

VALCam™ USB with Flash

Introduction

Thanks for purchasing the VALCam™ USB, the first image acquisition system designed specifically for photo-ID and visual database applications. All camera controls (pan, tilt, zoom and exposure level) are available from the mouse or keyboard. Manual positioning of the camera is eliminated for increased operator efficiency.

The VALCam™ Professional also includes **One Click Auto Centering**. Double click on the subject's nose and the camera will immediately center itself in under a second.

In addition to hands off control, the VALCam™ USB provides a synchronized photoflash for consistent high quality image acquisition in any environment. Software controls are provided for flash intensity and flesh tone adjustments making the acquisition of top quality images a snap. High quality captures with perfect skin tones and exposure can be obtained effortlessly in any environment, even dark rooms!



Video Associates Labs, Inc.
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Features Include:

- One Click Auto Centering on USB Professional
- Complete USB hardware interface
The only connection to the computer is a USB cable
- Mouse control of pan, tilt, zoom and exposure in Pan/Tilt/Zoom version.
Zoom in/out for the Zoom version.
- Uses optical pan, tilt, zoom for highest resolution.
- Synchronized photoflash with software control of flash exposure and flesh tones. Perfect captures even in dark rooms.
- Hassle free integration of photoflash.
- Includes 32 and 64 Bit Twain Driver.
- Complete SDK available on request (optional)
- Will work in all major Windows® photo ID and imaging applications.
- High-resolution single chip CCD array (796x494).
- Auto Focus, S-video output.
- Available in both NTSC and PAL video standards.

Quick start instructions for hardware and software installation are provided. A trouble-shooting guide will help resolve any installation and operational problems. The **Imaging Hints and Tips** section will help the end user achieve high quality captures.

If technical support is needed please contact:
Video Associates Labs, Inc.
Phone: 800-331-0547
Fax: 512-491-7619
Email: support@val-cam.com

Parts List for available VALCam™ products:

8500-630 VALCam™ Pro with Flash

High resolution Pan/Tilt/Zoom Camera
External USB interface box
Multi-cable interconnect
High Intensity Photo-Flash
Universal mounting bracket for flash
USB cable
Brick power supply for USB interface box
Instruction Manual
Installation Disk



9000-628 VALCam™ Zoom Enhanced with Integrated Flash

High resolution USB Zoom camera
USB cable
Brick power supply for camera
Instruction Manual
Installation Disk



8000-628 VALCam™ Zoom Enhanced with Flash

High resolution USB Zoom camera
High Intensity Photo-Flash
USB cable
Brick power supply for camera
Instruction Manual
Installation Disk



Installing the VALCam™ USB Zoom

1. Do **not** connect the camera to the computer until after software installation.
2. Mount the photoflash to the hot-shoe connector on top of the camera.
3. Connect the flash cable to the matching receptacle on the back of the camera.
4. Connect the power adaptor to the matching connector on the back of the camera. Plug the power adaptor to a wall socket.
5. Connect the USB cable to the back of the camera.



Do not connect the USB cable to the computer.

Installing the VALCam USB Pan/Tilt/Zoom

1. Do **not** connect the camera to the computer until after software installation.
2. Screw the tripod mounting shoe (this is may be removable from the tripod) to the screw hole at the back of the flash mounting bracket.
3. Attach the flash-mounting bracket to the tripod. Use the knob on the bottom of the flash bracket to attach the camera..
4. Attach the photoflash to the shoe connector on the flash bracket.
5. Locate the camera multi-cable.
6. Connect the **brown** S-video connector on the multi-cable to the matching S-Video connector on the camera. Verify that the connector is properly oriented and gently insert the connector. Do not force the connection.



7. Connect the **red** Visca connector to the matching **red** connector on the camera.
8. Connect the **yellow** power connector to the matching **yellow** connector on the camera.
9. Connect the 25-pin connector on the multi-connector to the USB converter box.
10. Connect the power supply to the USB converter box.
11. Connect the USB cable to the converter box. Do not connect the other end of the USB cable to the computer.
12. If desired the external USB converter can be removed from the flash bracket. An extended 10 ft cable is available from Video Associates.



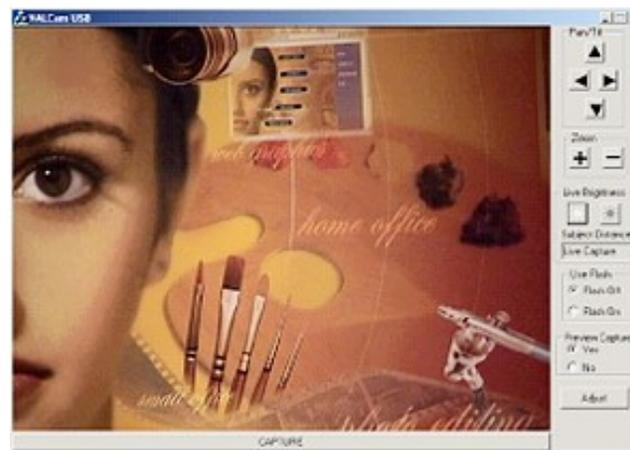
Final Installation for Win XP and Win 2000, and Vista

1. Run **Setup VALCam™ USB.EXE** located on the installation CD.
2. Verify that the camera is configured as described above. Make sure the power supply is connected and plugged in to a wall outlet.
3. Verify that the USB cable from the Zoom camera or the converter box is attached. Plug the USB cable to your computer USB port.
4. The computer will find new hardware and install the device. Answer **Yes** or **Continue** if you are queried during the installation.
5. The installation process will install 2 devices before the process is completed.
6. You can confirm the installation by opening Device Manager and noting the “**VALCam™ USB Camera**” listed under “**Video Associates Labs**”

NOTE: When upgrading software ALWAYS UNPLUG THE POWER SUPPLY CONNECTOR before installing the new software. Plug in the Power Supply Connector after the software upgrade is installed. Camera firmware will not be upgraded unless this procedure is followed.

Basic Operation

1. Confirm that the display settings of your computer are set to 24 or 32-bit color (16 bit is not recommended).
2. Click on **START->PROGRAMS->VALCam™ USB** and start the application.
3. The application will determine if the **DirectX** version installed on the computer is capable of using the camera. If the version needs to be upgraded, an error message will be displayed. The Microsoft DirectX upgrade is provided on the installation CD. If necessary run the DirectX upgrade and restart the camera application.
4. The **VALCam™ ID** capture control box will appear. **If you receive an error message or the capture control box does not appear displaying live video, consult the troubleshooting guide.**



Camera Zoom controls

1. Press the + key next to the numeric keypad, the camera will zoom in. Release the + key and the camera will stop zooming. To zoom out press the – key next to the numeric keypad. Release the – key to stop the action.
2. To speed up the Zooming action hold down the **Ctrl** key
To slow down the Zooming action hold down the **Shift** key.

One Click Auto Position (Available on Pan/Tilt version only)

This version of VALCam™ USB supports **One Click Auto Positioning** for the fastest face-centering feature available for photo-id applications. Unlike other auto-centering features, the VALCam™ will center the camera in real time in less than 1 second. The results can be previewed immediately for approval before saving.

Mouse Click, Drag and Release can also be used to quickly position the camera to any desired location for fast positioning.

Using the **Double Click Auto-Position** feature:

1. Place mouse cursor over any face feature (i.e., tip of the nose).
2. Double click the left mouse button
3. Camera will position the face feature to the center of the screen or any predefined position immediately
4. Tap the ↑, ↓, ←, → cursor keys to fine tune position for fine control of camera position.
5. Hold down the ↑, ↓, ←, → cursor keys to move the camera continuously.

NOTE: This feature can also be used to center scars and tattoos for law enforcement applications.

Using the **Click, Drag and Release** feature.

1. Place mouse cursor over any face feature (i.e., tip of the nose)
2. Click and hold the Left mouse button
3. Drag the mouse cursor to any desired position
4. Release the Left mouse button
5. Camera will position the face feature at the new cursor position.
6. Tap the ↑, ↓, ←, → cursor keys to fine tune position for fine control of camera position.
7. Hold down the ↑, ↓, ←, → cursor keys to move the camera continuously.

Manually Adjusting Pan/Tilt position

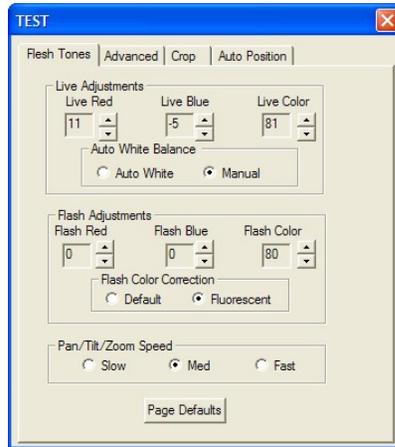
1. Use the ↑, ↓, ←, → keys on your keyboard to control pan/tilt operation. Hold down keys to initiate action and release keys to stop action.
(Pan/Tilt/Zoom Camera only)
2. To speed up **PTZ** action hold down the **Ctrl** key.
To slow down **PTZ** action hold down the **Shift** key.
3. Place the mouse over the  button and hold down the left mouse button. The camera will zoom in. When the mouse button is released, zooming will stop. The  button works the same way to zoom out.
4. Place the mouse over the  button and hold down the left mouse button. The camera will tilt up. When the mouse button is released, camera motion will stop. The , ,  buttons works in a similar fashion.
(Pan/Tilt/Zoom Camera only)
5. **PTZ** speed can be adjusted in the “Adjust Dialog Box”.

Adjust Live Preview/Capture Parameters

1. Click the **Flash Off** button.
2. Adjust the **Brightness** control buttons for proper image illumination. This is the only control used to adjust image brightness.
3. The last setting of the **Brightness** control is remembered between sessions.
4. Click the **Adjust** button and click the “**Flesh Tone**” tab.

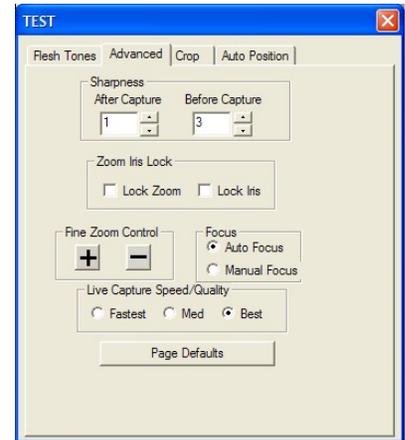


5. Click the “**Manual**” radio button to adjust the live preview colors. Adjust the **Live Red** and **Live Blue** scroll controls up and down. Note the changes in the image color balance. These controls can be used to fine tune image color for optimal quality.
6. Adjust the **Live Color** control and note the changes in the image. This control adjusts color intensity from pale to very intense.
7. Click the “**Page Defaults**” or “**Auto White**” button to reset White Balance and normalize color settings.
8. Refer to the “Tips on Optimizing Captures” for more details on obtaining high quality captures.



Sharpness Control

1. Click the “**Advanced**” tab on the Adjust Dialog box.
2. The “**After Capture**” control adjusts post capture image enhancement. The effects of this control are not visible until the capture is viewed. The default is 1 or 2.
3. The “**Frame Grabber**” sharpness adjustment affects real time out image sharpness. The default is 2 or 3.
4. Higher or lower values might be warranted in different circumstances. If the values are too high the image will look edgy and noisy. If the value is too low the image will look soft or out of focus.
5. Clicking the “**Page Defaults**” button will restore factory defaults.



Capturing a Live Images

1. Verify that the **Use Preview** is set to **Yes** and **Use Flash** is set to **Flash Off**.
2. Zoom in as close as necessary to your subject.
NOTE: Always zoom in as tight as the image composition will allow for best quality images.
3. Adjust **Brightness**, **Flesh Tone**, and **Sharpness** controls for best image quality.
4. Click the Capture Button and the image will be displayed.





- Adjust the “Red” and “Blue” scroll bars to adjust the image color balance. The values can be adjusted from -50 to +50. Positive values increase Red or Blue. Negative Colors decrease Red or Blue. These settings are remembered between captures and sessions and will be restored on the next capture without additional adjustment.
NOTE: If large positive or negative values of Red or Blue need to be added, the “Live Red” and “Live Blue” adjustments should be set to minimize the values of these settings. See “Tips on Quality Captures” later in the manual.
- Click the “Save” button to send the image to clipboard or your application. Click the “Don’t Save” button to discard the image and prepare to take another capture. This is very useful when using the Twain driver as you can immediately take another capture without restarting the application.

Using the Photo-Flash

The photoflash allows optimal captures to be obtained in any environment with the highest quality. You can even take captures in a completely dark room and varying subject distances with no degradation of image quality.

Once the flash intensity is set for a given subject distance, all captures will be identical even with different amounts of room light.

The VALCam™ stores different settings for Flash and non-Flash captures so both live and Flash capture can be obtained without user intervention.

Taking a Flash Capture

- Click the **Use Flash** button to **Flash On**. The Flash will be triggered the next time the capture button is clicked.
- Frame the subject with the camera controls.
Remember to zoom in as tight as your image composition will allow for highest image resolution.



- Adjust the and buttons for the subject distance from the camera. Each time these buttons are clicked the flash intensity will be changed to accommodate for proper subject distance.
- Click the Capture Button and after a short delay the flash will fire and the image will be displayed. (Verify that **Use Preview** is set to **Yes**)



Flash set too dark

Flash set too Bright



- Fine tune the and adjustments for optimal capture exposure and take another capture. Repeat this process until optimal image exposure is obtained. The live preview will not change because **Use Flash** is set to **Flash On**.



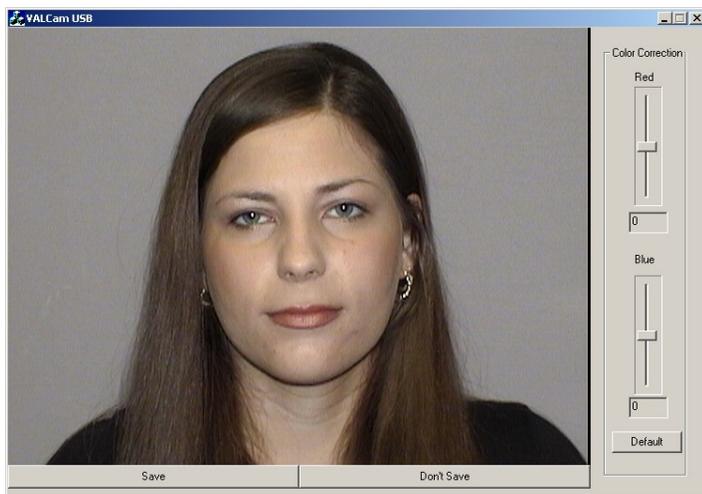
Flash set correctly

- Once the proper setting is found, it will not need to be readjusted even if the room lighting changes. If the subject distance changes these settings will need to be readjusted.

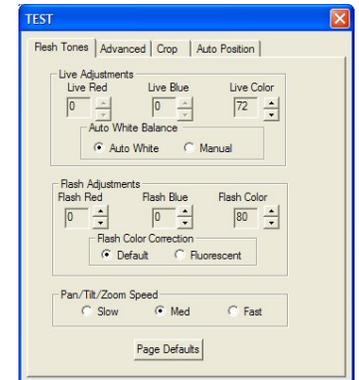
Adjusting Flash Capture Quality

- Adjust the “Red” and “Blue” scroll bars to adjust the image color balance. The values can be adjusted from -50 to +50. Positive values increase Red or Blue. Negative Colors decrease Red or Blue. These setting are remembered between captures and sessions and will be restored on the next capture without additional adjustment.

NOTE: If large positive or negative values of Red or Blue need to be added, the “Flash Red” and “Flash Blue” adjustments should be set to minimize the values of these settings. See “Tips on Quality Captures” later in the manual.



- If large values of Red and Blue are needed click the “**Don’t Save**” button and click the “**Adjust**” button. The “Test” dialog box will open.
- Set the **Flash Color Correction Radio** button for the setting (Fluorescent or Default) that is not being used.
- Do not close the “Test” dialog box and take another flash capture.
- Adjust the “Flash Red” and “Flash Blue” controls on the main dialog for color balance. Use the “Flash Color Correction” setting that needs the smallest adjustment of the “Red” and “Blue”



- If desired this process can be continued by adjusting the “Flash Red” and “Flash Blue” controls in the “Test” dialog, taking another capture and adjusting the “Red” and “Blue” controls in the main dialog.
- Please note that the Flash color controls only effect flash captures and have no effect on the live preview.

Cropping Control

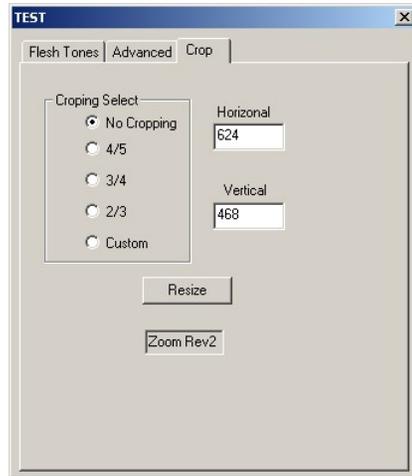
The VALCam™ USB allows the user to set cropping parameters for both preview and capture. The live preview will display live video that corresponds to these parameters. The capture image will also conform to these dimensions.

These parameters can be set to match the picture box of the card design thereby eliminating the need for software cropping and speeding up the capture process. The efficiency of the process will depend on how the photo-id application handles image captures. If the cropping function of your photo-id software can be disabled, you can use the camera to crop and capture straight to your card.

Another advantage of this feature is that the live preview will correspond to the actual “portrait” design of the card for a more pleasing and realistic rendition of the image.

Using Cropping Control

1. Click the Adjust button.
2. Click the Cropping tab on the adjust dialog box.



3. Click the various Cropping Select choices and see how the live display changes to the new aspect ratio.
4. Take a capture and note how the capture also matches the new settings.
5. Select Custom and adjust the Horizontal setting for any aspect custom aspect ratio.
6. It is recommended to leave the Vertical setting at 468 for maximum resolution and only adjust the Horizontal setting.

Typically it's only necessary to match the Horizontal/Vertical ratio to your picture box on your card design. It's not necessary to match absolute pixel values.

Using the VALCam™ with Photo-ID Applications

Twain drivers for the VALCam™ USB are loaded during the software installation procedure. Using your application, select the VALCam™ system as your Twain source.

Alternatively you can run the VALCam™ executable as a standalone application and capture images directly to the Window's clipboard. You can then paste these images into any applications that will support the Window's clipboard.

Contact Video Associates if you need a standalone application to capture JPEG files.

Setting an Administrators Password

An administrative password can be applied to restrict using the "Adjust" dialog box. This allows confidently settings parameters in the camera that cannot be changed by unauthorized personal.

The following parameters can be locked from end users:

- Zoom control
- Flash Intensity
- Preview adjustments
- Color adjustments
- Cropping parameters

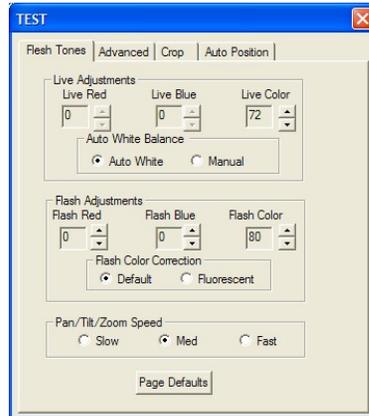
Setting the Password:

1. Locate and double click on the VALCam™ USB.INI file located in the Windows folder or sub folder.
2. The file will open in Notepad. Scroll down and locate the **Password=None** entry.
3. Modify this entry with a password of your choice
Example: **Password=123**.
4. Restart the VALCam™ application and click the **Adjust** button.
5. You will be prompted to enter your password
Enter 123 to open the Adjust Dialog box.

Detailed Overview of VALCam™ Controls

Live Color Adjustments

- Click the **Adjust** button on the main dialog box.
- Click the **Manual** radio button in the Auto White section.
- Adjust “Live Red”, “Live Blue” and “Live Color” for optimal live video display.
- Click “AutoWhite” for automatic continual white balance.
- Click “Flash Off” on the main dialog box. You can now adjust the live preview brightness with the brightness controls.
- For best live reproduction the manual controls can be used, but Auto White does an overall good job



Flash Color Adjustments

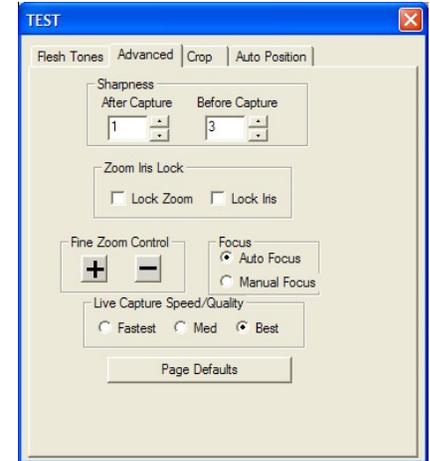
- Select the “**Fluorescent**” button if using fluorescent lighting, otherwise try the “Default” button
- Take a flash capture from the main dialog box.
- Click the default button on the Main screen.
- Adjust the “Red” and “Blue” scroll controls for the best color balance.
- Note the numerical amount of Red and Blue added.
- Select the “Red” button in the Flash Color Section.
- Take another Flash Capture and adjust the “Red” and “Blue” controls on the main screen.



- Use the Flash Color Correction setting that has the lowest amount of correction
- You can also experiment with adjusting “Flash Red” and “Flash Blue” if desired.
- Generally most all settings will work, but for best results these steps can be applied.

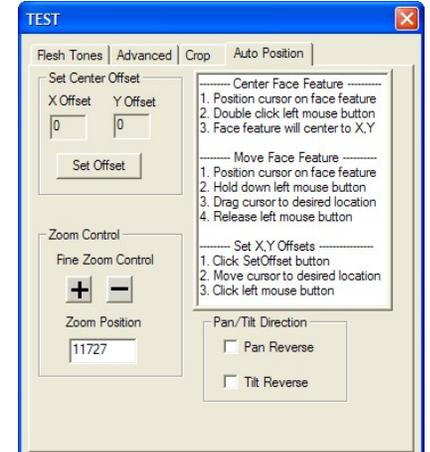
Advanced Settings

- The Sharpness controls have been discussed previously.
- Lock Zoom and Lock Iris will prevent the Zoom and Brightness from being changed on the main dialog box. When used with the Adjust Password protect feature, operators will not be able to change these settings.
- Fine Zoom controls allow controls of small zoom adjustment for precise settings.
- **Live Capture Speed/Quality** adjusts the live capture quality from **Fastest** capture but poorer quality to **Best** quality but slightly slower. This control does not affect Flash Capture quality.



Auto Position Options

- Position mouse cursor anywhere on the live video screen (subject’s nose)
- Double Click the left mouse button.
- Camera will center mouse cursor in under a second.
- Adjust auto-centering position by clicking the “Set Offset” button and clicking mouse on live video at new location.



- Click any position on the live screen. Hold down left mouse button and drag mouse cursor to new position. Release mouse button and camera will reposition.
- Use the ↑, ↓, ←, → keys on your keyboard to control pan/tilt operation. Hold down keys to initiate action and release keys to stop action. Use the “Shift” and “Control” buttons to speed up and slow down the camera.
- Press the + key next to the numeric keypad, the camera will zoom in. Release the + key and the camera will stop zooming. To zoom out press the – key next to the numeric keypad. Release the – key to stop the action

Tips for quality captures

- Always zoom in as tight as the image will appear on your ID badge. Do not zoom wide and crop in software.
- Use of the flash will almost always provide the highest image quality. Enable the **Flash On** and **Preview YES** radio buttons on the main dialog box.
- When using the Flash be sure to set the “Flash Brightness” for the correct distance and illumination.
- Adjust the “Flash Color Correction” and Flash Colors for optimal color adjustment.
- When not using the Flash, turn off “Auto White” and adjust the Live Color controls for best color balance.

Trouble Shooting

Trouble starting or running the application:

1. Verify that the power supply is properly connected to the Zoom camera or converter box if using the Pan/Tilt/Zoom version.
2. When using Windows 2000, be sure to use the supplied USB hub
3. Verify that the VALCam™ USB appears in Device Manager under **Video Associates Labs**.
4. Verify that you are running DirectX 8.1 or above. The application will test for this condition and display a warning message if necessary.
5. Unplug and Reinsert the USB cable.
6. Unplug and Reinsert the power cable.
7. Reboot the computer.

Flash will not fire:

1. Verify that the Flash switch is in the on position.
2. Verify Flash connector is fully inserted.
3. Verify that the amber LED is illuminated on the back of the flash.