

VIDEOLOGY

IMAGING SOLUTIONS INC.
Original Equipment Manufacturer

5MP Camera with Flash Instruction Manual 24C708AF

SFT-15003 Rev 2.1.0.0
Preliminary



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Doc # INS-SFT-15003	Issue Date: 08/12/2016
Revision: B	Page 2 of 30

Table of Contents

- 1. Document History4
- 2. About the Camera4
- 3. Specifications.....4
 - 3.1. Flash Support5
 - 3.2. Still Image Capture5
 - 3.3. Camera / Flash5
- 4. Viewer Installation6
- 5. VIS Viewer 10
 - 5.1. Devices 10
 - 5.2. Options..... 12
 - 5.2.1. Video Renderer 12
 - 5.2.2. Quality..... 13
 - 5.2.3. Direct Draw 13
 - 5.2.4. Performance 14
 - 5.3. Video Capture Filter 15
 - 5.3.1. Video Proc. Amp 15
 - 5.4. Video Capture Pin 16
 - 5.4.1. Stream Format 16
 - 5.5. Still Capture Pin..... 17
 - 5.6. Current Settings 18
 - 5.7. Capture 19
 - 5.7.1. Get Still (Enter) 19
 - 5.7.2. Still File Path 19
 - 5.8. Focus 21
 - 5.8.1. Trigger AutoFocus 21
 - 5.9. UVC Extension 22
 - 5.9.1. AF Status 22
 - 5.9.2. AF Trigger 23
 - 5.9.3. Flash Control 24
 - 5.9.4. Debug Control 24
 - 5.10. Help..... 26
- 6. TWAIN Installation..... 27
- 7. Using the TWAIN Interface 28
 - 7.1. ZOOM FEATURE 28
 - 7.2. Mode of operation 28
 - 7.2.1. Preview mode 28
- 8. Contact Information 30

1. Document History

Revision	Issue Date	Reason	CN#
	07-01-2013	Initial release	15-0003
B	06-30-2016	Software revision 2.1.0.0, updated manual (all sections) and added TWAIN instructions	16-0081

2. About the Camera

The 24C7085AF is a UVC compliant, robust, high resolution (up to 5 MP), USB, and autofocus camera ideally suited to Photo ID Badging applications.

The camera (and flash unit) are powered directly from the USB port of the computer and no external power supply is required.

The camera supports both raw and compressed video output.

3. Specifications

Image Sensor Size	1/4"	
Video Output	USB 2.0	
Compression	MJPEG / JPEG	
Data Format	YUV 422	
Resolution / Frame rate	Resolution	Frame Rate
	2592x1944	2.5
	2048x1536	2.5
	1920x1080	5
	1600x1200	5
	1280x720	7.5
	1024x768	10
	800 x 600	15
	640x 480	30
	352x288	30
	320x240	30
Image Control Functions		
Exposure	Auto/ Manual	
Focus	Auto (push to Focus)/ Manual	
White Balance	Auto/ Manual	
Brightness	via UVC Interface	
Contrast	via UVC Interface	
Hue	via UVC Interface	
Saturation	via UVC Interface	
Backlight Compensation	via UVC Interface	
Power Requirements		
Supply Voltage	5V DC (VIA USB)	
Power Consumption	<500mA	

3.1. Flash Support

The camera supports one or two Videology LED Flash units.

The flash units are powered from the USB camera

3.2. Still Image Capture

The camera supports a single image "snapshot" mode with optional JPEG compression.

The resolution of the still image is user definable.

3.3. Camera / Flash

The camera is fully UVC compliant and all basic camera controls can be accessed via the standard UVC command protocol.

The 24C708AF camera, includes an internal processor that automatically detects when a snapshot command has been issued, and triggers the flash at the appropriate time.

Some applications however do not issue a snapshot command to the camera, and in this case, the application needs to be modified to include the necessary flash control commands.

The full capabilities of the camera can be demonstrated using the simple viewer application provided.

4. Viewer Installation

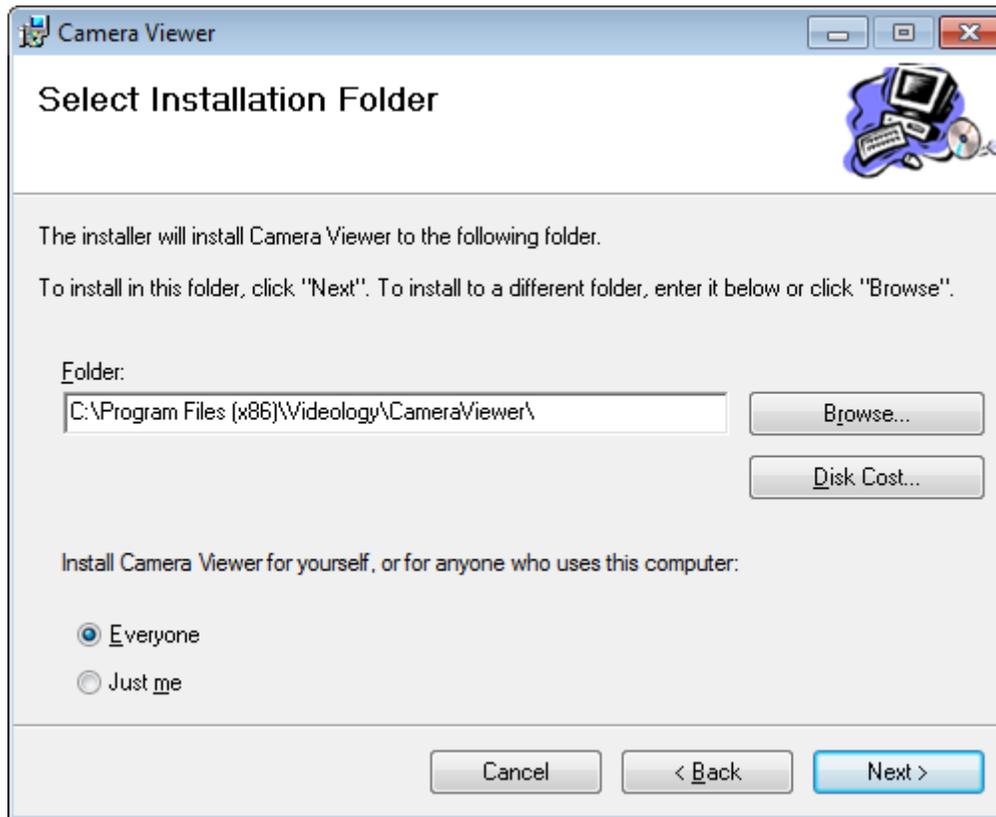
The 24C708AF is shipped with a simple demonstration viewer application that can be installed by running the "**setup.msi**" file found in the accompanying CD.

If the camera is to be used with a third party application, there is no need to install the Videology software.

- Insert CD into PC. If the disc does not autorun, open folder and double click setup.msi to start the install process.

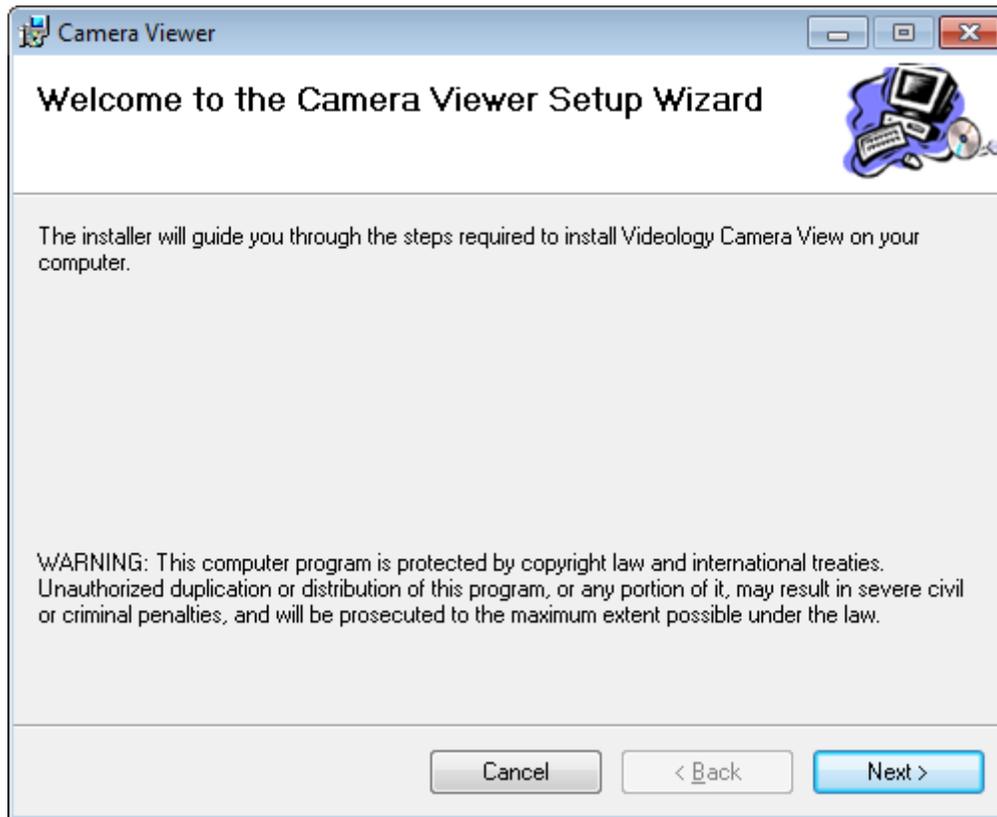


Select "Next".

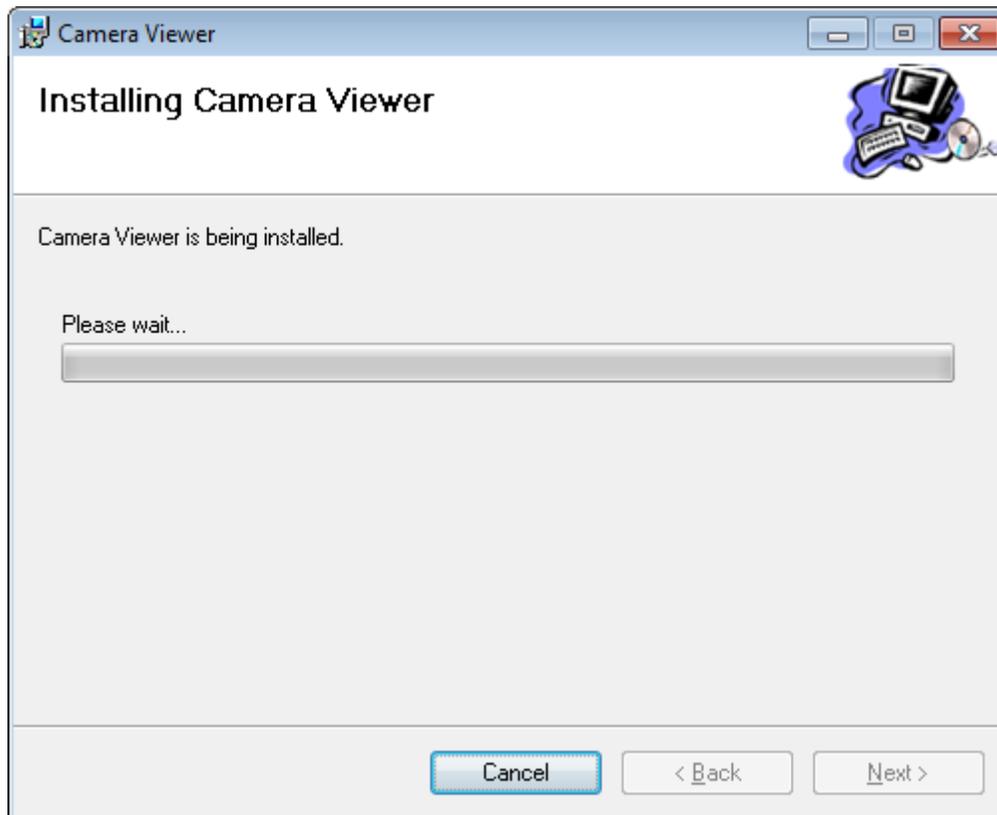


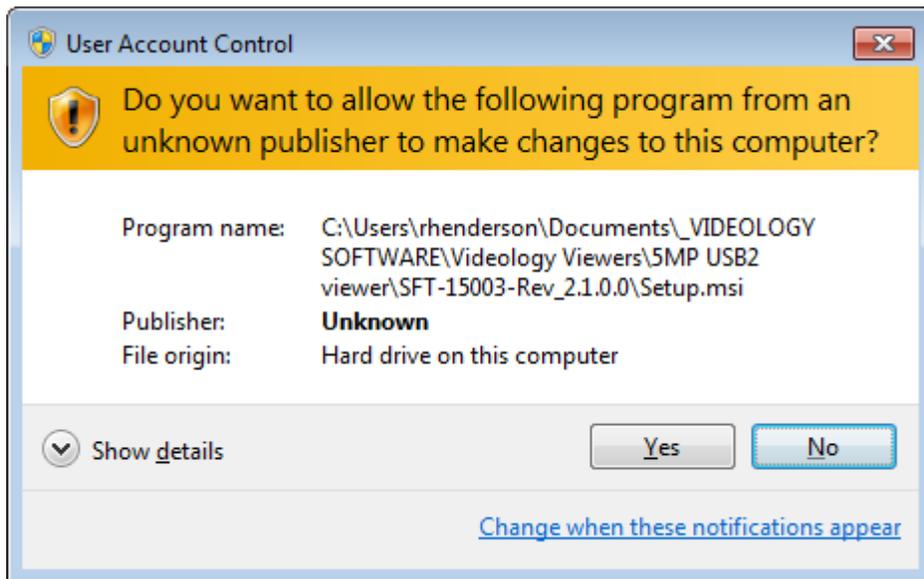
Pick the file directory you would like to install Videology software.
The default folder is C:\Program Files (x86)\Videology\CameraViewer\

You also have an option to install for everyone or just the user currently logged in.
Choose Everyone and click "Next"



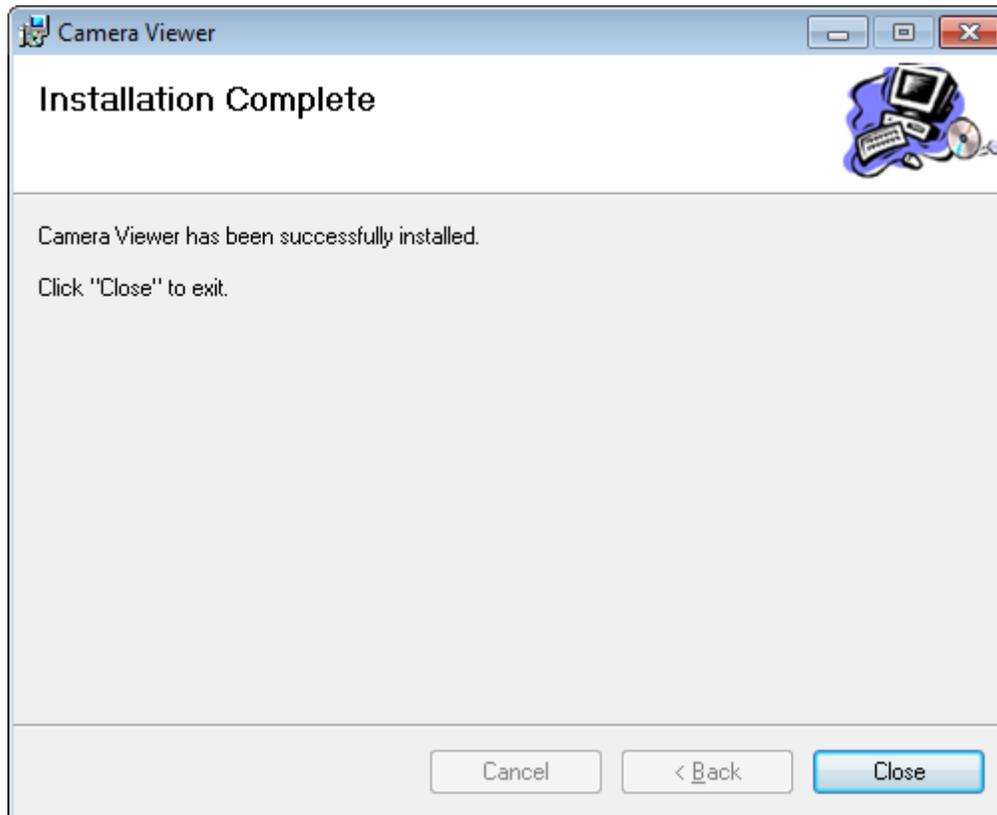
Select "Next" to continue. Another progress window will show status of install.





If a User Account Control" pop up is displayed, Click "Yes" to allow changes.

Once complete, a window will display that the 5MP Camera Viewer has successfully been installed.



Select "Close" to finalize the installation.

The USB camera can now be connected to the camera.

5. VIS Viewer

Plug in the camera (24C708AF) via USB cable , then open the viewer.

To open the viewer, Go to Start >> All Programs >> Videology >> Camera Viewer. You should now see a window like below.



The features that are supported in the current version of installer are briefly described here.

- In the viewer's status bar the current resolution of video stream and the frame rate are displayed.

5.1. Devices

When user clicks on Devices menu all the video devices connected to the PC will be enumerated and listed. A check mark will be placed alongside the camera whose images are being displayed in the window.



5.2. Options

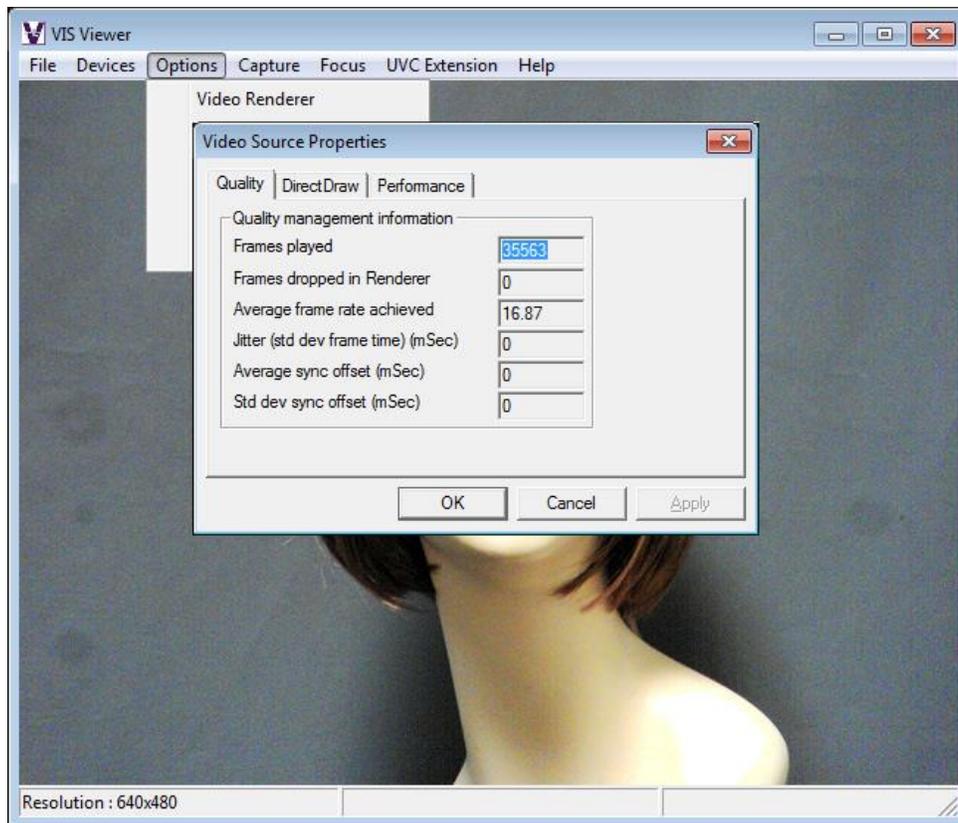
When user selects options menu, the below menu appears.



5.2.1. Video Renderer

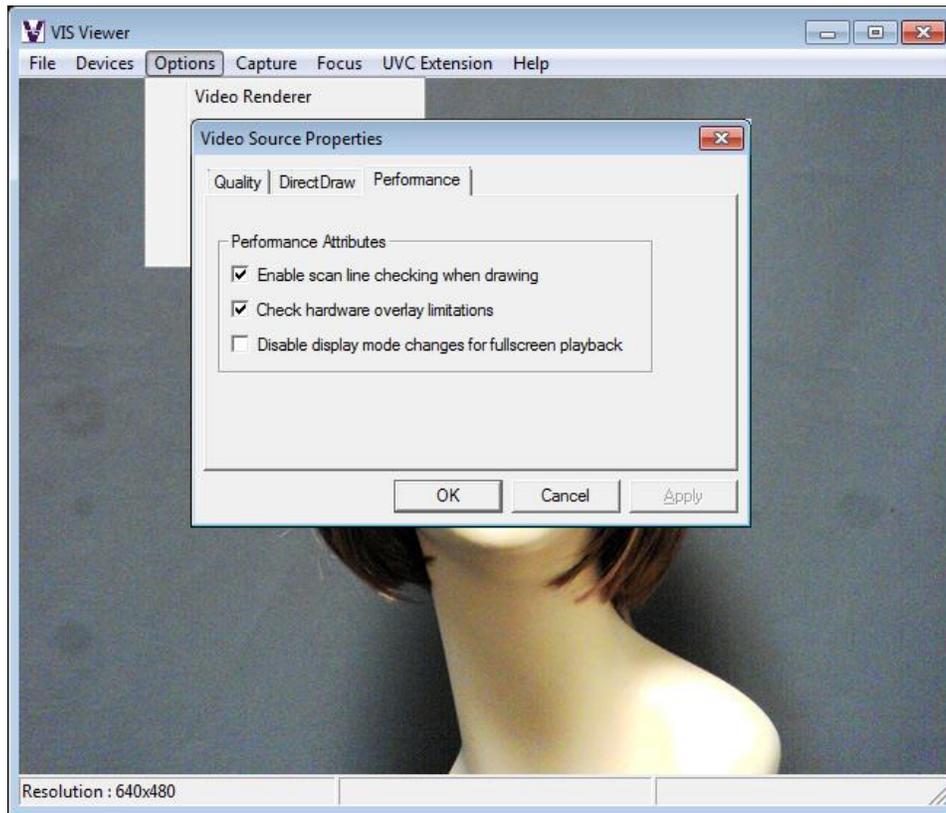
The video renderer properties that are displayed after being selected are shown in figure 5. The renderer properties include Frames played, average frame rate achieved, etc. All the values displayed are for the currently selected camera.

5.2.2. Quality

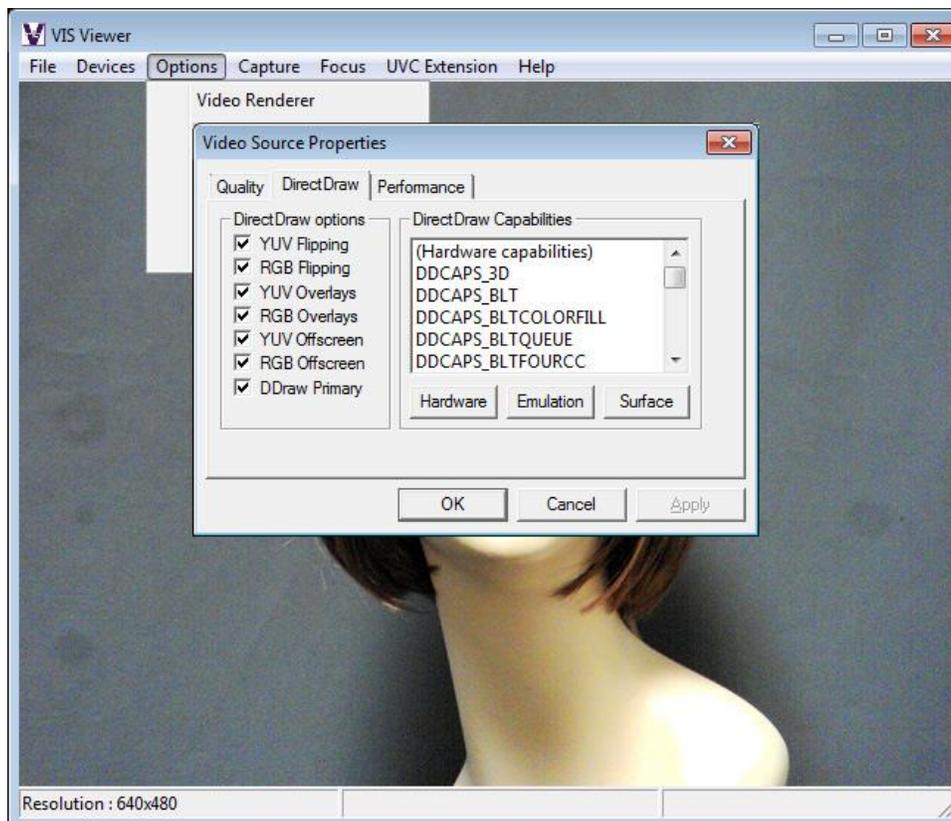


5.2.3. Direct Draw

The Direct Draw tab shows the enabled options and current capabilities of the DirectDraw plugin.



5.2.4. Performance



5.3. Video Capture Filter

5.3.1. Video Proc. Amp

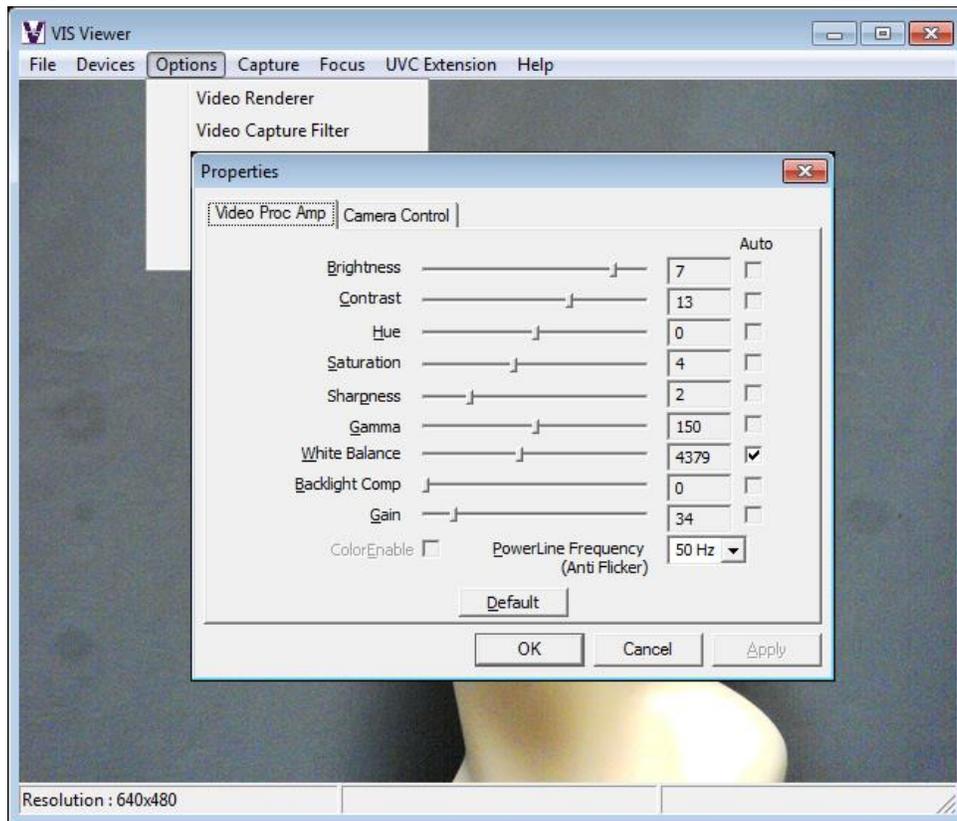
On selecting Video Capture Filter, a dialog will be launched which displays 2 kinds of video capture filter properties.

- a) Video Proc Amp Settings
- b) Camera Control Settings

a) Video Proc Amp Settings

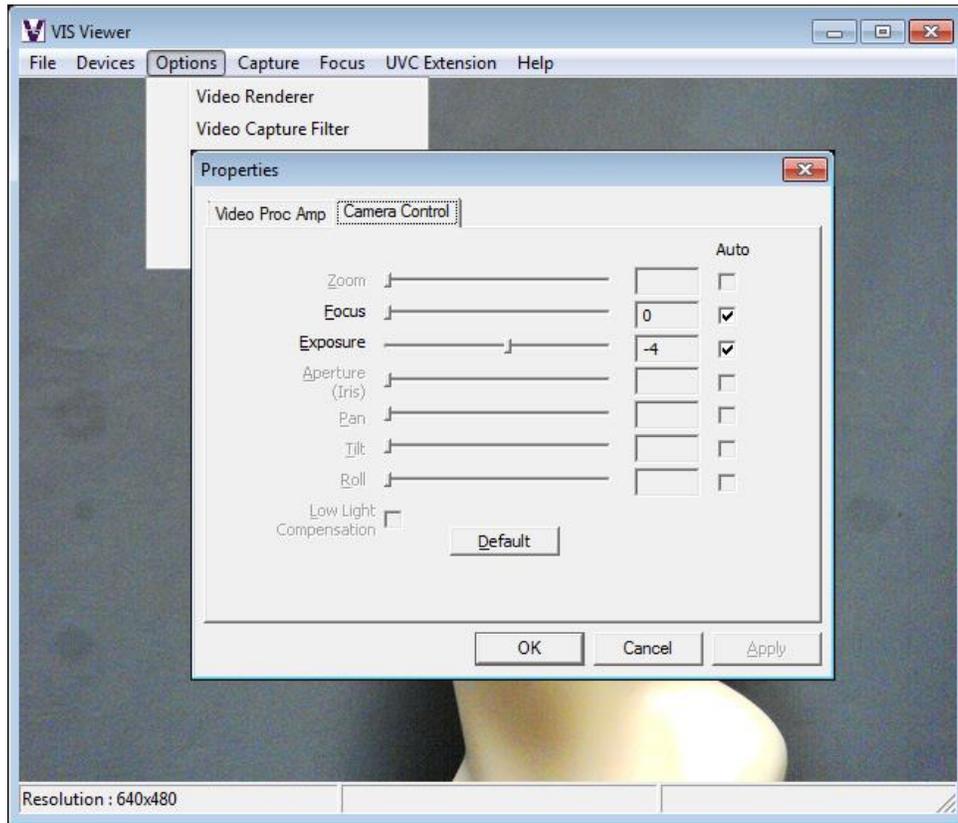
The user can adjust the Video proc amp settings in the dialog. Only sliders whose labels are not grayed out can be configured. The user can move the slider and configure the preview settings according to their needs.

The value being set will be displayed in the text box associated with the slider. As soon as the slider is moved to configure the values, the preview's property will instantly change, Clicking Apply button saves changes until the next time the dialog is opened.



b) Camera Control

To configure the camera control settings of the video capture filter the user can click on the Camera Control tab. Once again slider control will allow the user to configure the camera settings according to their need.



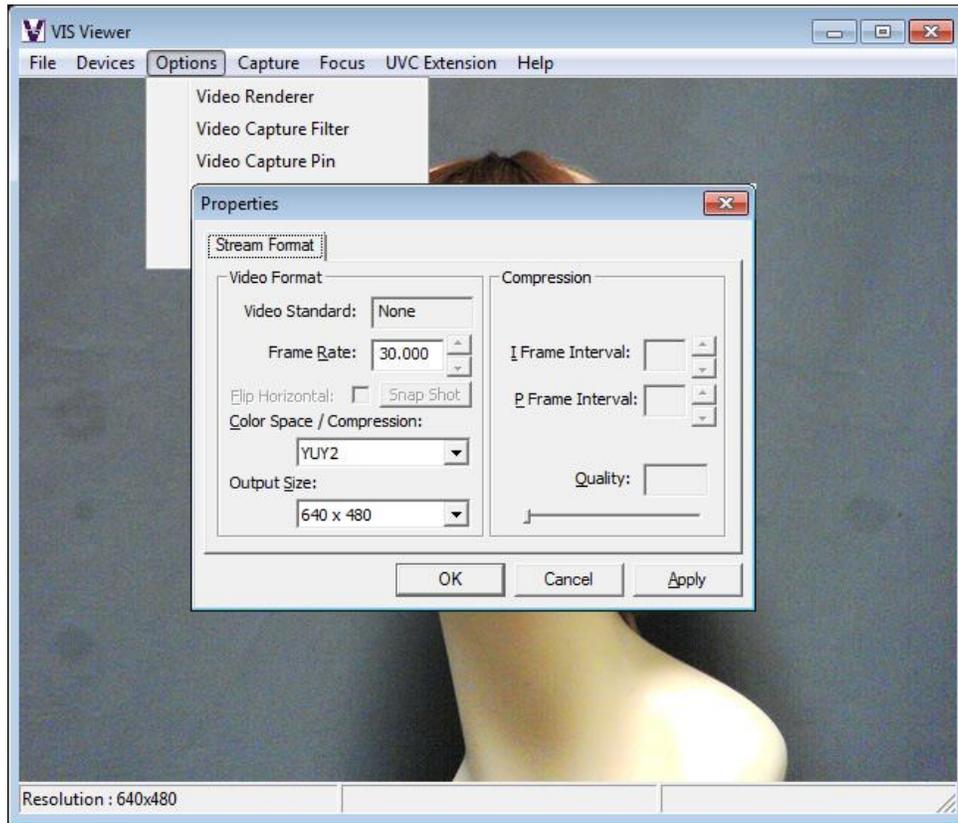
5.4. Video Capture Pin

5.4.1. Stream Format

On clicking the video capture pin sub menu a dialog box will be opened so that user can configure the output size and compression features of stream format. The preview running in the main application will be stopped until the video capture pin dialog box is active. Once the dialog box is closed preview will start automatically. The available output size and color spaces will be listed in the combo box. After selecting the required output size and color space, the user must press the Apply button to configure the changes. Pressing Ok will start previewing the video stream with newly configured output size and compression values. At any point in time the user can click on the Cancel button to exit the dialog and start the preview.

The window will be resized to the same size as that of the video stream output format.

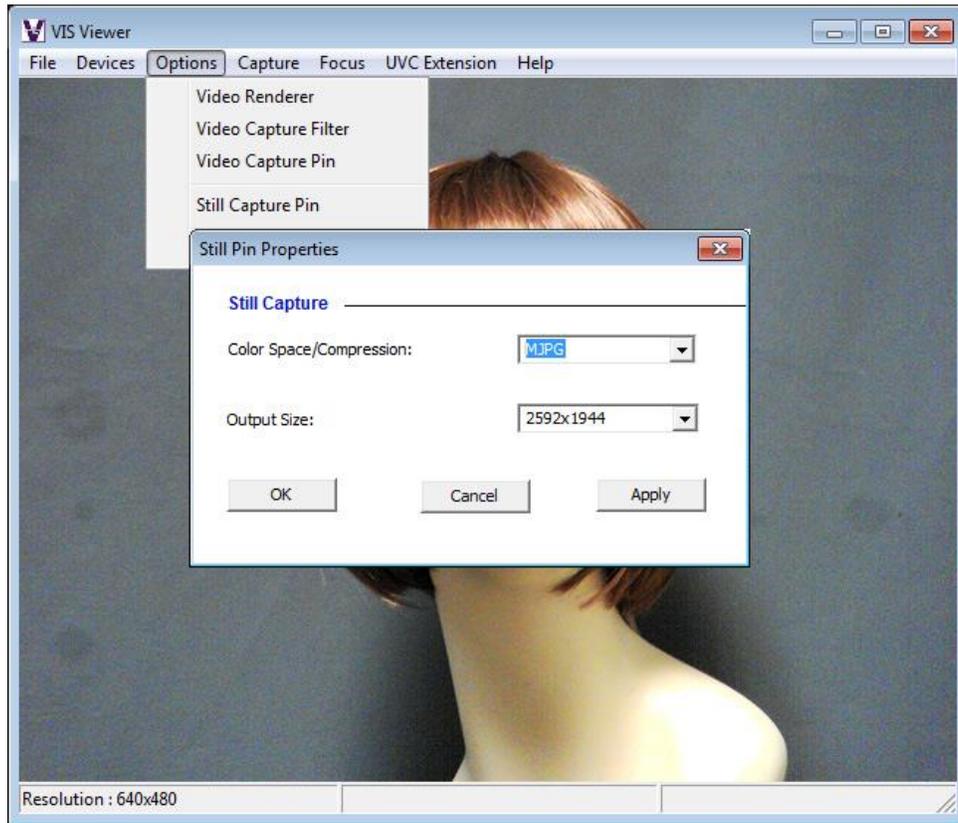
Video window height and width is reduced/enlarged according to selected output size of video stream as shown in figure below.



5.5. Still Capture Pin

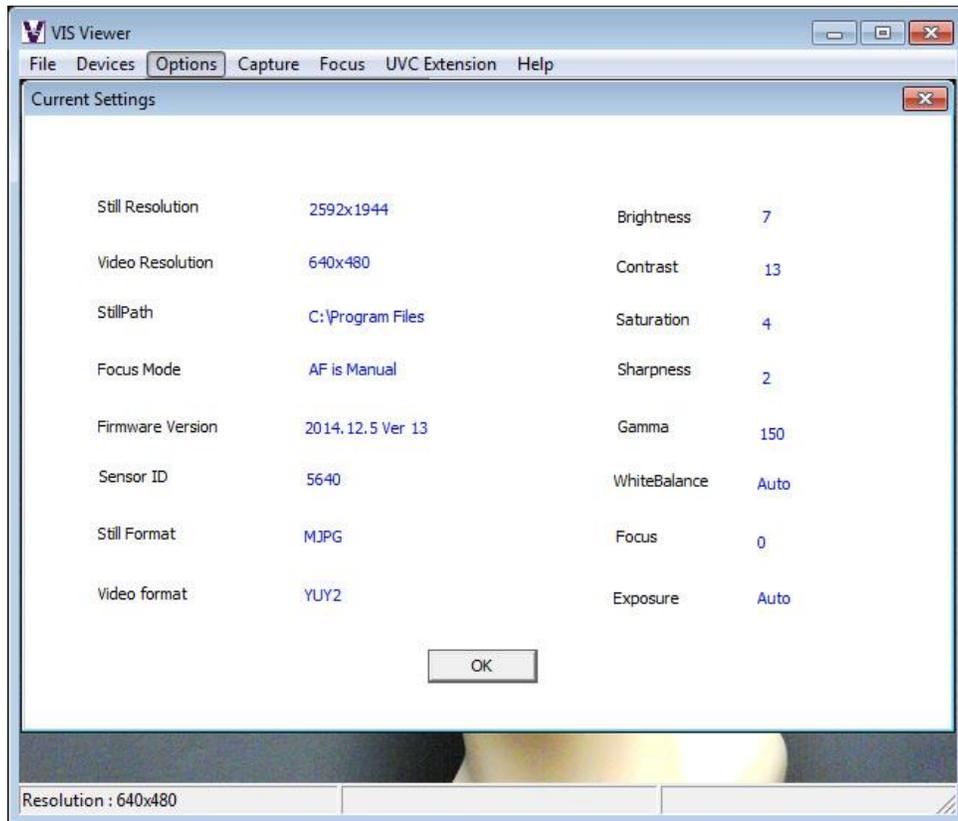
On clicking the still capture pin sub menu, a dialog box will be opened so that the user can configure the output size and compression features of the still capture pin. The preview running in the main application will be stopped till the still capture pin dialog box is active. Once the dialog box is closed preview will start automatically. The available output size and color spaces will be listed in the combo box. After selecting the required output size and color space, the user must press the Apply button to configure the changes. Pressing Ok will start previewing the video stream with newly configured output size and compression values.

At any point of time the user can click on Cancel button to exit the dialog and start the preview.



5.6. Current Settings

On selecting the current settings sub menu a dialog box will be opened which will list out all the currently configured values for the device. The user can see all the properties configured and the affects on the video that is rendered onto the application window.



5.7. Capture

The Capture Menu has 2 options.

- Get Still (Enter)
- Set File Path

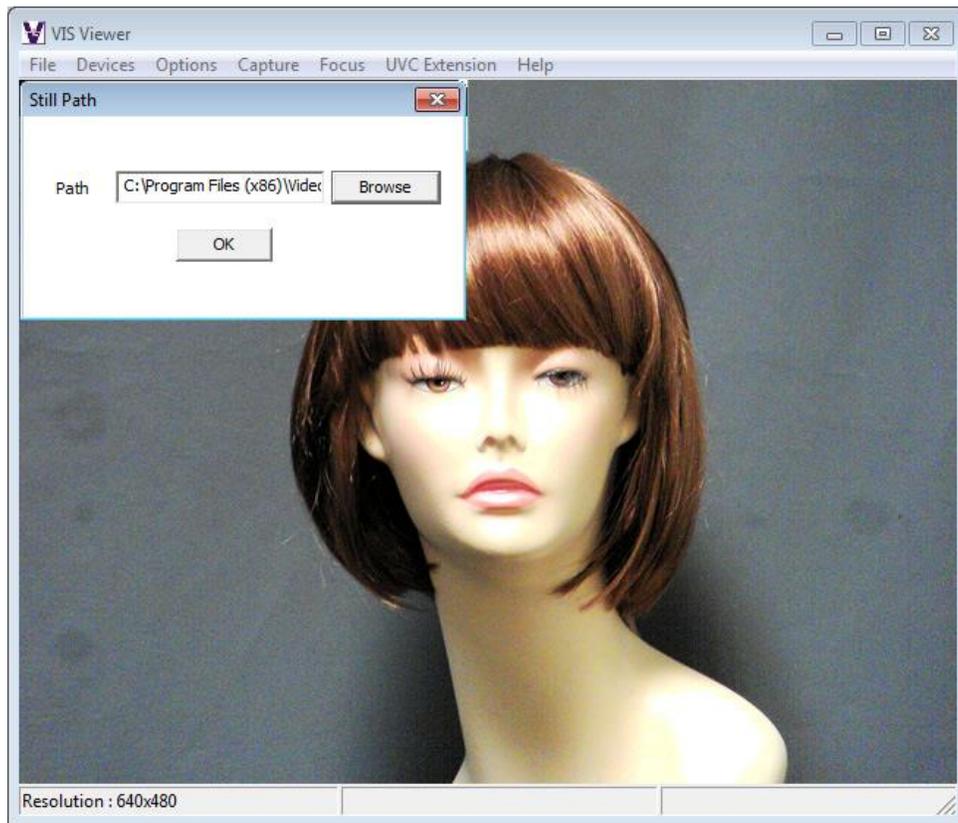
5.7.1. Get Still (Enter)

The user can capture the still image from the still pin by selecting this menu or pressing Enter key through the keyboard. The image will be saved in the desktop directory by default. The user can configure which folder to save images by clicking on the still file path and configuring the directory as required. The file name of the image saved will be the current timestamp.



5.7.2. Still File Path

By using this menu the user can set up the folder where the images captured will be saved. The user can browse the required directory so that future images captured will be saved in that folder.



5.8. Focus

5.8.1. Trigger AutoFocus

The 24C708AF is fully UVC compliant. All basic camera controls can be accessed via the standard UVC command protocol.

Focus

Focus is achieved by selecting the Focus tab on the menu and pressing the "Trigger Focus" command.

Alternatively please note that Focus is a standard UVC supported command. However, depending upon the software package being used, the focus menu item can be difficult to find. For example, in AMCap, the focus command is located as follows:

Options > Video Capture Filter > Video Proc Amp > Camera Control > Focus

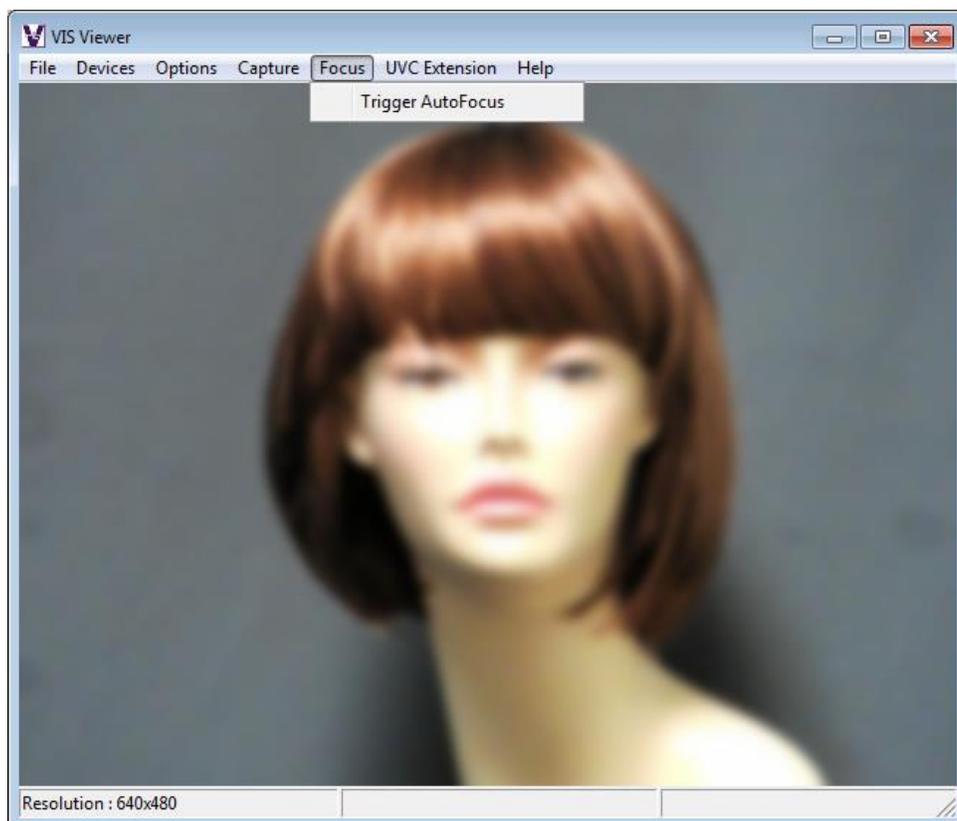
Since the 24C708AF UVC compliant USB2 camera is a push to focus device, the user must toggle the focus flag from "0" to "1" in order to initiate a focus. If the focus flag has been left at a "1", the user must first set it to "0" and then to "1".

Flash

Please note that automatic FLASH control is not a standard UVC supported command and is not included as part of the standard UVC interface.

To overcome this problem, the 24C708AF includes an internal processor that automatically detects when a snapshot command has been issued, and triggers the flash at the appropriate time. Some applications, however, do not issue a snapshot command to the camera, and in this case, the application needs to be modified to include the necessary flash control commands.

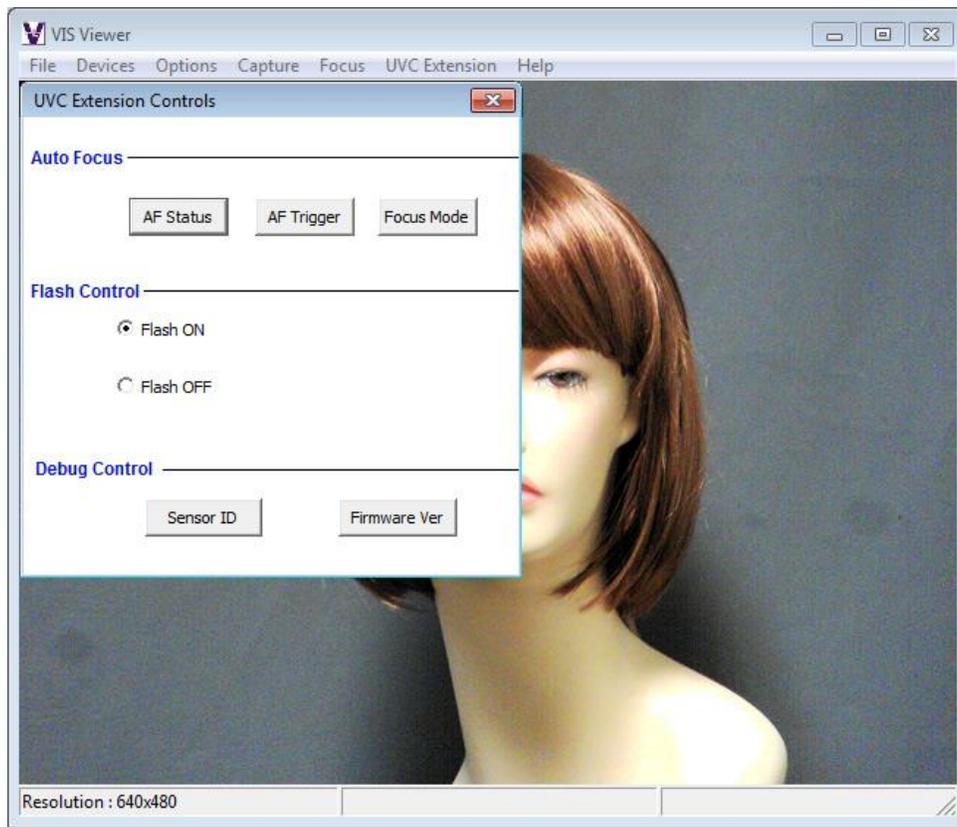
The full capabilities of the camera can be demonstrated using the simple viewer application provided.



5.9. UVC Extension

On selecting the UVC Extension menu, the UVC Extension Control dialog box will open. The UVC Extension library has the features mentioned below:

- Auto Focus Status
- Auto Focus Trigger
- Focus Mode
- Update GPI Status
- Set / Clear GPO's
- Get Sensor ID
- Get Firmware Version

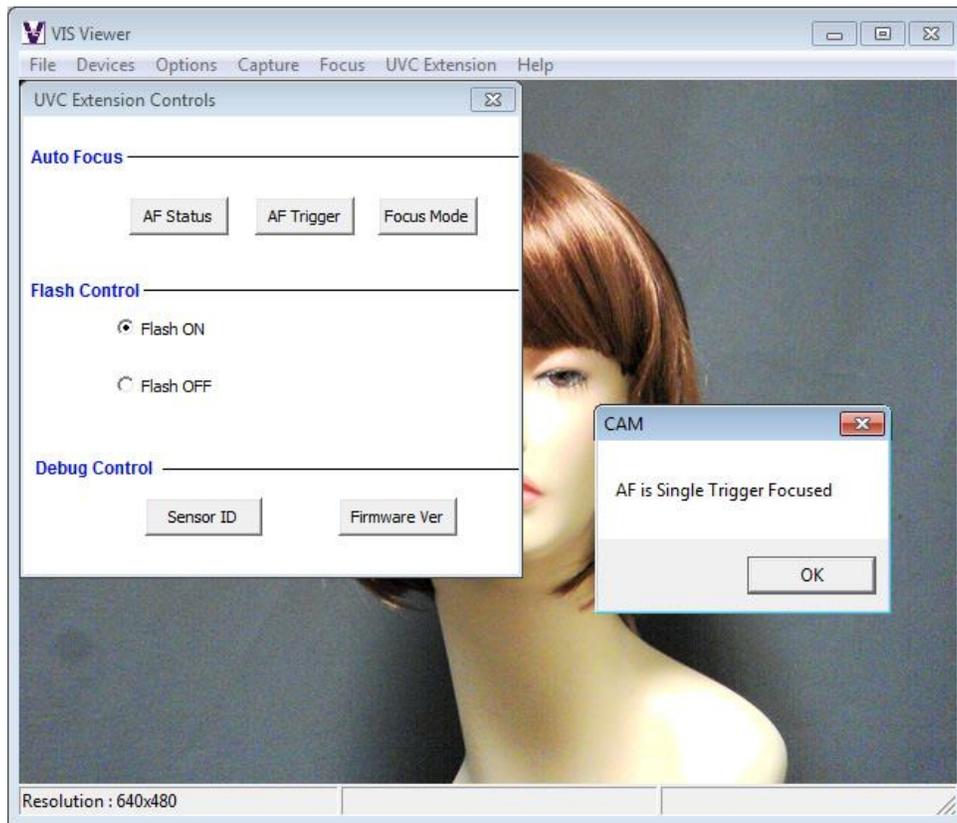


5.9.1. AF Status

The AF Status button shows the current auto focus status.

The possible focus status is shown below.

- AF is Manual
- AF is Single Trigger Focusing
- AF is Single Trigger Focused



5.9.2. AF Trigger

Focuses the camera (no screen shot)

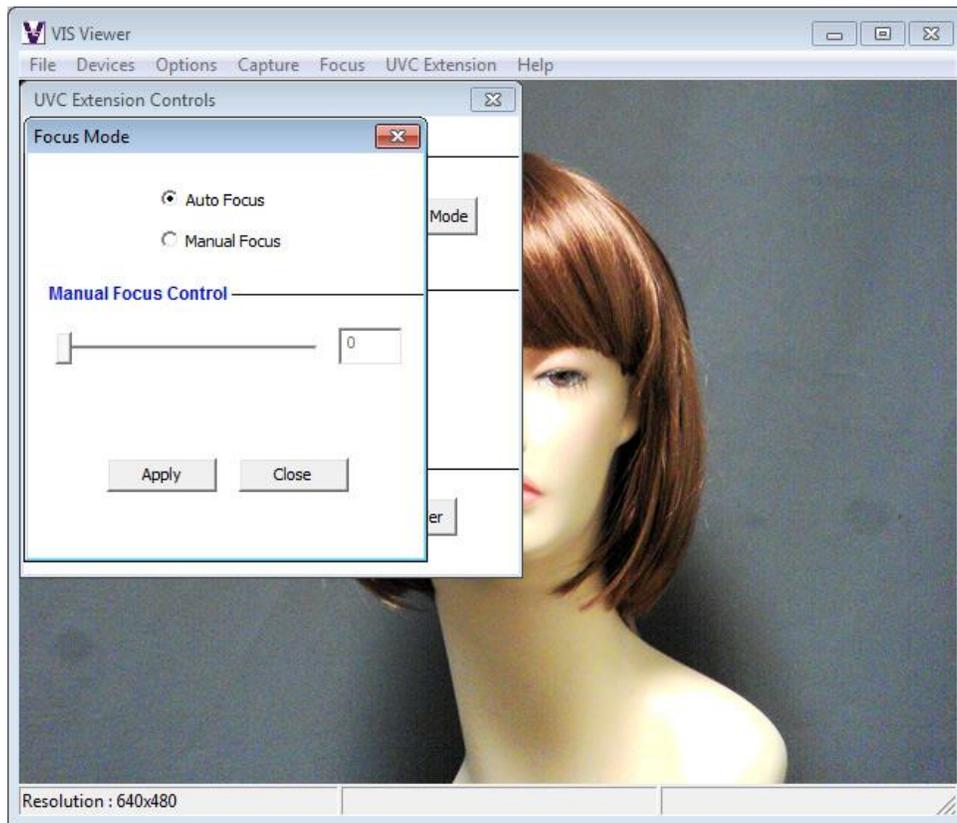
The AF Trigger button will perform a Single Trigger Auto Focus.

The Focus Mode button opens the Focus Mode Dialog to perform Auto Focus and Manual Focus. It contains two Radio buttons. 1) Auto Focus 2) Manual Focus. The Auto focus Radio button is selected by default.

On selecting the Auto Focus radio button the slider control and edit box will be disabled. Those controls will be enabled once the manual focus radio button is selected

Select the Auto Focus radio button and click the Apply button to set the Auto Focus mode.

Select the manual focus radio button to enable the Slider control and edit box. Slide the slider to set the manual focus. The slider position (Manual Focus Position) displays in the edit box. The Manual focus will be set after the user leaves the slider in the desired position.



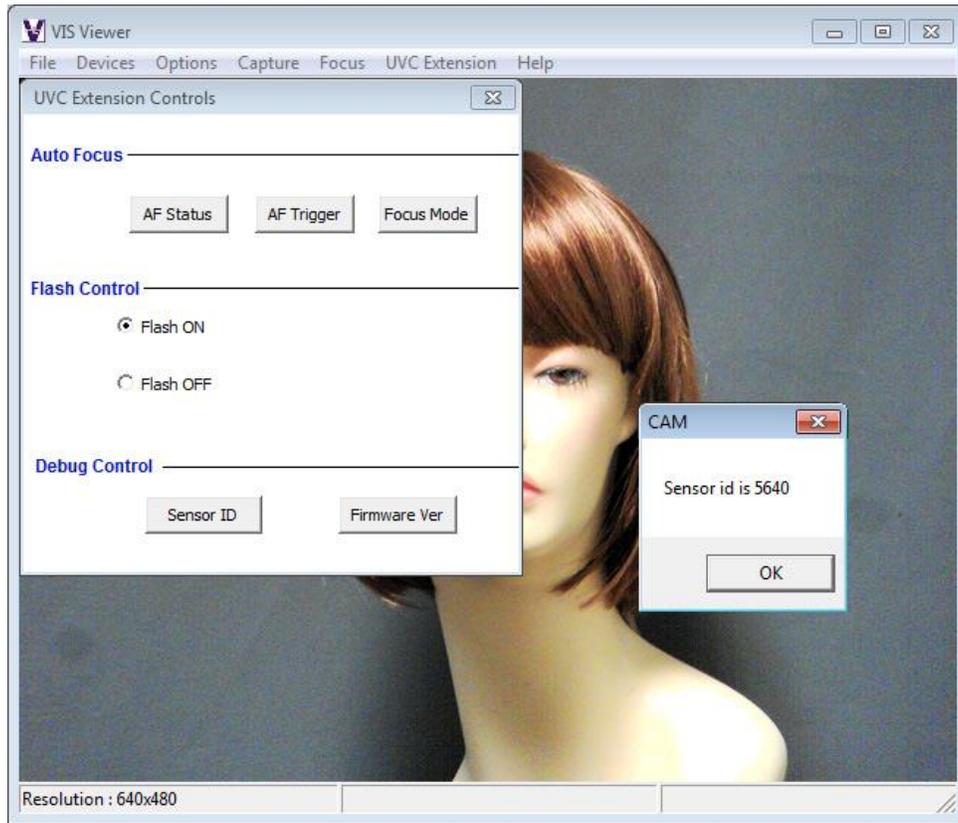
5.9.3. Flash Control

Flash Control command is not configured with this model.

5.9.4. Debug Control

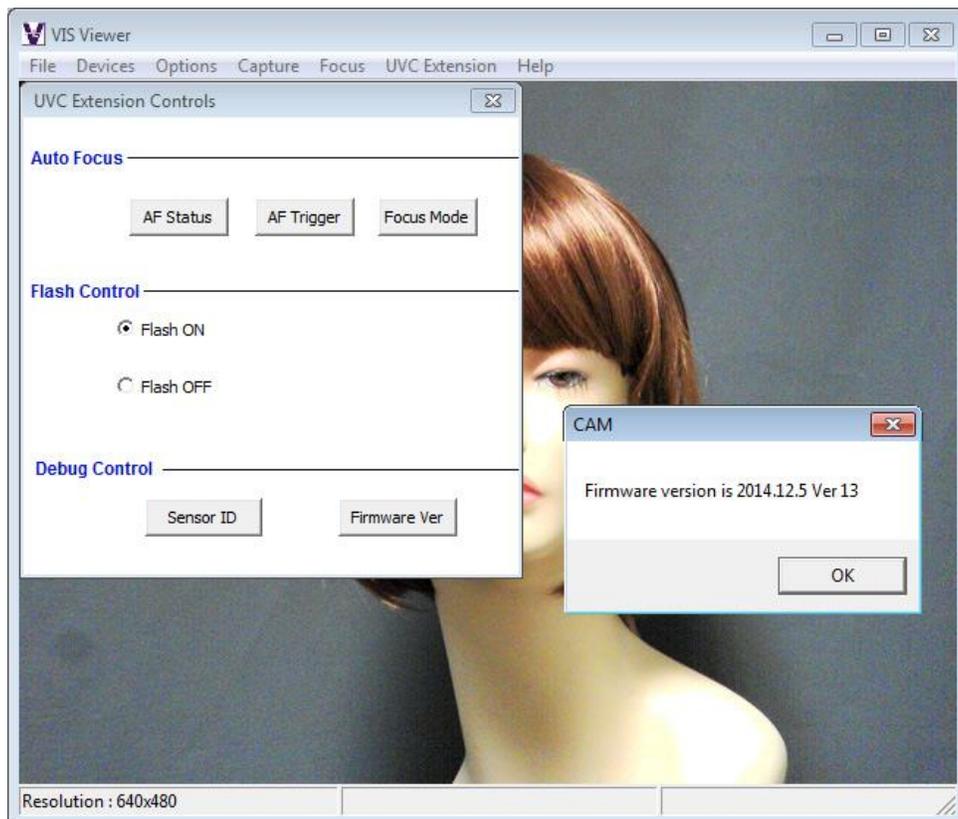
5.9.4.1. Sensor ID

The Sensor ID button will display the current sensor id details.
For the 24C708AF USB camera the id is shown below:



5.9.4.2. Firmware Ver

The Firmware Ver button will display the current firmware version details.
For the 24C708AF USB camera the firmware version is shown below:

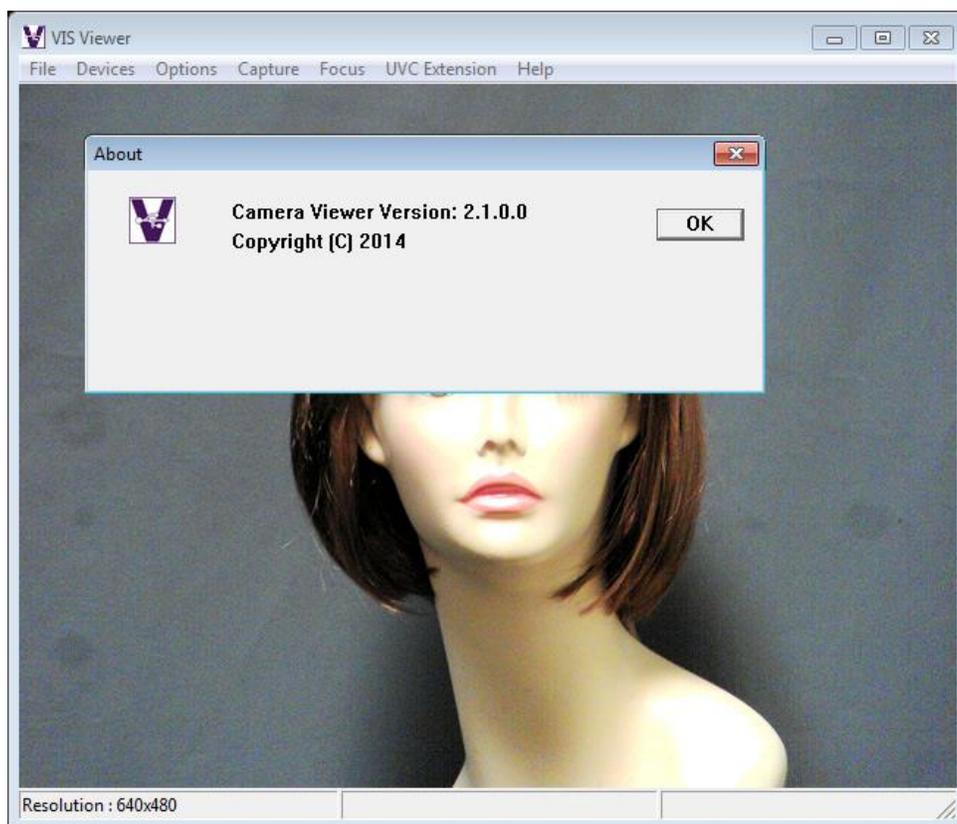


5.10. Help

Help will show the current version of the 24C708AF viewer.



About ...

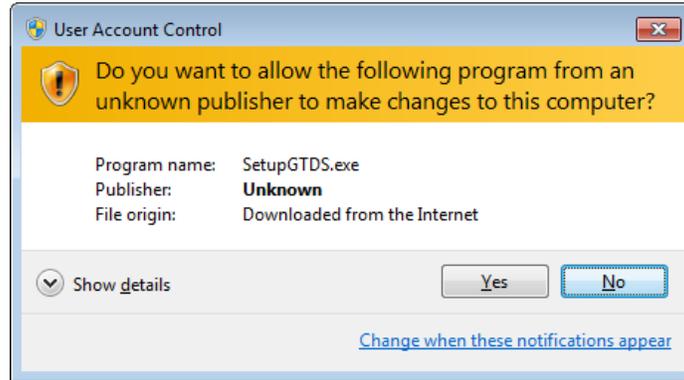


6. TWAIN Installation

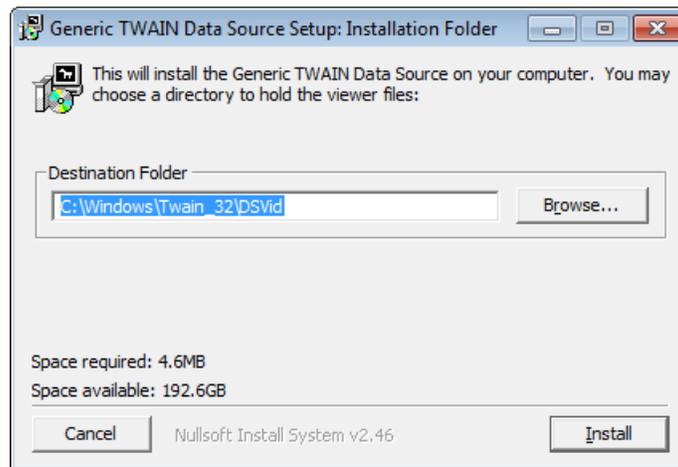
To install the TWAIN data source, double click the executable file named **SetupGTDS.exe**.

Note: the file name might be slightly different depending on the revision level of the software.

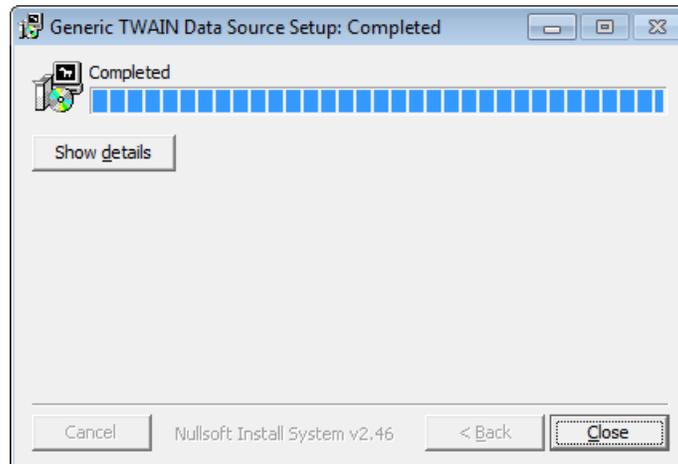
If a User Account Control" pop up is displayed, Click "Yes" to allow changes.



The following window will appear:



If the viewer is to be installed in a location other than the default directories, click on the **Browse** button and specify the desired location, otherwise click on the **Install** Button and the following screens will appear:



The TWAIN driver installation is now complete. Click **Close** to exit the hardware wizard.

7. Using the TWAIN Interface

If the Twain interface (**SFT-10012**) is installed, the camera can be used with any TWAIN Compliant Application.

The TWAIN interface will attach itself to the first CredCamProPlus camera it finds connected to the computer. For best operation, run the TWAIN Interface on a system that has only one CredCamProPlus camera installed.

Any application that supports a TWAIN Data Source as a capture device can access the camera. The camera's image will appear as shown below:



7.1. ZOOM FEATURE

The Optical zoom function is basically used to frame the subject within the field of view (FOV). The subject may be of differing height, distance, or position within the FOV, and the optical zoom provides a means of sizing and positioning the frame so as to provide an image of the correct proportions.

With no optical zoom capability within the camera, we need to provide some other means of framing the image to the size and proportions required.

One option would be to provide real time *digital* zoom, but doing this within the live video stream is problematic and would result in reduced frame rates, and somewhat jerky video.

An alternative approach is to provide a means of defining the size and position of the captured image within the streaming video. This is somewhat analogous to aiming and zooming the camera with the optical zoom.

7.2. Mode of operation

7.2.1. Preview mode

The streaming video is shown in 640 x 480 resolution.

The operator would view the subject in preview mode and then drag a box over the image to define the capture area. The box can be of any size and location within the image.

The still image would be captured at full resolution (2592 x 1944 pixels) and automatically cropped to the size defined by the box drawn in the preview mode as shown below.



Image in Streaming Video



Captured Still Image

If for example, the box drawn in the preview mode was half the height and half the width of the full screen then the captured image would have a resolution of 1296 x 972 pixels. This could of course be reduced in resolution if required.

8. Contact Information

For technical assistance with this product, please contact the supplier from whom the product was purchased.

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