.
16	Camera Select	Selects the desired camera number to bring up its view in full screen.
17	Screen Division	Selects the screen divisions.
18	Exit Button	This button brings up several options, including Login/Exchange User, Logout User, Minimize, and Exit.

Press [F7] function key, or click the Monitor button to start recording. Every camera records under Motion Detection mode by default at 320 x 240 resolutions using wavelet codec.

When working with the systems, you will undoubtedly want to change the settings as you go along. The buttons provide quick access to several popular main system settings. Click any button to see the menus to these settings. Let's start with the Configure button.

System Configuration

Choose Configure button, System Configure, General Setting tab. You may configure cameras and global recording parameters in this dialog box. Changes made to the General Setting tab would apply to all available cameras attached to the system, while changes made to each camera tab apply only to the individual camera. In I/O Device tab you could add and configure I/O devices. HotLine/Network tab is used to configure the system for connection to network or mobile.



Configuring Global Recording Parameters

Let's start with the options in the General Setting tab:

[Startup] The Startup options instruct the system to enable selected features at main system startup.

- **Start Monitor:** Selects one of the following monitor control modes at startup:

Monitor All: Allows you to monitor all cameras and I/O (if available) at startup. It is the same as to manually mouse click Monitor button, Start All Monitoring. (Refer to “Start/Stop Monitoring” later in this chapter for detail information).

Schedule Monitor: Allows you to monitor cameras by schedule. Alternatively you may click Schedule button, Schedule Start. Refer to *Running the System at a Scheduled Time* on page 50.

I/O Monitor: Allows you to monitor all I/O devices. Alternatively you may click the Monitor button, and then select I/O Monitoring.

Note: By adjusting Monitor Control, you may record or invoke alert methods of each camera with individual settings. See *Adjusting Individual Camera* on page 22 to set up your Monitor Control.

- **Multicast Server:** Allows connection to IP Multicast (one of the remote application) at startup. (Or click the Network button and select Multicast Server.)
- **TCP Server:** Allows connection to Remote View (another remote application) by TCP. (Or click the Network button and select TCP Server.)
- **WebCam Server:** Allows connection to WebCam Server at startup. (Or click the Network

button and select WebCam Server.)

- **Modem Server:** Allows connection to Remote View by a modem. (Or click the Network button and select Modem Server.)
- **Connect to VSM:** Allows connection to VSM Server (Or click the Network button and select Connect to VSM(G).)
- **Twin Server:** Allows connection to Twin Server at startup. (Or click the Network button and select Twin Server). Twin Server is discussed in Chapter 13.
- **Connect to CenterV2:** Allows connection to CenterV2. (Or click the Network button and select Connect to CenterV2.)
- **Enable Directdraw Overlay:** Enables full-screen at startup. (For the related applications, see *Switching to Full –Screen View* on page 45).
- **Enable De-interlace Render:** Avoids interlace of the odd and even video lines. This feature affects only single channel view mode with the resolution of 640 x 480. To apply this feature for the first time, follow these steps:

1. Click the Configure button, and select System Configure from menu.
2. In the System Configure dialog box, select Enable De-Interlace Render in the Startup section.
3. Clicks OK to apply the setup.
4. Exit and restart the Main System. Without the restart, the function will not apply.

Note: Most of the VGA card supports DirectX9. Enable Directdraw Overlay and De-interlace Render if your VGA card supports DirectX9. The settings will greatly enhance the quality of image.

- **Startup Auto Login:** Select and press the Arrow button to assign an ID used at system auto startup. After the setup, system will automatically login using this ID at next startup, without asking for ID and Password. For related settings, see *Launching Main System from System Tray* on page 31.
- **Panel Resolution:** Select the resolution (between 800 x 600 and 1024 x 768 from drop-down list) that best fits the monitor screen on your computer screen.
- **Mini-View for Remote Desktop:** Squeezes all video channels into a single 320x240 view. Since you may use Microsoft Remote Desktop (a feature that comes with Windows XP Professional Edition) to set up a main system through network, it is important to get smallest size possible data to transfer over network. To apply this feature for the first time:

1. Press Configure button in function panel, and select System Configure from menu.
2. In the System Configure dialog box, select Mini-View for Remote Desktop in Startup section.
3. Press OK to apply the setup.
4. Exit and restart the Main System. Without this step the function will not apply.

5. After system restart, select Configure button again, then enable Mini-View Switch from menu. If wish to go back to normal view, go back to the menu and deselect the feature.



Note: You may see a warning message “Directdraw Create Overlay Failed” when trying to use WebCam Remote Control to connect to a server. The message indicates the server has selected the Enable Directdraw Overlay function. It only means the remote side will not see the images with DirectDraw applied. It is safe to press YES to continue the connection.

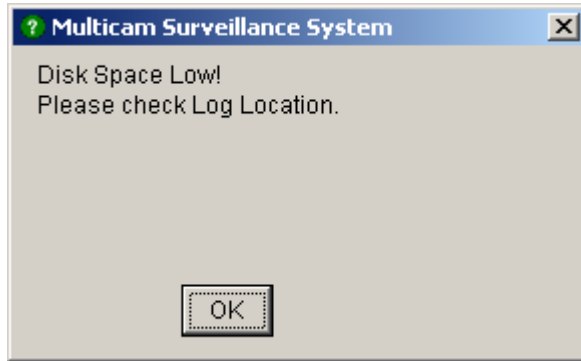
Tip: To check version of your DirectX, search for file name **dxdiag**. Open the file and find version of your DirectX in this dialog box. DirectX 9 is also included in system CD-ROM. Find **DirectX9** folder and run **dxsetup** to upgrade to DirectX 9.

[Location Name] The given name (maximum 14 characters) is displayed in main screen as the name of the server.

[Log Storage] Selects storage type (recycle or not recycle) and location.

- **Available:** Shows remaining hard disk space.
- **Recycle Log:** Indicates the recording date of the next video file to be erased.
- **Set Location...:** Press Set Location to select location to save video files to.
- **Recycle:** When this option is selected, it will cause the oldest files to be deleted when the system requires storage space for new surveillance videos. If it is not selected, the system will stop recording when disk space is full.
- **Keep Days:** Set to keep the files in storage for a set number of days. Users may specify to recycle at 1 to 999 days. If designated storage space is not big enough to keep all video files for the defined days, Recycle setting then overrides the Keep Days setting.

Note: For GV-250 or above, the minimum is 800MB. GV-900 and GV-1000 each requires 1GB and 1.2GB, respectively. When one partition fell short than minimum, video files will automatically be saved to next available hard disk; when total available storage space is lower than minimum, the system will stop recording and show a Disk Space Low! Message.



To solve the space shortage problem, you may add more hard disk space to the system, or to delete/backup your video files for more storage space. To correctly delete or back up video files, see Chapter 5 for more details.

[Caption] Enters heading to have it displayed on the upper left-hand corner of the camera screen. You may choose No for no heading; ID to show only camera ID, or ID+Name to show both camera ID + Name.

[Send Alerts Approach] Click the arrow button to choose whether to be notified by E-mail, telephone or SMS when an alert condition occurs under the surveillance area. For the telephone setup, see *Configuring Hotline/Network Notification* on page 28. For the E-mail setup, see *Sending Alerts thru E-Mail Accounts* on page 41. For the SMS setup, see *Short Message Service* in Chapter 12.

[Exit Option] Check the box to enable the feature. Press the blue Arrow button to switch between Select Auto Shutdown and Auto Restart Windows. Auto Shutdown closes Windows OS after exiting GV system. Auto Restart Windows restarts Windows OS after exiting a GV system.

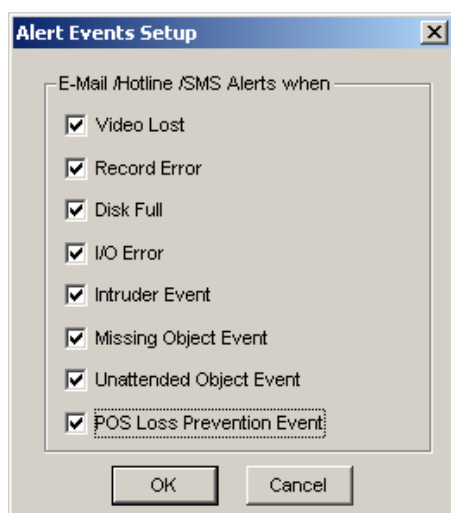
[PTZ Control] Adds PTZ cameras to the system. See the later section of *PTZ Control Panel* for operation details.

[Monitor Option]

- **Start Delay:** Starts monitor after x second(s) when system is activated.
- **Post-Rec Motion:** Records video after motion has stopped for a specified period of time (1 – 10 seconds).

- **Send Event Alerts:** Allows you to send out the assigned E-Mail/Hotline/SMS notification when the selected alert conditions occur. To enable the function, follow the steps below.

1. Check the Send Event Alerts item, and click the arrow button beside to display the following window.



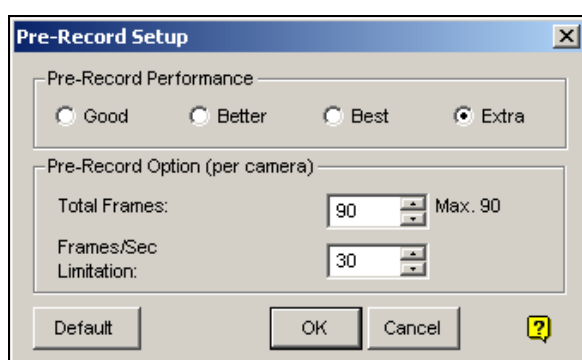
2. Select the desired alert events to send out the assigned notification, and then click OK for the application.

The alert events of Intruder Event, Missing Object, Unattended Object, and POS Loss Prevention Event are only available when the alarm settings are activated in Counter Application, Object Monitor, and POS Application separately.

Note: To select the type of notification, see *Send Alerts Approach* on page 19.

- **Pre-Rec Motion:** Records video just prior to an activity event for a specified period of time. To use this feature, follow these steps:

1. Select the Pre-Rec Motion check box to enable the feature.
2. Click the blue Arrow button next to Pre-Rec Motion to bring up the Pre-Record Setup dialog box.



[Pre-Record Performance] The amount of physical memory of the computer that the system is running on determines the pre-recording performance. The selection is grayed out if computer does not have enough memory for the selection.

Table below shows the maximum pre-recording frame rate of each preset, and the physical memory requirements:

	Good	Better	Best	Extra
Maximum pre-recording frames per camera (fps)	15 fps	30 fps	60 fps	90 fps
RAM required	128 MB	256 MB	512 MB	768 MB

Note: The recording frame rate is calculated base on a 320x240 recording size.

[Pre-Record Option (per camera)] Determines numbers of pre-record frames.

- **Total Frames:** Determines the maximum pre-recording frames of a system.
- **Frame/Sec Limitation:** Determines the maximum pre-recording frame rate (fps) of a camera.

Dividing the Total Frames by Frames/Sec Limitation, you will get the pre-recording duration of each camera (in the above case, each camera will record 5 seconds pre-activity).

$$\text{Pre-recording duration} = \frac{\text{Total Frames}}{\text{Frame/Sec Limitation}} = \frac{30}{6} = 5 \text{ seconds}$$

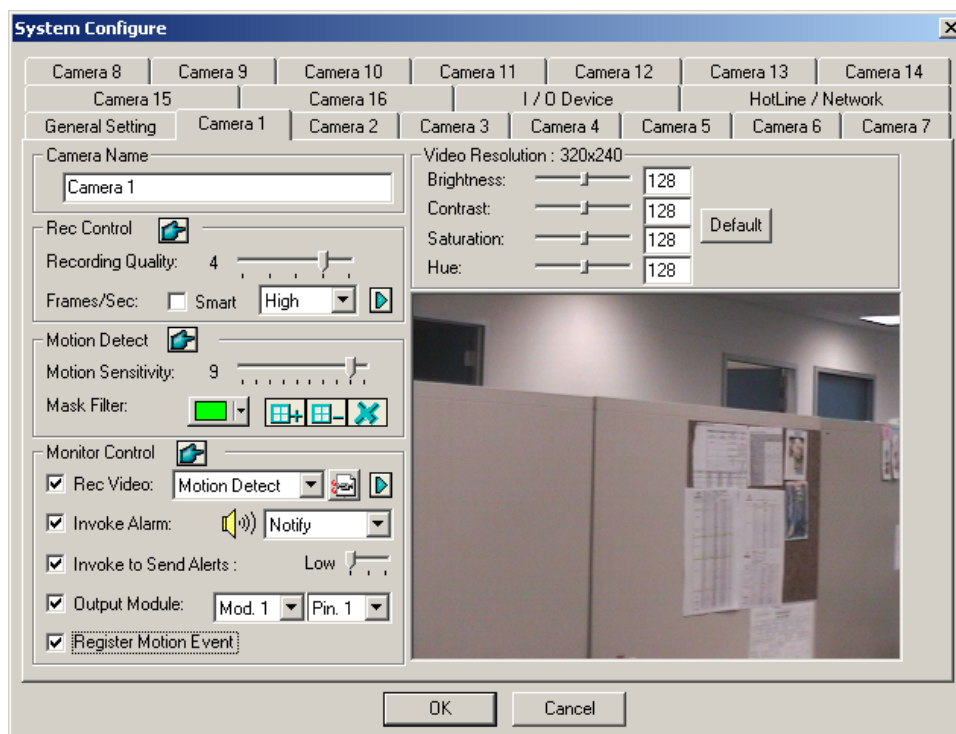
[EventLog Size] Determines the amount of time (from 1 to 5 minutes) of each event file. If selected 5 Min, a 30-minute video clips will be chop into six 5-minute event files; if selected 1 Min, a 30-minute event will be chop into thirty (30) 1-minute event files. To decide what to set up here, consider how often you back up your event files, and how intensive the activity is in your surveillance area. Smaller file size makes backup process faster.

[Camera Scan] Select to rotate through the screen division. Click the drop-down list and specify the amount of time that elapses before switching to the next screen division group. Press the blue Arrow button to select the mode of screen division.

[Video Record] Click the check box to watermark all recorded videos. Watermark is a way to verify authenticity of the video streams, and to ensure that they have not been tampered with or modified in any way.

Adjusting Individual Camera

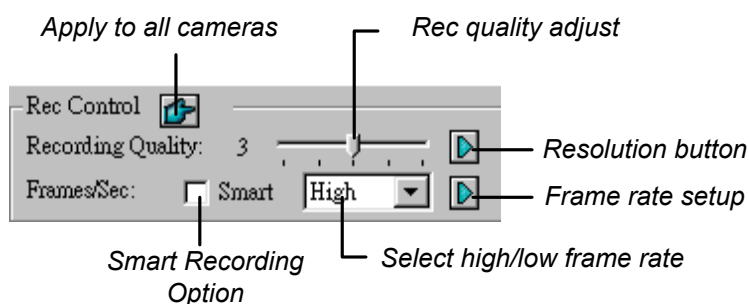
Select any camera tab to make change only to the selected camera. Choose Configure button, System Configure, Camera XX (XX represents camera number), setup dialog box shown as follows:



Several settings could be configured here:

[Camera Name] The name entered here will appear in the upper-left hand corner of the camera screen.

[Rec Control] The Rec Control area allows you to set each camera's recording quality. The camera's recording quality is based on its resolution and compression rate. Higher quality picture will require more storage spaces.



- **Recording Quality:** Allows you to adjust the video quality in 5 levels. Higher value equals to lower compression rate.
- **Resolution Button:** Click the Arrow button next to the Recording Quality slide bar to select

recording resolutions.

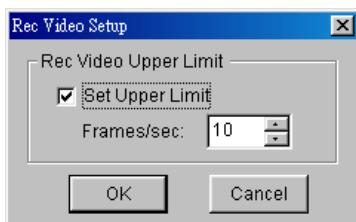
- **Frame/Sec:** Allow you to adjust camera's recording frame rate. There are three options available: Smart, High, and Low.

Smart: When Smart Recording Option is selected, the system will distribute as many frame rates as possible to the camera where motion occurs.

High: System will distribute high percentage of frames (not a definite frame number) to the selected camera while the other cameras will share rest of the frame rates. Assuming that all cameras are in action, selecting High ensures this camera always receive higher frame rate than the rest of the cameras. Effect can be seen in both preview mode and record mode.

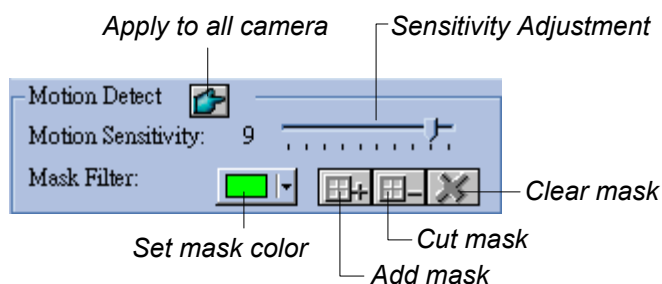
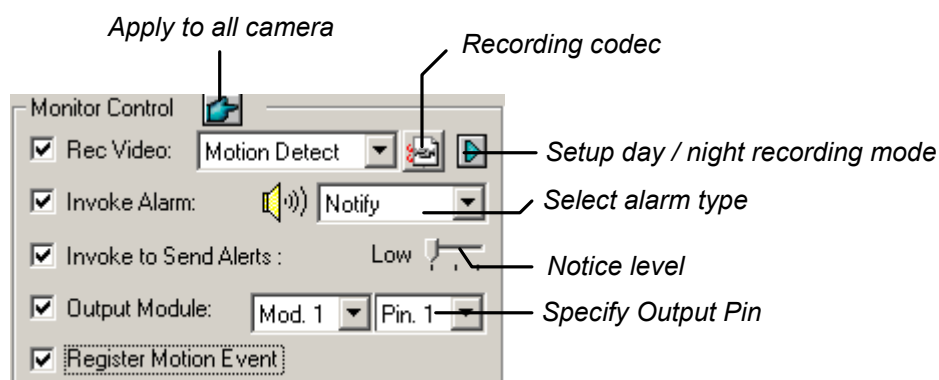
Low: System will distribute low percentage of frame rates to the selected camera. Assuming that all cameras are in action, certain cameras are of least importance. System can be set Low in order to allow frame rate to go to more important cameras.

Frame Rate Setup: Click the blue Arrow to open the dialog box that sets maximum recording frame of this camera. For example, if you select 10 Frames/sec from the field, maximum frame this camera will record is 10 frames/second. The setting does not mean it always records at 10 frames/second because the actual recording frame rate depends on also other settings in the system. The function takes effect only in Smart, High and Low recording mode.



[Motion Detect]

- **Motion Sensitivity:** There are 10 levels of sensitivity for motion detection. The higher the value, the more sensitive the system is to the motion.
- **Mask Filter:** Mask instructs the system to ignore movement under masked area. Mask could be applied to repetitive motion that should be ignored within the surveillance area, such as street trees. Buttons used to modify the masked area are as followed:

**[Monitor Control]****Figure 2-1** Monitor Control Setup

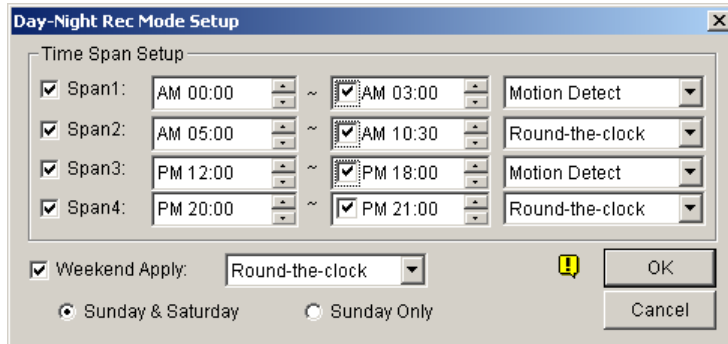
- **Rec Video:** Click the check box to enable the recording function. Use the drop-down list to choose the desired recording mode. Selections available in the drop-down list include: Motion Detect, Round-the-Clock, and Day/Night. Click the Recording Codec button to select method of recording compression for your video. Click the Arrow button will bring up the Day-Night Recording setup dialog box as shown on page 25 Day-Night Recording Mode.
- **Invoke Alarm:** Sends audible warning (.wav sound clip), selected from drop-down list, for when motion occurs.
- **Invoke to Send Alerts:** Sends an assigned alert (E-Mail/Hotline/SMS) when motion occurs. Use the slider bar to specify the motion duration to invoke the alert. The choices include High (0.5 seconds), Normal (1 second), and Low (1.5 seconds). For example, suppose you choose High. When motion remains for 0.5 seconds, the alert will be sent out.
- **Output Module:** If this option is enabled, when camera's motion detection is active, the system will send signal to trigger the specified output pin. Use the Mod (x) and Pin (x) drop-down list to select an output pin to perform this function.
- **Register Motion Event:** Enable this option to log motion events to System Log.

[Video Resolution] Allow you to adjust video characteristics such as brightness, contrast, saturation, and hue.

Setting Up Day - Night Recording Mode

Click the Day-Night Recording Mode button in figure 2-1, and the following dialog box will appear.

Day-Night Recording allows you to setup different recording mode for different time frame during the day. Each day can be divided to 4 time frames, represented by Span 1~4 as shown below.



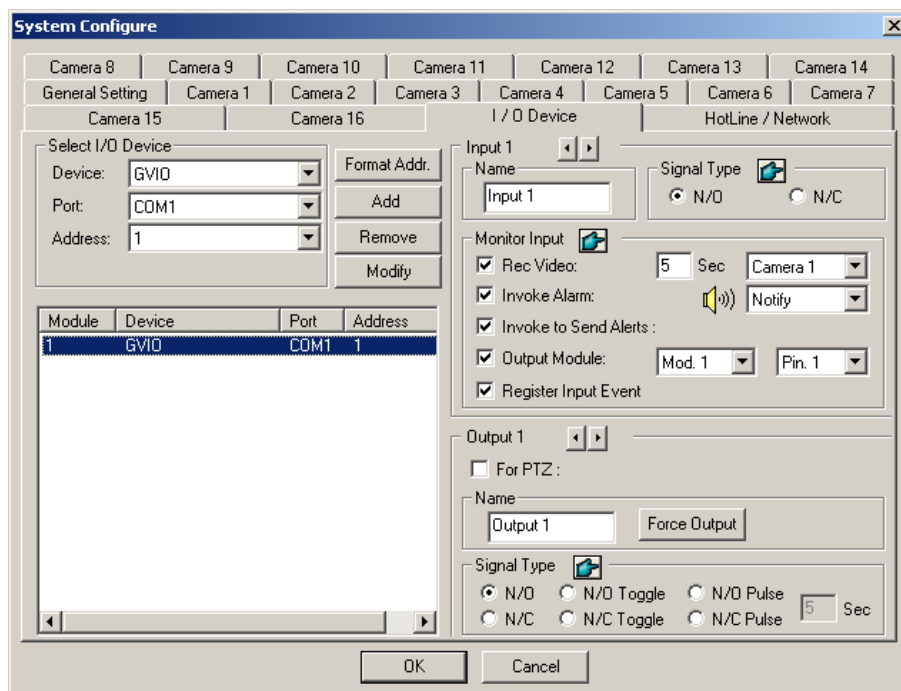
1. Enable Span1 and specify the start time in the first time field; enable the check box in the second time field and specify the end time.
2. Use the drop-down list to select recording mode for the associated span.
3. Repeat step one and two to setup multiple spans if required.
4. If you do not wish to apply your setting to the weekends, simply enable Weekend Apply option and select the recording mode to be used during the weekend. Use the radio button at the bottom to define whether your weekend includes Sunday and Saturday or Sunday only.
5. Press OK to apply your setting.

Note: If end time field is disable, the span will run to the start of the next span.

Setting Up I/O Devices

It is also possible to connect alarm modules to GV system. Devices necessary for this operation are: GV-Net, GV-Net card, GV-NET/IO card, GV-IO, and GV-Relay. Refer to Chapter 1 for the installation of these devices.

Following section explains how these devices may be controlled once connected to GV system. Let's first add a device to the system. Click Configure button, System Configure, and then go to I/O Device tab. This gives the following setup page:



[Select I/O Device] Adding an I/O device to the system:

1. Select the device from the Device drop-down list, in this case, GVIO.
2. Press the Format Addr. button to assign an address to the device. This brings up the Format Address dialog box.
3. Starts your first device with New Address set to 1, Press the Write button to write the address to the device. Press OK to apply the setting.
4. Press the Add button to add the device to system. You should see the device being listed in the display window.

Note: You can only add one device at a time. To add another device simply repeat step one to four as described above. Each device should have its own address, therefore in step 3 you should assign a different address for the new device.

[Input X] Press the Input Select Button to select an Input to set up. Up to 8 inputs (available in one GV-IO) may be connected to the system.

- **Name:** Specifies a name for each input device in the Name text area. (press the arrow button to set up next input).
- **Signal Type:** Select signal type for your input device. You may use the Apply All button to apply your selection to all input devices.

[Monitor Input]

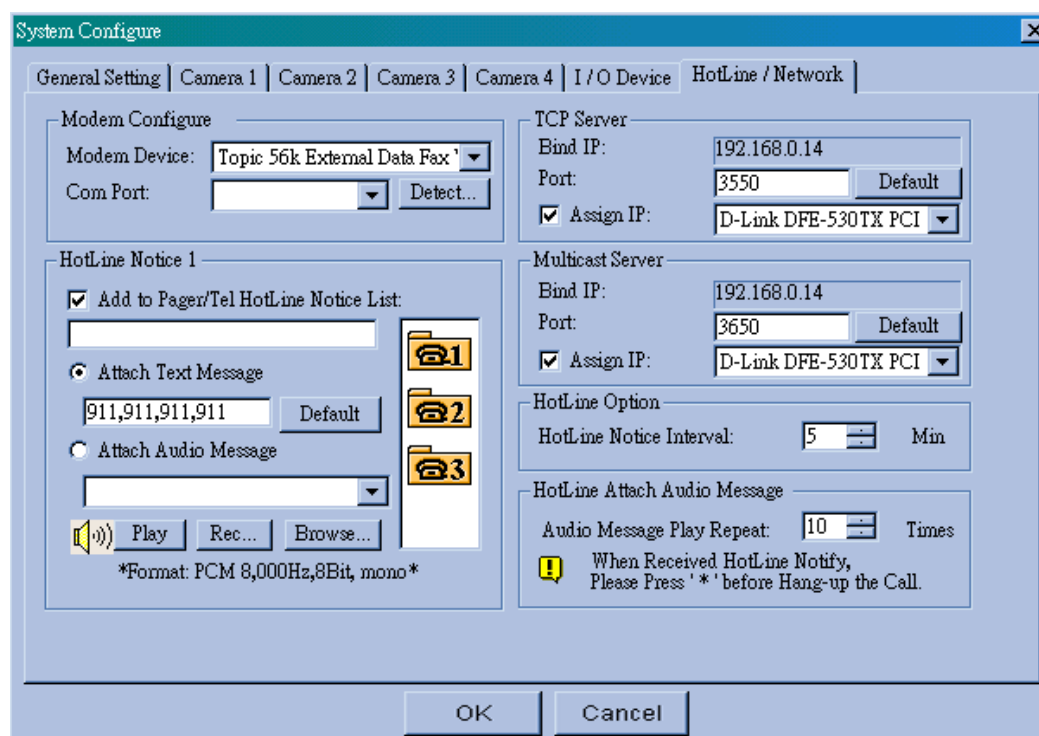
- **Rec Video:** Check this option if you wish to use this device to trigger recording (sensors or detectors). You may select which camera to record in the Camera Select drop down list and specify the recording duration.
- **Invoke Alarm:** Check this option if you wish to send alarm to the GV-System when this input device is trigger. You may select the alarm type in the drop down menu.
- **Invoke to Send Alerts:** Check this option to send out an assigned alert (E-Mail/Hotline/SMS) when the input is triggered. If E-Mail is the assigned alert, you will see a right arrow button next to the item. Click the button to choose the camera(s) that are to take a snapshot on input activation. The snapshot will be sent out by E-Mail.
- **Output Module:** If the input device is invoked, the system automatically sends a signal to an output pin.
- **Register Input Event:** This option logs the alarm events on the local server, into System Log. Each event is labeled with ID, time, device name (camera or I/O input), corresponding module of the device, and event for fast retrieval. See *System Log* on page 47 for details.

[Output X] Use the Output Select buttons to select an output; maximum 16 outputs are supported by GV-IO.

- **For PTZ:** This option opens the PTZ Control Panel, where to control movements of your PTZ camera.
- **Name:** Specifies a name for each output device in the Name text area.
- **Force Output:** Press to test signal to selected device.
- **Signal Type:** There are six signal types available: N/O (Normal Open), N/O Toggle, N/O Pulse, N/C (Normal Close), N/C Toggle, and N/C Pulse. Choose the one suit mostly to the device that you're using. The N/O Toggle or N/C Toggle signal type is output high mode until press again to output low. You may also specify the pulse duration for pulse type signals.

Note: PTZ camera and I/O devices cannot be assigned to the same port at the same time.

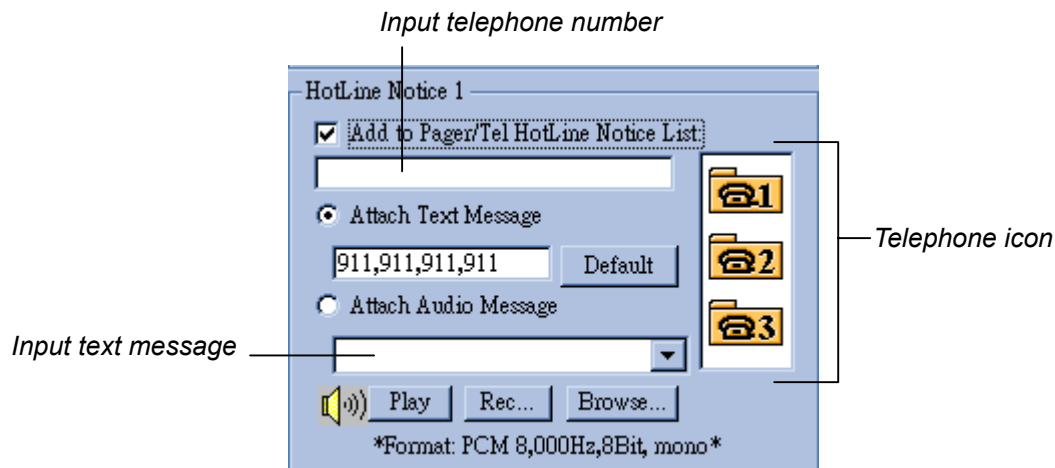
Configuring Hotline/Network Notification



[Modem Configure] If you have installed modem in this PC, select the corresponding device and port, then press Detect button to test your modem.

Note: Internal modems (PCI or ISA) are not recommended.

[HotLine Notice x] The event can be set to trigger phone calls or pagers, up to three (3) units. A text message may be sent to the pager.



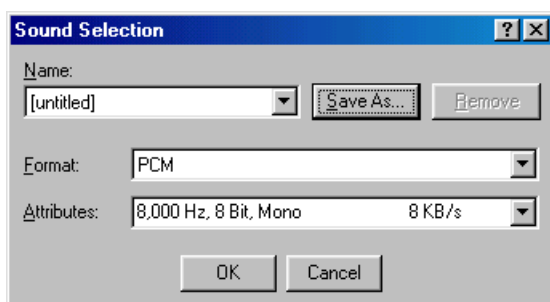
1. Click a telephone button.
2. Enable Add to Pager/Tel hotline Notice List check box.
3. Type the telephone or the pager number in the field.
4. Enable Attach Text Message and type the text messages to be sent to a pager.

The system allows you to send a custom created sound file to telephone. Your PC must have microphones connected to the MIC input of GV system for this operation. To record a sound file, follow these steps:

1. Press the Rec button to bring up the following dialog box:



2. Press the Record button and start recording. Speak the message script clearly to the microphone. Press Stop button when done.
3. Press the Play button to listen to the recording. To save this sound file, choose File, Save as, Change. This brings up the Sound Selection dialog box, shown as:



4. Select *PCM 8,000 Hz, 8-bit Mono*, the only format supported for this feature then click OK.

To find a sound file, click Browse button to locate the file. Add the path of the file to the field, and the file will be sent with the telephone calls.

[TCP Server] Allow you to setup TCP server. Enable Assign IP to enable the drop-down list. Select the network card from drop-down list and your IP address will be displayed in Bind IP. The default port number for TCP server is 3550; you may assign different port by entering the port number in the Port field.

[Multicast Server] Allow you to setup the Multicast server; its operation is similar to the TCP server setup described above. The default port number for Multicast server is 3650.

Note: GV system automatically checks the dynamic IP of your PC every one minute. This ensures connection of remote applications, including Remote View, IP Multicast, WebCam, and Remote Playback.

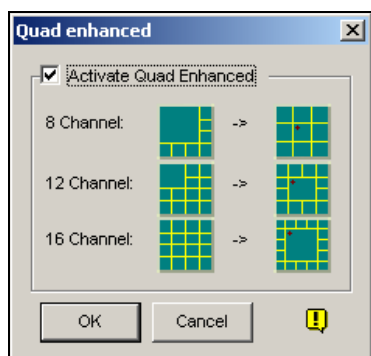
[HotLine Option] If motion persists, decides how often, specified in minutes, the system should send a notification to you before the motion ends.

[HotLine Attach Audio Message] Specifies how many times to repeat the audio message when a telephone call is made to you.

Selecting Screen Layout

This feature gives you the option of screen layout for the 8, 12 and 16 screen divisions.

1. Click the Configure button, and then select System Configure to display the System Configure window.
2. In the Startup section, click the right arrow button next to the Panel Resolution item to call up the following window. The left mode is the default layout; the right is the enhanced layout.



3. For the enhanced layout, click the check box of Activate Quad Enhanced, and click OK to enter

the change.

4. Restart the GV-system to apply it.

Note:

1. When the enhanced screen layout is applied, the camera 1 view will show on the central screen; when the popup function is enabled, the pop-up view will show on the central; when the camera scan function is enabled, the scanned view will show on the central.
2. If you are using the DSP card, GV-system won't support the enhanced screen layout.

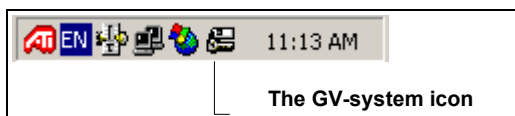
Launching GV-System from System Tray

The feature lets GV-system appear in the system tray when you launch Windows, instead of displaying the system login window. To enable the function, follow the steps below.

1. Click the Configure button on the menu bar and then select System Configure to display the System Configure window.
2. In the Startup section, click the Arrow button next to the Startup Auto Login item to display the following window.

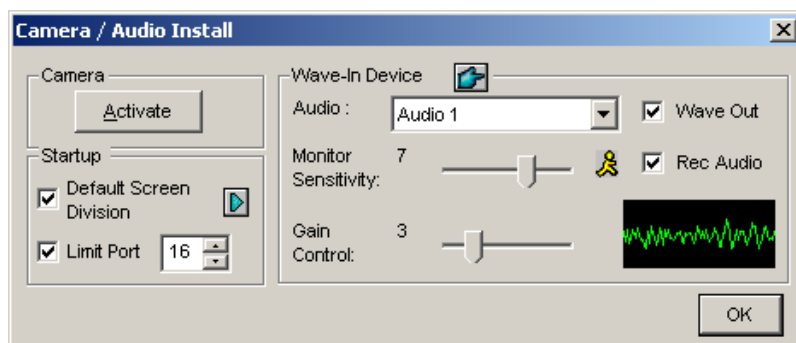


3. Check the item of Startup Silently Hide into System Status Bar and then click OK to close the window.
4. Restart the GV-system. You will see the following icon shown on the system tray.



Camera / Audio Install

Click the Configure button and select Camera / Audio Install from menu to bring up the following dialog box:



[Camera] Click the Active button and specifies the cameras to be viewed by default. Select to view all camera or selected cameras. Cameras deselected from viewing do not affect the cameras being recorded.

[Startup] Configure the startup camera screens and screen divisions.

- **Default Screen Division:** To select the desired screen divisions at startup, check the item and click the right arrow button.
- **Limit Port:** To restrict camera screens at startup, check the item and select desired port numbers. This function will execute at next system startup.

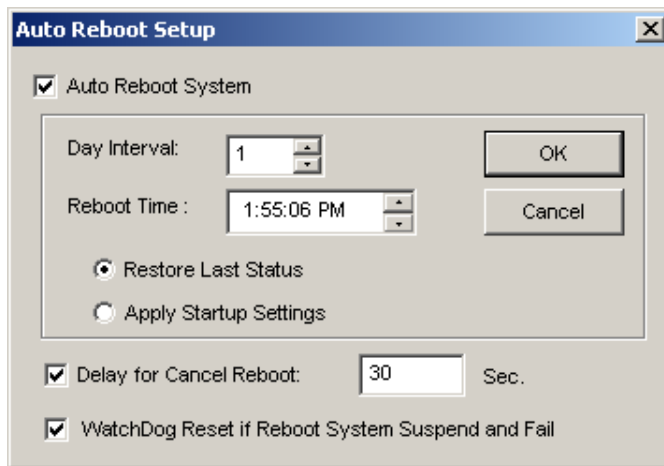
[Wave-in Device] Adjust audio devices to record and listen to live sounds.

- **Audio:** Choose to set up an audio channel from the drop-down selection field.
- **Monitor Sensitivity:** Adjusts sensitivity of the audio that will be detected. The higher the value, the more sensitive it is to surrounding sound.
- **Gain Control:** Increases or decreases the gain of the microphone.
- **Wave Out:** Select to listen to live audio at server PC.
- **Rec Audio:** Enable to activate the audio recording function.

Setting Up Auto Reboot

This setup restarts your Windows at a scheduled time. Follow these steps to set up:

Click the Configure button, and then select Auto Reboot Setup from the menu to bring up the setup dialog box. The two options each performs following function:



[Auto Reboot System]

Enables the setup for reboot time. Specify how often (from 1 to 14 days) at the Day Interval selection field, and when the Windows should reboot at the Reboot Time.

- **Restore Last Status** The system will resume the last operation after rebooting, e.g. camera recording.
- **Apply Startup Settings** The system will apply your Startup settings in the System Configure window after rebooting.

[Delay for Cancel Reboot] When the item is checked, a warning message will appear and count down your specified time before the reboot schedule begins. Clicking the Cancel button on the prompt will cancel the rebooting.

[WatchDog Reset if Reboot System Suspend and Fail]

Prior to Reboot Time, if GV system finds any abnormal Windows operation that may hinder the Auto Reboot, GV system will instruct a hardware reboot of Windows. The feature is available only in GV-600, GV-650, GV-800, GV-900 and GV-1000).

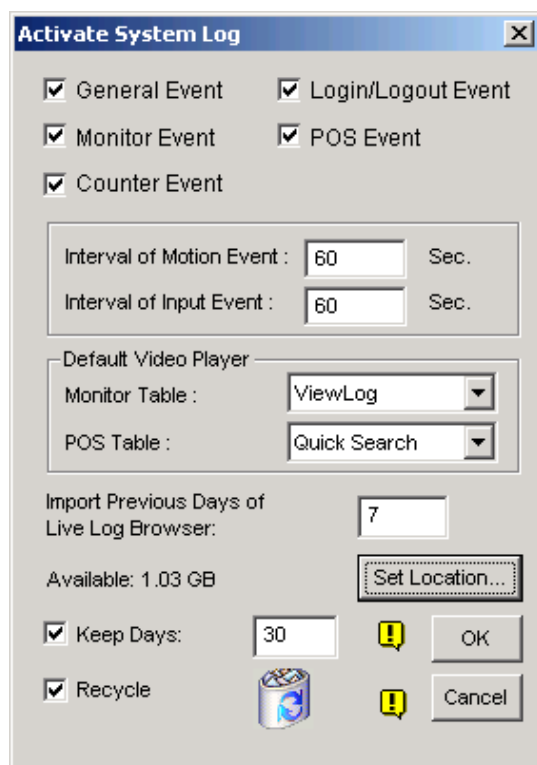
Caution: GV system must already be added to Windows Startup menu; only so will the Windows automatically restart a GV system after a reboot. Also, make sure you've correctly connected a GV card to your motherboard for the hardware watchdog feature. See *Connecting Watchdog* in Chapter 1 for connection details.

Logging System Activities into System Log

GV system provides the ability to monitor security events by recording the login and logout of system resources. No events are written to the System Log until you activate the desired type of log here.

To do so, follow these steps:

1. Click the Configure button, and then select System Log Setting. This brings up the following dialog box:



2. Click to log selected events into System Log. The system log recognizes five types of events:
 - **General Event:** Keeps a log for system startup/exit, network sever start/stop, and recording start/stop.
 - **Login/Logout Event:** Displays information pertaining to user login/logout into/from main server and the WebCam.
 - **Monitor Event:** Keeps a log of events that are both motion-triggered and I/O-triggered.
 - **POS Event:** Writes POS transaction data into System Log, which may be used for fast retrieval.
 - **Counter Event:** Keeps a log for counting results.
 - **Interval of Motion Event:** Specify the amount of time that elapses before logging one motion-triggered event to the next. This setting could prevent the system log growing too big when trying to log all events under a motion-intensive surveillance area.
 - **Interval of Input Event:** Specify the amount of time that elapses before logging one I/O-triggered event to the next.

[Default Video Player]

- **Monitor Table:** Specify the playback software to be used for playing back monitor events. Each playback application is discussed in details in Chapter 4.
- **POS Table:** Specify the playback software to be used for playing back POS events.

[Import Previous Days of Live Log Browser] Specify how many days of data to be loaded to the System Log.

- **Set Location:** Click the Set Location button to specify a folder to keep the log file. The available free space will be displayed in left hand side.
- **Keep Days:** Set to keep the log files in storage for a set number of days.
- **Recycle:** Enabling this function will instruct the system to delete old files to make space for new files when HDD free space hits below 500MB.

Tip: To view and learn more about System Log, see page 47 for details.

Moving PTZ Camera to a Preset Location upon Alarm Event

It is possible to direct a PTZ camera to a present location upon an alarm event. The setup determines how the PTZ camera moves in response to an I/O-triggered event. Click the Configure button, select I/O Application Setting from the menu to bring up the following dialog box.

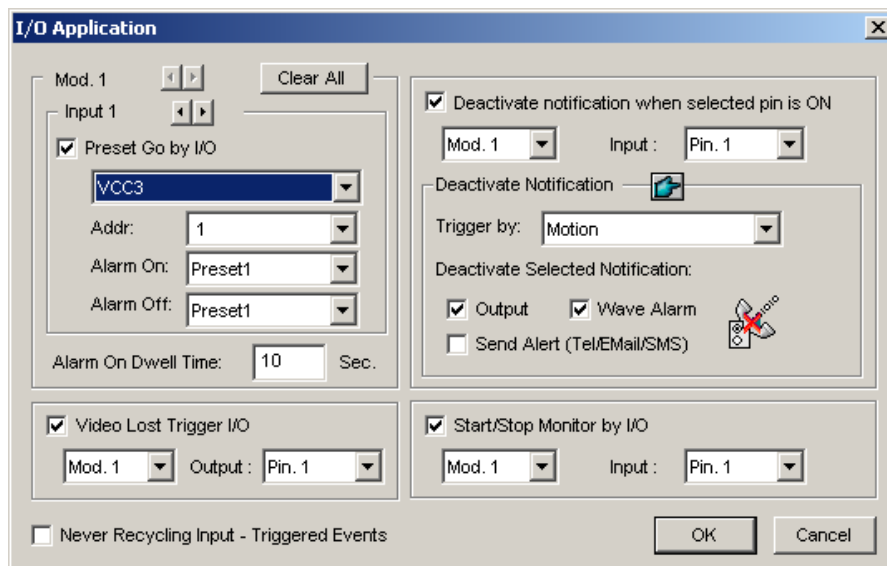


Figure 2-2 I/O Application

The options here allow you to specify how the PTZ camera and the GV system will respond to an I/O-triggered event. Click the left and right arrow buttons, and select a module and its input to set up.

- **Preset Go by I/O:** Enable the option and select your PTZ camera from the drop-down list.
- **Addr:** Specifies the address of the PTZ camera.
- **Alarm On:** When the I/O input is triggered, select from the drop-down list where you want the PTZ camera to move to.
- **Alarm Off:** Returns the PTZ camera to a preset location when the triggered is off.
- **Alarm On Dwell Time:** Specifies the amount of time the PTZ camera stays at “Alarm On” present location, before returning to the “Alarm Off” preset point.

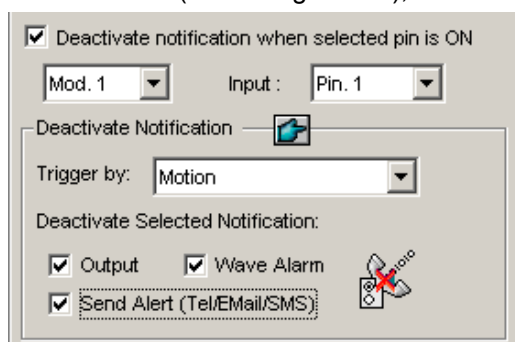
[Start/Stop Monitor by I/O] Once the selected I/O is triggered, it instructs the GV system to reverse its monitoring process. This feature is useful for access control management. For example, video monitoring or recording process may be set to temporary activated or deactivated when the door is open.

[Video Lost Trigger I/O] You may instruct the system to send an alarm to the selected device if any camera lost its video signal.

[Never Recycling Input-Triggered Events] When the item is checked, the files of input-triggered events won't be recycled by the system when disk space is full.

Deactivating Alarm and Alert Settings

The option lets you instantly deactivate all the prior alarm and alert settings (Output, Wave Alarm, Send Alerts), when an assigned input module, such as an access control system, is triggered. Open the I/O Application window (refer to figure 2-2), and find the following section.



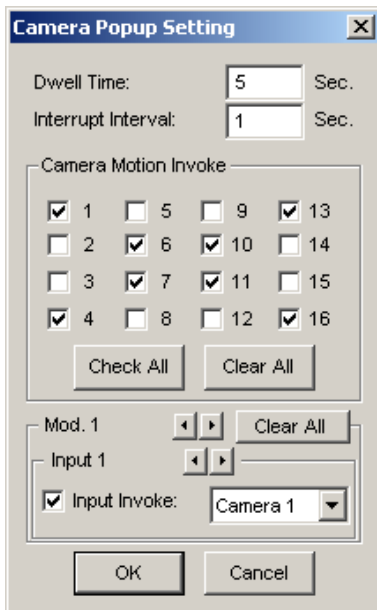
[Deactivate notification when selected pin is ON] When an assigned input module is activated, all designated alarms and alerts will be disabled. Assign an installed input module and a pin number for the application.

[Deactivate Notification]

- **Triggered by:** Select an alert condition from the drop-down list for the application. For example, if you choose Motion, all designated alarms and alerts upon motion detection will be deactivated when an assigned input module is activated.
- **Deactivate Selected Notification:** Select the alarms and alerts you want to be deactivated, such as Output, Wave Alarm and/or Send Alert, when the assigned input module is activated.

Popping Up a Camera Window on Motion Detection

Using this feature, you may view the pop-up camera at the moment event occurs. To set up, click the Configure button, and then select Camera Popup Setting. This brings up the following Camera Popup Setting dialog box.

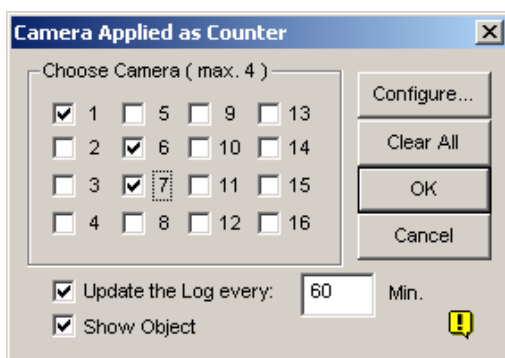


- **Dwell Time:** Specify the amount of time a pop-up camera window to remain in the foreground.
- **Interrupt Interval:** This feature is useful when more than one camera is set for pop-up notification. If cameras are all activated at the same time, specify the interrupt interval here would allow you to set the amount of time between camera pop-ups.
- **Camera Motion Invoke:** Choose which camera you wish to have auto pop-up on motion-triggered event. (Utilize Masking to in system configuration to adjust the area of activation).
- **Input Invoke:** Use this function to have an I/O device trigger the auto pop-up.

Configuring Object Counting

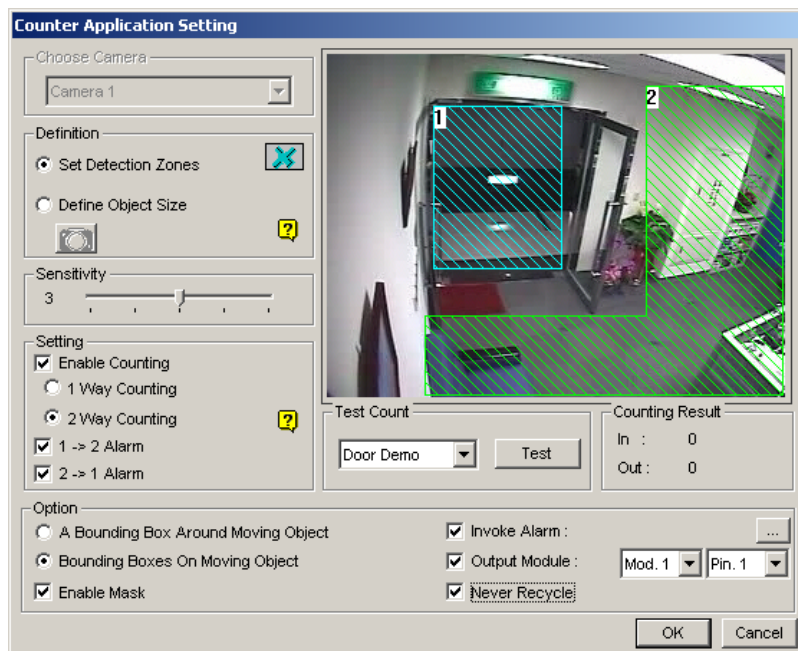
Object counting in GV system provides bi-directional counting of objects under the surveillance area. When defined, it could count any objects, such as people, vehicles, animals, etc.

1. Click the Configure button, and then select Counter Application Setting. This brings up the following dialog box.



2. Select the desired cameras for the counter application.

3. Click the Show Object item in the lower of the window to put a rectangle around the object being tracked.
4. Click the Configure tab to open the Counter Application Setting dialog box, shown as follows.
This is where you define the counter to count target objects.



5. In the Choose Camera section, select a camera from the drop-down list for setup.
6. In the Definition section, there are two options:
 - **Set Detection Zones:** Use the mouse to outline detection regions on the video image. Number 1 is for region 1; number 2 for region 2. Defining multiple regions 1 and 2 is practicable. Clicking the delete (blue X icon) button will clear all defined regions.
 - **Define Object Sizes:** Use the mouse to outline a region matching the normal size of the targeted object. If the video is playing, first click the snapshot button to freeze the image before defining.
7. In the Setting section, the three options represent:
 - **Enable Counting:**
 - 1 Way Counting:** When an object appears in region 1 and then enters into region 2, it will be counted as 1 in.
 - 2 Way Counting:** When an object appears in region 1 and then enters into region 2, it will be counted as 1 in, and when an object appears in region 2 and then enters region 1 it will be counted as 1 out.
 - **1→2 Alarm:** When an object enters from region 1 to region 2, the event will be recorded as “Intruder” in System Log for later retrieval.
 - **2→1 Alarm:** When an object enters from the defined region 2 to region 1, the event will be recorded as “Intruder” in System Log for later retrieval.

8. In the Option section, select how you want to highlight the detected object. If Enable Mask is enabled, masks will be displayed on the detection regions.
9. If the alarm settings in step 7 are selected, the following options will be enabled:
 - **Invoke Alarm:** Activate the computer noise alarm when an object enters a defined region. Click the button next to the item to assign a wav sound file.
 - **Output Module:** Enable an installed output device when an object enters a defined region. Assign the output module and pin number.
 - **Never Recycle:** When the item is checked, the alarm-triggered events won't be recycled even when disk space is full.
10. To test your settings of counting, select Live from the drop-down list, and then click the Test button. Notice how the number changes in the Counting Result section when objects pass through the detection regions. There are three options in the drop-down list. Live tests your current settings; Door Demo and Traffic Demo are pre-recorded events, showing how the application counts objects in two actual DVR examples.

Mapping PTZ Cameras

This option assigns a PTZ camera to its corresponding camera channel for either the local or the remote applications. For local applications, see *Auto Switching PTZ Control Panels* on page 53. For remote applications, this option will let you control PTZ cameras by the WebCam or Center V2 server. For the setup, add at least one PTZ camera to the system. Click Configure and select Camera Mapping PTZ Dome from the menu to bring up the following dialog box. Select a camera channel by using the camera tabs in the upper part. Select the PTZ camera connected to the selected channel from the Device drop down list. If you have two identical PTZ cameras set in the system, you may use the Address drop down list to choose the one with the correct address. Click OK to apply the settings.

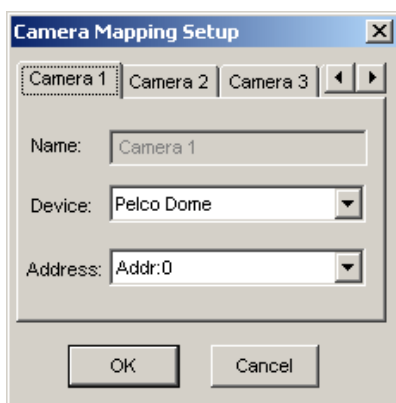
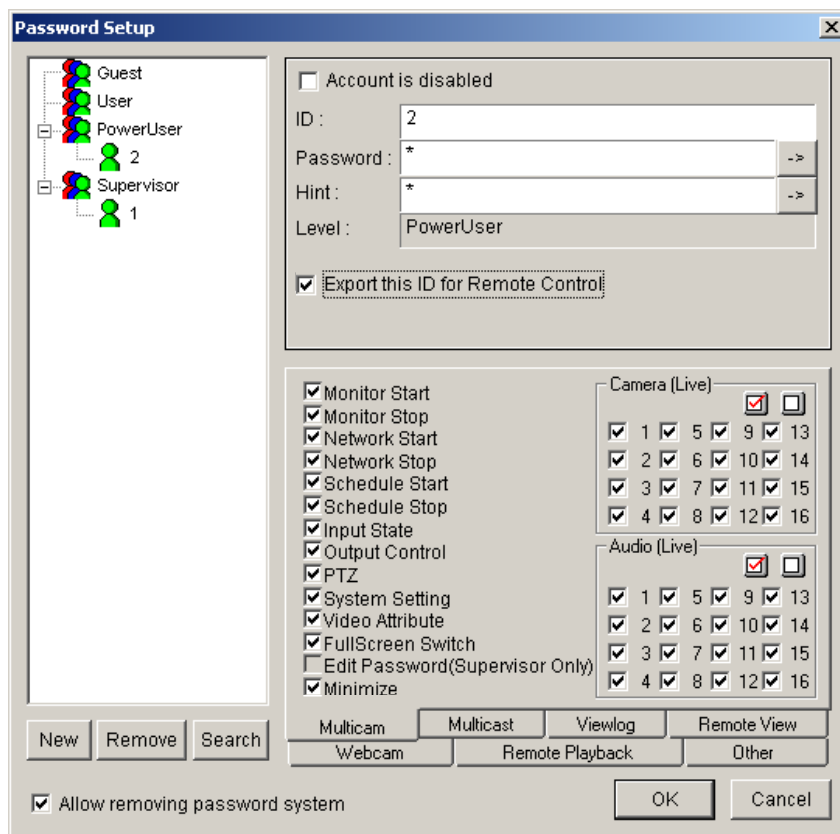


Figure 2-3 Camera Mapping Setup

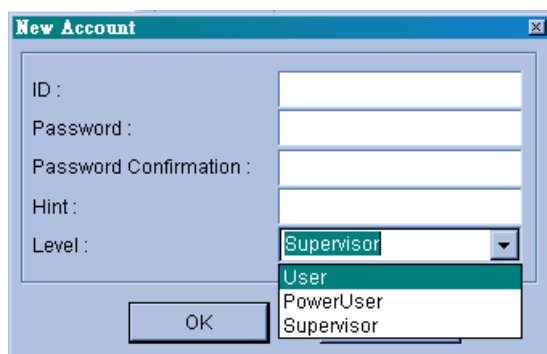
Setting Up Password

The password setup allows you to assign permission and rights to users. You can create up to 1,000 passwords. The system will control and restrict access to system resources based on the permission and rights associated with each user account. Only Supervisor account level is pre-set with the access to the Password Setup function. Click the Configure button and select Password Setup to display the following window.



To add a new user:

1. Click the New button at the lower-left hand corner to bring up the New Account dialog box.



2. Enter the user's ID name and password. Re-enter the same password in the Password Confirmation field.
3. Give a Hint (optional) that would remind you of the password.

4. Select the user's authorization level: Supervisor, PowerUser, User or Guest. By default, users belonging to the Supervisor level have full rights over GV-system settings. PowerUsers have the same permission and rights as Supervisors, except that they cannot edit user information and delete the password system (described later). Users belonging to the User level are restricted to all system settings, and have only limited access to certain functions. Users in the Guest level can only view videos.
5. Click OK to add the user.

To edit an existing user: (Only supervisors are allowed to do it.)

1. Select a user from the user list to display its properties. Or, right click on any of the user levels (User, PowerUser, Supervisor), and then select Find Specific Account for quick search. A valid password is required to edit a supervisor.
2. Edit the properties as required. Check the Account Is Disabled item if you wish to disable this user.

Three options you may also find in this dialog box:

- **Login this ID automatically:** Enabling this option allows auto login with this ID.
- **Export this ID for Remote Control:** This option allows the export of users IDs for the remote control. When it is checked, you can see the designated ID in the drop-down menu of login. (Note: For the operation of remote control, the password should be restricted for digits.)
- **Allow removing password system:** This option lets users remove the ID and password database from GV system. To do this, select this option (only Supervisor level users can make the selection), and then find PassUnInstall in the system folder. Click the application, and a message prompts to you for confirmation. Click Yes to remove the entire ID and password from GV system.

Note: If the option of Allow Removing Password System is not checked, the loss of passwords will require the reinstallation of Windows and the reset of passwords.

Sending Alerts thru E-mail Accounts

It is possible to send alerts through E-mail accounts on motion or I/O triggered events. You may first set up your server to handle the sending of alerts. Follow these steps to set up an E-mail account:

1. Click the Configure button, and then select E-Mail Setup. This brings up the following dialog box:

2. In the Mail Setup section, set up following fields:
 - **SMTP Server:** Enter your mail server name.
 - **E-Mail From:** Enter the reply E-mail address (optional).
 - **E-Mail To:** Enter the E-mail address you want to send alerts to.
 - **Charset:** Select the character-set to be used when sending mail via system.
 - **Subject:** Enter a subject that would come with the alert message.
3. You have the option to attach an image with the alert when sending mail. Click to enable the option. Select image format from the drop-down list, and the image size.
4. In the Pic. Field, enter how many snapshots (max. 6) you wish to receive in an event.
5. Press the blue arrow if wish to tag the snapshot with Time/Date, Camera number, and Location name. Select Transparent makes the tag background transparent, and Color Box is for you to choose your text color.
6. Click the Test Mail Account button to test if E-mail function is working correctly. You may click OK here or go on to set up with following options:

[Email-Alerts Setup] If the camera continues to detect motions then the GV system will continuously send E-mails to you. You may specify the time interval between one from next E-mail. The default time interval is 5 minutes (configurable from 0 to 60 minutes); therefore if motions occur for more than 15 minutes it means you will receive 3 E-mails. If motions occur for less than 5 minutes, then you will receive only one E-mail.

[Option] Select Auto Modem dial-up to dial-up automatically when the system is instructed to send E-mail alerts. The Disconnect Delay disconnects the system from Internet after the set number of minute(s) (from 0 to 30 minutes).

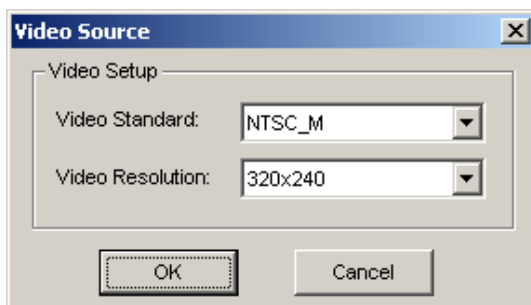
[SMTP Mail Server requires authentication] If the SMTP mail server needs authentication, select this item and enter your account name and password.

Choosing Video Source

Click Configure button and select Video Source from menu. Video Source sets video format of the system (NTSC or PAL).

[Video Setup] Determines video standards for the system.

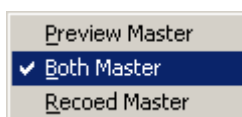
- **Video Standard:** Select a video standard used in your country.
- **Video Resolution:** Consider your priority between quality of image and the use of CPU resource before making a selection. Rank from most to least image quality: 640x480, 640x480 S/W, 640x240, 320x240. Rank from most use of CPU resource to the least: 640x480 S/W, 640x480, 640x240, 320x240. Select the one that best fits your application.



Optimizing System Performance

Click the Configure button and select Performance from menu. This function is only available to GV-650, GV-750, GV-800, GV-900, GV-1000.

- **Preview Master:** The Display speed increases because the system resource will focus on the monitoring after click Preview Master.
- **Both Master:** Both display and recording speed is at the average because the system resource is allocated equally.
- **Record Master:** The recording speed increases because the system resource will focus on the recording after select the Record Master.

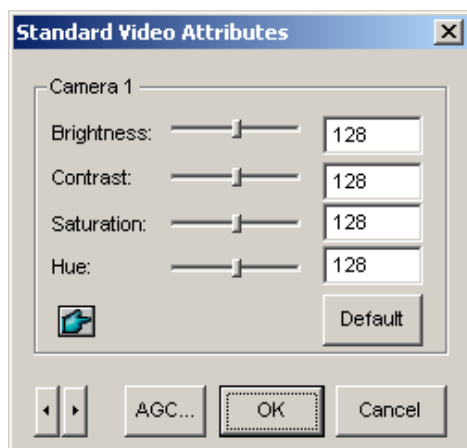


Adjusting Video Attributes

This feature lets you adjust video attributes to get the best picture. Click the Configure button and select Video Attributes to have two selections: Standard and Advanced.

Standard Video Attributes

Adjust image quality by moving the slide bars to the desired values. Click Default to apply default values. Click the left and right arrow buttons to select a desired camera for setup. Or, click the finger button to apply the displayed settings to all cameras.

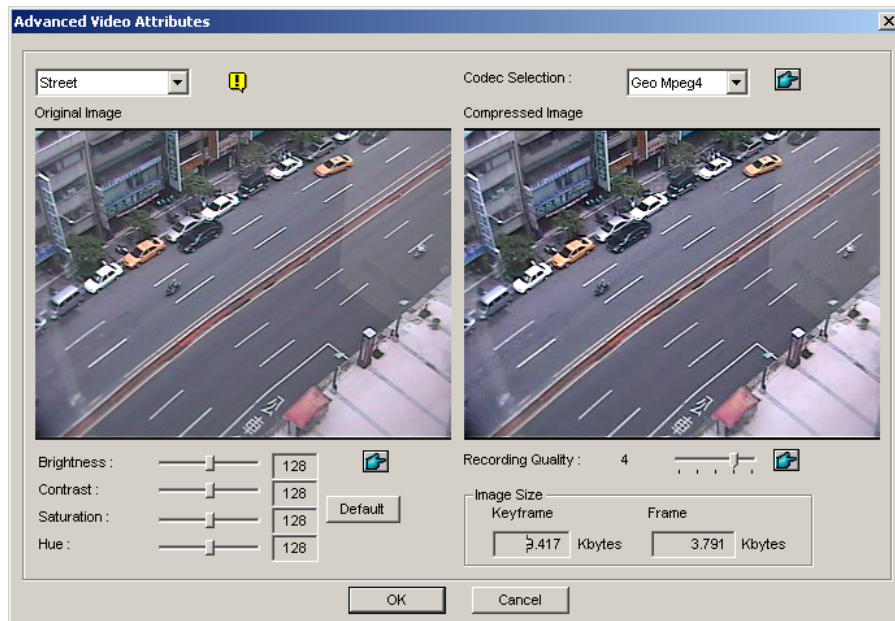


AGC (Auto Gain Control): Adjusting AGC help boost weak video signals or reduce strong video signals, and gives optimized image quality. The adjustment could be done manually or automatically. When a video signal is weak, for example, due to distance, adjusting the brightness or contrast of the video source will NOT help the situation. Adjust AGC and see the difference. (Depending on the model purchased, this feature may or may not be available.)

In the Auto Gain Control window, click Auto for auto adjustment, click Default to apply default values, or click Apply to apply the displayed settings. The default value is set to 1.15V (115), but you may move the slider bar to adjust between 0.3V (30) or 2.5V (250).

Advanced Video Attributes

This feature lets you know the file size after quality and image adjustment.



- **Camera drop-down list:** Select a camera channel for the application.
- **Codec Selection:** Select a desired type of compression.
- **Image Adjustment (Brightness, Contrast, Saturation, Hue):** Move the slide bars to adjust image attributes. Click the finger button to apply the displayed values to all cameras.
- **Recording Quality:** Move the slide bar to increase or decrease the picture quality. Click the finger button to apply the selected quality to all cameras.
- **Image Size:** Keyframe indicates the compressed file size while Frame shows the partly compressed file size after quality and image adjustment.

Note: The smaller image size means higher video compression and smaller file size, thus extending the recording capacity.

Switching to Full-Screen View

For full-screen display, first select the Enable Directdraw Overlay option (See page 17). Click the Configure button, and then select Full Screen(F) to switch to full screen. Right click on the full screen and select Full Screen Mode Switch to switch back to normal view screen. Alternatively, press [F] key on keyboard to toggle between full-screen view and normal screen view.

Listening to Live Audio

Choose the Configure button, point to Wave-out, and then select the audio channel you wish to listen to.

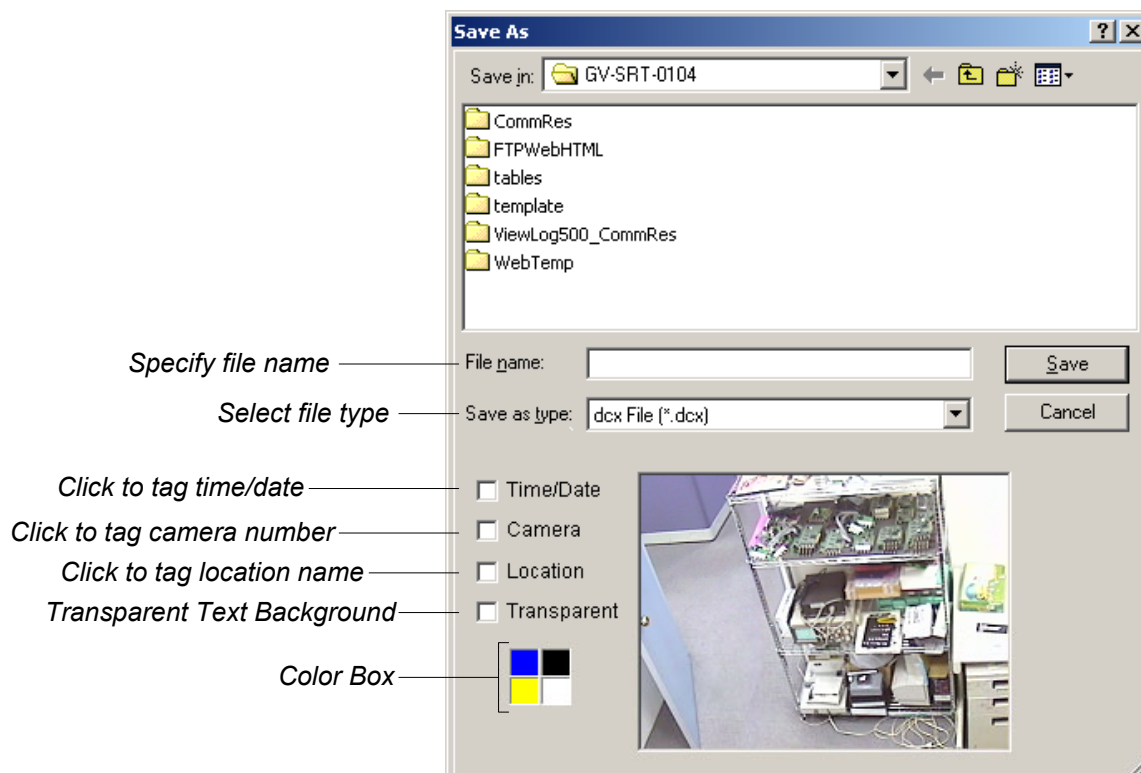
Deactivating Video Lost Beep

To stop a beep noise when any of videos lost, click the Configure button and select Disable Video Lost Beep.

Start/Stop Monitoring

Select the Monitor button and select to start or stop all or individual camera monitoring. Camera Name at the upper left-hand corner of the view screen changes from yellow to red color when motion detected. (Blinking represents the camera is detecting motion). [F7] function key is the shortcut of this operation.

Tip: To take a snapshot of the current frame, position your cursor over on the Camera Name. When the Hand button appears, click to open the Save As dialog box, shown as follows:



Save and tag the frame with Time/Date, Camera number, and Location name. Select Transparent will make the tag background transparent, and Color Box is for you to choose your text color.

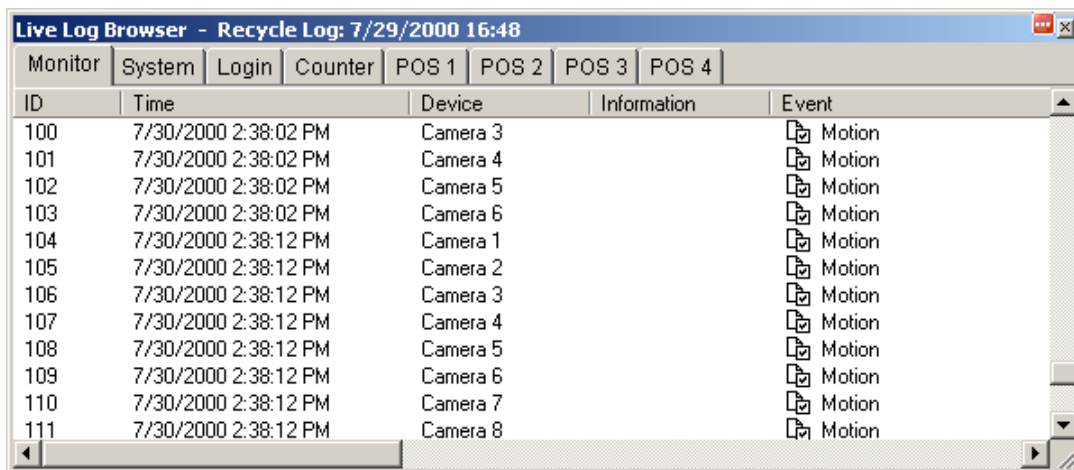
Playing Back Video Files

The ViewLog button is used for playing back video and audio files. This function is discussed in Chapter 4.

System Log

System Log displays detailed information about the GV system and remote operation. This information is being saved in a database Access format for this can be a useful tool to Supervisor. To view the System Log, Click the ViewLog button, and then select System Log from the menu. This brings up the Live Log Browser viewer as shown below. The Log Browser viewer displays five type of event information. Use the control tab to switch between them. Click the [...] icon on the upper right corner bring up Advanced Log Browser screen.

[Monitor] Displays information pertaining to motion and I/O events. Double click on the log list will allow you to view related video in ViewLog or Quick Search (depending on which video player you selected in Activate System Log dialog box on page 34).



The screenshot shows a window titled "Live Log Browser - Recycle Log: 7/29/2000 16:48". It has a tabbed interface with tabs for Monitor, System, Login, Counter, POS 1, POS 2, POS 3, and POS 4. The "Monitor" tab is selected, displaying a table with the following columns: ID, Time, Device, Information, and Event. The table contains 11 rows of data, all showing "Motion" events from various cameras at the same time.

ID	Time	Device	Information	Event
100	7/30/2000 2:38:02 PM	Camera 3		Motion
101	7/30/2000 2:38:02 PM	Camera 4		Motion
102	7/30/2000 2:38:02 PM	Camera 5		Motion
103	7/30/2000 2:38:02 PM	Camera 6		Motion
104	7/30/2000 2:38:12 PM	Camera 1		Motion
105	7/30/2000 2:38:12 PM	Camera 2		Motion
106	7/30/2000 2:38:12 PM	Camera 3		Motion
107	7/30/2000 2:38:12 PM	Camera 4		Motion
108	7/30/2000 2:38:12 PM	Camera 5		Motion
109	7/30/2000 2:38:12 PM	Camera 6		Motion
110	7/30/2000 2:38:12 PM	Camera 7		Motion
111	7/30/2000 2:38:12 PM	Camera 8		Motion

ID: This column shows the event ID number generated by the system.

Time: This column shows the time when a motion or I/O monitor event occurs.

Device: This column shows camera ID or I/O device associated with the event.

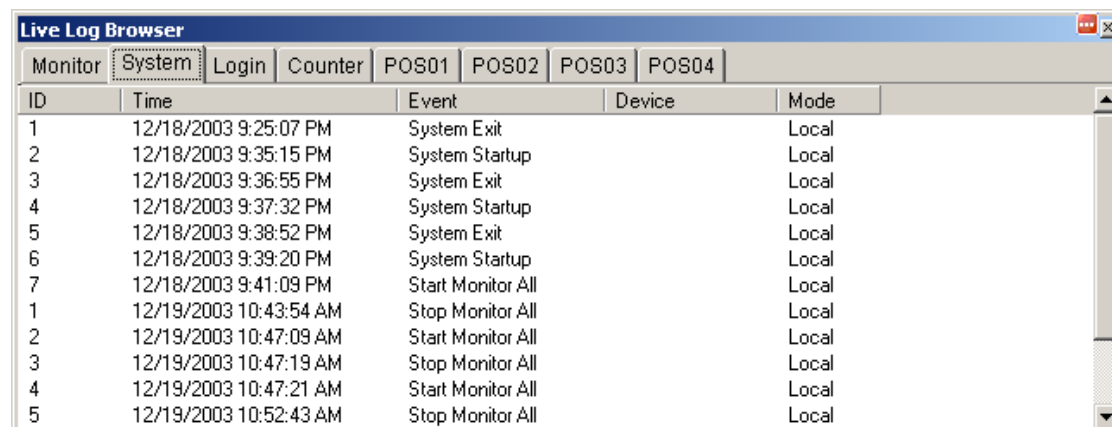
Information: This column shows the I/O module number

Event: These event messages mean:

- **Motion:** Appear if motion occurs in the associated camera.
- **Monitor Video Lost:** Appear if video lost occurs in the associated camera.
- **Monitor Video Resume:** Appear if video resume in the associated camera.
- **Signal On:** Appear if one of the input device connected to the associated I/O module are activated.
- **Signal Off:** Appear if one of the input device connected to the associated I/O module are terminated.
- **I/O error:** Appear if associated I/O module failed.
- **I/O resume:** Appear if associated I/O module resume to action.
- **Missing Object:** Appear if objects miss from a defined camera view.
- **Unattended Object:** Appear if unattended objects show up within a defined camera view.

- **Intruder:** Appear if there are objects entering a defined region.
- **Disk Full:** Appear if storage space is full.

[System] This function shows which functions are being enabled or disabled in the GV-System.



The screenshot shows a window titled "Live Log Browser" with a tabbed interface. The "System" tab is selected. The table below represents the data shown in the window.

ID	Time	Event	Device	Mode
1	12/18/2003 9:25:07 PM	System Exit		Local
2	12/18/2003 9:35:15 PM	System Startup		Local
3	12/18/2003 9:36:55 PM	System Exit		Local
4	12/18/2003 9:37:32 PM	System Startup		Local
5	12/18/2003 9:38:52 PM	System Exit		Local
6	12/18/2003 9:39:20 PM	System Startup		Local
7	12/18/2003 9:41:09 PM	Start Monitor All		Local
1	12/19/2003 10:43:54 AM	Stop Monitor All		Local
2	12/19/2003 10:47:09 AM	Start Monitor All		Local
3	12/19/2003 10:47:19 AM	Stop Monitor All		Local
4	12/19/2003 10:47:21 AM	Start Monitor All		Local
5	12/19/2003 10:52:43 AM	Stop Monitor All		Local

ID: Displays the event ID number

Time: This column shows the time when System event occurs.

Event: This column shows the following messages when associated actions are taken.

- **Schedule Start /Stop:** Appear when a user starts or stops the monitoring schedule.
- **Auto Reboot:** Appears when the system performs auto rebooting function.
- **System Start / Exit:** Appear when a user starts or stops GV-System.
- **Start / Stop Monitor All:** Appear when a user starts or stops all cameras' monitoring functions.
- **Start / Stop Monitor:** Appear when a user starts or stops the individual camera's monitoring function. The camera number will appear in Device column.
- **IO Monitor Start / Stop:** Appear when a user starts or stops the individual I/O module's monitoring function. The I/O module number will appear in the Device column.
- **Modem Svr Start / Stop:** Appear when a user starts or stops GV-System's Modem Server.
- **TCP Svr Start / Stop:** Appear when a user starts or stops GV-System's TCP Server.
- **Multicast Svr Start / Stop:** Appear when a user starts or stops Multicast Server.
- **WebCam Svr Start / Stop:** Appear when a user starts or stops WebCam Server.
- **Connect to Center Start/ Stop:** Appear when GV-System connects or disconnects with the Security Center.
- **Twin Svr Start / Stop:** Appear when a user starts or stops Twin Server.
- **Connect to Center V2 Start / Stop:** Appear when GV-System logs in or out Center V2.
- **Connect to VSM Start/Stop/Net Down/ Net Resume:** Appear when GV-system logs in or out VSM; when the connection of both fails or resumes.
- **Connect to SMS Start/Stop/Net Down/Net Resume:** Appear when GV-system logs in or

out the SMS server; when the connection of both fails or resumes.

Device: This column shows the individual camera number.

Mode: This column shows whether actions are being taken in local side or remote side.

[Login] This function shows whom and when has logged in and out from the GV-System and WebCam server.

ID	Time	User Login	User Logout	Status	Mode	Note
1	12/18/2003 9:35:15 PM	1		Success	Local	
2	12/18/2003 9:37:32 PM	1		Success	Local	
3	12/18/2003 9:39:20 PM	1		Success	Local	
1	12/19/2003 10:55:31 AM	guest		Success	Local	
2	12/19/2003 10:55:33 AM		guest	Success	Local	
3	12/19/2003 10:55:36 AM	1		Success	Local	
4	12/19/2003 10:55:53 AM	guest		Success	Local	
5	12/19/2003 10:55:56 AM		guest	Success	Local	
6	12/19/2003 10:55:58 AM	1		Success	Local	
7	12/19/2003 10:56:01 AM		1	Success	Local	
8	12/19/2003 10:56:05 AM	1		Success	Local	
9	12/19/2003 10:56:09 AM	guest		Success	Local	

ID: Shows the event ID number

Time: This column shows the time when Login event occurs.

User Login: This column shows the ID of the login user.

User Logout: This column shows the ID of the logout user.

Status: This column shows whether login or logout attempts were successful or failed.

Mode: This column shows the following two messages:

- Local: Appear if a user login to or logout from the main system.
- WebCam (Mpeg4): Appear if a remote client login to or logout from the WebCam server.

Note: This column shows the IP address of the client server.

[Counter] This function shows the information and result of GV-System's counter function.

ID	Start Time	End Time	Device	In	Out
5	12/19/2003 10:47:09 AM	12/19/2003 10:47:18 AM	Camera 1	0	0
6	12/19/2003 10:47:09 AM	12/19/2003 10:47:18 AM	Camera 2	1	0
7	12/19/2003 10:47:09 AM	12/19/2003 10:47:18 AM	Camera 3	0	1
8	12/19/2003 10:47:09 AM	12/19/2003 10:47:18 AM	Camera 4	0	8
9	12/19/2003 10:47:21 AM	12/19/2003 10:52:43 AM	Camera 1	70	197
10	12/19/2003 10:47:21 AM	12/19/2003 10:52:43 AM	Camera 2	80	115
11	12/19/2003 10:47:21 AM	12/19/2003 10:52:43 AM	Camera 3	41	220
12	12/19/2003 10:47:21 AM	12/19/2003 10:52:43 AM	Camera 4	82	163
13	12/19/2003 10:52:47 AM	12/19/2003 10:54:28 AM	Camera 1	18	103
14	12/19/2003 10:52:47 AM	12/19/2003 10:54:28 AM	Camera 2	28	40
15	12/19/2003 10:52:47 AM	12/19/2003 10:54:28 AM	Camera 3	10	67
16	12/19/2003 10:52:47 AM	12/19/2003 10:54:28 AM	Camera 4	10	43

ID: This column shows the event ID number

Start Time: This column shows the time when GV-System's counter function is activated.

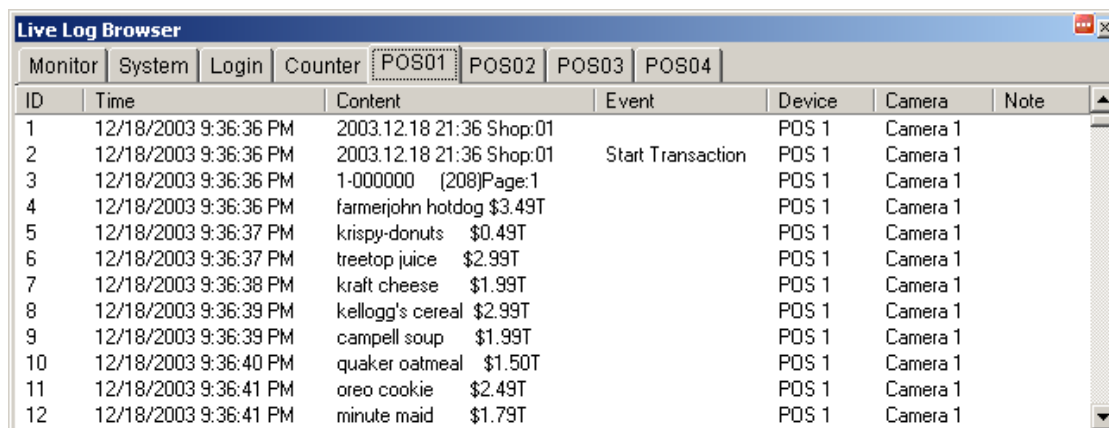
End Time: This column shows the time when GV-System's counter function is terminated.

Device: This column shows the camera that performs counter function.

In: This column shows the "In" result of GV-System's counter function.

Out: This column shows the "Out" result of GV-System's counter function.

[POS] This function shows the POS event information. Double click on the log list will allow you to view related video in ViewLog or Quick Search (depending on which video player you selected in Activate System Log dialog box on page 34).



The screenshot shows a window titled "Live Log Browser" with a tabbed interface. The "Counter" tab is selected, showing a list of events for POS01. The table has columns for ID, Time, Content, Event, Device, Camera, and Note. The data shows a sequence of transactions starting with "2003.12.18 21:36 Shop:01" and listing items like "farmerjohn hotdog", "krispy-donuts", "treetop juice", "kraft cheese", "kellogg's cereal", "campell soup", "quaker oatmeal", "oreo cookie", and "minute maid" with their respective prices.

ID	Time	Content	Event	Device	Camera	Note
1	12/18/2003 9:36:36 PM	2003.12.18 21:36 Shop:01		POS 1	Camera 1	
2	12/18/2003 9:36:36 PM	2003.12.18 21:36 Shop:01	Start Transaction	POS 1	Camera 1	
3	12/18/2003 9:36:36 PM	1-000000 (208)Page:1		POS 1	Camera 1	
4	12/18/2003 9:36:36 PM	farmerjohn hotdog \$3.49T		POS 1	Camera 1	
5	12/18/2003 9:36:37 PM	krispy-donuts \$0.49T		POS 1	Camera 1	
6	12/18/2003 9:36:37 PM	treetop juice \$2.99T		POS 1	Camera 1	
7	12/18/2003 9:36:38 PM	kraft cheese \$1.99T		POS 1	Camera 1	
8	12/18/2003 9:36:39 PM	kellogg's cereal \$2.99T		POS 1	Camera 1	
9	12/18/2003 9:36:39 PM	campell soup \$1.99T		POS 1	Camera 1	
10	12/18/2003 9:36:40 PM	quaker oatmeal \$1.50T		POS 1	Camera 1	
11	12/18/2003 9:36:41 PM	oreo cookie \$2.49T		POS 1	Camera 1	
12	12/18/2003 9:36:41 PM	minute maid \$1.79T		POS 1	Camera 1	

ID: This column shows the event ID number.

Time: This column shows the time when POS event occurs.

Content: This column shows the action taken in the POS device.

Event: This column shows the following messages.

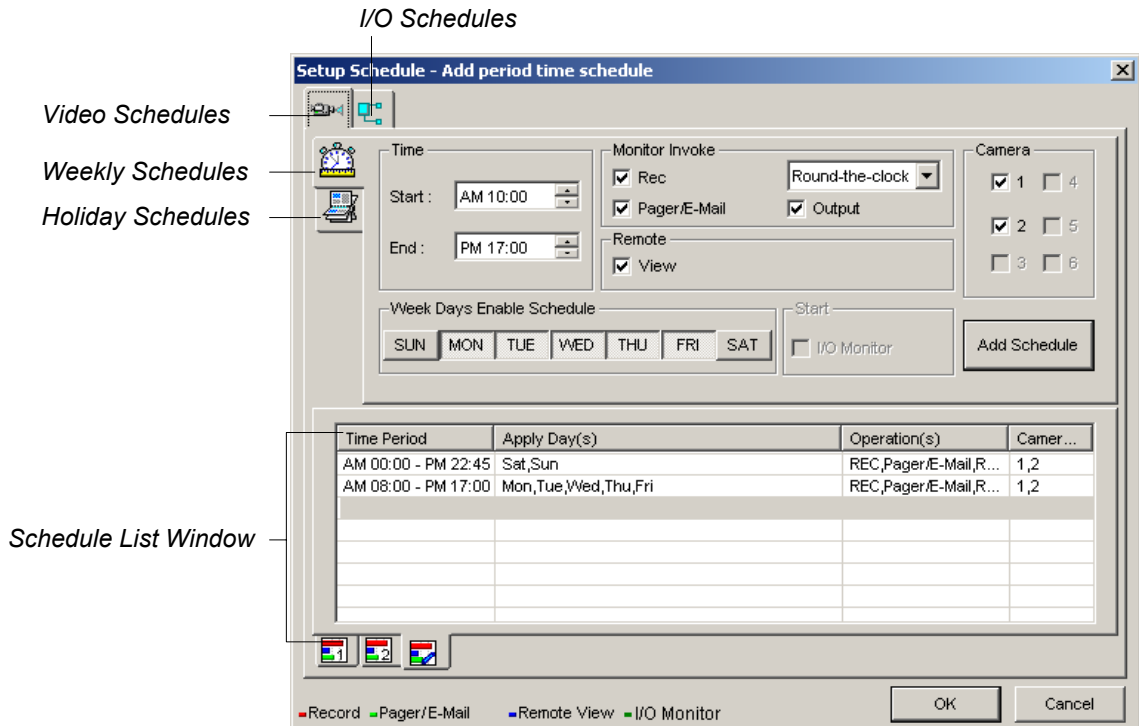
- Start Transaction: Appear when sales transaction starts.
- Stop Transaction: Appear when sales transaction ends.
- Void Transaction: Appear if an item is being void from the sales transaction.
- Cash Drawer Open: Appear if the cash drawer is opened.
- Filter 1-15: Appear if the sales transaction matches the defined condition 1 to 15.

Note: This column is currently not being used.

Running the System at a Scheduled Time

A schedule can be used to selected cameras at different times, and select whether alarms or activity is enabled. The schedules have two options:

- Video Schedule: A schedule starts the surveillance system at user-defined date and times.
- I/O Schedule: A schedule starts I/O surveillance at user-defined date and times.



Set your surveillance preferences:

[Time] Enter Start and End time of the schedule.

[Monitor Invoke] Sets alert methods in case of motion.

- **Rec.** Select to record while monitoring. From the drop-down list, select to record the videos by Motion Detect or Round-the-Clock.
- **Pager/E-Mail.** Pager or e-mail alerts on event activation.
- **Output.** Select to trigger corresponding I/O devices in case of motion. To set the corresponding I/O device, see *Adjusting Individual Camera* on page 22 in this chapter for details.

[Remote] Click to send the triggered images to these applications.

- **View.** Sends videos to Remote View application (Remote View application must be open to receive the videos).

[Week Days Enable Schedule] Press to select days for the video schedule.

[Start] Grayed out. It will be enabled only in I/O Schedule.

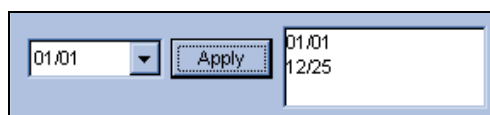
[Camera] Select to apply all settings to selected cameras. Cameras that are not connected are grayed out.

1. Press Add Schedule to confirm all settings. The new schedule will be listed in different bar colors in the Schedule List Window if setup successful. Color presents following actions would be started within the defined time:

- **Red:** Recording enabled
 - **Green:** Pager/e-mail notification enabled
 - **Blue:** System will send videos to Remote View
 - **Jade:** I/O monitor enabled
 - **Purple:** System will send videos to Center
2. Repeat the process to set up more schedules.
 3. To modify a schedule, select the schedule you wish to make the change, then press Modify Schedule button to modify.
 4. To delete a schedule, select the schedule and hit the Delete key on keyboard. Click OK to apply schedule.

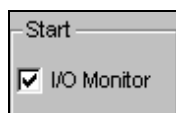
To configure a schedule for Holidays, follow these steps:

1. Select the Holiday Schedule in the Setup Schedule – Add period schedule dialog box.
2. All setups are the same as in Weekly Schedule, except the section shown as follows. Click the drop-down arrow and select a date from the pop-up calendar. Click Apply to add dates to holiday schedule.



Configuring I/O Schedules

All setups are the same as those in Video Schedule, except the section shown as follows:



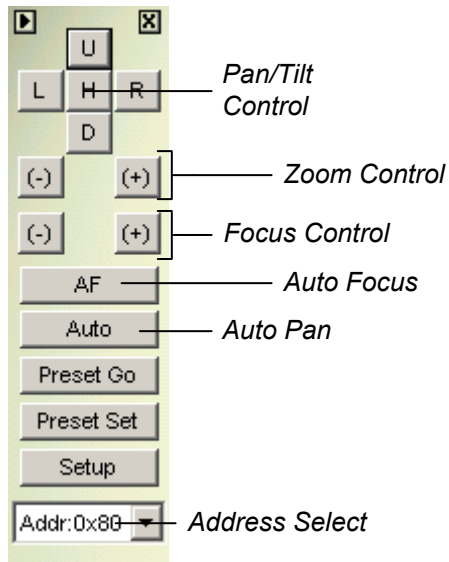
This selection is important! After you set up all your schedule dates and surveillance preference for I/O, select the I/O Monitor to activate the schedule.

PTZ Control Panel

PTZ control panel is used to control PTZ camera operations, camera presets, and magnification functions. This control panel will not appear, unless at least one PTZ camera is connected to the system. Follow these steps to add PTZ cameras to the system:

1. Click Configure button, System Configure, General Setting tab.
2. Select PTZ Device Setup from PTZ Control section to enable the camera drop-down list.
3. Select the make and model from the list, and press the PTZ Control button to bring out the camera setup dialog box (slightly different for other camera models).

4. In the dialog box, select Activate. This is important! Without this step the PTZ camera will not be added to system.
5. Click OK and then go back to main screen. Now you should see PTZ Control button on main screen. Press the button to bring out the on-screen control interface, shown as follows:



Auto Pan: Allows camera to pan back and forth continually among preset points.

Preset Go: Moves camera to the preset position.

Preset Set: To set preset positions for the camera.

Address: Specify address of your camera.

Note: Each dome will need to be addressed correctly. Refer to the dome manufacturers' documentation for details.

Auto Switching PTZ Control Panels

The function allows the corresponding PTZ control panels to be called up automatically when you switch to different PTZ camera screens. To enable the function, follow the steps below.

1. Click the Configure button on the menu bar, and then select System Configure to display the System Configure window.
2. In the PTZ Control section, click the Arrow button, point to PTZ Panel Switch and click Auto.



3. When the Camera Mapping Setup window appears (see figure 2-3), specify the brand name and hardware address of each PTZ camera. Then click OK for the application.

I/O Control Panel

I/O control panel is used to add and control I/O devices that are added to the system. This control panel will not appear, unless at least one I/O device connected to the system. To add and to configure a device, see “Setting Up I/O Devices” in previous section for more details.

I/O Input Control Panel

After a device added to system, click the button to bring out the on-screen control interface for I/O inputs, shown as Figure 2-4. If only one I/O device is connected to system, press the button will immediately bring up the control interface; if more than one I/O are connected to system, press the button will list all I/O devices connected to system. Select one to bring out the control interface.

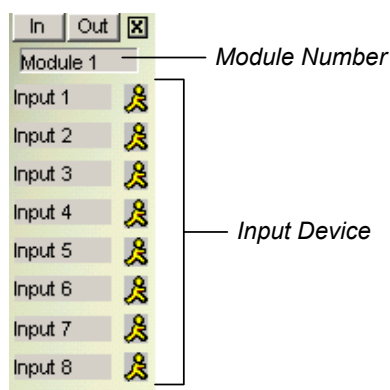


Figure 2-4 Input control panel

The I/O input panel displays status of current input sensors, up to 9 modules. The “walking man” indicates the sensor is being triggered.

I/O Output Control Panel

Press the Out button to switch to the following output panel. Press the “hand” button would send an output signal to the corresponding relay.

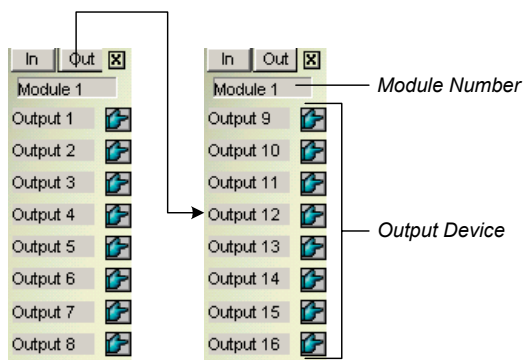


Figure 2-5 Output Control Panel

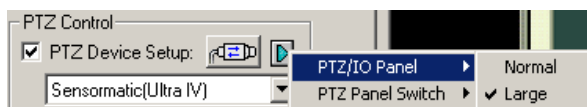
Touch Screen Support

The GV-system offers three types of control panels with touch screen support: PTZ Control Panel, I/O Control Panel and Touch Screen Panel.

PTZ and I/O Control Panel

This feature gives you the option of a large PTZ and I/O control panel with touch screen support. To open the panel, follow the steps below.

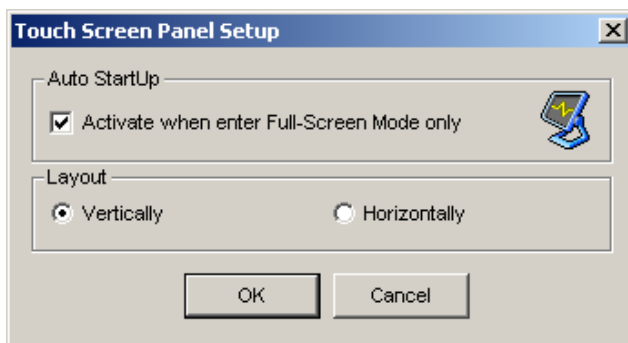
1. Click the Configure button, and then select System Configure to display the System Configure window.
2. In the PTZ Control section, click the Arrow button, point to PTZ/I/O Panel, and check Large.



Touch Screen Panel

The touch screen panel allows you to switch to ViewLog and full screen by the touch of a finger. To open the panel, follow the steps below.

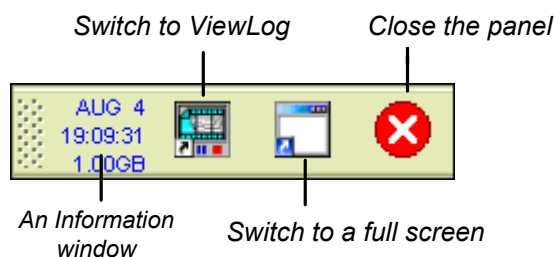
1. Click the Configure button, select Tool Kit, point to Touch Screen Panel and then select Panel Setup to display the following window.



[Auto StartUp] Launch automatically the panel when the full screen view is applied.

[Layout] Choose a vertical or horizontal panel.

2. Click OK for the above settings.
3. Click the Configure button, select Tool Kit, point to Touch Screen Panel and then select Panel Activate to open the panel.
4. An information window indicating date, time, and storage space will appear at the upper left corner of the screen. Right click it to open the touch panel as shown below.



Note: You can move the touch screen panel anywhere on the screen by dragging it.

Retrieving Images Using Object Index

The feature allows you to view the very first frame of a *continuous* movement in a video stream. With Live Object Index, you may view the most recent 50 frames captured. With Object Index Search, you may easily locate a desired event and instantly play it back by double-clicking on the image frame.

Object Index Setting

You can select up to 4 cameras to view live video frames.

1. Click the Configure button and then select Object Index/Monitor Setup to see the following window.

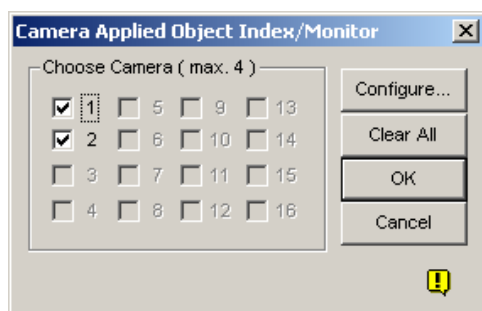


Figure 2-6 Camera Applied Object Index/Monitor

2. Check the desired cameras for the application.
3. Click the Configure button to display the Video Object Setup window.

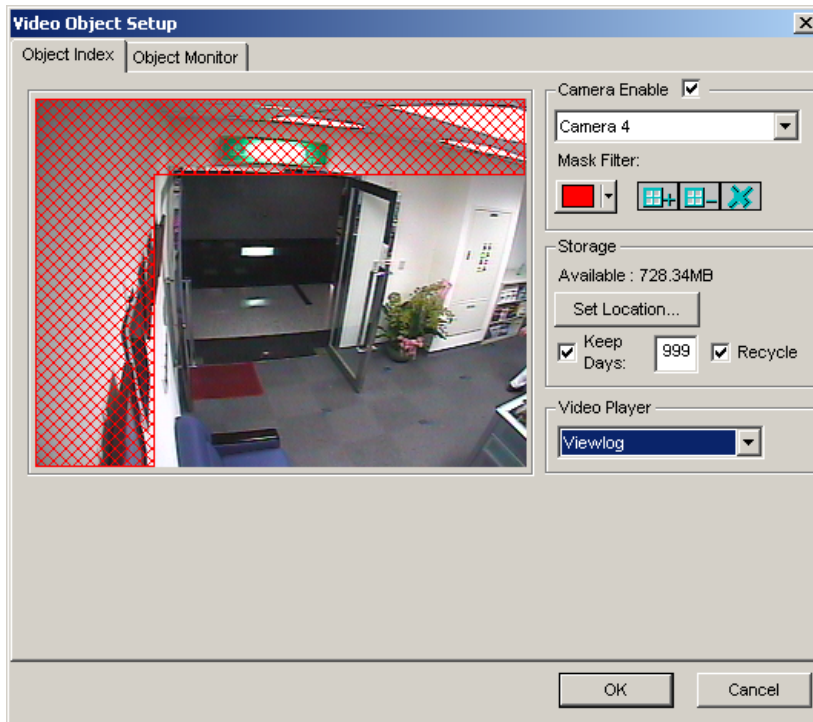


Figure 2-7 Video Object Setup for Object Index

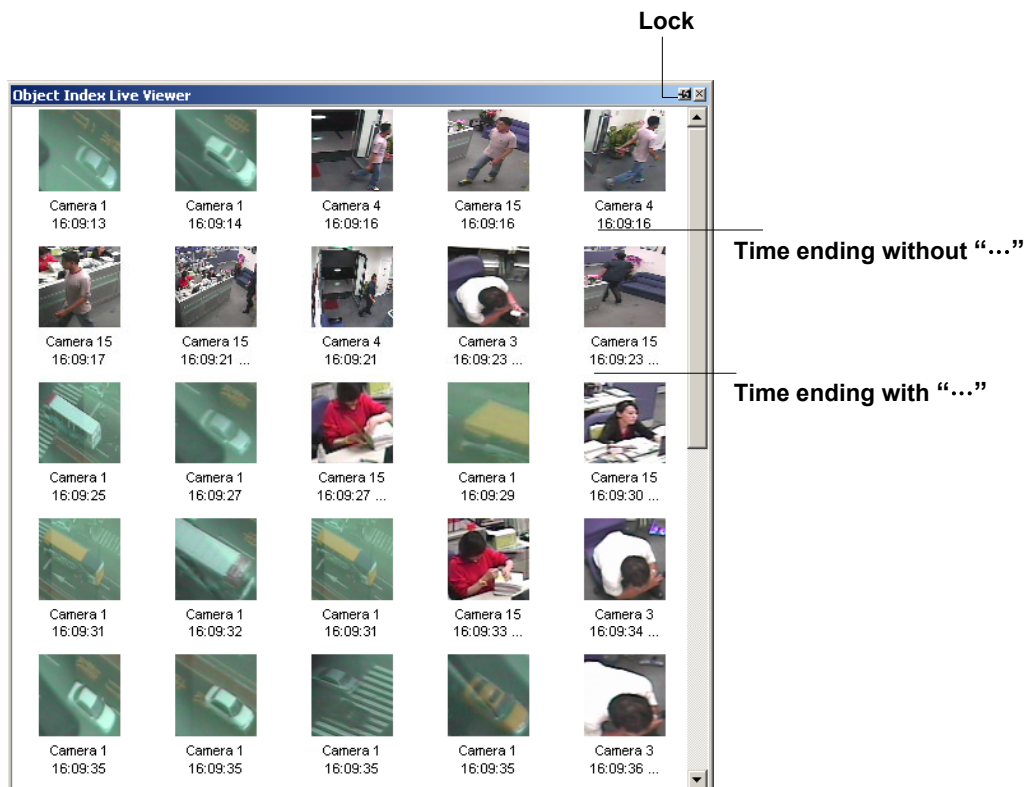
- **Camera:** Select the camera you wish to configure from the drop-down menu.
- **Camera Enable:** Check to enable the selected camera for configuration.
- **Mask Filter:** Use the mouse to outline a mask area where motion will be ignored.
- **Set Location:** Click to assign a path to save the file.
- **Keep Days:** Check the item and specify the days to store the files, from 1 day to 999 days.
- **Recycle:** When both Keep Days and Recycle are selected, the system applies whichever condition comes first. For example, if storage space is lower than that is required to hold the days of data specified in Keep Days, recycle comes first.
- **Video Player:** Select a viewer ViewLog or Quick Search to play back video files.

Note: Minimum storage space required for Object Index is 500MB.

Live Object Index

After configuring Object Index, you can start to view the most recent frames captured, with 50 frames at most.

1. Start camera monitoring.
2. Click the ViewLog button on the menu bar and then select Live Object Index to display the Live Viewer window.



The controls in the Live Viewer window:

- **The Lock button:** Click to pause the updating process.
- **Time ending without "...":** This means the file is a complete one and can be played back with the ViewLog or Quick Search player. Double click the file to play it back.
- **Time ending with "...":** This means the video can't be played back since the recording is still in process.

Object Index Search

You can locate frames within selected cameras and a specific time frame.

1. Click the ViewLog button on the menu bar, and then select Search Object Index to display the following search window.

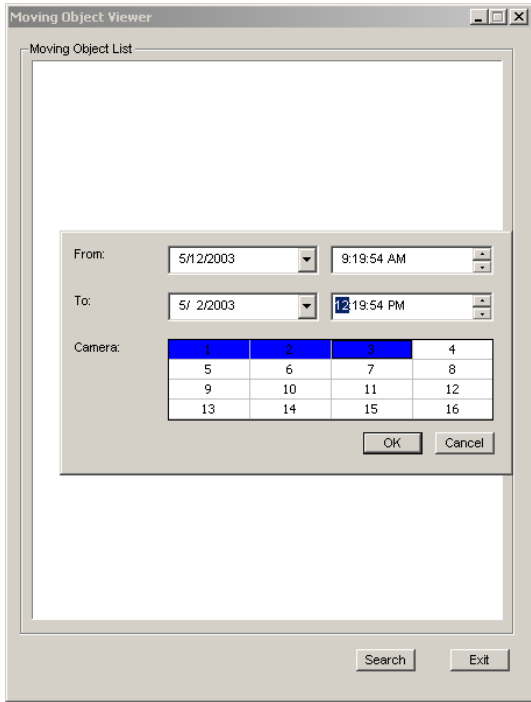


Figure 2-8 The search window

2. Specify a time frame and cameras, and then click OK to start searching. The following window will be called up.

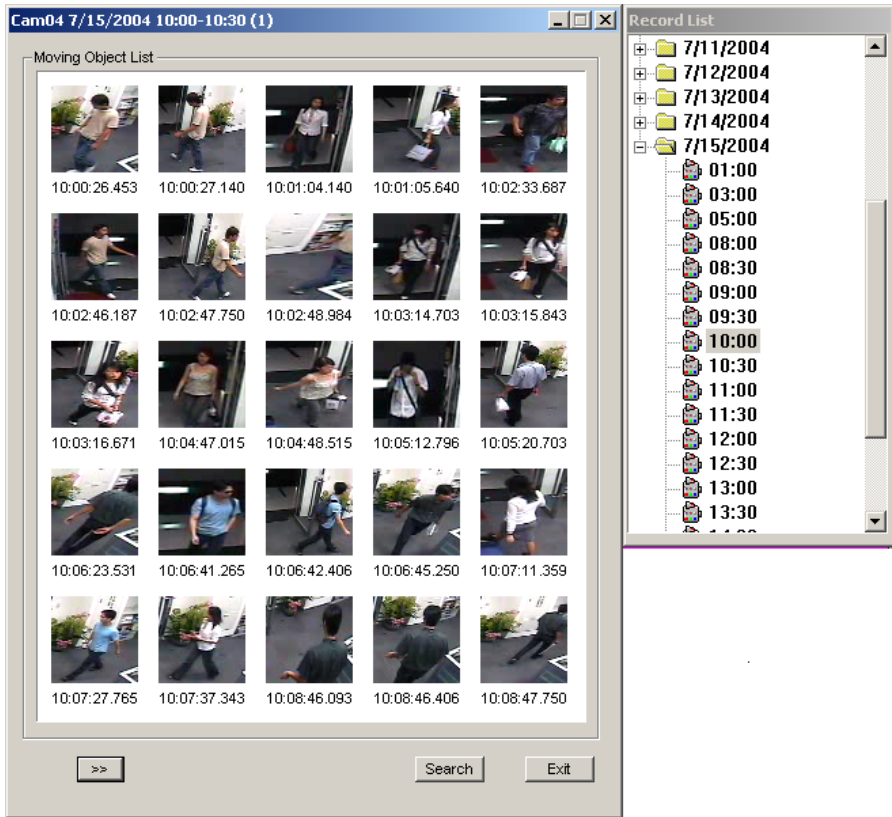



Figure 2-9 The Moving Object List window (left) and the Record list (right)

[The Record List] The list contains the search results. Double click a camera folder to display all found files. Click one time-segment file (e.g. 10:00) to open its included frames in the Moving Object List window.

[The Moving Object List window]

- **Frames:** Double click any frame in the window to play back its video file with the Viewlog or Quick Search player.
- : Click the Next Page button for the next page.
- **Search:** Click the button to launch the search window.
- **Exit:** Click the button to close the window.

Note: Every time segment is a 30-minute interval, as shown in Record list in figure 2-9.

Detecting Unattended and Missing Objects

The Object Monitor program can detect any unattended and/or missing object within the camera view by highlighting its location.

Detecting Unattended Objects

To detect any unattended objects within the camera view, follow the steps below.

1. Click the Configure button, and then select Object Index/Monitor Setup to display the Camera Applied Object Index/Monitor window. (Refer to Object Index, figure 2-6.)
2. Check the desired cameras for the application. (The checked cameras will also be applied for the settings of Object Index)
3. Click the Configure button to display the Video Object Setup window. (Refer to Object Index, figure 2-7.)
4. Click the Object Monitor tab in the upper part to display the following window.

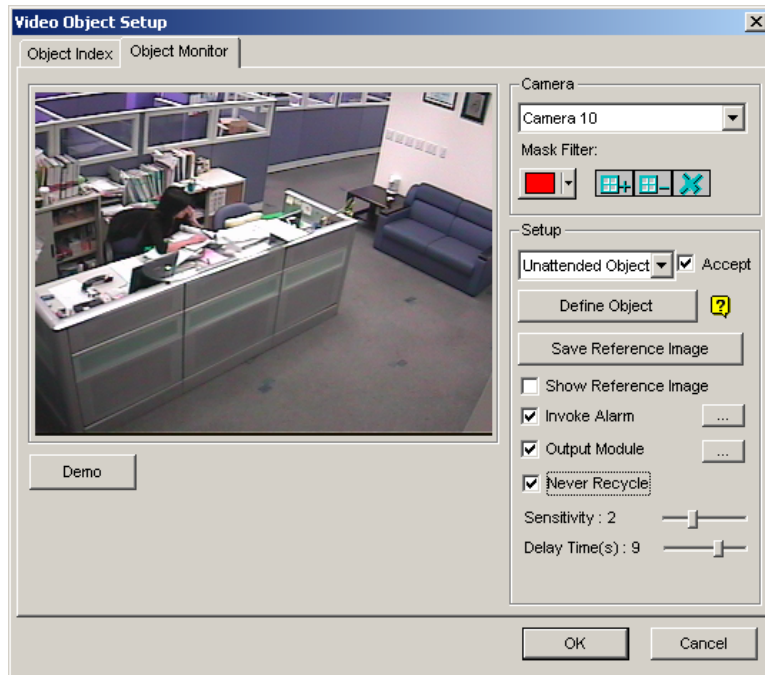


Figure 2-10 Object Monitor

5. In the Camera field, select a desired camera for setup.
6. Select Unattended Object from the drop-down list.
7. Click the check box of Accept to make other options available.
8. Use the Mask Filter function to ignore any motion detection within a certain area if necessary.
9. Click the Define Object button.
10. Use the mouse to outline the max and min detection regions separately on the screen. Every time when finishing an outlining, you will be prompted to enter the Maximum Size or Minimum Size. See the illustration below.

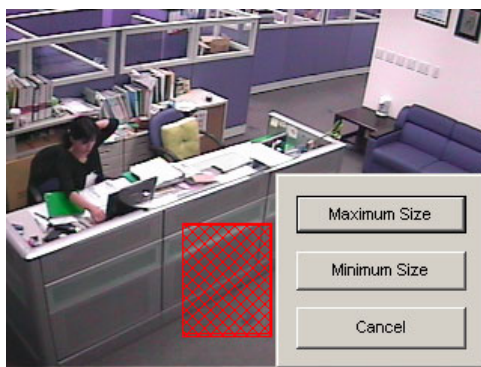


Figure 2-11 Defining the min. and max. detection size

11. Click the items of Show Max and Show Min. in the lower of the window one by one to check your defined sizes.
12. Click the Done button to finish the defining.

13. Click the Save Reference Image button to save the image as a reference view.
14. To set up other options, see *Other controls in the Video Object Setup window* on page 63.
15. Click the OK button to apply the settings and close the window.
16. Start camera monitoring for the application.

When an unattended object appears and remains stationary for 9 seconds, its location will be highlighted, and the event will be recorded in System Log for later retrieval.

Detecting Missing Objects

To detect any object missing from the camera view, follow the steps below.

1. Follow the step 1 to 4 in the above section of *Detecting Unattended Objects* to display the Video Object Setup window. Refer to figure 2-10.
2. In the Camera field, select a desired camera for configuration.
3. Select Missing Object from the drop-down list.
4. Click the Accept check box to make other options available.
5. Click the Define Object button.
6. Use the mouse to outline regions on the object(s) you want to detect. It is recommended to outline several regions within the object(s) to increase detection sensitivity. Notice that the outlined regions should not be larger than the object(s). Every time when finishing an outlining, you will be prompted to enter Add Region. See the illustration below.

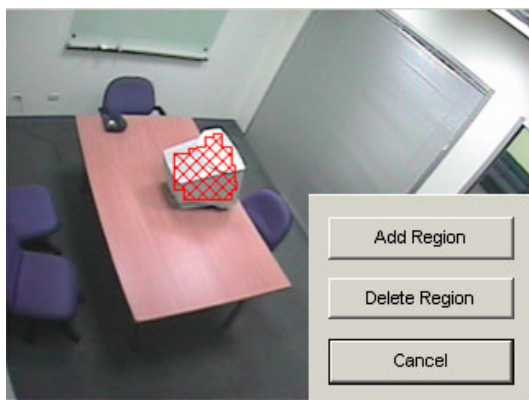


Figure 2-12 Outlining regions on objects

7. Click the Done button to finish the defining.
8. Click the Save Reference Image button to save the image as a reference view.
9. To set up other options, see *Other controls in the Video Object Setup window* below.
10. Click the OK button to apply the settings and close the window.
11. Start camera monitoring for the application.

When any object, which you have outlined the regions for, disappears from the camera view for 3 seconds, its location will be highlighted, and the event will be recorded in System Log for later retrieval.

Other controls in the Video Object Setup window:

- **Show Reference Image:** Click to view the saved reference image.
- **Invoke Alarm:** Enable the computer noise alarm when any unattended and/or missing objects are detected. Click the button next to the item to assign a .wav sound file.
- **Output Module:** Activate the output device when any unattended and/or missing object is detected. Click the button next to the item to assign an installed output module and a pin number.
- **Never Recycle:** When the item is checked, the events of unattended and missing objects won't be recycled by the system.
- **Sensitivity:** Use the slide bar to increase or decrease detection sensitivity if necessary.
- **Delay Time:** The option allows you to specify the duration of a missing or an unattended object to invoke the detection.
Unattended Object: The choices include 3, 6, 9, 12 seconds, with 9 seconds as default. For example, suppose you choose 12 seconds. When an unattended object appears in the camera view for 12 seconds, its location will be highlighted.
Missing Object: The choices include 3, 6, 9, 12 seconds, with 3 seconds as default. For example, suppose you choose 9 seconds. When a defined object disappears from the camera view for 9 seconds, its location will be highlighted.
- **Demo:** Click to see the demonstration from actual DVR applications.

Object Tracking and Zooming

Object Tracking provides you the real-time tracking and automatic magnification of a single moving object by the combination of one PTZ camera and one stationary camera. If only one PTZ camera is available, it can be applied for Object Zooming, letting you configure four critical views for real-time zooming. The Object Tracking and Object Zooming functions can be combined together by completing both settings.

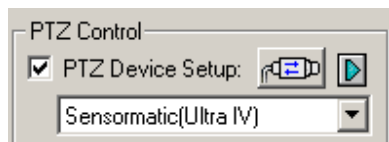
Object Tracking


For the tracking function, you need one PTZ camera applied for tracking and one stationary camera set for a fixed view. Currently, GV- system only supports Sensormatic PTZ. Install the PTZ camera and the stationary camera in the best possible closing position, so the focus of both could be similar.

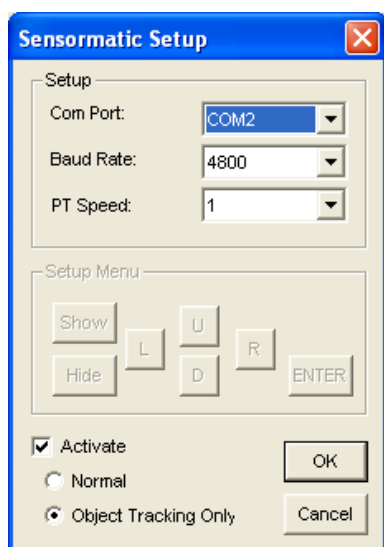
PTZ Setup

Before configuring the Object Tracking function, first configure the PTZ device.

1. Click the Configure button on the menu bar, and then select System Configure to display the System Configure window.
2. In the PTZ Control section, click PTZ Device Setup and select Sensormatic(Ultra IV).



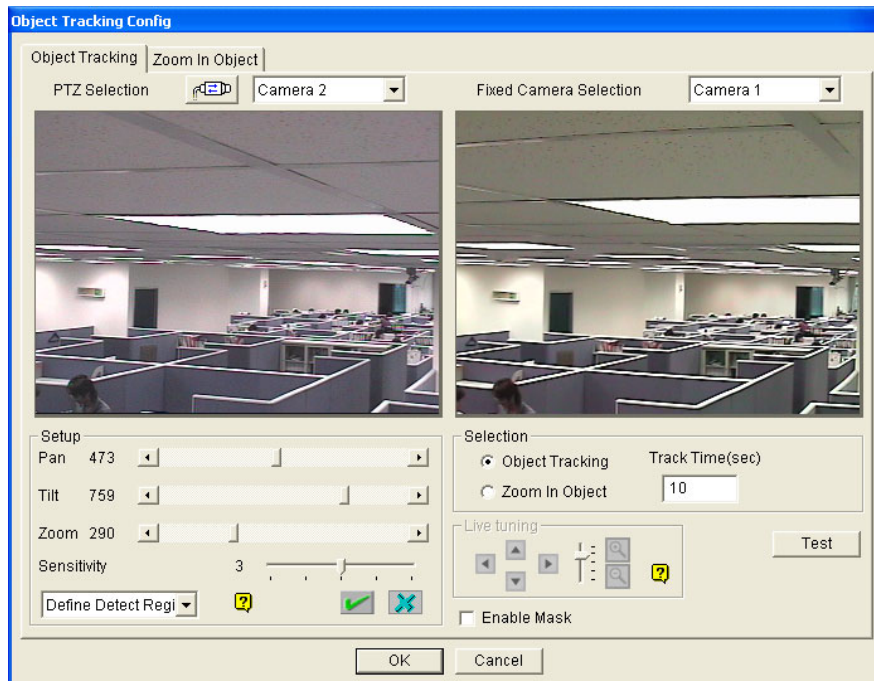
3. Click  to display the Sensormatic Setup window.




4. Enter Com Port, Baud Rate and PT Speed of the PTZ camera.
5. Check the Activate item and select Object Tracking Only.
6. Click OK to apply the settings.

Object Tracking Setup

After the above PTZ setup, go back to the menu bar. Click the Configure button, point to Object Tracking Application, and click Object Tracking Setup to display the following window. The left screen is the PTZ camera view and the right screen is the stationary camera view.



[PTZ Selection]

- : Click the button for the PTZ setup.
- **Camera:** Click the drop-down menu to choose the corresponding camera screen of the PTZ.

[Fixed Camera Selection] Click the drop-down menu to choose the corresponding camera screen of the stationary camera.

[Setup]


- **Pan, Tilt and Zoom:** Use the slide bars to adjust the PTZ camera view.
- **Sensitivity:** Use the slide bar to adjust the detection sensitivity.
- **The drop-down menu:** Click the drop-down menu to define detection region and object size.

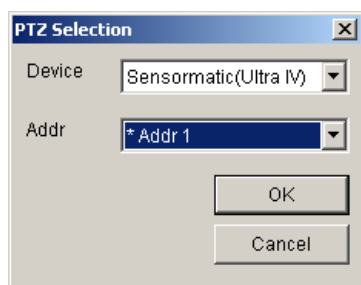
[Selection]


- **Object Tracking:** Click the item to specify the tracking time.
- **Zoom in Object:** Click the item to specify the idle time.

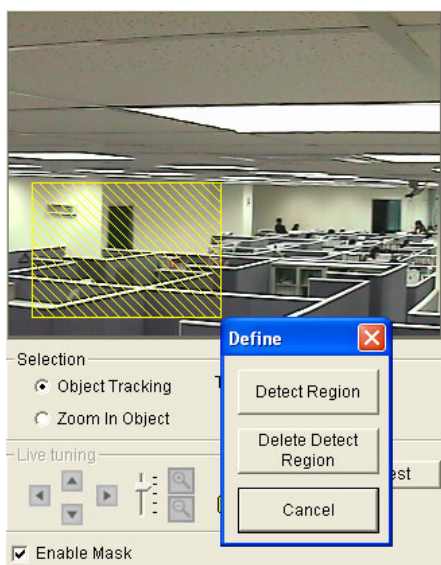
[Live Tuning] Adjust directions and the desired level of zooming.

[Enable Mask] Click the item to display the mask on the defined detection region.

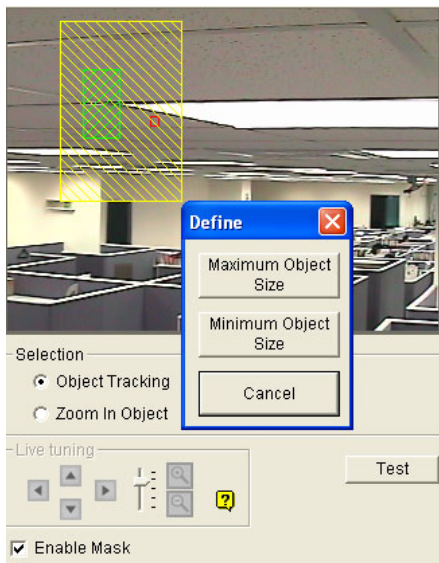
1. Click  to display the following window, select the PTZ brand and the hardware address, and click OK to apply the settings.



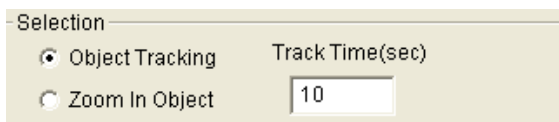
2. Choose the corresponding camera screens of the PTZ and stationary camera. For this example, the images of the PTZ camera show in the camera 2 screen while the images of the stationary camera display in the camera 1 screen.
3. Adjust the screen view of the PTZ camera with the slide bars of Pan, Tilt and Zoom. Let the PTZ camera view similar to the stationary camera view.
4. Click  the Save button to save the both views as image references.
5. Adjust Sensitivity or keep it as default.
6. Select Define Detect Region from the drop-down menu. Use the mouse to outline a detection region in the right screen; you will be prompted to enter Detect Region. See the illustration below.



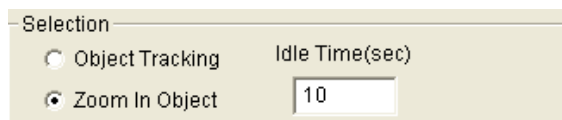
7. Select Define Object Size from the drop-down menu. Use the mouse to outline the max and min object sizes for tracking separately. Every time when finishing the outlining, you will be prompted to enter Maximum Object Size or Minimum Object Size. See the illustration below.



8. Click the Object Tracking item and specify Track Time(sec). Track Time(sec) indicates the tracking duration in seconds.



9. When the PTZ is tracking, you can still control it to zoom in a desired area. Click the Zoom in Object item and specify Idle Time(sec). Idle Time (sec) indicates the zooming duration in seconds. If a target appears after the specified idle time, the PTZ will start tracking. If not, the PTZ will remain on the zoomed place.



10. Click the Test button to check your settings. There are two major settings you have to observe in the testing. 1) Tracking: Observe if the target showing in the defined detection region is being tracked with a highlighted mask, and magnified automatically in the left screen. If not, increase the sensitivity degree. 2) Zooming: Use the mouse to outline an object in the right screen, and observe if it is magnified in the left screen clearly. If not, use the Live Tuning buttons to adjust directions and the desired level of zooming.
11. Click OK in the lower of the window to save your settings of the tracking time, the idle time for zooming in objects and the testing results.

Starting Object Tracking

After the above settings, you can start the object tracking application. Click the Configure button, point to Object Tracking Application, and then click Object Tracking Start to start the function.

Zooming in Objects

While the PTZ is being applied for tracking, you can still control it to zoom in any desired area by launching the Zoom in Dialog window.

1. Click the Configure button, point to Object Tracking Application, and then click Object Tracking View to launch the Zoom in Dialog window, overlapping in the main screen, as shown below.

Note: The Zoom In Dialog window is for the stationary camera view and the main screen is for the PTZ view.

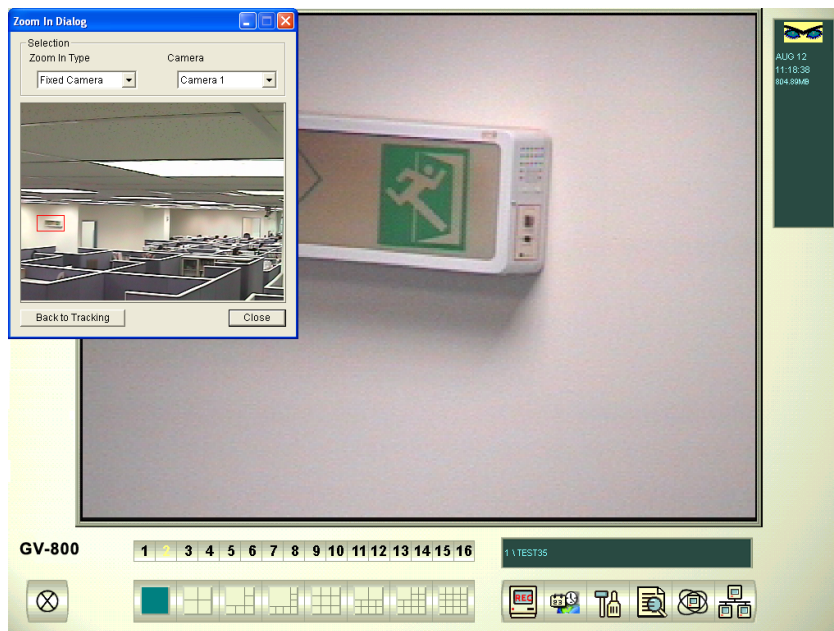


Figure 2-13 The Zoom in Dialog window

2. In the Zoom In Type field, select Fixed Camera.
3. In the Camera field, select the assigned camera screen for the stationary camera.
4. Use the mouse to outline a desired area in the Dialog window. It will be magnified in the main screen.

When the specified idle time of zooming is up, PTZ will go back for tracking. If you want to stop the zooming function before the specified idle time, click the Back to Tracking button in the lower of the Dialog window. Then PTZ will go back tracking instantly.

Object Zooming

If only one PTZ camera is available, without the stationary camera, you can simply apply it for the object zooming function. The feature allows you to configure up to 4 critical views for instant monitoring and zooming.

PTZ Setup

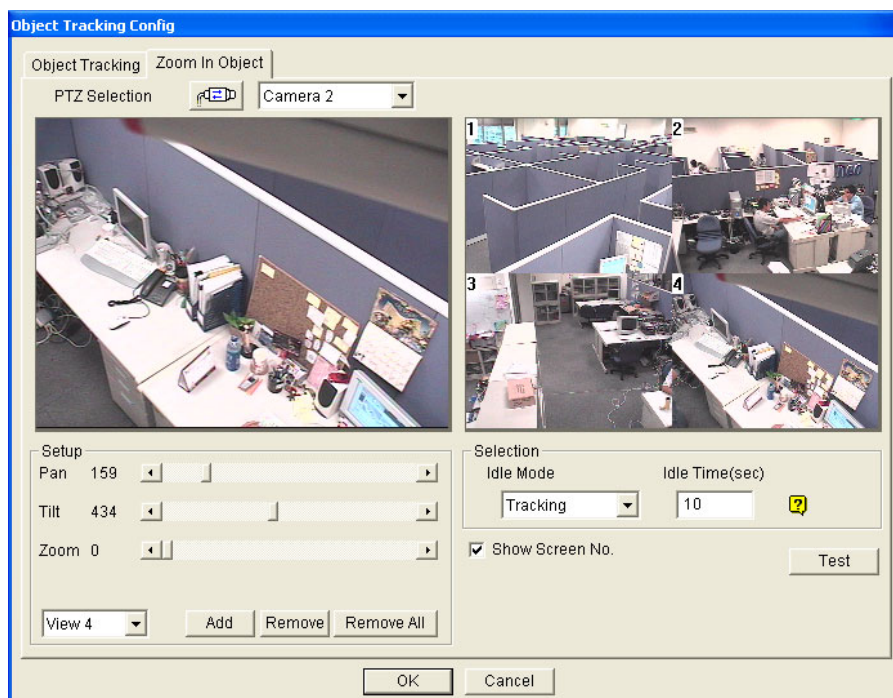
Before configuring the Object Tracking function, first configure the PTZ device. Refer to the PTZ Setup of Object Tracking.


Object Zooming Setup

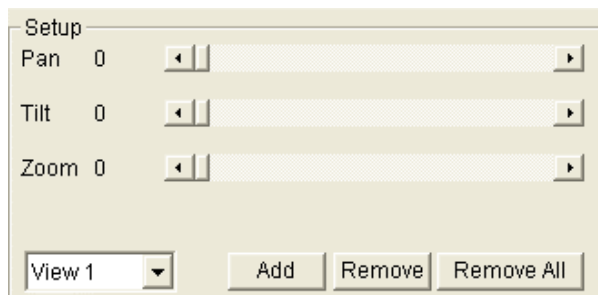
After the above PTZ setup, go back to the menu bar.

1. Click the Configure button, point to Object Tracking Application, select Object Tracking Setup to display the Object Tracking Config window, and then click the Zoom in Object tab in the upper part to display the following window.

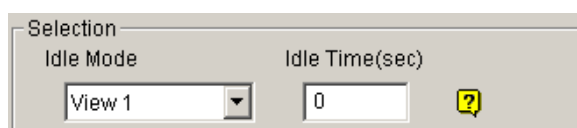
Note: No images will show in the right screen until you complete the settings below.



2. Click  for the PTZ setup. Refer to step 1 in the section of Object Tracking Setup.
3. Choose the camera screen of the PTZ. For this example, the images of the PTZ camera show in the camera 2 screen.
4. Use the slide bars of Pan, Tilt and Zoom to set up the View 1 as shown below. Then click the Add button to apply the settings. The View 1 will show in the upper-left corner of the right screen.



5. Click the drop-down menu to set up View 2,3, and 4, one at a time. Refer to step 4 for the View 1.
6. Specify Idle Time(sec), indicating the zooming duration in seconds.

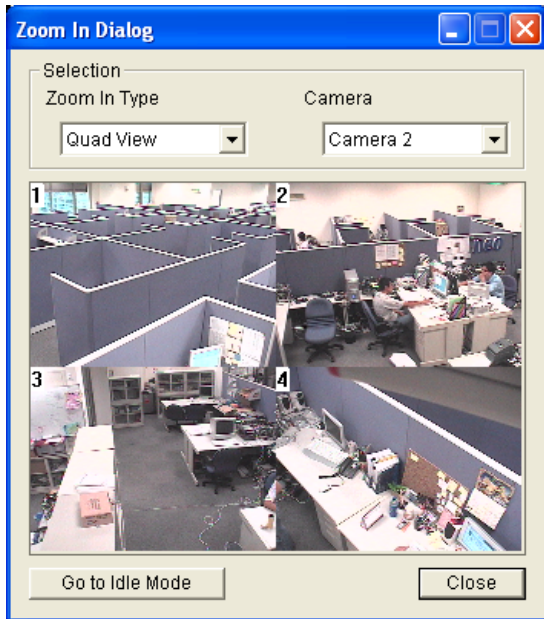


7. Click the drop-down menu of the Idle Mode item. The seven options included inside are: None, View 1, View 2, View 3, View 4, Tracking and Refresh View.
 - **None:** After zooming, the PTZ camera will remain on the same view until the next zooming command.
 - **Tracking:** After the idle time, the PTZ camera will start tracking if it is also being applied for the tracking function.
 - **View 1,2,3,4:** After the idle time, the PTZ camera will go back to the preset View 1,2,3, or 4.
 - **Refresh View:** After the idle time, the 4 views will be refreshed.
8. Click Test to check your settings. Use the mouse to outline a desired area in one of the four views. The area will be magnified in the left screen.
9. Click OK to apply the displayed selections and close the window.

Starting Object Zooming

After the above settings, you can start the object zooming application.

1. Click the Configure button, point to Object Tracking Application, and click Object Tracking View to open the Zoom in Dialog window, overlapping in the main screen. Refer to figure 2-13.
2. In the Zoom In Type field, select Quad View.
3. In the Camera field, select the assigned PTZ camera screen. Then the four views you set up before will show in the Dialog window as illustrated below.



4. Use the mouse to outline a desired area in one of the four views. The area will be magnified in the main screen.
5. When you click the Go to Idle Mode button in the lower part, your setting in step 7 of Object Zooming Setup will be applied. For example, suppose you choose View 3. When you click the button, the PTZ camera will go to the preset View 3.

Displaying the Fast Key Window

This option lets you view the fast key windows of Main System and PTZ Control, giving you an instant reference. Click the Configure button, point to Tool Kit, and then select Fast Key (K) to display the fast key table of Main System. Click Close to display the table of PTZ Control.

Fast Key Reference

Esc	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11	F12	Print	Scroll	Pause					
~	1	2	3	4	5	6	7	8	9	0	-	=	←Back	Insert	Home	Page Up	Num	/	*	-
Tab	Q	W	E	R	T	Y	U	I	O	P	[]		Delete	End	Page Down	7	8	9	+
Caps	A	S	D	F	G	H	J	K	L	;	"		Enter				4	5	6	
Shift	Z	X	C	V	B	N	M	<	>	?		Shift	\				1	2	3	Enter
Ctrl		Alt	Space Bar								Alt		Ctrl	←	↓	→	0	.		

Main System

Key	Function
Esc	Return to the default screen
Num 1-9, 0 and F1-F6 or	Switch the camera channel
F7	Start/Stop monitoring
F8	Start/Stop monitoring schedules
F9	Open the System Configure Setup dialog
F10	Open ViewLog
F11	Start/Stop the camera scan function
F12	Enable/Disable all network connections
M, m	Start/Stop modem connection
T, t	Start/Stop TCP/IP connection
W, w	Start/Stop WebCam connection
I, I	Start/Stop IP Multicast connection
V, v	Start/Stop connection to Center V2
S, s	Start/Stop TwinServer
G, g	Start/Stop connection to VSM
F, f	Start/Stop full screen view
L, l	Login/Change the user
O, o	Logout from the current user
Q, q	Switch the screen division
Ctrl+Q,W,E,A,S,D,Z,X	Switch to a specific screen division
Z, z	Minimize the Main System window
X, x	Exit the Main System
K, k	Display the Fast Key Reference table
Page Up	Switch to the previous screen
Page Down	Switch to the next screen
Ctrl+Num 1-9, 0 and F1~F6	Take a snapshot
+, -	Zoom in/out the single camera view