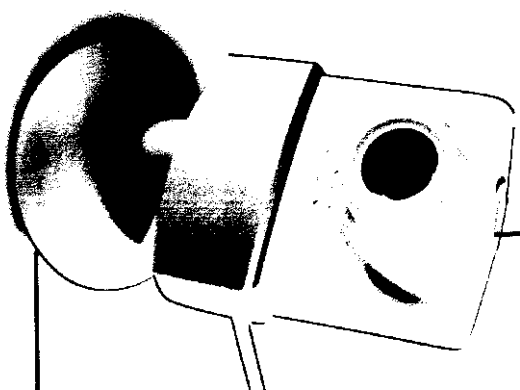


FAA ID: N5898100115

PC Camera

OWNER'S MANUAL



P/N A94100-01

WARRANTY

Electromagnetic Compatibility Notice

INSTRUCTION TO THE USER

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If the unit does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or any experienced TV/radio technician for help.

FCC Caution: To assure continued compliance, the user must use only shielded interface cable when connecting to computer or peripheral devices. Also, any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to use this equipment.

WARNING

Caution

In order to maintain compliance with FCC regulations, shielded cables must be used with this equipment. Operation with non-approved equipment or unshielded cables is likely to result in interference to radio and TV reception.

To comply with the limits for a class B digital device, pursuant to part 15 of the FCC rules, this device must only be installed on computer equipment certified to comply with the Class B limits. In addition, only the supplied power cables should be used with the product. Operation with non-certified computers, use of a cable other than that supplied, or modification of the device may result in interference to radio or television reception and could void the user's authority to operate this device.

Trademark acknowledgements

ColorMOS is a trademark of VLSI Vision, Ltd, Edinburgh, Scotland. Microsoft, Windows, Windows 95, Windows 98, Windows NT, are registered trademarks of Microsoft Corporation. Pentium is a registered trademark of Intel Corporation. All other product names mentioned herein are trademarks or registered trademarks of their respective owners.

Subject to change without notice.

⊘	Do not attempt to modify this camera.
⊘	Do not place this camera in a damp or dusty location.
⊘	Do not place this camera in places subject to extremely high temperatures, such as in a closed vehicle or direct sunlight. Exposure to high temperatures may adversely affect the camera case and internal components.
⊘	Do not remove the camera casing. Internal inspection, maintenance and repairs should be carried out by your dealer or local authorized service facility.
⊘	Do not use the camera if any foreign objects have entered the casing. Disconnect the camera from your computer, and contact your dealer or local authorized service facility. Do not continue to use the camera.
⊘	Do not use the camera if any water has entered the casing. Disconnect the camera from your computer, and contact your dealer or local authorized service facility. Do not continue to use the camera.
⊘	Do not use this camera if it is emitting smoke, is unusually hot to touch, is emitting any unusual odor, or is in any other abnormal state.
⚠	If your camera has been dropped or the case has been damaged, disconnect it from your computer, and contact your dealer or local authorized service facility. Do not continue to use the camera.
⚠	Take care not to bump or drop your camera. This may cause the camera to malfunction.

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Getting Started

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Congratulations on purchasing your new USB PC-Camera. This camera will display real-time video on your PC screen, enabling you to conduct remote video-linked conversations with people throughout the world. Other uses for your PC-Camera include creating still images for personal applications that produce greeting cards or photo albums; or sending videos recorded on your camera by e-mail.

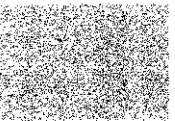
State-of-the-art features include instant live video at high frame rates, making your conversations feel more natural, ease of installation, low power consumption, 16 million colors, and a rotating camera head. Added to these is the ability to capture your video images for later viewing or printing with the ease of taking a photo.

Quick Guide

1. Connect your PC-Camera to the USB port of your PC.
2. Install the appropriate driver software.
3. Ensure all driver settings are correct and appropriate for your lighting.
4. Open your video software application.
5. Start using your PC-Camera.

What's Inside

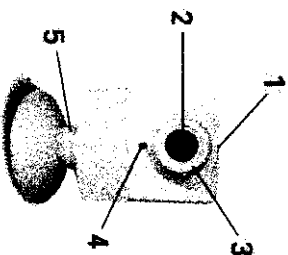
- Owner's manual
- USB PC-Camera
- Rotating base (for Desktop PCs) or clamp base (for Notebooks)
- Driver Disk
- Bundled software CD.



Getting to Know Your PC-Camera

1. Video Capture Button
2. Lens
3. Focus
4. Power on/off light*
5. Rotating Base (for PC)
6. Clamp base
(for Notebook Computer)

*Note: This light illuminates only when pc-camera is in operation.



System Requirements

- A PC with a minimum of a 75MHz processor.
- 8 Mbytes or more of RAM.
- A USB port.
- A VGA or SVGA video card capable of displaying at least 256 colors (64k colors preferred).
- Windows 95 OEM Service Release 2.1, Windows 98, or Windows NT 5.0 (to be released). Not compatible with Windows NT 4.0.

USING THE PC CAMERA

Installing Your Camera

Connect your PC-Camera to the USB port of your PC.

Installing the Drivers

Follow one of the procedures below.

Method 1

1. Make sure that your computer is turned OFF.
2. Connect your PC-Camera to the USB port of your PC.
3. Turn on your computer.
4. Windows will popup a dialog "Add New Hardware Wizard".
5. Click "next" button.
6. Select "Search for the best drivers for your device" check box, then click "next" button.
7. Insert the setup disk into your floppy disk drive.
8. Select "Floppy disk drives" check box.
9. Windows will find the driver, then click the "next" button.
10. Windows will install the driver automatically.
11. Click "Finish" button when Windows has finished the installation.
12. Windows will re-boot the computer, and the PC-Camera will be ready for use.



Method 2

1. Once you are in Windows, connect your PC-Camera to the USB port of your PC.
2. Windows will popup a dialog "Add New Hardware Wizard".
3. Follow steps 5 - 12 in Method 1 to install the PC-Camera.

Method 3

1. Before connecting your PC-Camera to the USB port of your PC, insert the setup disk into your floppy disk drive.
2. Click on the "Start" button situated at the bottom left hand corner of your computer screen.

3. Click the "Run" button.
4. In the Run dialog box, click on Browse.
5. In the top line of the Browse dialog box, select "A:".
6. Double click on the setup.exe.
7. Setup program will install the driver automatically.
8. Connect your PC-Camera to the USB port of your PC.
9. PC-Camera is ready for use now.

Removing the Drivers

1. Insert the setup disk into your floppy disk drive.
2. Click on the "Start" button situated at the bottom left hand corner of your computer screen.
3. Click the "Run" button.
4. Type "A:\Setup /UNINSTALL" in the command line and press Enter.
5. The Setup program will remove the driver automatically.

Viewing Your First Image

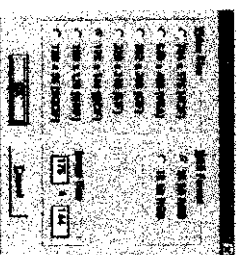
After you have installed your camera and software, start your video software to ensure everything is properly set up. Your software should start displaying live pictures from your PC-Camera. If you can not see an image on your computer screen, please consult the Troubleshooting section at the end of this manual.

Operating Your Camera

The following section will explain to you the procedures for fine-tuning your PC-Camera to receive an optimal image, depending on your needs.

Video Format

The Video Format dialog box allows you to control the size and color of the image provided by your camera. The following dialog box will appear when you select "Format" from within your video application.

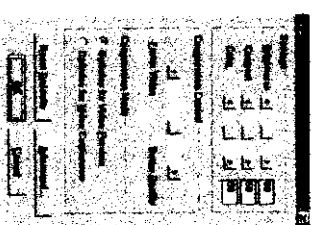


Video and still image sizes are displayed separately. Still image sizes can be displayed automatically, or entered manually, with the left-hand box displaying rows and the right-hand box displaying columns.

If you wish to enter the still-image size manually, please remember that both rows and columns must be multiples of 8. RGB formats can also be selected, but it is recommended that 24 bit RGB color is used unless your PC can only display 256 colors.

Source

The video source dialog box allows you to control the image quality provided by your camera. Most applications allow you access to this dialog box which is shown below.



The brightness, contrast and color controls operate as on a television.

The compression controls let you fine-tune your camera to suit your particular situation.

There are two options:

- (1) Optimize for Video Preview
- (2) Optimize for Video Conference

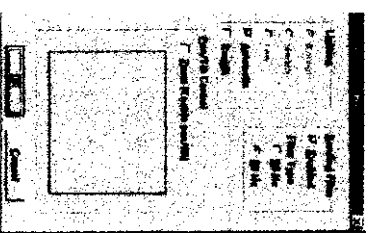
"Optimize for Video Preview", lets you trade off frame rate against image quality. As you move the slider to the right, image quality will increase and frame rate will decrease. It is recommended that you use this option for "View Only" applications like Video Capture, where you are interested in capturing individual images only rather than viewing a video.

"Optimize for Video Conferencing", allows you faster computing speed, but at the cost of image quality. As you move the slider to the right, your image quality will improve, but CPU usage will also increase. This selection is intended for use with applications such as video conferencing software.

The sharpness checkbox control adjusts the vertical resolution of your image. If you leave this box unchecked, the camera halves the vertical resolution, but the video frame rate will be improved.

Advanced Camera Settings

Room lighting is critical for the correct functioning of your PC-Camera, as your camera requires a certain light level to produce good pictures. If you are getting dull or dark images, or if coloring is poor, try increasing the ambient light in the room, or even try lighting the subject directly. Using the camera in a sunlit room will also produce good results. If you cannot use your camera in a naturally well-lit position, then try using a



desk lamp or some other artificial light source. You may also select one of the alternative lighting modes in the Advanced Camera Settings. Your camera defaults to using the Automatic mode, however, you can switch it into medium or low light modes using the radio buttons.

Check on the "Backlit" radio button if your subject is lit from behind.

If you are in a room lit by fluorescent lighting, ensure that the "Banding Filter" radio button is checked. Depending on your country's fluorescent lighting system, you will either choose a filter type of 50 Hz or 60 Hz.

TROUBLESHOOTING

No Image

- Ensure all cables are correctly and securely attached.
- Ensure that the correct driver has been installed for your PC-Camera, and that all settings are correct.
- Ensure that your Video software has been properly installed.
- Make sure your lens is free from obstructions, or that it has not been accidentally rotated down into its holder.

Dark Pictures

- Check that there is sufficient light for the camera.
- Ensure that the lens is clean.

Anomalous PC Behaviour

- Any problems your PC may be experiencing immediately after installing your camera should be referred to technical support.

Frequently Asked Questions

Using your PC-Camera with other applications

A Video for Windows Device Driver is supplied with your camera. This allows it to be used as a general video input device with other Windows applications.

Using your PC-Camera with other video capture devices

If you wish to use multiple cameras, applications will use the default device. The best way to determine the default device is to ensure that all other video capture devices are disabled. To do this:

- Open the Control Panels and double click on the 'Multimedia' icon
 - Select 'Advanced'
 - Open the list of video capture devices and double click on the driver name. This will open a dialog box showing your camera's properties.
 - Enable or disable the driver as required.
- Some applications (e.g. Cu-SeelMe) let you select a device from within the application. If this is the case, disabling the other devices is not necessary.

Lens cleaning

If your lens becomes dirty, wipe lightly with a dry lint-free cloth.

Outdoor Use

Your PC-Camera is not designed for outdoor use, and should not be exposed to the elements without suitable protection. In general, you should not expose it to extremes of temperature or humidity.

Driver Updates

Updates may become available during the life of this product. Check our web site for details.

APPENDIX

Appendix A: Hardware Description

Sensor

USB PC-CAMERA uses a VISION ColormOS™ Image sensor.

Resolutions and Frame Rates

USB PC-CAMERA supports image resolutions up to CIF (352x288 pixels) at 15 frames per second, and will support QCIF (176x144 pixels) or smaller images at up to 30 frames per second.

Image Data Quality

USB PC-CAMERA provides image data with a default format of 7 bits Y, 6 bits UV in 4:2:0 format. Other formats are supported by the Video For Windows™ driver.

Exposure Control

Exposure Control of the USB PC-CAMERA sensor is automatic with range 25,000:1.

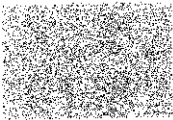
USB Interface

USB PC-CAMERA uses a USB Port Interface that will auto-select the fastest data transfer method, depending on the Port Bandwidth available at the time the camera is plugged into the PC.

Note: the achievable frame rates for this product are affected by the bandwidth available in the particular USB configuration being used.

Electromagnetic Compatibility

USB PC-CAMERA will comply with all applicable CE and FCC regulations regarding Electromagnetic compatibility and immunity.



Appendix B: Technical specifications

Sensor Specifications

Parameter	Measured Value	Notes
S/N Ratio	42dB	15fps, 200 lux, 25C
Fixed Pattern Noise	< 0.5%	
Frame Rate Options	30, 15, 7.5, 3, 75 25, 12.5, 6.25, 3, 125	Frames per second (fps)
Resolution	352 x 288	
Aspect Ratio	4:3	

Lens Specifications

Parameter	Measured Value	Notes
Near Focus limit	5cm	
Far focus limit	Infinity	
Depth of Field	20cm to infinity	When focused at 60cm
Distortion	< 6.5%	At edge
Spatial resolution	> 50% mtf	@ 2.7 cycles per degree
Horizontal Field of View	54 degrees	

Electrical Specifications

Parameter	Measured Value	Notes
Supply Voltage limits	5V (±5% dc)	Startup mode
Current Consumption	100mA 250mA	Normal operation

Environmental Specifications

Parameter	Measured Value	Notes
Lower temp. operating limit	5°C	
Upper temp. operating limit	50°C	Tested at 80% RH
Lower temp storage limit	-15°C	
Upper temp storage limit	60°C	Tested at 90% RH