

Dial Up Video Server

Model: DGRT400

Installation / User Manual



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1. GENERAL INFORMATION

1.1 Introduction

Thank you for purchasing Digimerge product. The *Dialup Video Server (DVS)* will enable you to monitor sensitive locations and remote areas over standard phone lines. A key feature of *DVS* is the ability to not only visually survey a sensitive location, but to also hear what is occurring at the scene as well as speak to anyone at the monitored location. A standalone *DVS* unit installed on-site with video and audio feed from up to four cameras and connected to a phone line lets you see and hear exactly what is happening and verbally interact with the individuals at the sight.

No special hardware is required at the operator's PC, just a modem. Images are transmitted by the remote *DVS* unit will be decoded by a special client software and displayed on the screen or stored onto a hard disk for later examination. The operator, who can be located several thousand miles away, is in complete control of the *DVS* and any cameras attached to it. This allows for incredible expandability and flexibility of the security and surveillance network.

Important features of *DVS*-based surveillance system include:

- *DVS* is low cost, maintenance-free standalone unit.
- High quality Wavelet-compressed video from 4 sources and one channel full duplex audio can be transmitted simultaneously between *DVS* and supervisor's PC through an ordinary phone line (POT line) using internal PSTN modem at a bit rate up to 56Kbps.
- Optional connection types supported: External PSTN modem, ISDN modem, cellular services (GSM, CDMA modem), dedicated line modems and direct cable connections.
- *DVS* unit and PC client software are specifically designed for extremely low speed connections, giving the user surveillance capability approaching real-time. Maximum achievable video update rate for one camera source with a 28.8 kbps modem connection at a resolution of 170x120 is 5 frames per second.
- Snapshots – high quality/resolution images can be captured into internal *DVS* memory at operator's request, while monitoring an area with low quality/resolution but high frame rate.
- Audio user interface provides full control in audio streaming mode.
- Non-volatile internal video memory plus *CompactFlash* (removable) are used as video storage.
- Callback mode: *DVS* unit can be instructed to call a PC back and notify you about suspicious activity in the monitored area or alarm events on sensor's inputs, and show high quality captured snapshots sequence (user defined) on the screen which can be automatically saved as a JPG or AVI file without any user interaction.
- Motion Detection is provided with adjustable sensitivity levels and camera participation in a motion monitoring cycle for every camera.
- Password protection is available to prevent unauthorized access.
- Internal timer for pictures time stamp.

- Camera Pan/Tilt/Zoom (PTZ) control for certain camera models: SONY EVI-G20, SONY EVI-D30, KALATEL, PHILIPS TC-700 and DCP-1010 (Pelco-D) etc.
- Can be optionally connected to Windows-based WWW server to make JPEG images available through the web browser.

DVS will become an important part of your personal or corporate security video and audio surveillance system.

1.2 Technical specification

- 4 BNC composite video inputs (1 Vp-p/75 Ohm)
- One full duplex audio channel: Microphone/Linear and Speaker jack's connectors provided for external electret-foil microphone and speaker.
- 2 RS-232 ports (male). One RS-232 is for external modem and another for PTZ function support.
- 8 inputs (TTL level) for external alarm sensors.
- 4 relay outputs (0 - 400V AC/DC, 120 ma) that can operate on alarm events: sensors toggling, motion detection, video loss.
- Onboard memory: 512 KB for compressed video buffering (non-volatile). Approximate storage capacity: 50 snapshots of good quality at 340x240 resolution.
- CompactFlash socket – memory card can be used as an optional expanded removable storage.
- Video Input Type: NTSC, PAL, B/W 60 Hz, B/W 50 Hz.
- Video Resolution: 680x480, 340x240, 170x120.
- Video Compression: Wavelet.
- Audio Compression: G723.1 5.3 Kbps.
- Dimensions: 310mm x 140 mm x 56 mm. (12.20" x 5.51" x 2.20")
- Power consumption: +12V/0.5A (requires external power supply 1.2A recommended).
- Operating temperature: 0°C ~ +50°C (system is designed for in-door use)

1.3 System requirements

The following are minimum system requirements for an operator's PC sufficient to run *Digimerge DVS* client software:

- Desktop or notebook PC with Intel Pentium™ 90 MHz or compatible CPU. Pentium II™ MMX™ 300 or better CPU is recommended for optimal system performance.
- 32 MB of system RAM (64MB for Windows NT). More memory is recommended for improved overall system performance.
- Microsoft® Windows® 95, Windows® 98, Windows NT™ 4.0, Windows® 2000, Windows® XP.
- Any Windows-compatible modem (internal or external). 57.6 Kbps modem is recommended.

- Display adapter configured for 16-bit or better color mode (32768 or more colors) at 800x600 or higher resolution.
- 5 MB of free space on system hard disk are required for standard software installation. Additional free space is required to store individual still images and image sequences.

The rest of this document contains important installation and operating instructions for *DVS* hardware (remote unit) and the client software on the operator's PC. Be sure to read all applicable sections carefully before proceeding.

2. REMOTE UNIT INSTALLATION

This chapter describes installation procedure of the remote video surveillance unit that is the essential part of the *DVS* package. The remote *DVS* unit is a standalone device that does not need any direct connection to a PC on remote monitoring site. The unit's exterior is shown in Figure 1.

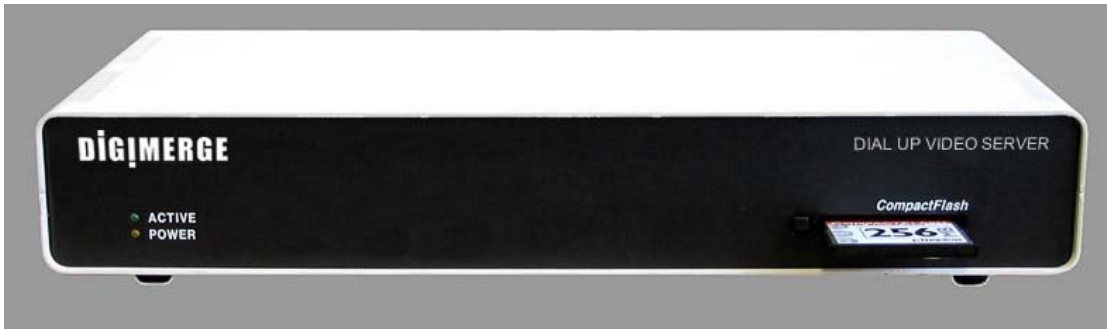


Figure 1 *DVS* unit front view

The remote unit should be placed on the site that requires monitoring, anywhere within the reach of a telephone line. It is recommended to place the *DVS* unit as near to the video cameras as possible to avoid image quality degradation or use of expensive high-grade video cables. Maximum video cable length is 100 meters and may vary depending on cable quality.

- First, you should check *DVS* unit CONFIGURATION in order to make appropriate DIP-switch **SW** settings on the back panel of unit (see Figure 2). All possible operation modes are tabulated:

Operation Mode	SW position		Reference for details
	Internal modem	Aux mode	
Internal modem (standard)	ON	OFF	Section 6.1
Direct cable connection (COM-port)	OFF	ON	Section 6.2
Custom configuration (external modem)	OFF	OFF	Section 6.3
Auxiliary (reserved)	ON	ON	-

- Provided that you will use device with internal modem configuration, connect the telephone line (RJ11 plug) to the **Line** connector on your *DVS* unit (see Figure 2). If the same line is also to be used for as a regular telephone line or to connect a fax machine, then use the

Phone connector on the *DVS*. In that case, you may need to adjust (increase) the number of rings after which the *DVS* will respond to an incoming call in order to avoid conflicts with normal phone and/or fax usage and the associated inconveniences. See section 5.2.1 and Figure 7 on page 23 for more information on *DVS* configuration options.

Note: The condition of the telephone line could be a reason for low modem connection rate and poor image transmission performance. We recommend you to avoid connecting *DVS* through PBX boxes because the reduced voltage may interfere with connection reliability. We also suggest that you use a direct telephone line connection to hook up the *DVS* unit. Finally, since the *DVS* system is designed for in-door use, it should not be installed in places with high humidity or extreme temperature variation.

- Next, connect one or more video cameras to any of the 4 BNC connectors on the back panel of the *DVS* box. *DVS* is capable of camera auto-detection so you are free to use any of the unit's video inputs in any order. You may also safely mix color and black & white cameras, as long as they all conform to the same electrical and video standard (NTSC or PAL). However, mixture not recommended because of possible video synchronization problems. Then power on the cameras.
- Finally, after all other connections are completed, connect the power supply cord (DC 12V 1.2A) to the corresponding socket on the *DVS* unit.

Immediately after the power is supplied to the *DVS* unit, the board starts the internal self-test. Test progress is always shown on the front LEDs. There are 2 LEDs: **POWER (yellow)** and **ACTIVE (green)**. The LEDs will behave in the manner as described below during power up sequence:

Test (power-up) behavior of *DVS* unit.

1. **ACTIVE (green)** and **POWER (yellow)** turn on together, then **ACTIVE (green)** turns off.
2. **POWER (yellow)** during the whole test will indicate test progress step by step by turning off for a short time at the beginning of each step 13 times.
3. When the test successfully passes, **POWER (yellow)** remains lit and the **ACTIVE (green)** starts blinking 2 times per second (status is disconnected).
4. When the *DVS* detects a connection, the **ACTIVE (green)** light will blink at double the rate it blinks in the disconnected state.

If these steps do not occur with your system, disconnect and reconnect the power and try again. The detailed layout of *DVS* connectors are shown in Figure 2. It is very simple and well inscribed.



Figure 2 *DVS* unit rear view

If all connections are properly made and the *DVS* start up process is completed successfully, proceed to the following chapters to learn how to install and use Digimerge *DVS* client software from your PC.

3. SOFTWARE INSTALLATION

The Digimerge *DVS* client software can be easily installed on any desktop or notebook PC running Windows 95, Windows 98, Windows Me, Windows NT 4.0, Windows 2000 or Windows XP operating systems that is equipped with an internal or external modem. The installation is done by simply double-clicking on the dm51xx.exe self-installable file (xx here is the version number). The install script will then proceed and you should follow the prompts as indicated.

As a result, the Digimerge *DVS* application program (DM51App.exe) and the online help file will be installed automatically on the PC. However, before you proceed with launching the Digimerge *DVS* software for the very first time, make sure that the modem drivers and other software are correctly installed and functional.

4. UNINSTALLATION

You can remove the Digimerge *DVS* client software from your computer at any time, if desired. The complete product uninstallation can be accomplished by doing one of the following actions:


1. Start -> Programs->Digimerge -> Dialup Video Server -> Uninstall
2. Re-execute the installation program dm51xx.exe (xx here is the software version number)
3. Launch the Windows Control Panel and then select the Add/Remove Programs icon. Locate the Digimerge *DVS* line in the list of the installed software and double-click on it.

After receiving a confirmation, the uninstaller will delete the Digimerge *DVS* application and help files; destroy the corresponding software folder and remove all the registry keys, which were created by the Digimerge *DVS* client software.

Note: The uninstaller will not delete any data files (still images in .JPG format or image sequences in .AVI format) created by Digimerge *DVS* software. Also, the uninstallation of Digimerge *DVS* software will not affect modem drivers or its settings in any way.

5. USING THE CLIENT SOFTWARE

This chapter describes the Digimerge *DVS* client software, including all control elements related to video images, cameras, alarm sensors and output relays. After successful completion of software installation the main Digimerge *DVS* client program can be launched either from the

Digimerge Dialup Video Server program group or by clicking on the  *DVS* icon on the Windows Desktop.

The following section will outline usage of the program and lead you through a process of viewing your first images from a remotely installed *DVS* unit. Sections 5.2 through 5.10 provide advanced users information on commands, parameters and operation modes associated with *DVS* software.

Getting started with Digimerge DVS client program

After clicking on the Digimerge icon to launch the *DVS* client program, the main screen, in its initial state will be shown below (Figure 3). The window consists of three main elements:

- **Image windows**
- **Main control panel**
- **Status bar**

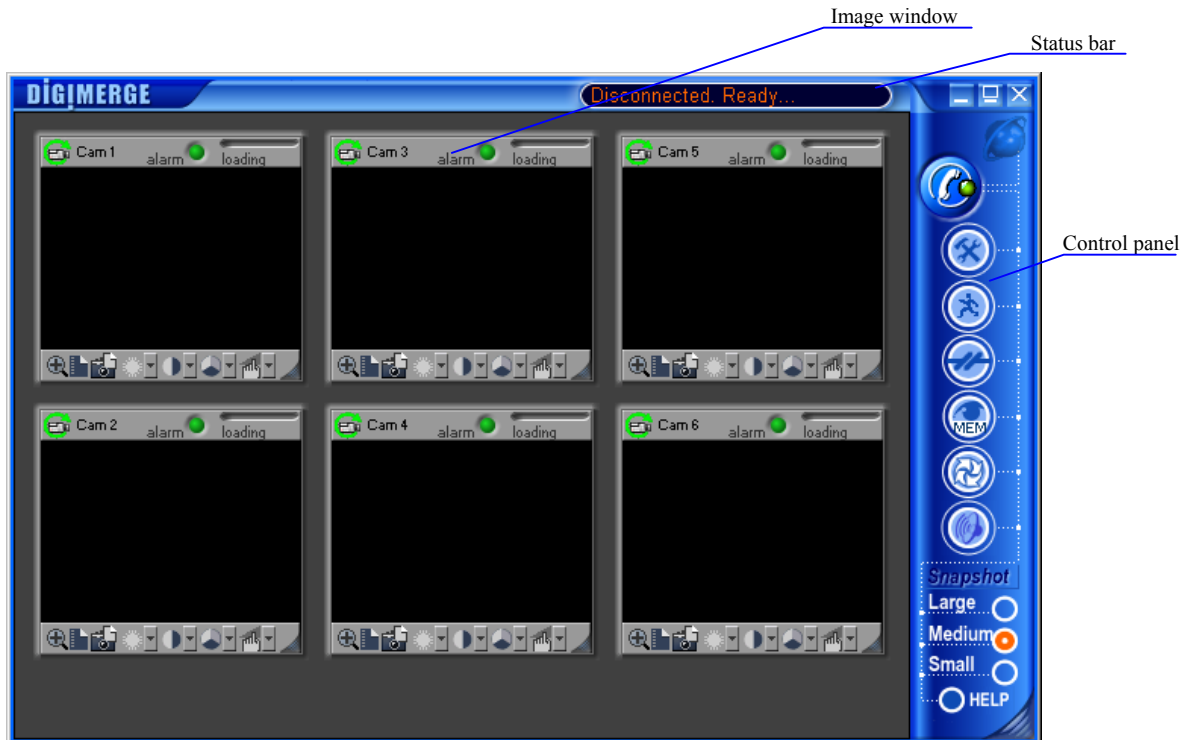


Figure 3 DVS client program (initial state)

Main control panel at the right is comprised of several buttons that allow you to issue commands to the remote *DVS* unit and view or modify its configuration parameters (see section 5.1.1 for detailed description of each button). The resizable **Image windows** are intended to show video images acquired from the remote *DVS* unit. The **Status bar** is provided to show the current operational status.

5.1.1 Main control panel

The Digimerge *DVS* main control panel provides an easy way to perform any operation with a remote unit. Each of the buttons are described in detail below.



Displays the **Establishing connection** dialog and lets you connect to any of the available remote *DVS* units. Use the same button to break the connection.



When connected, the control button changes.



Properties button lets you view and modify configuration information stored in the remote unit that you are currently connected to (refer section 5.2 for details).



Motion detection button displays motion detection control window (refer section 5.3 for details).



Sensor and relay button displays relays/sensors control window (refer section 5.4 for details).



Image memory button activates the *DVS* internal image memory control window that shows a preview of images stored on board (refer section 5.5 for details).



PTZ control button activates the PTZ control window (refer section 5.6 for details).



Audio control button activates the control window with all available audio functions (refer section 5.7 for details).



CompactFlash memory button activates the *DVS* CompactFlash window that maintains all operations with files (refer section 5.8 for details).

Snapshot size buttons: **Large** (680x480), **Medium** (340x240), **Small** (170x120) affect the resolution of images, captured into the *DVS* internal image memory by mouse clicking on the image window.

5.1.2 Getting initial images from the DVS

Before you can get any images from the *DVS* unit, you need to establish a connection from your



PC. Press the **(Connect to remote unit)** button on the main control panel. This will bring up the **Establishing connection** dialog as shown in Figure 4. Use the **Phone number** field to enter the telephone number assigned to the line connected on the remote *DVS* unit you are trying to access. If the *DVS* unit is located in another city or country, be sure to include the long distance or international dialing codes as well as the outside line access code, if any. The *DVS* program will simplify access if you “check” the **Using Country and Area Codes** box below.

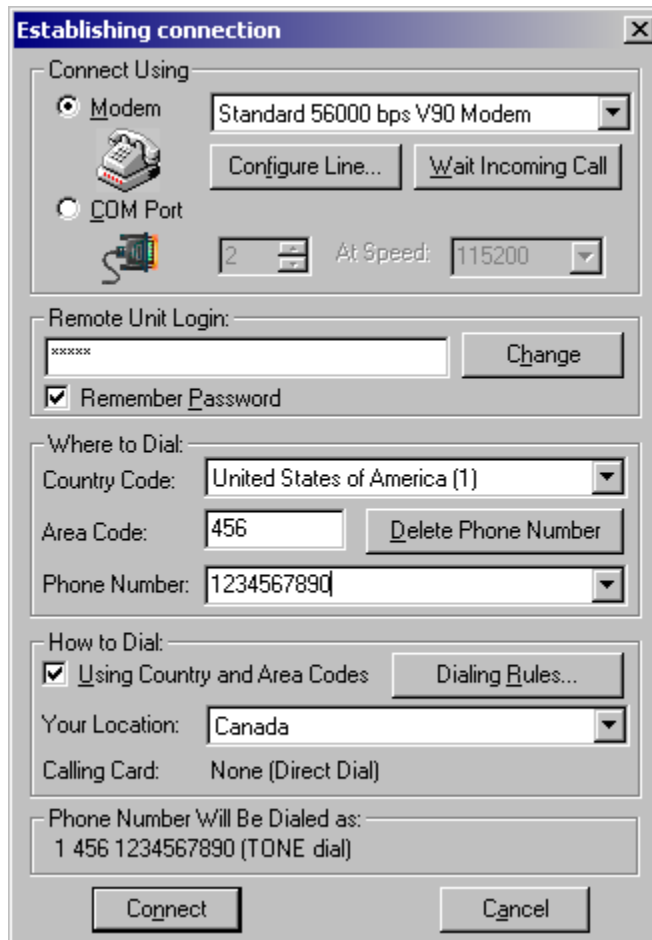


Figure 4 Dialing up a remote unit



Note that, as you enter any telephone number in the dialog, it will be memorized automatically, so the next time you will not have to retype it again. Simply pull the list down by the small arrow button on the right to choose from the 10 most recently used numbers. You can remove unwanted telephone numbers from the list by pressing the **Delete Phone Number** button right above it.

The password is required in order to prevent unauthorized access to the remote *DVS* unit. Enter the correct password in the **Remote Unit Login** field. Note that for security reasons the entered password will be masked by a number of asterisks (*).

Note: The default password provided from Digimerge is set to **qwert (in lower case)**. It is highly recommended to change it as soon as possible in order to prevent unauthorized use of the *DVS* unit. See section 5.10.2 for details on how to change the password. After the password is changed, keep a record in a safe place so you don't forget it.

There are a few other selections and buttons available in the dialog. These are not essential to remote connection. A detailed description of their use is found in section 5.10.1. Simply press **Connect** after entering and verifying the number.

Now your modem will begin dialing the given telephone number and attempt to establish a connection to the *DVS* unit on the other end of the line. It may take some time, perhaps up to a minute, depending on the type of line and telephone number, before a reliable connection is established. It is possible that you will have to try dialing several times if the line is busy or the

connection is slow or unreliable. To redial, press the  (**Disconnect**) and then  (**Connect to remote unit**) buttons on the main control panel again.



Selecting the **COM Port** button in the **Establishing Connection** dialog (shown in Figure 4) performs a direct connection through the null-modem cable. The correct port number and desired speed settings must be established. All modem controls are unavailable in this mode, and thus disabled. To start the connection process you need to press **Connect** in the same manner as in modem mode. Additional information on this topic can be found in section 6.2 on page 50. When using a direct cable connection, be sure that configuration switches **SW** on the back panel of *DVS* are set as shown in Figure 34 on page 51 before the last power up on the *DVS* unit.


During the connection process, its current state will be displayed in the **Status bar** of the main window. Connection failure may occur if you have the wrong password, busy line, etc. This will help you monitor the programs current state.

DVS unit will automatically begin transmission of the first images using the last stored or the factory default settings. Loading progress bars at the top right corner of each image window will show a green progress indicator that will advance as the image data is being received. For use of camera auto detection, access the **Image Properties** dialog as described in section 5.2.1. The process of loading images will normally take a few seconds for fast connections, medium image resolution and quality settings. Finally, images from all of the connected cameras to the remote *DVS* unit (up to four) should appear in the program window as shown in Figure 5.



Figure 5 Example image received from a *DVS* unit

You can easily change image resolution by pressing  or  buttons in **Image Window**. The program window displays information about connection speed in bits per second (bps) in the window **Status bar**.

You can also press the  (**Properties**) button to view or change the configuration of the remote unit that you are connected to. The *DVS* configuration parameters are described in detail, in section 5.2. Finally, you can terminate the connection by pressing the

 (**Disconnect**) button.

5.1.3 Image window description

Figure 6 shows all controls available from the image window.

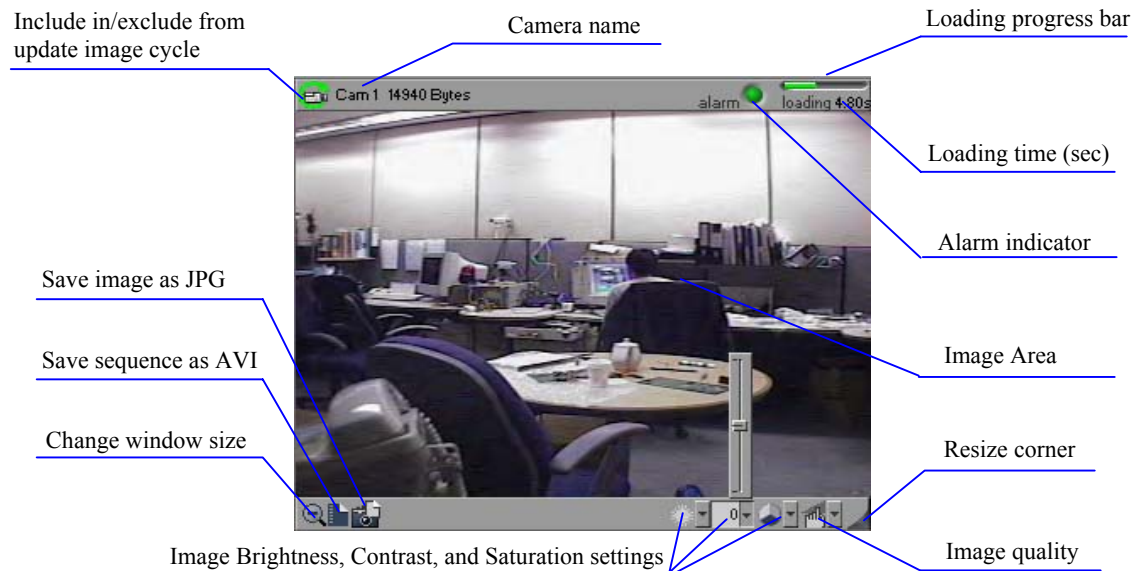



Figure 6 Image window interface

Images from all cameras are updated in *cyclic mode* by default. You are also able to assign one camera for faster update, by mouse clicking on the image window caption (*single mode*). Image window frame will be highlighted in *single mode*. You may return to *cyclic mode* by mouse clicking on the Image window caption, or in the main window area or by pressing Esc on the keyboard.

Use **Include in/exclude from update image cycle** button to control renew image cycle in *cyclic mode*. When this button is pressed, it becomes gray . This image window will be excluded from the renew image cycle.

You are able to adjust image quality settings as you like, using **Image quality slider**. Minimal quality settings allow you to receive video at a frame rate up to 6 frames per second at 31200 bps modem connection from a single camera.

To change the image window size, you should use **Change window size** button, and resize the image window by dragging the **resize corner** of the window. When you press **Change window size** button, all image windows are rearranged in the main window to fit the screen using small (170x120) or medium (340x240) video resolutions, without stretching. Thus, all size changes that you have made by dragging the right bottom corner of the image window and main window will be discarded. To avoid this, you should uncheck **Enable image windows auto resize**

check box in **Image properties** dialog (section 5.2.1 on page 22), then manually align all windows. **Image windows** can be moved within the application window, as you like.

Adjust image settings: **Brightness**, **Contrast**, and **Saturation** using pop up sliders. The default values (middle values) work fine with most of color video cameras under regular day lighting conditions. If you intend to download images taken at twilight or at night or in case of other special circumstances, you may need to find a more suitable combination of these parameters.

To take snapshots at a high quality/resolution you need to click on a specific **Image window**, and the picture will be captured to the internal *DVS* memory. Refer to section 5.5 on page 32 for detailed description of image memory management.

Use the **Save image as JPG** and **Save sequence as AVI** buttons to store image window contents in files. The downloaded images will be saved in *JPEG* or *AVI* format into the folder specified by the corresponding parameter in the *DVS Image Properties* dialog shown in Figure 7. The file name is chosen automatically, based on the date and time that the image was acquired by the *DVS* unit.

5.2 Configuring the remote DVS unit



The *DVS* configuration settings can be accessed by pressing the **(Properties)** button, after the connection is established, allowing you to access the property pages. Each *DVS* unit has its own individual configuration options, such as callback telephone number, time, etc. These parameters should be viewed or modified independently if more than one *DVS* unit is used. Only a small portion of configuration information is actually stored on the client PC and can be shared between many *DVS* units. The configuration options are shown and described in detail in the following subsections.

5.2.1 Modifying basic and image parameters

The first page of the *DVS* configuration dialog is dedicated to the **Image properties**. It is shown in Figure 7.

The field **Auto save JPEG & AVI file to...** allows you to specify the target path (drive letter and folder name) intended for storing the *JPEG* and *AVI* images downloaded from one or more *DVS* units. You may specify the location of the local or networked hard drive or removable storage. Use the **Browse** button to select the path interactively. This parameter is stored automatically.

After *DVS* has been connected, the image windows are activated based on the selection made in the **Cameras** menu and all transmitted images have the exact date and time (group **Remote unit time**). Check this by pressing **Check current time** button and synchronize it with your computer clock by clicking the **Set current time** button. You can select a specific camera in the **Cameras** menu that you want to monitor. By checking the **Cameras**, you activate an auto-search of the selected video input.

After the *DVS* has been connected, the image windows get activated on the basis of the selection made in **Cameras** field, given on the left of the tab. Here you may select the camera that you want to monitor. By checking the cameras check box, you can activate the *Auto Search* of the selected video input every time.

Connection properties group allows you to specify the number of rings the *DVS* unit will allow before “picking up the phone” when receiving a call from PC. The default setting instructs the *DVS* to answer after **2** rings. If you have a dedicated telephone line for the *DVS*, it may be a good idea to decrease this parameter down to **1** to facilitate faster access time. On the other hand, if the same line is being shared between the *DVS* and a voice telephone, you may want to increase this parameter up to **9** to let somebody answer the incoming voice call before the *DVS* ties up the line.

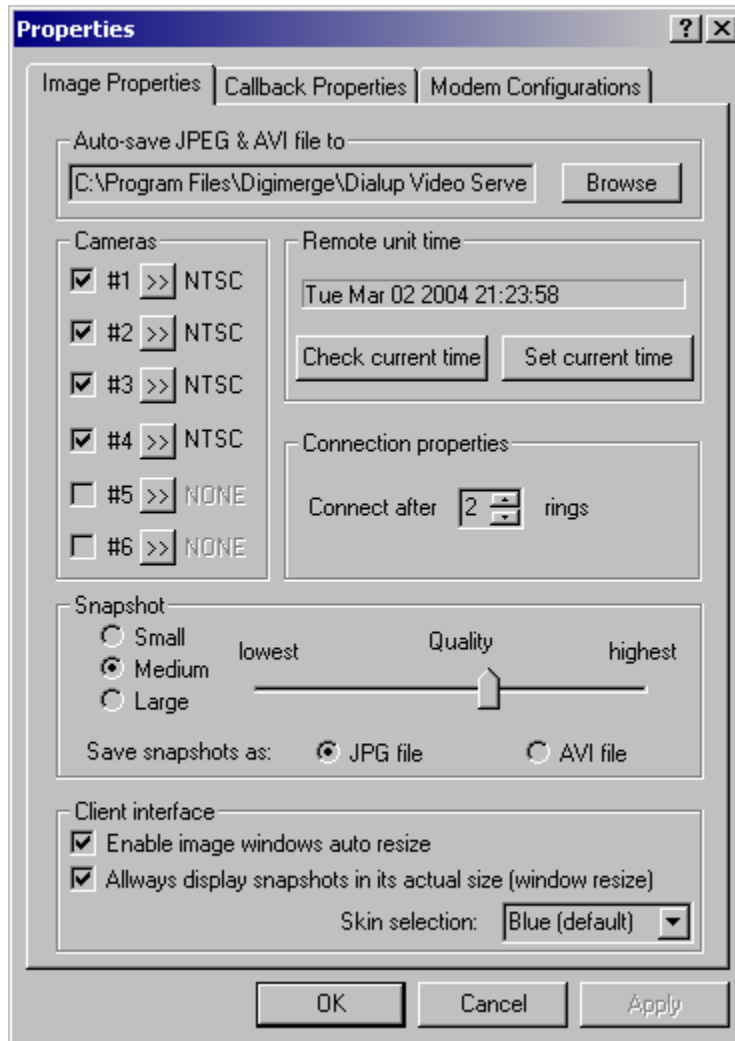


Figure 7 Selecting image path, snapshot quality and other parameters

The slider for the **Snapshot quality** allows you to adjust the quality of images captured to internal *DVS* memory by clicking on the image window. The same settings will be used for alarm snapshots made in callback mode and CompactFlash recording. This quality factor will not only affect the image quality appearance, but will also influence the image transmission time and the quantity of snapshots that can be saved in internal *DVS* memory (this is especially important for callback mode). For faster downloading, it is not recommended to choose high

quality settings. The image size increases exponentially with higher quality, and can greatly lengthen transmission.

Enable image window auto resize check box lets you disable the rearrangement of image windows inside of a main window, so you can apply your own position and size of image manually. These settings will be saved.

Always display snapshots in its actual size (window resize) check box lets you disable resize and center position of snapshot windows, so one can apply your position and size of snapshot window manually. These settings will be saved.

Skin selection drop down menu allows different graphic user interface representation.

5.2.2 Setting up Callback parameters

DVS has the ability to automatically call the client PC if motion is detected in the monitored area, or if an alarm is set. This is known as a callback function.

DVS will access the client PC after the detection of motion or triggering signals from the alarm sensors, after which it will start transmitting images. The phone number to be dialed and the required actions after the motion or sensors detection are defined in the **Callback Properties** dialog shown in Figure 8. You need to type in the **Callback phone number** (be sure that you have selected correct **Tone Dial** or **Pulse Dial** mode), select the folder for saving images in **Save callback images to** field, specify the number of sequential callback attempts (up to 5), time interval between dialing series, and select a **Sound beep**, if desired, to receive sound notification on Callback. If you wish to proceed with Callback mode after successful callback attempt, check **Auto proceed callback mode after callback event** checkbox. Please refer to the section 5.9 on page 41 for further details on the callback function.

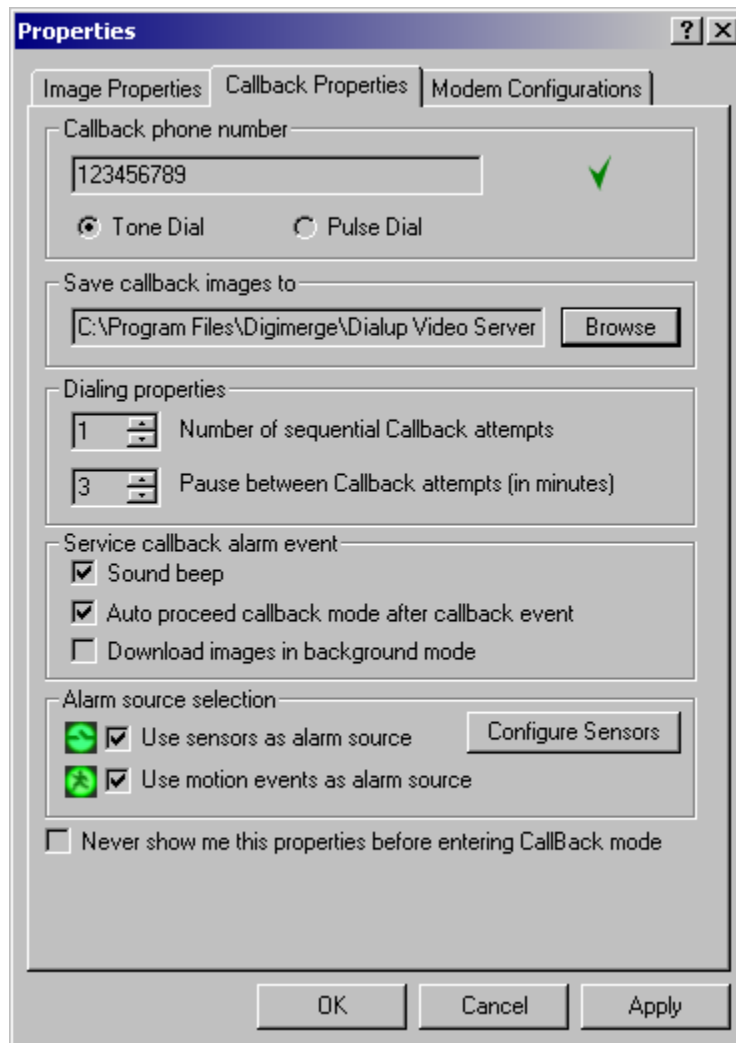


Figure 8 Specifying Callback mode properties

5.2.2.1 Configuring the alarm sensors

The signals from magnetic, infrared or sensors of other type, installed on the doors, windows, or ceiling can be directly connected to *DVS* and used as trigger signals for alarm image capture and callback with or without video motion detection. Clicking the **Configure sensors** button in the **Callback Properties** dialog will display the **Sensor controls and out alarms** dialog shown in Figure 9.

There are two kinds of sensor state (see **State** field in Figure 9):

- *Normally Open* - the non-signaled state of sensor input – HI, when sensor input is not connected or connected to digital HI level
- *Normally Closed* - the non-signaled state of sensor input – LO, when sensor input is tied to the ground or digital LO level.

By pressing the **Restore to default** button you can assign all alarms as *Normally Open*. A green sensor icon in the **State** field means signaled state - alarm. After deciding all sensor states, you can press the **Remember current state as normal** button for saving your configuration and now *DVS* will generate an alarm signal when the sensor is toggled.

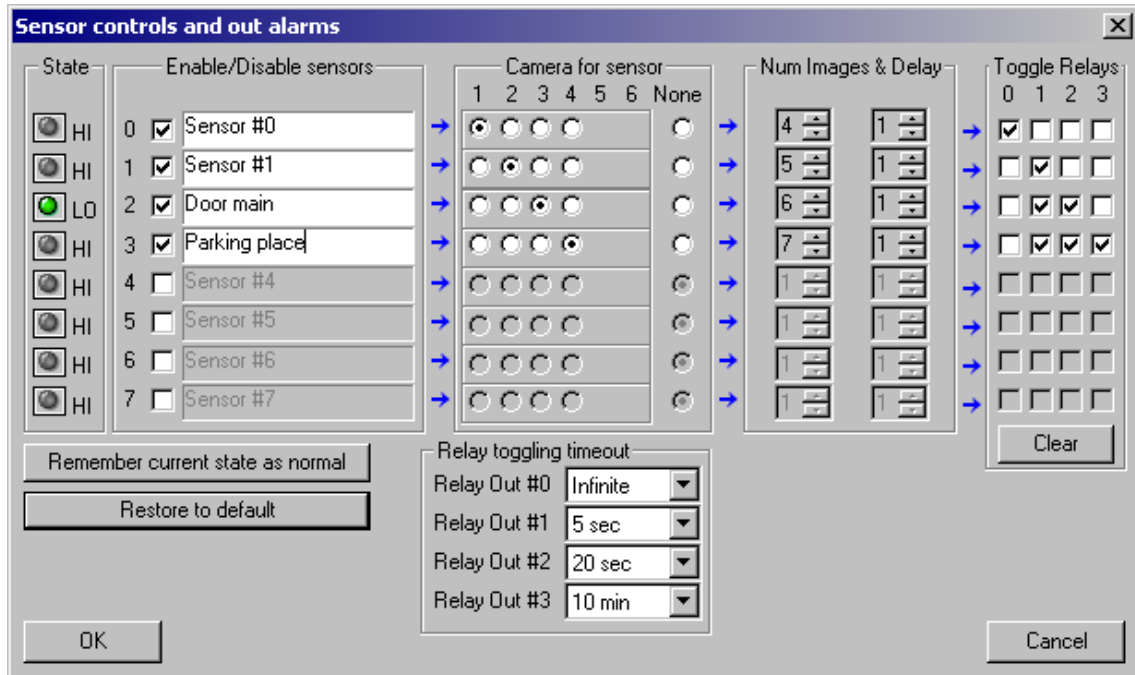


Figure 9 Configuring the alarm sensors

The **Enable/Disable sensors** control will allow you to activate or deactivate each sensor. You can specify the name of sensor in the edit box. The **Camera for sensor** field allows you to choose the camera and assign it to a sensor alarm. One of four cameras may be connected to each sensor. If we have a sensor set on a door, and one of the cameras is directed at the door, you should specify the camera number in the **Camera for sensor** field. When this sensor toggles to a signaled state, *DVS* will capture a defined number of snapshots with a defined delay, in seconds (**Num Images & Delay**) from the defined camera. When 1 image from the camera is specified, a delay will occur before the image is captured.

You may specify the time the output relays will be toggled in the **Relay toggling timeout** field. The relays to be toggled are assigned in the **Toggle Relays** field. In the example in Figure 9, the output relays 0; 1 will be toggled for *infinite* and 5 seconds after, the sensor will alarm 0 and 1 respectively. You may clear all checked **Toggle Relays** checkboxes with the **Clear** button.

5.2.3 Changing external modem parameters

Note: This section is applicable to the external PSTN or ISDN modem users only. Use **Direct cable connection (COM port) mode** (see section 6.2) to setup this settings before entering **Custom configuration (External modem) mode** (see section 6.3).

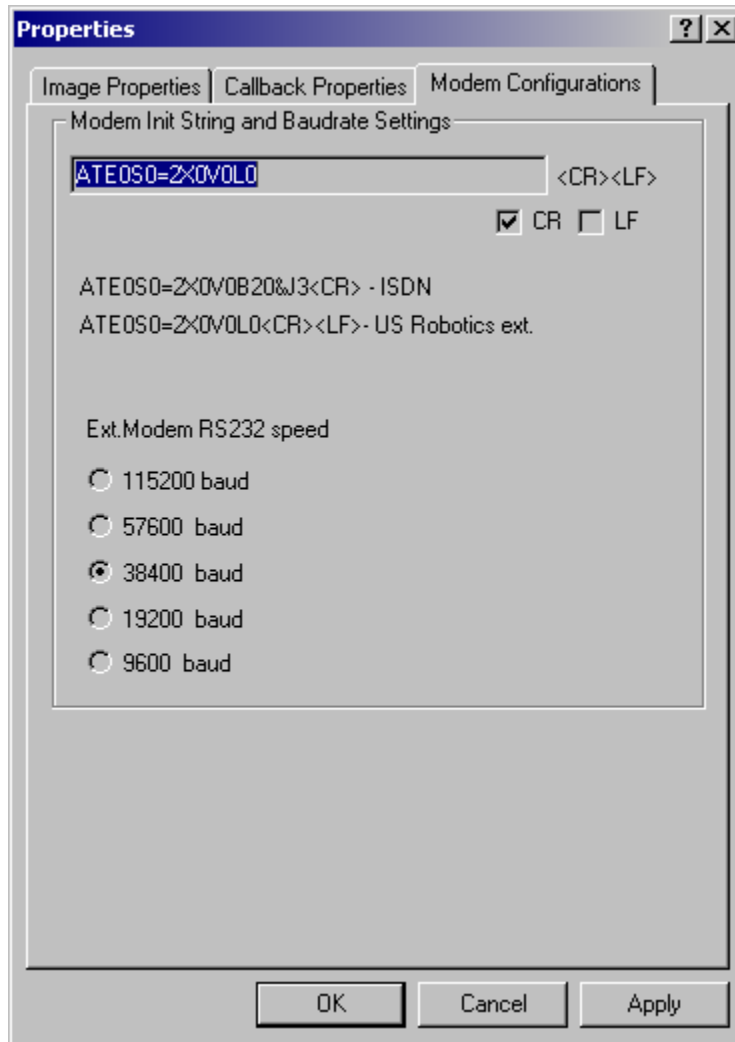


Figure 10. Setting external *DVS* modem parameters

In the **Modem Configurations** dialog (Figure 10) the user can specify the operation parameters for the external modem and make full use of its functions. Any PSTN, ISDN modem with the RS232 interface can be used as an external modem. In this mode the user may specify the

modem initialization string that must be executed after the modem starts. There are, however, a few limitations:

1. The length of string should be less than 40 characters.
2. All characters should be typed in the same case. (either lower case or upper case)
3. Set the modem to digital communication mode (i.e. X0, X1, X2, X3, X4).
4. Some ISDN modems cannot accept commands ending with <CR>, <LF> characters. They may need only <LF>. This is also determined during the configuration set up.
5. You must prohibit echo (use the E0 command)

The default string is ATE0S0=2X0V0L0<CR><LF> - this is suitable for standard external PSTN modem.

The external modem may have 9600, 19200, 38400, 57600 or 115200 baud rates for the RS232 port.


The user specified parameters are stored in the *DVS* unit's internal Flash-memory, and they are used at startup for configuration of external modem from the *DVS* side.

Typing different AT-commands separated with blank spaces divides single string into multiple parts. In this case, commands will be sent to the modem, one after another, every time, acknowledged by the modem's OK response.

Select the proper data transfer rate between the modem device and the **Ext (RS232)** port of the *DVS*. When done, press the **Apply** button to store the new custom initialization parameters in the *DVS* unit.

5.3 Motion Detection Control

The motion detection function of the *DVS* provides you with the ease and convenience of

automatic monitoring from a remote location. Pressing the  (**Motion detection**) button brings up the motion sensitivity control window shown in Figure 11. If you wish to use video motion detection, you can set the sensitivity level using the **Motion threshold** slider. You can test the sensitivity level. The **Running man** image will start to flash when motion is detected. It is also possible to assign motion detection to cameras by checking **Include /exclude camera in motion detection** check box.

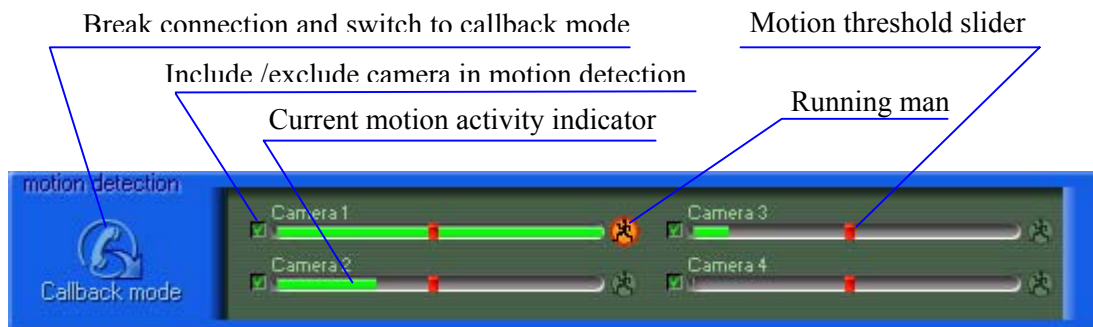




Figure 11 Motion sensitivity control window

- Note:**
1. When this window is activated, images in the Image window will be updated as an alarm event. To return back to normal image update you should deactivate this window by pressing  again or by activating another control window.
 2. Sometimes one or more video inputs can be sensitive, even though there is no visible motion in the monitoring areas. This may be due to daylight lamp usage (not incandescent lamp) different camera types, or possibly different electrical levels of video input signals (perhaps video cable connection quality). Try changing the video inputs, or refrain from using certain video inputs for motion detection purpose.

After pressing the **Break connection and switch to callback mode** button, the *DVS* will go to *Callback mode*. Please refer to the section 5.9 for the details on the callback function.

5.4 Relays and sensors control

Pressing the  (**Relays and sensors**) button brings up the relay/sensors window shown in Figure 12.

DVS can generate up to 4 relay output signals. You can turn relays on or off by pressing the **Relay Out** buttons. Do this, set-up the initial relay states.

For sensors, a red color means an alarm state. Press any sensor button to bring up the dialog for configuring the alarm sensors (shown in Figure 9 on page 26).

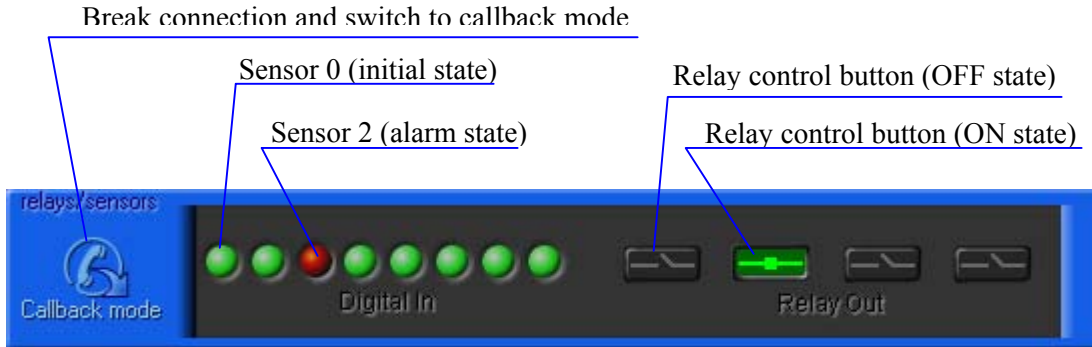



Figure 12 Relays/sensors control window

After pressing the **Break connection and switch to callback mode** button, the *DVS* will go to *Callback mode*. Please refer to the section 5.9 for the details on the callback function.

5.5 Internal image memory management

Pressing the  (**Image memory**) button or making snapshots by mouse clicking on an image window activates the *DVS* internal image memory window, shown in Figure 13.

In the upper left corner there is a **Filling image memory** indicator. This allows you see how much memory you can still use for making snapshots.

Using **Preview** allows you to either download the images or delete them without downloading.

The default state of **Save/Delete buttons** are shown in Figure 13 (**Save** button pressed). If you click on a specific **Preview**, the downloading process will be initiated (Figure 14). You will then see a **Snapshot window** with a **downloading progress bar**. After the download is complete, the image is saved automatically as a JPEG file with an associated date/time stamp. You should specify a destination folder for snapshots in **Image properties** (see section 5.2.1).

Press the **Delete** button and click **Preview** to delete the corresponding image from memory without downloading.

Use the **Save all** button to download and save all images, or **Delete all** to clear the whole memory space.

You should also take into consideration that the downloading of snapshots is quite a prolonged process.

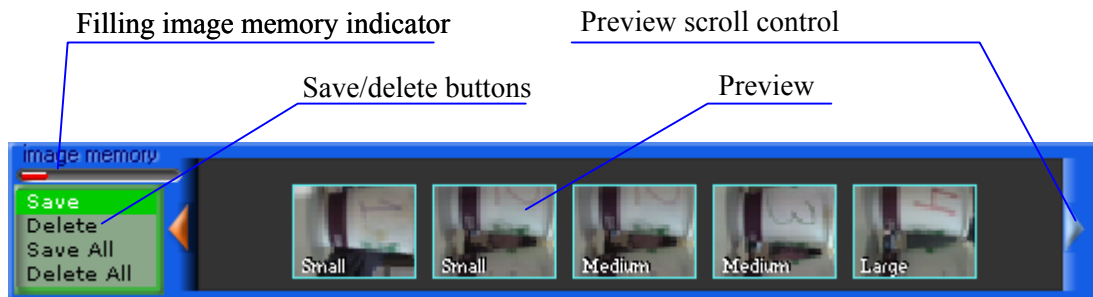


Figure 13 Image memory control window

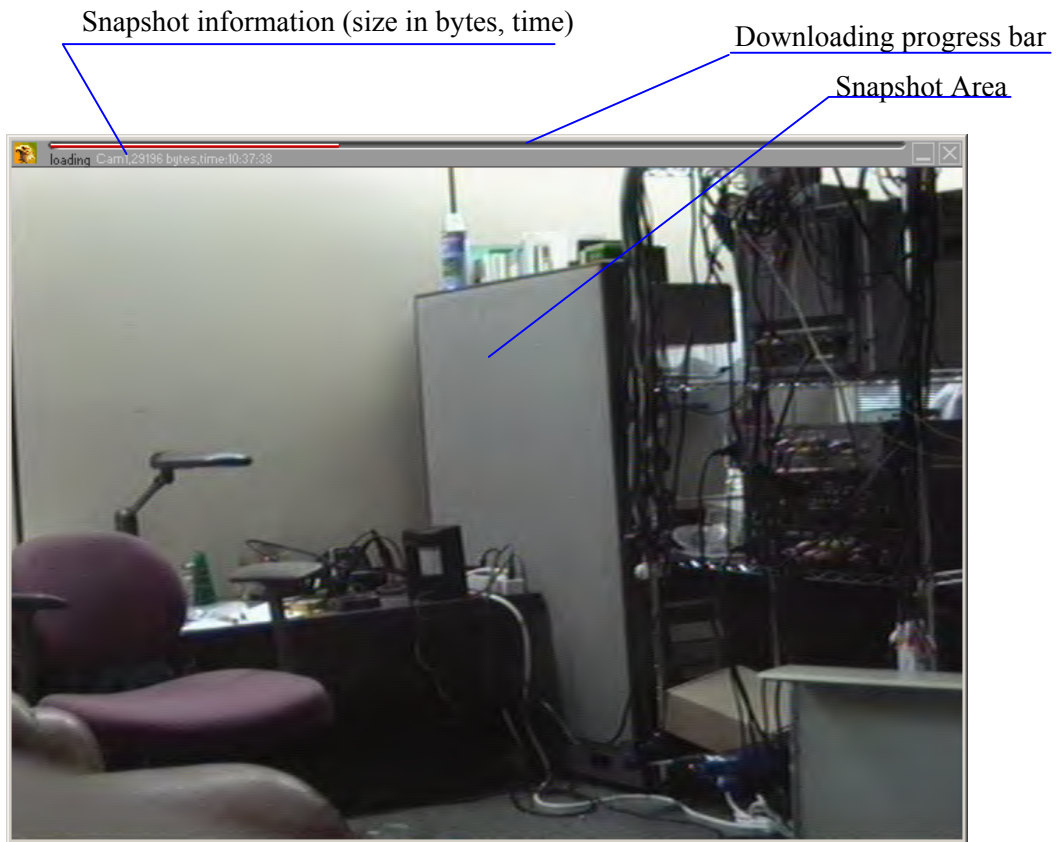


Figure 14 Downloading snapshots

5.6 Controlling Pan, Tilt, Zoom, Focus of remote cameras


Pressing the  (**PTZ control**) button on the main control panel brings up the PTZ (Pan/Tilt/Zoom) window shown in Figure 15. Pressing the arrow button affects the camera position. The Kalatel Cyber Dome camera will perform directed movement when you keep the arrow button pressed. These positions can be saved as user defined template name. You can adjust the camera's position while monitoring the remote location at the same time.



Figure 15 Pan, Tilt, Zoom, Focus (PTZ) window for Kalatel serial PTZ controller

If the Sony-EVI camera (EVI-G20 or EVI-D30 models) is connected through RS232, then it is necessary to select the appropriate type from the **PTZ Type** drop-down menu. The dialog will automatically change its appearance as shown in Figure 16. You can control the Sony camera by moving the pointer in the spatial window.

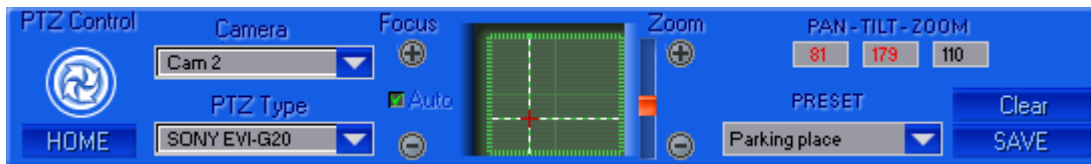


Figure 16 Pan, Tilt, Zoom, Focus window for Sony EVI cameras

For DCP-1010 or other PELCO-D compatible cameras the control window will look like Figure 17.



Figure 17 Pan, Tilt, Zoom, Focus window for DCP-1010 cameras

The camera ID selection dialog (see Figure 18) appears when selecting the **PTZ type**. All cameras should have a different ID for proper function. As soon as the **PTZ type** is assigned to a camera number, you can easily access control from camera to camera by clicking on the caption in the **Image Window**, shown in Figure 6, on page 20.



Figure 18 Camera ID selection dialog

Here is a list of PTZ cameras currently supported by the *DVS* software:

- KALATEL (Cyber Dome) cameras
- SONY EVI G20, SONY EVI D30 cameras
- Philips TC700/TC8560 series protocol
- DCP-1010 or CNB-PTD302 camera (PELCO-D protocol)

5.7 Audio stream control



Pressing the **(Audio control)** button on the main control panel brings up a control window shown in Figure 19. From here you can control the incoming audio data from the *DVS* and outgoing voice audio to the *DVS* (G723.1 compressed to 5.3 K bit per sec). A Red color square at the left top corner of each audio control button means an *Enabled* state.

Note: *DVS* MIC IN is designed for an electret-foil microphone only, (not dynamic type). Use a microphone equipped with a stereo male jack.

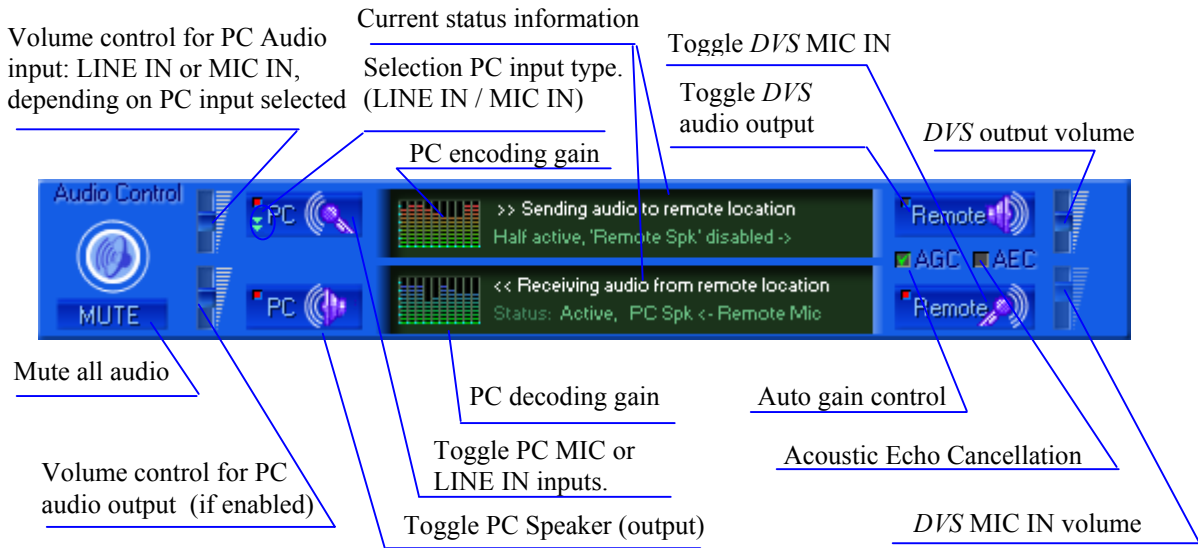


Figure 19 Audio stream control window

AGC (Automatic Gain Control) – controls the *DVS* microphone input. When this feature is enabled, the MIC sensitivity is changed with the current voice level in the monitoring (i.e. hearing) area. This is extremely useful for low audio level amplification. It is strongly recommended not to use this feature with the remote unit audio output. Use **AEC** to cancel the echo from the remote speaker to the remote MIC. Since the **AGC** mode is incompatible with the **MIC IN volume**, the slider shown is disabled in Figure 19. It is also incompatible with **AEC** mode.

AEC (Acoustic Echo Cancellation) – works only when both *DVS* in/out audio channels are enabled. Use this feature to avoid echo from the *DVS* unit’s speaker to the *DVS* unit’s MIC.

When using the audio channel, take into consideration the following tips:

1. Do not set audio volume to extremely high values, it may cause voice intermodulation (worse quality). You should start from middle sliders positions.
2. Sometimes transmitted or received audio may appear choppy. It depends on the phone

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