



Installation Notes

Quad Video DS Card

Installation, Configuration, and User Interface



Cameleon Installation Notes
Quad Video DS Card - Installation, Configuration, and User Interface

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360 Surveillance, Inc.
4218 Commerce Circle
Victoria, B.C. V8Z 6N6
Canada

Phone 1-250-388-7232
Toll free 1-888-242-4291
Fax 1-250-388-7229
E-mail mail1@360surveillance.com
Web www.360surveillance.com

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Scope

These Installation Notes describe how to install the Quad Video DS Card card in a PC, configure the card in Windows 2000 or Windows XP, and access and use the card's settings in the Cameleon client application.

These Installation Notes apply to Camera Cameleon Version 3, Cameleon Version 4, Cameleon ITS, Cameleon GEO and Cameleon Tactical.

Overview

2.1 Procedure

Follow these steps to install and configure Quad Video DS cards:

- **UNDERSTAND EQUIPMENT:** Read Section 2.2 - *Description of Equipment* (p.4) to familiarize yourself with the equipment required for the installation.
- **INSTALLATION:** Install and cable the Quad DS card. See Section 3 - *Installing Quad Video DS Cards* (p.5) for instructions.
- **WINDOWS CONFIGURATION:** Configure the Quad DS card in Windows. See Section 4 - *Configuring Quad Video DS Cards in Windows* (p.7) for instructions.
- **SERVER CONFIGURATION:** Add windows, canvases, and connections to the server configuration. See Section 5 - *Configuring Quad Video DS Cards in Cameleon* (p.13) for instructions.
- **USER INTERFACE:** Adjust Quad DS card input display and capture settings on the fly using the Cameleon client application's integrated Quad Video Display DS canvas gadget. See Section 6 - *Client Interface* (p.17) for instructions.

✓ **TIP** You can define canvases and connections before you install and configure the Quad Video DS card. This way, when you cable the equipment, you will be able to see immediately if the equipment is cabled correctly.

Figure 2.1 Quad Video DS card



2.2 Description of Equipment

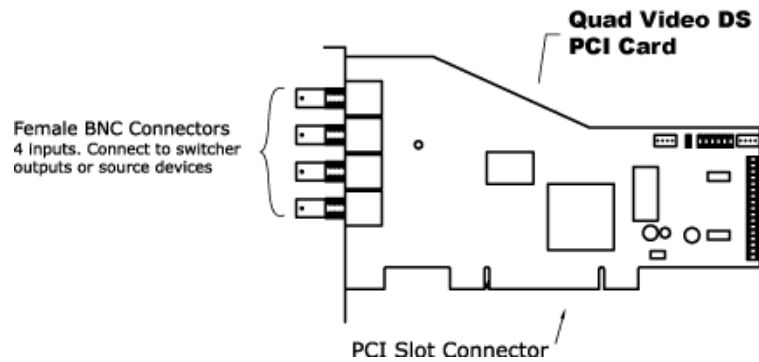
2.2.1 Quad Video DS Cards

The Quad Video DS Card allows you to connect up to four video sources and view them on the PC in which the card is installed. Figure 2.2 provides an illustration of the card.

Each Quad Video DS card has one set of ports:

- **VIDEO INPUT PORTS:** Four female BNC video input ports. Connect sources' outputs, such as cameras or switchers, to the card's video input ports.

Figure 2.2 Quad Video DS card diagram



Installing Quad Video DS Cards

3.1 Overview

In general, avoid installing more than three Quad Video DS cards in a given PC in order to ensure optimum performance. Note, however, that the maximum number of cards that can be installed in a given PC is limited by the number of available PCI slots the PC has. Each card provides four video inputs and each video input requires a distinct video window defined for it in the Cameleon server application.

- ✳ **NOTE** For lower powered PCs, video playback performance can be improved by resizing video windows or by adjusting the Quad Video DS card's compression settings. For instructions on adjusting the card's compression settings refer to Section 6.1.1 - *Adjusting Quad Video Display DS Properties* (p.18). For instructions on resizing video windows refer to the Cameleon Client Manual.

The Quad Video DS card does not limit how video windows are displayed. For example, while using a single Quad Video DS card, a client PC can be configured to display all four Quad Video DS card video inputs in four video windows on a single monitor or it can be configured to display each video input in its own video window on its own monitor if the client PC has an adequate number of video output ports on configured video display boards (e.g. two dual-monitor video cards).

- ✳ **NOTE** The Quad Video DS card does **not** provide any monitor outputs. In order to view video from a Quad Video DS card your system must have at least one video display board or an integrated video port.

3.2 Installation

- ✳ **NOTE** Before installing Quad Video DS cards make sure that you have already installed the Cameleon software.

To physically install a Quad Video DS card:

1. **TURN OFF COMPUTER:** Turn off the computer you will be installing the card in. Unplug the computer from the wall. Unplug all peripheral devices such as monitors, keyboards and mice from the computer.
2. **OPEN COMPUTER:** Remove the PC's cover and the PCI adaptor slot cover from the PCI slot you will be installing the card in.
3. **INSERT CARD:** Firmly place the adapter edge connector into the PCI slot until it is fully inserted. Secure the bracket to the computer's chassis.

- ✳ **NOTE:** Make sure to add Quad Video DS cards to PCI and not AGP, PCI-x or PCI-e slots.

4. **PLUG IN COMPUTER:** Plug the computer back in. Reconnect all peripherals. Start the machine.

⊛ **NOTE** Cameleon does not currently support the card's watchdog reset cable or the card's digital I/O interface.

MULTIPLE CARDS: If you are installing more than one Quad Video DS card, complete the hardware and software installation of the first card and then install the second Quad Video DS card. The cards do not need to be physically installed immediately adjacent to each other. Repeat the software installation outlined in Section 4 - *Configuring Quad Video DS Cards in Windows* (p.7) for the second card.

For instructions on adding PCI cards to your PC, refer to your PC's product documentation.

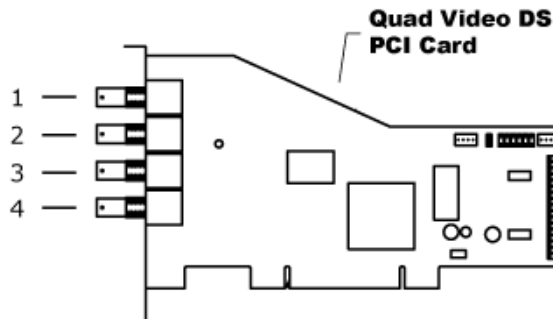
3.3 Cabling Quad Video DS Cards

1. **SWITCHERS:** If video is routed through a switcher, connect Inputs 1-4 of each configured Quad Video DS card to the desired switcher outputs.
2. **CAMERAS:** If video comes directly from source devices such as cameras, connect Inputs 1-4 of each Quad Video DS card to the source devices.

⊛ **NOTE:** PTZ control is performed by a camera or switcher's driver. For instructions on cabling and configuring switchers and/or cameras to allow for PTZ control refer to the camera and/or switcher's Driver Application Notes.

3. **INPUT NUMBERING:** You may wish to label the inputs of the Quad Video DS card as all of its inputs appear identical. Refer to Figure 3.1 for an overview of the card's input numbering.

Figure 3.1 Quad Video DS card input numbering



Configuring Quad Video DS Cards in Windows

Once you have installed and cabled a Quad Video DS card, you must configure the Quad card in Windows. The following instructions are for Windows 2000 and Windows XP.

✳ **NOTE** If you are installing more than one Quad Video DS card you will need to repeat the following steps for each card. For example, if you are installing two Quad Video DS cards, physically install the first card and then perform following the software installation. Once the software and hardware installation of the first card is complete you can physically install the second card and then repeat the software installation.

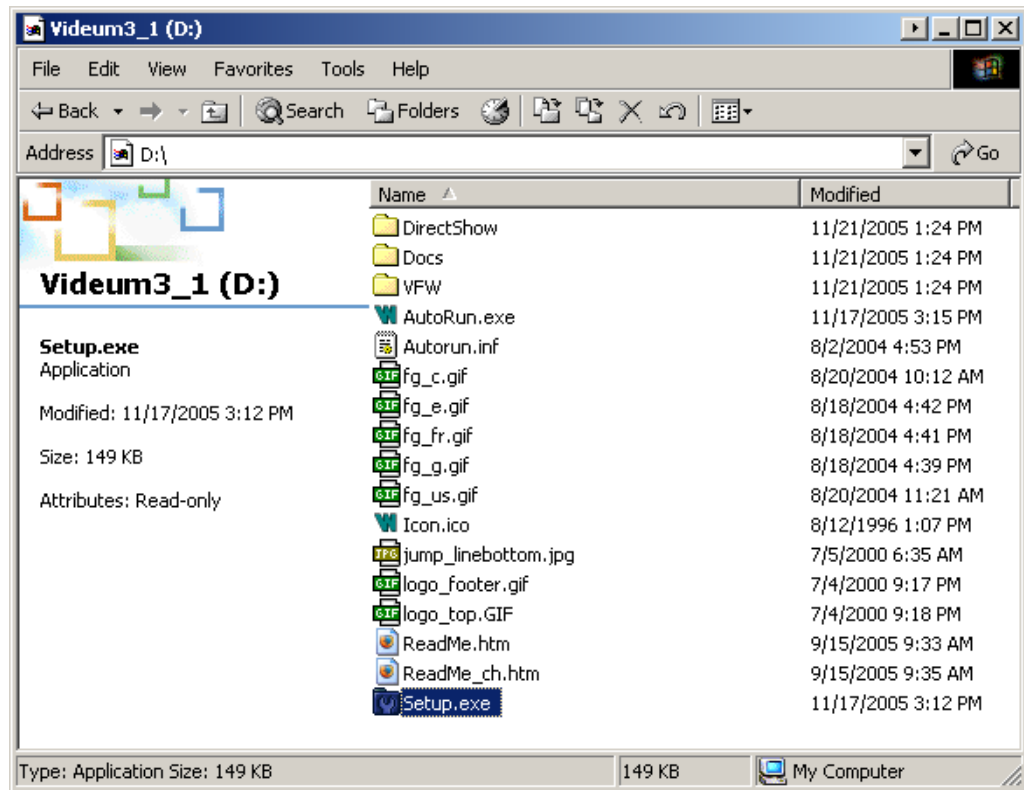
1. **LOG IN:** Log in to Windows as a user with administrative privileges. The PC may automatically detect the newly-installed Quad Video DS Video card. If so, it will start the Found New Hardware Wizard. If the Hardware Wizard opens, leave it open but **do not** press **Next**.

Figure 4.1 The Windows Hardware Wizard



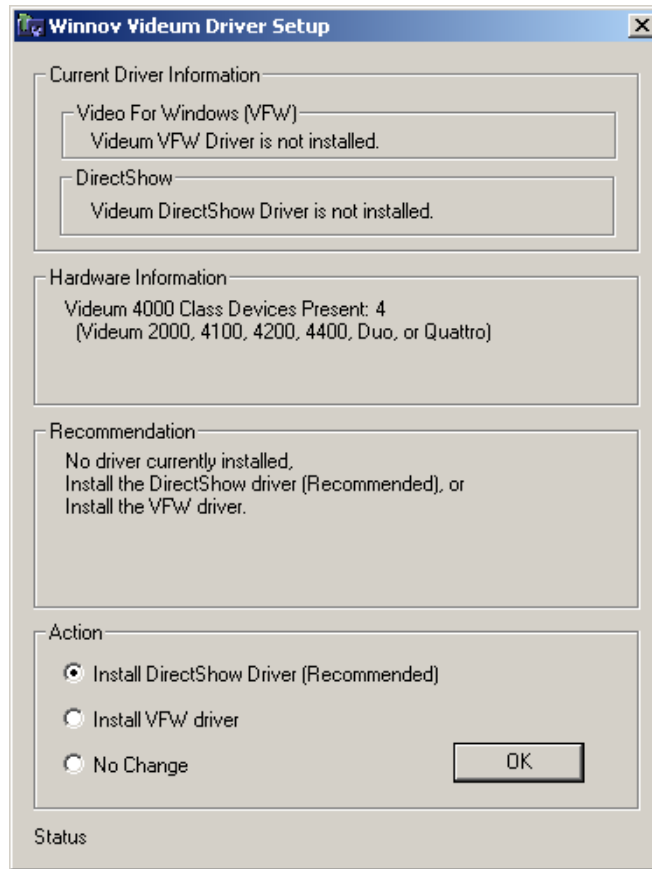
2. **INSERT THE INSTALLATION CD:** Insert the included installation CD in your CD drive.
3. **FIND AND RUN THE INSTALLER:** Open Windows Explorer. Browse to the **Setup.exe** file located on the root directory of the CD. In Figure 4.2 the CD drive is the D: drive. Double-click **Setup.exe** to run the installer.

Figure 4.2 Browse to Setup.exe using Windows Explorer



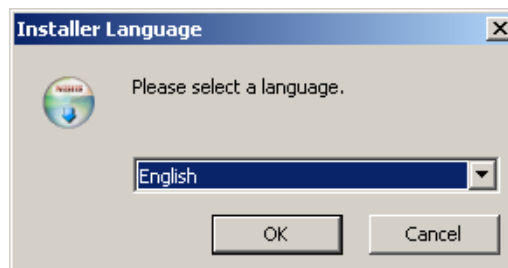
4. **INSTALL THE DRIVER:** Select **Install DirectShow Driver** from the **Action** menu. Press **OK**.

Figure 4.3 Driver Setup dialog box



5. **SELECT LANGUAGE:** Select the installation language from the drop-down list. Press **OK**.

Figure 4.4 Insert the CD



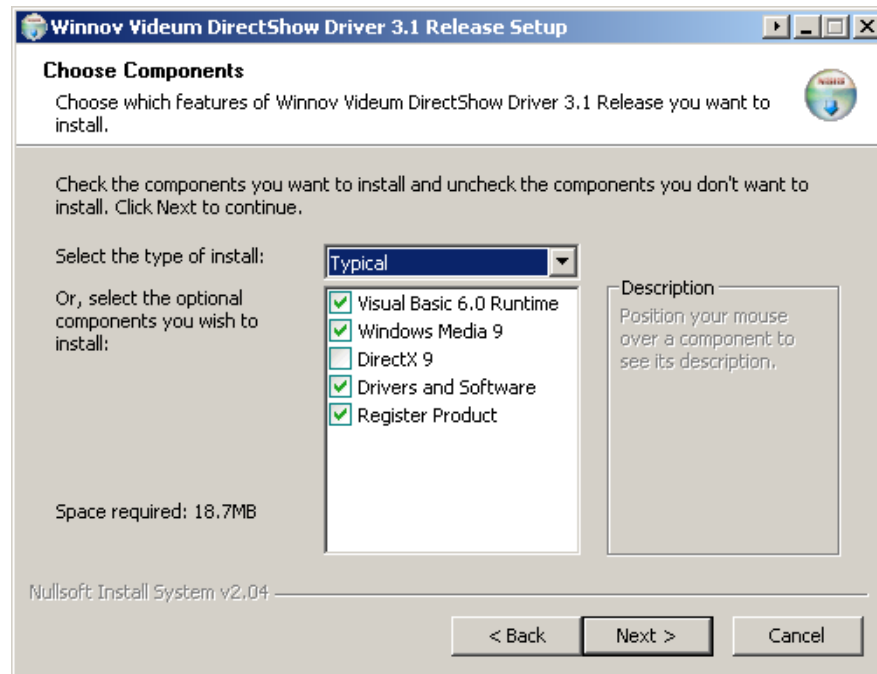
6. **SETUP WIZARD:** Follow the instructions listed on the Setup Wizard. Hit **Next >**.

Figure 4.5 Setup wizard



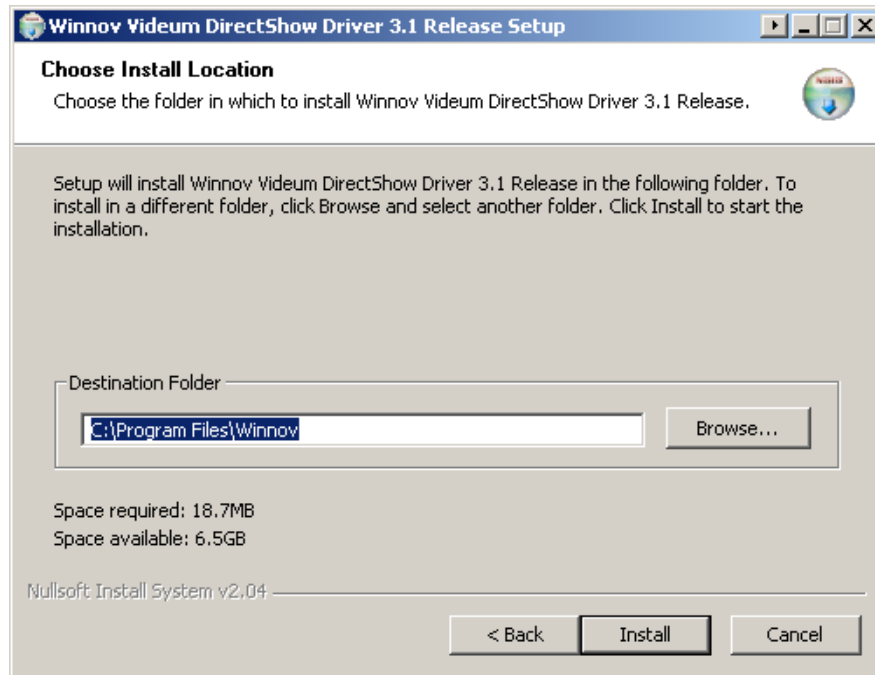
7. **SELECT INSTALLATION COMPONENTS:** Select all of the optional components. If your system already has DirectX 9 or later installed, you do not need to select it. Press **Next >**.

Figure 4.6 Choose installation components



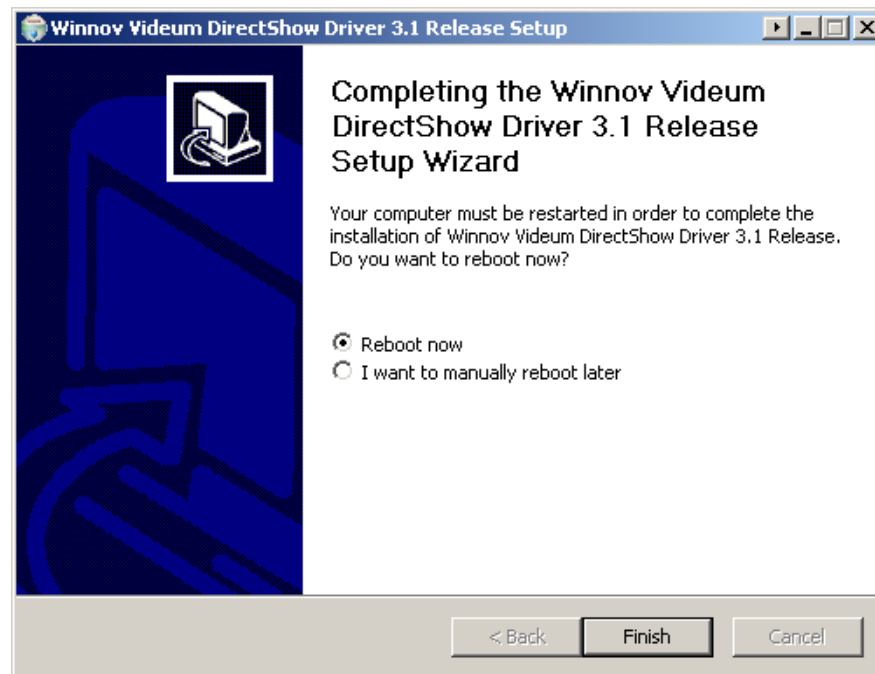
8. **SELECT INSTALLATION LOCATION:** Manually enter or browse to the directory where you wish to install the drivers. Press **Install**.

Figure 4.7 Folder to copy files from is selected



9. **REBOOT:** Select **Reboot now** and press **Finish**. Your computer will automatically restart.

Figure 4.8 Select the device driver



10. **CHECK INSTALLATION:** Once you computer has restarted you can check the status of the card by moving your mouse over the video board's icon in the system tray.

Figure 4.9 System tray icon



Hovering your mouse over the icon momentarily should prompt a 'Video Board OK' message.

Configuring Quad Video DS Cards in Cameleon

Once you have configured a Quad Video DS card in Windows, you must configure it in the Cameleon server. Refer to the Cameleon Server Manual for detailed instructions on each step.

For instructions on using the Quad Video DS card's gadget refer to Section 6 - *Client Interface* (p.17).

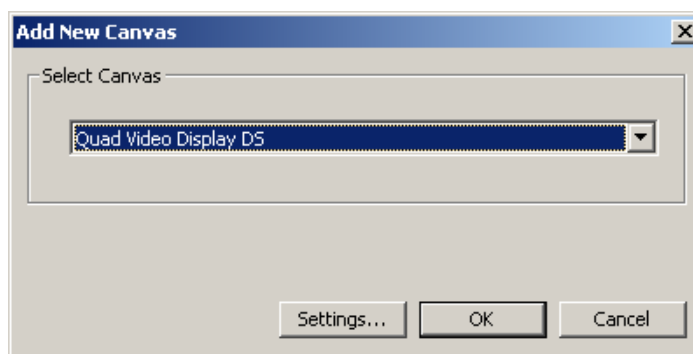
5.1 Configuration Instructions

1. **ADD CLIENT:** If you have not already done so, add the client to the server configuration.
2. **ADD CUSTOM WINDOWS:** For each Quad Video DS card **input** you intend to use, add a custom window to the client.

For example, if the PC has two Quad Video DS cards installed in it, each with three inputs in use, add six custom windows to the client.

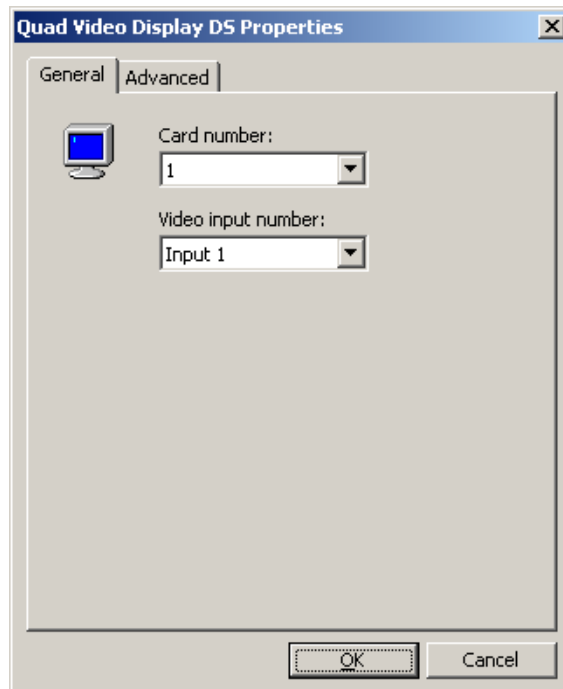
3. **ADD CANVASES:** Add a Quad Video Display DS canvas to each custom window.

Figure 5.1 Add New Canvas dialog box



4. **CANVAS SETTINGS:** Edit the settings for each canvas by pressing **Settings**.

Figure 5.2 Quad Video Display DS Properties - General tab



- (a) **GENERAL TAB:** On the General tab, assign the card number and video input number. Card 1 is the Quad card closest to the AGP or PCIe slot. Card 2 is the next closest Quad card to the AGP or PCIe slot, and so on.

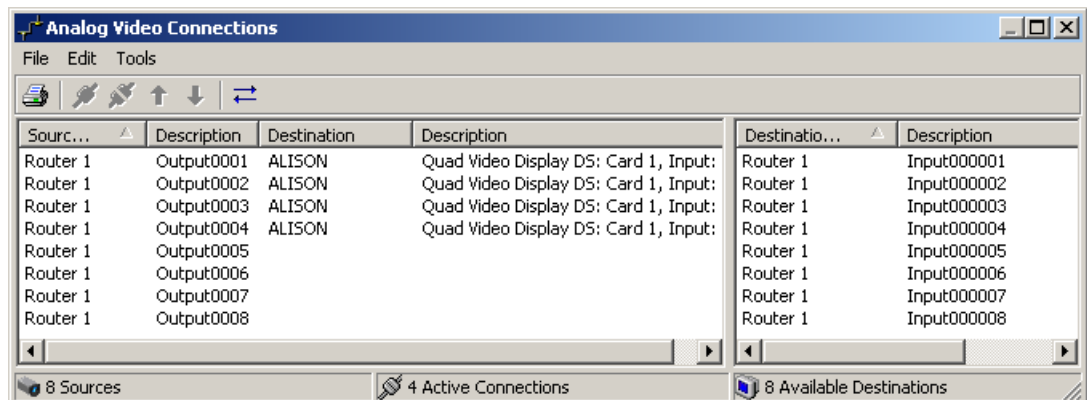
Each canvas must be assigned a unique card/input combination. For example, if you assign 'Card 1: Input 1' to Window 1, then no other window on that client can be assigned 'Card 1: Input 1'.

- (b) **ADVANCED TAB:** The Advanced Tab allows you to adjust image capture and image size settings. For instructions refer to the Devices section of the Cameleon Client Manual.

5. **DEFINE CONNECTIONS:** Add a connection for each Quad card input that is cabled to a source device.

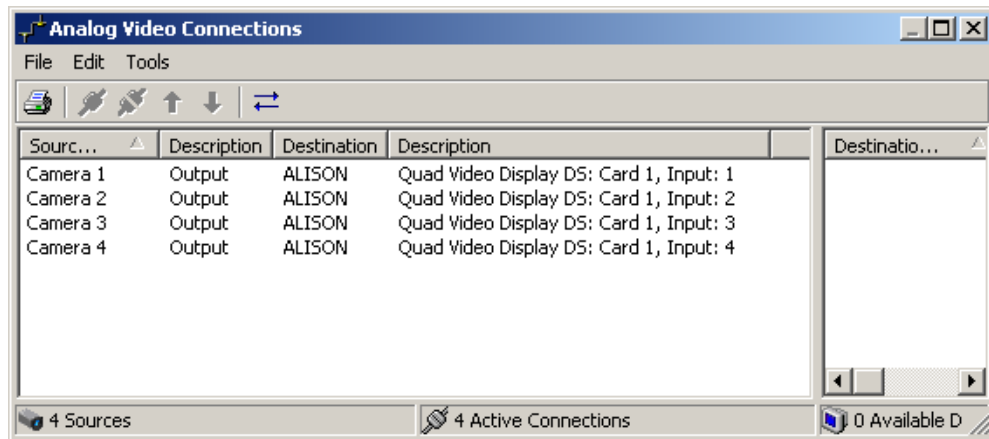
- (a) **CONNECT TO A SWITCHER:** Connect the appropriate Quad card inputs to the appropriate switcher outputs. For example, if you cabled Quad Video Display DS Card 1 Input 1 to switcher Output 1, then you must connect the PC's **Quad Video Display DS: Card 1, Input: 1** to the switcher's **Output1** in the analog video connections.

Figure 5.3 Connections to a switcher



- (b) **CONNECT TO CAMERAS:** Connect the appropriate Quad card inputs to the appropriate cameras. For example, if you cabled Quad Video Display Card 1 Input 1 to Camera 1, then you must connect the PC's **Quad Video Display VO: Card 1, Input: 1** to **Camera 1 Output** in the analog video connections

Figure 5.4 Connections to cameras.



✓ **TIP:** If you get a Switch Path Not Found error when you drag a camera to a window, you have dragged the camera to the wrong window. You must drag the camera to the window whose input the camera is connected to.

6. **SAVE CONFIGURATION:** Save the server configuration.
7. **TEST:** Start the Cameleon client application. Open the windows that have a Quad canvas.

Once a camera is installed and configured, drag the camera to each window in turn to make sure the video is working.

✓ **TIP** If adjusting the settings in the Quad canvas gadget results in the video breaking up, click the Load Defaults button in the gadget to reset the settings to their default values. This restores the video.

Client Interface

Users can adjust Quad Video DS card display settings on the fly using the card's Quad Video Display DS gadget in the Cameleon client application.



6.1 Quad Video Display DS Gadget

- ★ NOTE** To access the Quad Video DS card's Quad Video Display DS Gadget in a custom window, the custom window must have the Quad Video Display DS canvas added and a source device must be switched to the custom window. For instructions on adding the Quad Video Display DS canvas refer to Section 5 - *Configuring Quad Video DS Cards in Cameleon* (p.13). For instructions on switching source devices to a custom window refer to the Cameleon client manual.

Figure 6.1 Quad Video Display DS gadget

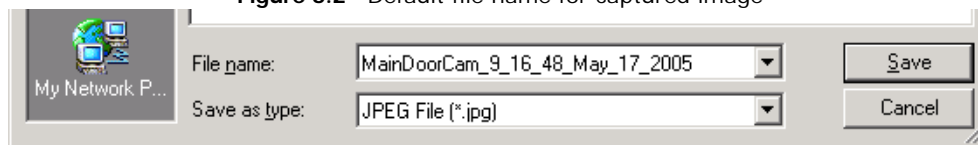


The gadget for the Quad Video DS card has the following tools:

-  • **PROPERTIES:** The Properties button opens the Quad Video Display DS Properties dialog box. See Section 6.1.1 - *Adjusting Quad Video Display DS Properties* (p.18) for instructions.
-  • **CAPTURE AND SAVE IMAGE:** The Capture and Save Image button allows you to take a snapshot of the video displayed in the window and save the image as a JPEG file.

Click the button to open the Save JPEG As dialog box. Browse to the desired folder and type in a file name, or use the default file name that is provided. The default file name is comprised of the name of the video source, followed by the time and date. Click **Save** to save the file and close the dialog box.

Figure 6.2 Default file name for captured image




- ★ NOTE** In some configurations, a conflict between a PC's display controller and the Quad Video DS card may prohibit the screen captures function. If, when a screen capture is taken, the result is a blank image, this can be fixed by turning down the video acceleration of the PC's display controller. The method to do so may vary depending on the model of video card installed in the PC.

In general, video acceleration can be accessed by right-clicking on the desktop of a monitor connected to the display controller in question. Select **Properties** from the pop-up menu. Navigate to the Settings tab. Press

Advanced. On the Troubleshooting tab, move the **Hardware Acceleration** tab down one notch. This should allow you to resume capture screen images.

6.1.1 Adjusting Quad Video Display DS Properties

To adjust Quad Video DS card properties, such as contrast and hue, click the Properties button  in the Quad Video Display DS gadget. The Properties dialog box will open.

NOTE The settings configuring in the Properties dialog box affect only the selected window and not all custom windows displaying video from the Quad Video DS Card.

1. GENERAL TAB:

Figure 6.3 Quad Video Display DS Properties - General tab

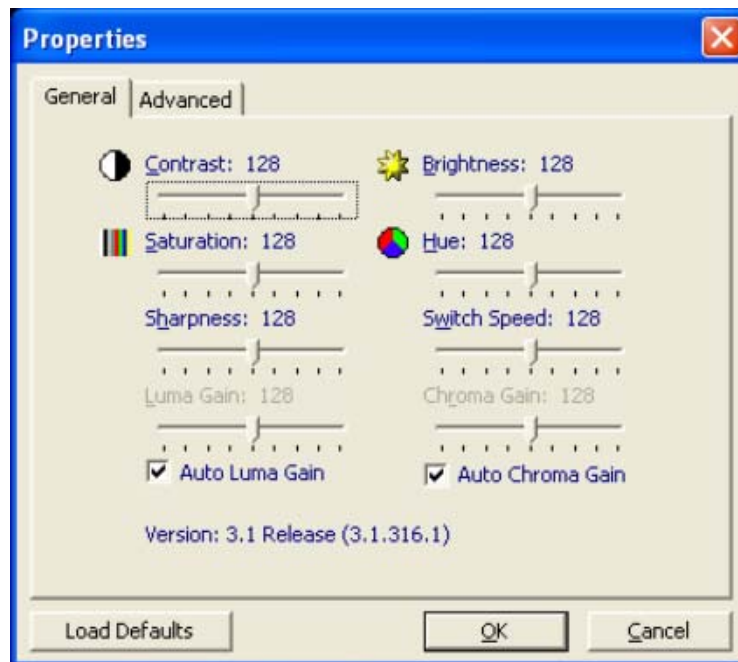


Table 6.1 describes the tools that are available on the General tab of the Properties dialog box.

Table 6.1 Quad Video Display DS Properties - General tab tools





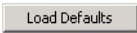
	PROPERTY	DESCRIPTION
	Contrast	Use the Contrast slider to increase or decrease the contrast of the video in the window.
	Brightness	Use the Brightness slider to increase or decrease the brightness of the video in the window.
	Saturation	Use the Saturation slider to increase or decrease the saturation of the video in the window.
	Hue	Use the Hue slider to adjust the hue of the video in the window.
	Sharpness	Use the Sharpness slider to increase or decrease the sharpness of the video in the window.
	Switch Speed	Use the Switch Speed slider to increase or decrease the speed at which video switching is performed in the window.
	Auto Luma Gain	Check the Auto Luma Gain box to set the luma gain settings of the video in the window to automatic. Checking the box prohibits the use of the Luma Gain slider.
	Luma Gain	Use the Luma Gain slider to adjust the luma gain of the video in the window. The Luma Gain slider can only be adjusted if Auto Luma Gain is not selected.

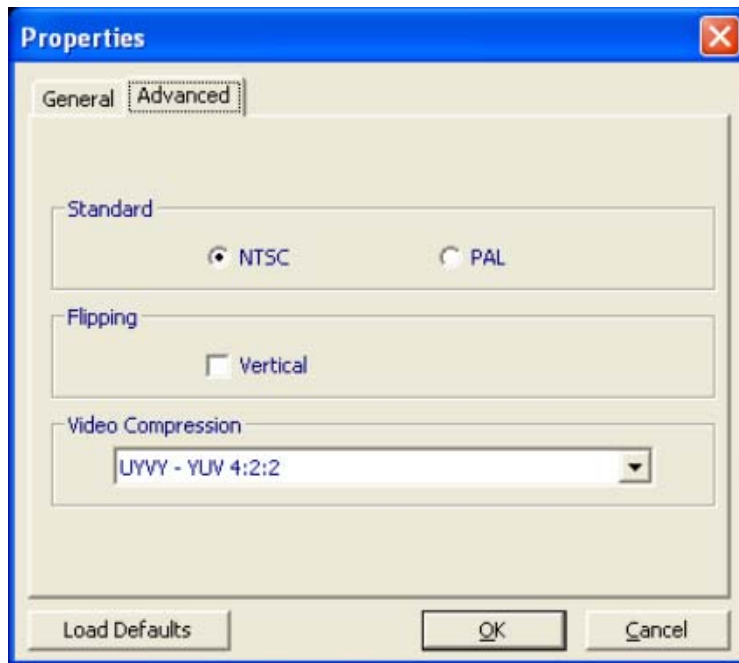
Table 6.1 Quad Video Display DS Properties - General tab tools

PROPERTY	DESCRIPTION
Auto Chroma Gain	Check the Auto Chroma Gain box to set the auto gain settings of the video in the window to automatic. Checking the box prohibits the use of the Chroma Gain slider.
Chroma Gain	Use the Chroma Gain slider to adjust the chroma gain of the video in the window. The Chroma Gain slider can only be adjusted is Auto Chroma Gain is not selected.
 Load Defaults	The Load Defaults button resets the settings on the General tab to their default values. Click the button to load the default settings.

VERSION: The version number is the version of Quad card you are using. The version number is used for troubleshooting.

2. **ADVANCED TAB:**

Figure 6.4 Quad Video Display DS Properties - Advanced tab tools



- (a) **STANDARD:** Select the format of the video source displayed in the video window. Choose either **NTSC** or **PAL**.
- (b) **FLIPPING:** Select **Vertical** to flip the video shown in the video window vertically.
- (c) **VIDEO COMPESSION:** Select the desired video compression format from the drop-down menu for the card's video capture.

Employing video compression can alleviate high CPU usage when many video sources are being captured simultaneously. The compression formats supported are as follows:

- HFYU: Huffman Lossless YUV
- I420: Intel Indeo 4 H.263
- IYUV: Intel Indeo iYUV 4:2:0
- MJPG: Motion JPEG
- MPG4: Microsoft MPEG-4
- RG23: Uncompressed RGB24 8:8:8
- RG32: Uncompressed RGB24 8:8:8:8
- R565: Uncompressed RGB565 5:6:5
- UYVY: YUV 4:2:2
- WMV7: Windows Media Video V7

- WMV8: Windows Media V8
- WMV9: Windows Media V9
- YUY2: YUV 4:2:2
- YV12: ATI YVU12 4:2:0 Planar

(d) **LOAD DEFAULTS:** Use the **Load Defaults** button to return the Advanced tab settings for the selected window to their default values.