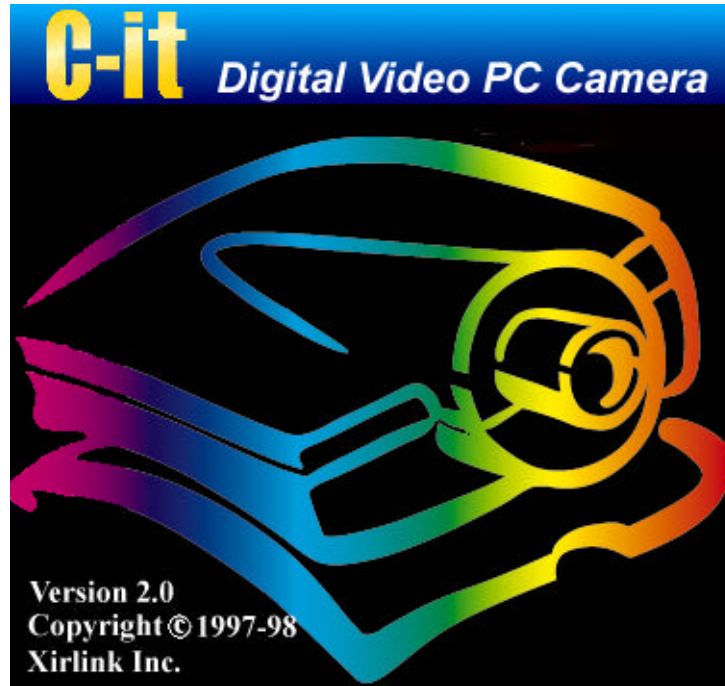


C-it

Digital Video PC Camera

Model XVP510

For Windows



User's Guide

Release 2.0
June, 1998
Xirlink, Inc.



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FCC Radio Frequency Interference Statement:

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: 1. This device may not cause harmful interference, and 2. This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of 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 instruction guide, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment 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 the receiver.
- * Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- * Consult the dealer or an experienced radio or TV technician for help.

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Introduction

Welcome to the C-it for video media

The C-it with its high-quality digital Video Camera and software now makes video mail and videoconferencing easy. Whether you're sending video mail or videoconferencing over the Internet with someone in another part of the world, or on your business' network to a colleague in a building across town, the C-it delivers clear video and audio to your computer.

Using the C-it application is especially effective for larger companies located in several buildings or cities. Instead of trudging to another building or hopping on a plane and wasting a day in the air, you can simply capture video mail and send it out or video conferencing and get the job done in a fraction of the time. A video mail and video conferencing with the C-it is almost like being there in person.

What's In the Box

Before you start the installation, please check the contents of the box to make sure that all parts are included. There should have one C-it camera with USB cable and one C-it CD. If any items are missing or you notice any damage, contact the dealer where you purchased the C-it product.

1.



C-it PC Video Camera
with USB cable

2.



C-it CD

What You Need

Hardware

- An IBM PC (or 100% compatible) with a Pentium processor that operates at 90 Mhz or faster. The MMX Pentium processor is recommended, and the faster the Mhz operating speeds, the better.
- 16 megabytes (MB) or more of internal memory (RAM)
- 10 MB of hard disk space
- One available USB port on your computer to plug in the C-it camera.
- An SVGA monitor.
See the user's manual for your computer if you aren't sure about its hardware features.

Software

- Microsoft Windows 95 version 4.00.950b (OSR2) or Windows 98.

- Microsoft Internet Explorer (version 3.0 or later) and Microsoft NetMeeting (version 2.1 or later). Both Microsoft Internet Explorer and Microsoft NetMeeting are part of Windows OS. If your computer includes a complete installation of Windows OS, Internet Explorer and NetMeeting are already installed.
- ▼ NOTE: To find the version number of your Windows operating system, select Settings from the Start menu, open Control Panels, and double-click on the System icon. The System Properties dialog box shows the version number.
- ▼ NOTE: If you have problem in using our camera. Please go to Device Manager page of System Properties dialog box, to check the Universal serial bus controller. If your PC's USB controller is Open Host Controller (OHCI), you may have problem using our camera under Windows 95. Upgrade to Windows 98 is the best way to solve this problem except change your USB host controller.



To find the version number of NetMeeting or Internet Explorer, open the application and then choose About (the application) from that application's Help menu.

- ▼ TIP: If you don't have Microsoft Internet Explorer or NetMeeting, you can download them from the Internet at: <http://www.microsoft.com/download>

OpArt Video Mail

- Need to have e-mail system installed, such as Microsoft Outlook, Netscape Commander, Eudora, Lotus CC mail and so on.

Internet and Intranet Videoconferencing

- An Internet connection to video conference with the C-it Video Conference Center. In a typical corporate environment, your computer is connected via Ethernet to the corporate network, which is connected to the Internet over T1 or ISDN lines. The modem is provided as part of the network.

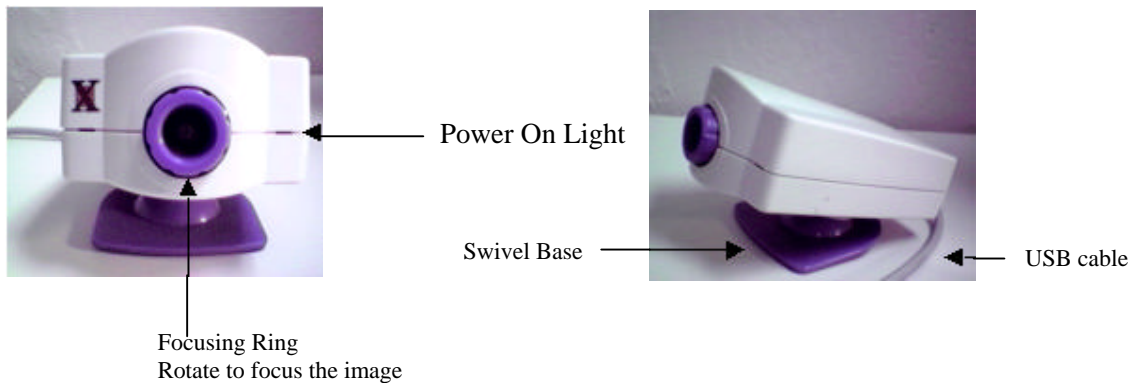
Standard Phone Line

- Connection to the Internet through a standard telephone line to video conference with the C-it Video Conference Center. You need connect to your Internet service provider(ISP) first.

Recipient or Participant Requirements

- For OpArt Video Mail – sender needs compatible e-mail system that allows attachment, but no additional hardware or software is needed at recipient's end.
- For Internet videoconferencing -- virtually any videoconferencing software that meets the ITU H.323 standard (please refer to the software's manual to see if it meets the H.323 standard).

A Quick Look at C-it Digital Video Camera



Focus the Camera

You focus the camera with the focus ring.

Adjust the Monitor

For best results you may need to adjust the computer monitor settings.

- 1 With Windows running, double-click on the My Computer icon.
- 2 Double-click on the Control Panel icon.
- 3 Double-click on the Display icon.
- 4 Click on the Settings tab.
- 5 From the color palette field, select either High (16-bit) or true 24-bit (32-bit) color.
- 6 Click OK.

▼ **NOTE:** To set the size of the video image on the monitor using the procedure described on page 33.

Hints for Taking Good Pictures

By following these simple hints, you can take quality videos and pictures with the C-it Digital Video Camera.

Composition

- Aim the camera so the subject is in the center of the image.
- Put the camera on a flat, steady surface. If you have to hold the camera during the shot, hold it still when shooting.

Lighting

- Use plenty of light on the subject.
- Select similar types of light. If possible, don't mix fluorescent lights with other lights.
- Don't point the camera directly at bright lights or windows.

Video Quality

Using the C-it Video Camera or OpArt Video Mail application, you can adjust the camera settings that control the image hue, brightness, sharpness, and so on. See pages 18-20 for details.

A Quick Look at C-it applications

OpArt Video Mail

- With this application, you can capture a series of video clip as well as audio and then send it out to your recipient as a revolutionary new video mail. After OpArt_VM compression, a one minute video mail will only takes about 1MB of memory space.



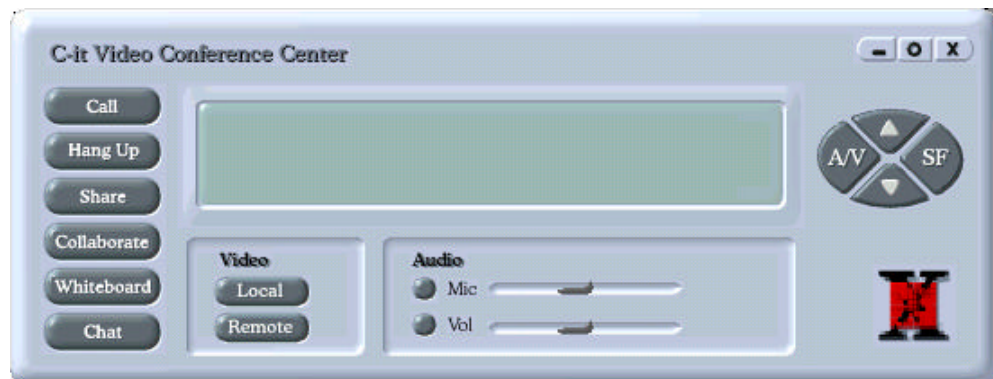
C-it Video Camera

- Use this for Capture, Snapshot and with its advanced design, the C-it USB Digital Video Camera captures video at millions of color and high resolution. In addition, the connection to the USB port provides high quality video at about 30 frames per second in Camera application, and about 10 frames per second in Conference application.



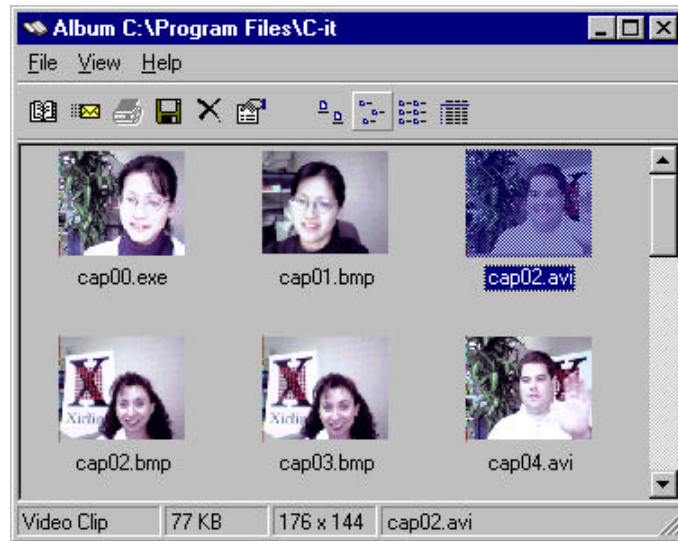
C-it Video Conference Center

- Use the straightforward C-it Video Conference Center to control your conference.



C-it Video Album

- Take snapshots -- grab a frame of the video and save it as a cap*.bmp file in the photo album.
- Take captures – record motions and save it as a cap*.avi file in the photo album.
- Take video mail – record video and audio message and save it as a cap*.exe file in the photo album.



Installation

Installing the C-it on your computer takes two steps:

- Install the software – make sure you install the software first before plugging in the C-it Digital Video PC Camera.

- Connect the C-it Digital Video Camera to a USB port

Before You Begin

Before you can send video email with OpArt Video Mail or videoconferencing with the C-it Video Conference Center, your computer must have all the necessary hardware and software to access the mail server, the Internet, or your company's Intranet. See "What You Need" on page 5 for a list of the necessary hardware and software

Registering Your C-it

Please take the time to register your C-it product. Registration is very important because each participant in a videoconferencing must have an individual copy of the software. Registration also entitles you to information about product upgrades and other services from C-it. You can register electronically or by fax, phone, or mail.

Installing the Software

Install the software before you connect the C-it Digital Video PC Camera.

If you've already plugged the camera into the computer, please unplug it before installing the software.

- ▼ NOTE: Each copy of the C-it Software is licensed to be installed on only one computer. Installing copies on other computers is in violation of the license agreement.

To install the C-it Software

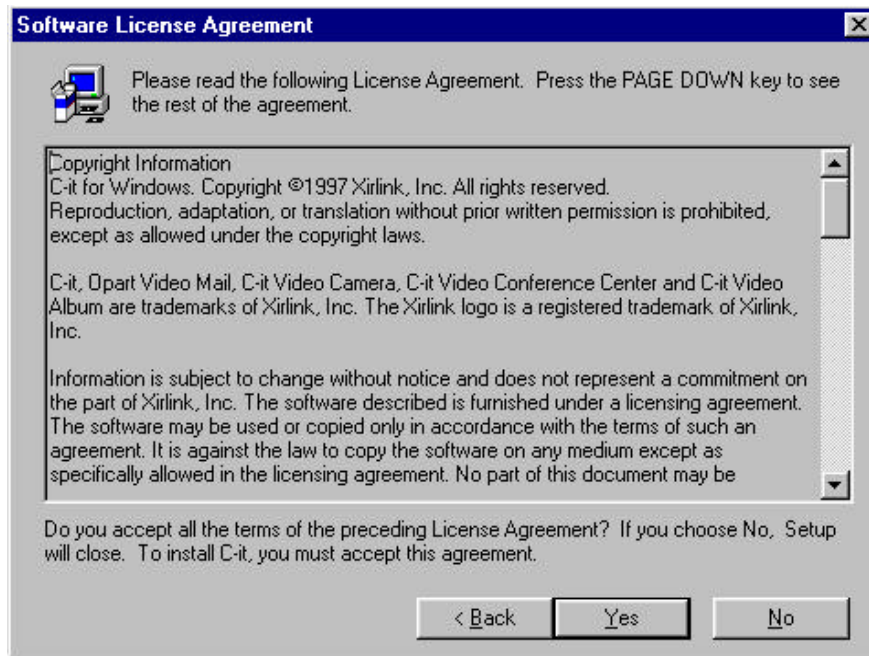
- 1 Turn on your PC and start Windows95 or Windows98.
- 2 Insert the C-it CD into your CD drive.
The Autorun starts and displays the initial screen. Click Install.



- 3 The installation procedure starts and you'll see the Welcome dialog box. Click Next.

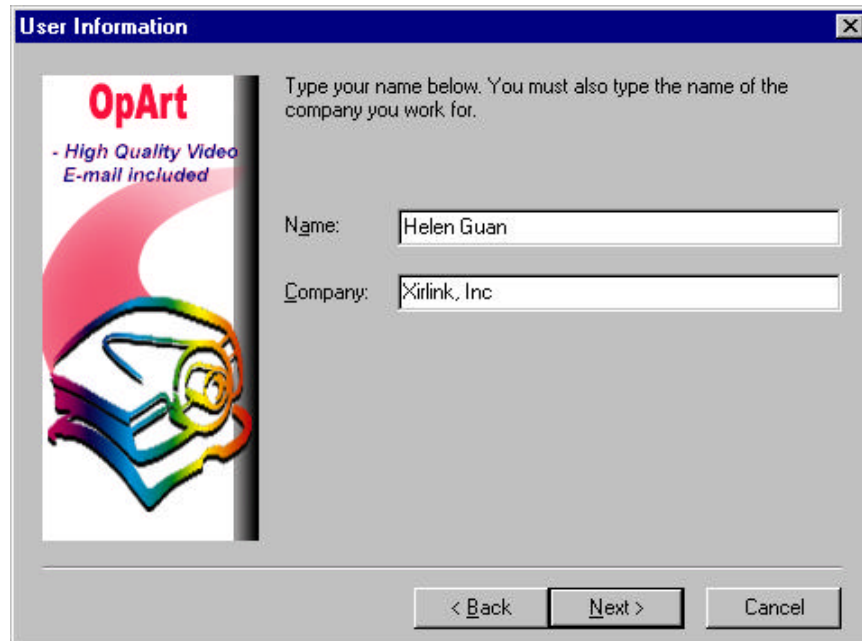


- ▼ NOTE: If the Autorun does not start, choose Run from the Windows Start menu. Assuming your CD drive is the D drive, type d:/C-itAutorun in the Run dialog box and click OK. If the CD is in some other drive type its letter instead, such as e:/C-itAutorun.
- 4 This dialog box show the Software Licensing Agreement. Please read this agreement carefully and click Yes if you agreed.

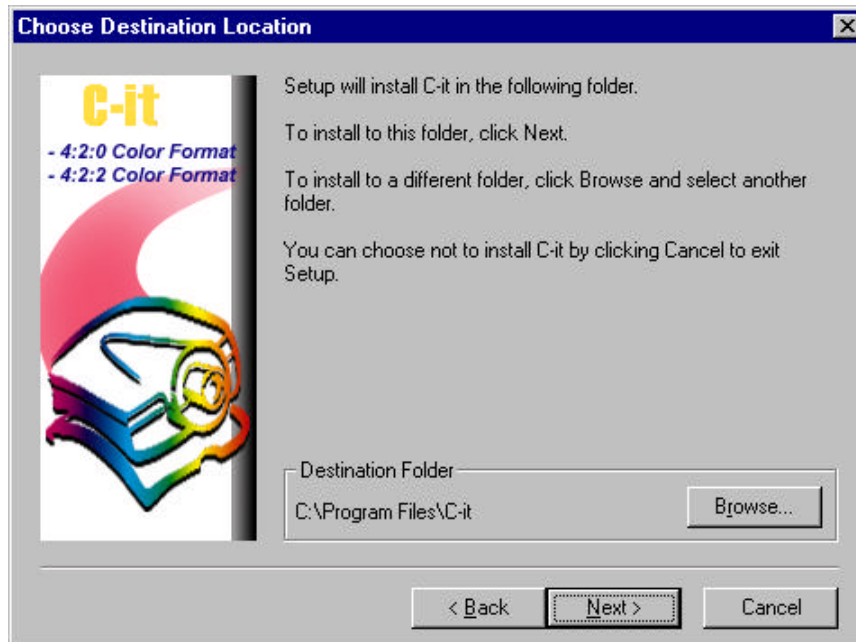


- 5 In this next dialog box, enter your name and company name and then click Next.

By the way, to go back to a preceding dialog box during the setup process to change one of your choices, click the Back button.

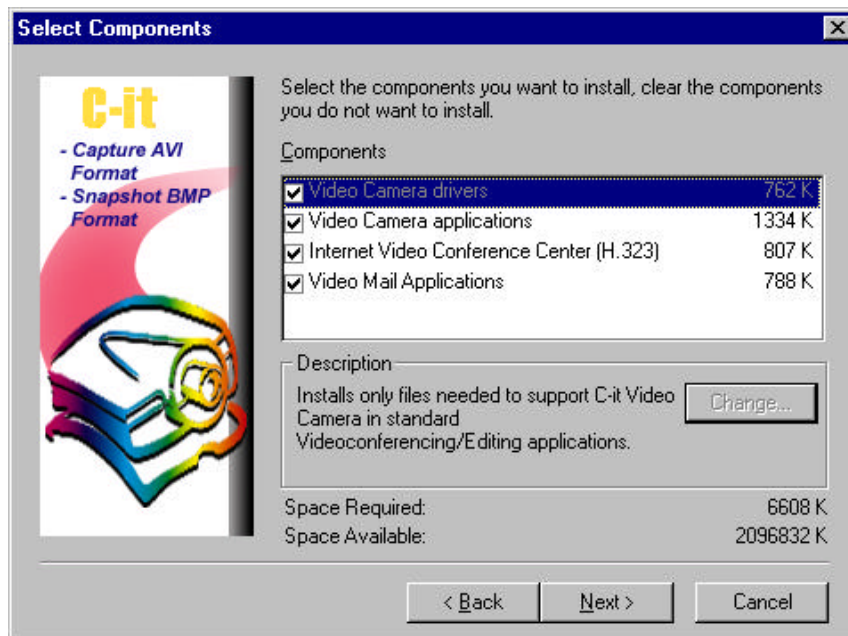


- 6 The next dialog box shows where the C-it files will be installed. The C-it application files will be installed in the Destination Folder shown on the dialog box -- typically it will be C:\Program Files\C-it. Click Next if you want to save in the default folder.

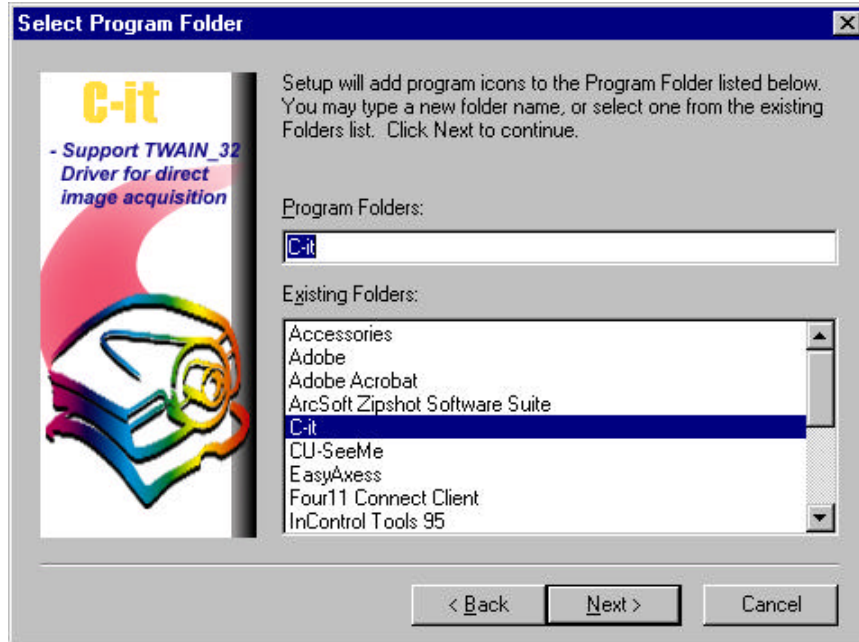


To install the C-it files in a different directory, click the Browse button to see the Choose Directory dialog box. Type a new path name for the files in the Path box, or select an existing directory from the list. You can also type a path name of a new directory, and the setup program will create it.

- 7 The next dialog box show the C-IT components to be installed. Make sure that each component that you want to install has a checkmark (✓) next of it. Click Next. The drivers must be installed in order for the camera to work properly, and typically you will install all of the other components. However, if you don't want to install a component, remove the checkmark (✓) in front of the component by clicking on it. A component without a checkmark won't be installed.



8 Click Next.



9 At this point, installation begins, and progress boxes show how the installation is proceeding.

10 After all the files are installed the following dialog box appears. Click Finish and that's it. You're now ready to connect the camera.



To Connect the C-it Digital Video Camera

To connect the camera:

1. Unwrap the camera carefully.
2. Plug the USB connector on the camera into any available USB port on your computer.

▼ NOTE: The camera does not have a power plug. It draws its power from the USB port. You're now ready for video media.

The C-it Icons

Use the C-it icons to start the C-it applications.



Getting Help

For technical support, you can reach us at: 408-474-0494
Between 9:00 a.m. and 6:00 p.m. Pacific Standard Time.

While logged on to the Internet, you can

1. Connect directly to our home page at <http://www.xirlink.com>
2. Connect directly to our product site at <http://www.citnow.com>
3. Contact our technical support at techsupport@xirlink.com

3

OpArt Video Mail

This Chapter explains how to compose video mail and send it out over the Internet or Intranet Service Provider.

Using OpArt Video Mail

Double click on the OpArt Video Mail icon to open this application



- When start OpArt Video Mail, if you don't have sound card previously installed, you will get the following message:



Click OK if you want to continue without audio device, or Cancel if you want to go back to install the device first before using the application.

- When OpArt Video Mail window pops up, you should be able to see local view. Some buttons on the window will change from inactive to active after you captures your video mail.



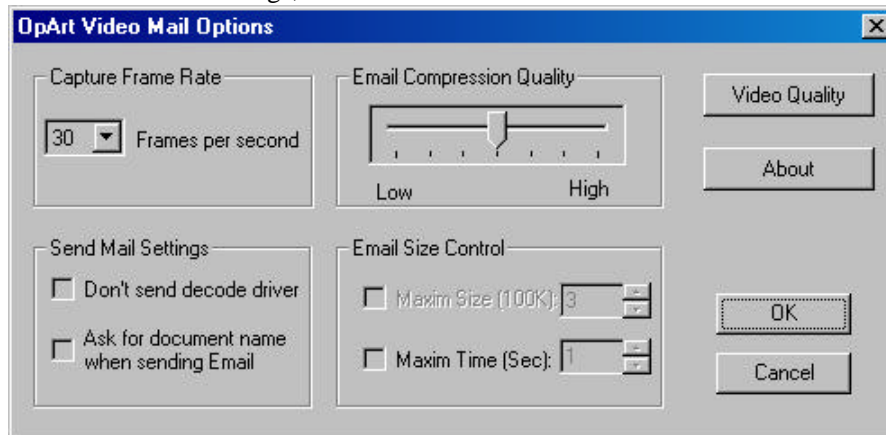
- Capture* Click on this button when you are ready to record your video message as well as the audio and make sure you are speaking into the microphone.

- Preview* This button will become active once you have recorded a message. Click on this button to view and listen to your newly recorded message.
- Send* This button will become active once you have recorded a message. Click on this button to send the mail out if you are satisfied with what you saw in Preview.
- Save* This button will become active once you have recorded a message. Click on this button to save your message to a permanent location for future retrieval.
- Album* Click on this button to open C-it Album Application if you want to view any avi or bmp file taken from the C-it Video Camera Application.

There are three tool commands on the window bar:



- Click on this button to minimize the OpArt Video Mail window. To restore, click on the icon from the task bar
- O Click on this button to change the Video Mail Options, like the Capture Frame Rate, Video Compression Quality, Send Mail Settings, and Email Size Control:



Capture Frame Rate – You can select different frame rates per second for the video capturing. The more the frames per second, the more lifelike video you will get. But this will also increase the mail size that takes the recipient longer time to download.

Email Compression Quality – You can change the quality from low to high by moving the bar from left to right. The higher the quality, the longer time it will take to compress your video but you will have a much clear video image.

Send Mail Settings -- There are two options you can make from this setting:

Don't send decode driver – a check on this box will enable you to send only the captured video mail(data file), without any C-it decode driver.

NOTE: If you are sending the mail to someone who didn't have the OpArt Video Mail software previously installed, DO NOT check the box. If the person has OpArt Video Mail installed or has received your OpArt Video Mail (with decode driver) before, you can check that box, to minimize the mail size and thus speed up the transmission time.

Ask for document name when sending Email – a check on this box will enable you to give the captured video mail a name when you send the mail out.

Email Size Control – There are two options here for you to control the size of the video mail being sent out.

Maxim Size (100K) – putting a check on the box will setup a limit on the video mail size by the actual file size and whatever number you type into the space will be a multiple of 100KB of data. For example, if you type 3, it means the maximum file size of the video mail will not exceed 300KB. It is very efficient to control the size of your outgoing emails because some email service providers have certain limit on their clients' mail size, and if it is over their preset control limit, the mails will be returned back to the senders.

Maxim Time (Sec) – putting a check on the box will setup a limit on the time length of the video mail and whatever number you type into the space will be a multiple of 1 second. For example, if you type 10, it means the maximum length of the video mail will not exceed 10 seconds.

Video Quality – This will open up another window for you to make changes to the video qualities, like the white balance, brightness, sharpness, hue, gamma, and compression control.

Compression Control -- As video captured by camera, you want to send it as a displayable file, not as raw data. Indeed, it is compressed into a smaller file so it can be sent in less time. Compressing video makes smoother, more lifelike motion possible. However, compression can also reduce image quality. On the other hand, less image compression results in a higher image quality, but a big amount of data and therefore may produce less lifelike motion.

No Compression -- The video is sent as uncompressed, raw video data. This option produces the highest image quality, but probably also produces less lifelike motion.

High Quality Compression -- Video is compressed to produce the best quality image with adequate lifelike motion. Use this setting when you are more concerned about image quality than motion, such as when the camera is pointed at a presentation screen.

Fast Frame Rate Compression -- Video is compressed to produce the best lifelike motion with adequate image quality. Use this option when motion is more important than image quality, such as when you're conducting a face-to-face conference.

- ▼ NOTE: These options control compression done while the camera captures raw data to preview display mode.

Brightness -- The brightness setting is like shutter speed on a camera, staying open longer to let in more light. The higher the setting, the more light that reaches the camera. But if you set it too high, the camera "stays open" for so long that moving objects will be blurred. You'll probably have to experiment with this setting to find the best one for different lighting conditions.

If the image is:

- ▼ white or washed out -- drag the slider to the left to decrease the light.
- ▼ dark or almost black -- drag the slider to the right to let in more light.
- ▼ speckled with colored dots -- turn on more lights in the room and then adjust the brightness.

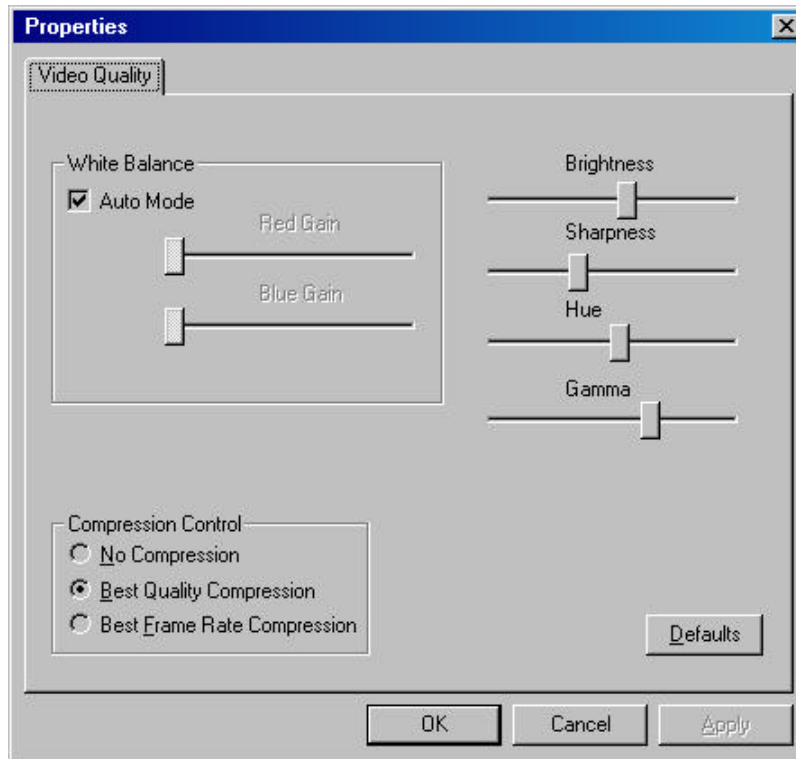
Hue -- Sets the balance of colors in the image. Dragging the hue slider makes the image look more blue or red. Drag the slider until the colors look correct.

Sharpness -- Adjusts the clarity (or resolution) of the image. Drag the slider to the left to soften edges in the image. Drag the slider to the right to see a sharper image.

Gamma -- Gamma is the measure of the degree of contrast of the video image. Usually the gamma setting does not need to be changed, however, if you notice that the picture tends to be "washed out" or, conversely, too intensely colored, you may want to change the gamma setting.

White balance -- Adjusts the amount of white to black balance for your camera and surrounding lighting. If the picture in the Local window looks washed out or consists solely of whites and light colors, move the two sliders to the left to lower the amount of light reaching the camera. If the picture looks dark or consists solely of dark colors, move the sliders to the right to let in more light. The Auto option has to be off (unchecked) to drag the sliders. When the Auto option is selected, the camera tries to correct colors automatically when the lighting or scene changes. You've set the white balance correctly when the picture covers the color spectrum fully. If you will not be pointing the camera in some other direction, you should only have to set white balance once. But if you point the camera around the room, you may have to reset the white balance for the conditions of the new scene.

Default button -- Click to return the settings to their original, default values. Usually you click this button after experimenting with the settings to see how you might improve the image.



Click OK or Cancel to close the Option window.

- X Close OpArt Video Mail application
NOTE: If you close the application without sending or saving the message, you will lose it when program exists.

Sample of using the OpArt Video Mail Application

Sending site

1. Capturing the mail

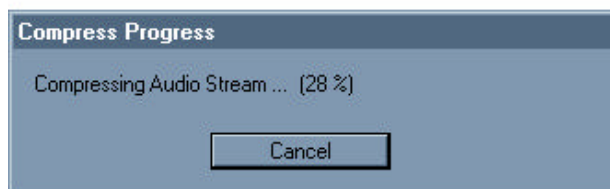
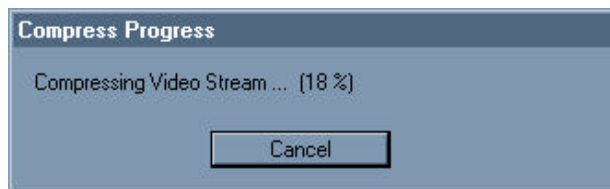


Click here to capture your mail.
Make sure you speak nice and clear
into the microphone.

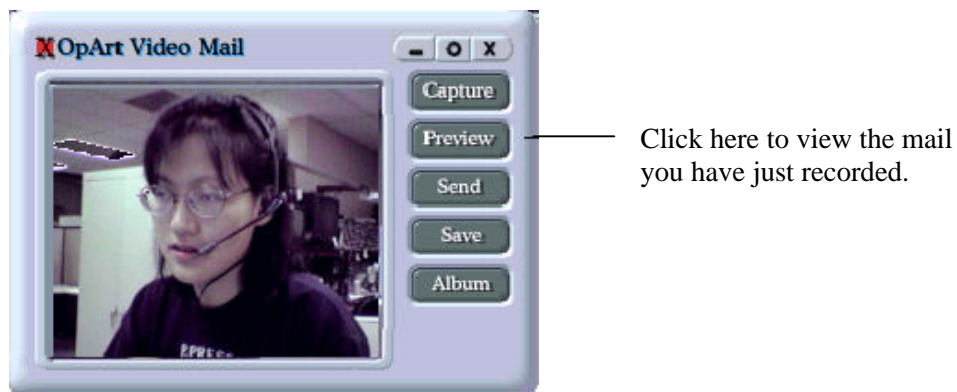
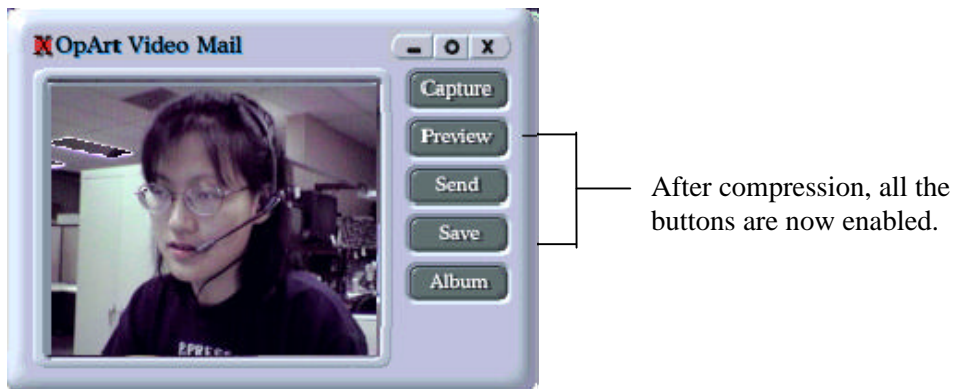


Click here to stop the capture
when you finish.

2. After clicking Stop, notice now the OpArt is doing the compression for your video and audio.



3. Previewing the video mail you just capture



The playback will show, you can check the quality of the video and audio. This is the exact the same quality with receiving side's playback.

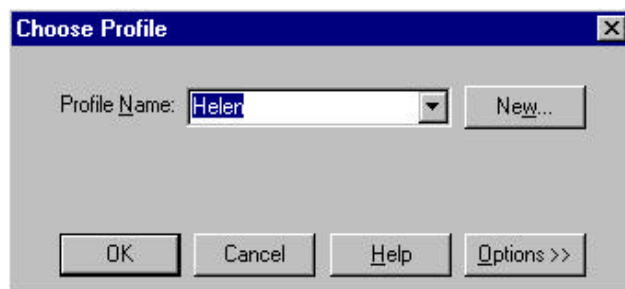
4. Sending the video mail if you are satisfied

Your default E-mail composer will open and allow you to type in the recipient's E-mail address and subject.



Click here to Send.
This will open up your
default E-mail carrier.

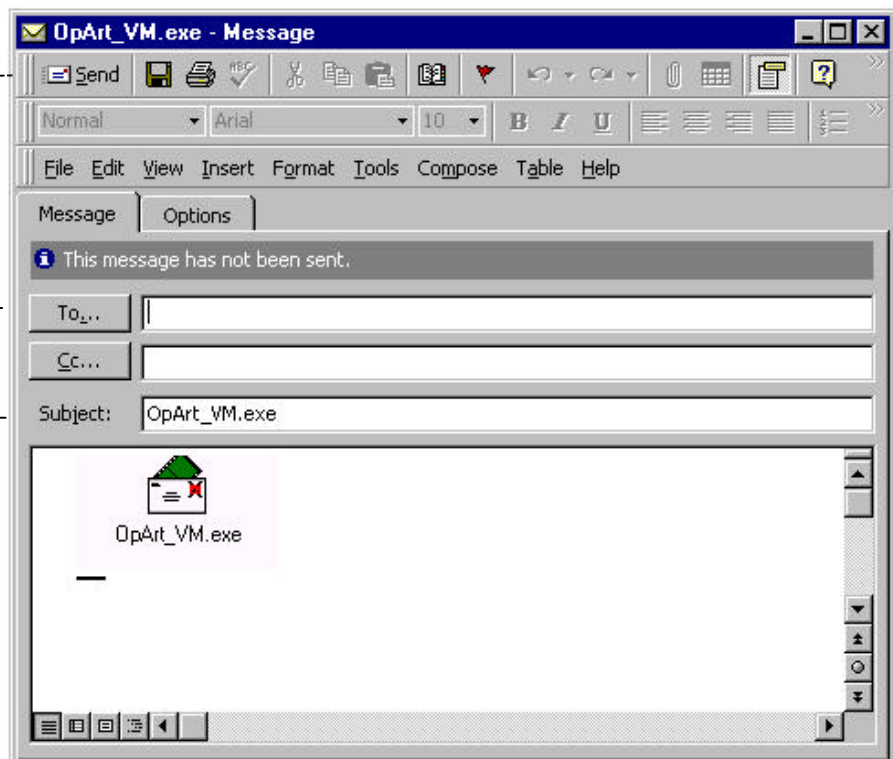
Here is just a sample of Microsoft Outlook E-mail system:



Click here to send

Type in the E-mail
address of the one(s)
you want to send to

Type in the subject
of the E-mail



5. Saving the video mail if you want keep it

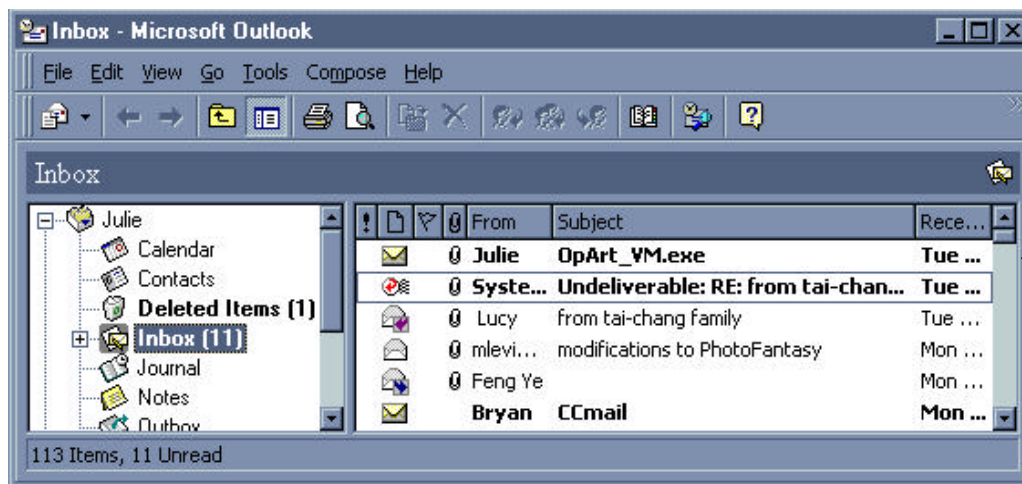


Click here to save your recorded mail to Album.

Notice that after you click this button, it will gray out which indicates this recording has been saved.

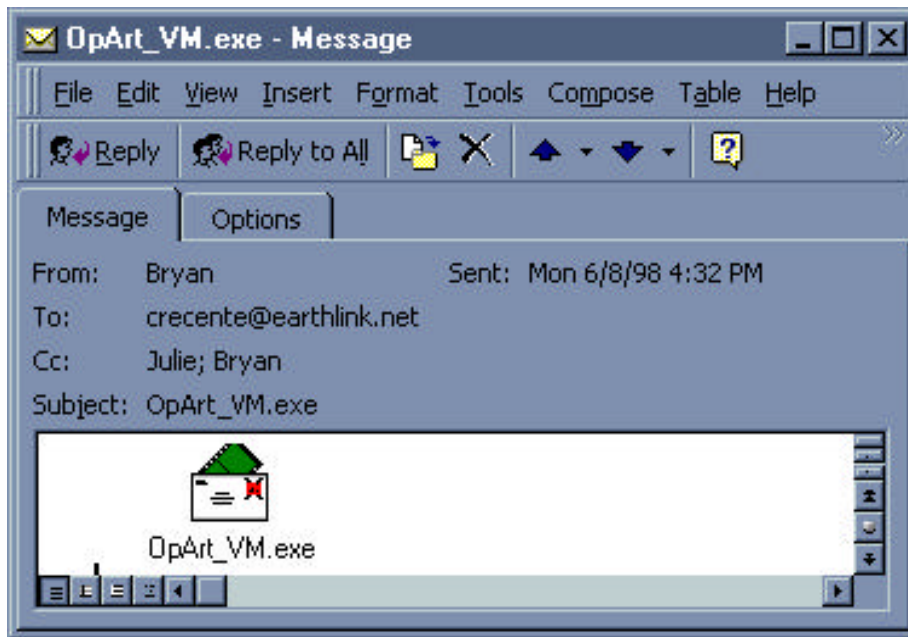
Receiving site

- 1) Open the mail from your E-mail carrier

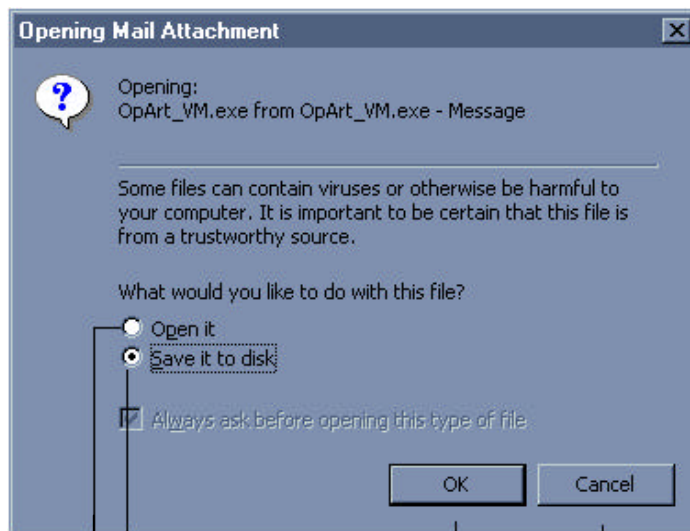


Double click on the mail

2) Open the OpArt_VM.exe from the incoming mail



3) Choose the opening method



- Click to cancel
- Click to proceed
- Save mail to disk
- Open mail without saving

- 4) The OpArt_VM.exe will play back by Microsoft



- Time control bar
- Microsoft movie playback control
- Click to stop playback or rewind
- Click to play or pause the playback

- 5) Close the OpArt_VM playback window



Click here to link
to our home page

Click here to close
this window

4

C-it Video Camera

The C-it Video Camera application provides a complete set of options for using the camera to take quality snapshots and videos.

To open the Video Camera window:

- Double-click the icon, C-it Video Camera.



The Video Camera window opens and shows the video that your camera sees.



From Left to Right:

1. Minimize window
 2. Maximize window
 3. Double window size
 4. Mirror camera horizontally
 5. Display camera options
 6. Close the window
- Take a snapshot of the video image
Start / Stop video recording
Open Album of images

To flip the image:

- Click the Mirror Image button on the top of the window.



To capture video clips:

- 1 Point the camera at the action.
- 2 Click the Capture button on the Video Camera window.
The video begins recording and is captured on your computer's hard drive.
Notice the Capture button changes to Stop in Figure 2.

To stop recording, click the Stop button.

Figure 1



1. Click Capture to start recording the action.

Figure 2



2. Watch while the action continues.
Notice the logo is blinking which tells you the camera is recording.

Figure 3



3. Click Stop to stop the recording.

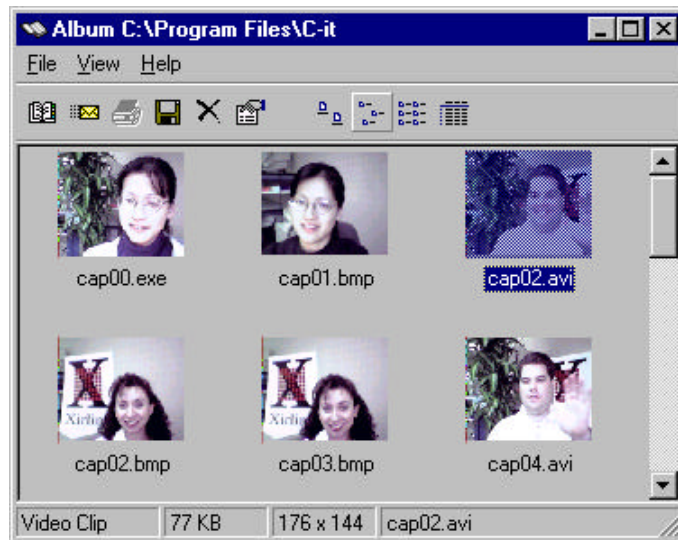
4. To playback a video clip, click on Album to view all available .avi files and then open them.
The one you just captured is highlighted in Album.

When you're finished recording the video clips, the Album window opens. It shows other videos and snapshots you've already recorded. Video files are captured as files with an .avi name extension, and automatically receive the name capn .avi, where the n is the next number for a video. For example if the last video is named cap04.avi, the one you just took is named cap05.avi.

- ▼ TIP: Limit the length of the video sequences to a few seconds. Long video sequences can take a lot of space on the hard drive. For example, 10 seconds of video captured in Camera application needs about 10 megabytes of hard disk space (for image size of 176 x 144).

To open the Video Album:

- ☐ Click on the Album button on the Camera window.
Please see Chapter 6 for detail of Album operation.



Adjusting the Video

The C-it Video Camera software has video settings to provide the best quality of the video media application.

These settings are available from the C-it Video Camera window.

To display the video settings – the following example are for win98 and the option window for win95 is a little different:

- 1 Click the C-it Video Camera icon to open the Video Camera window.
- 2 Click the Options button on the window.



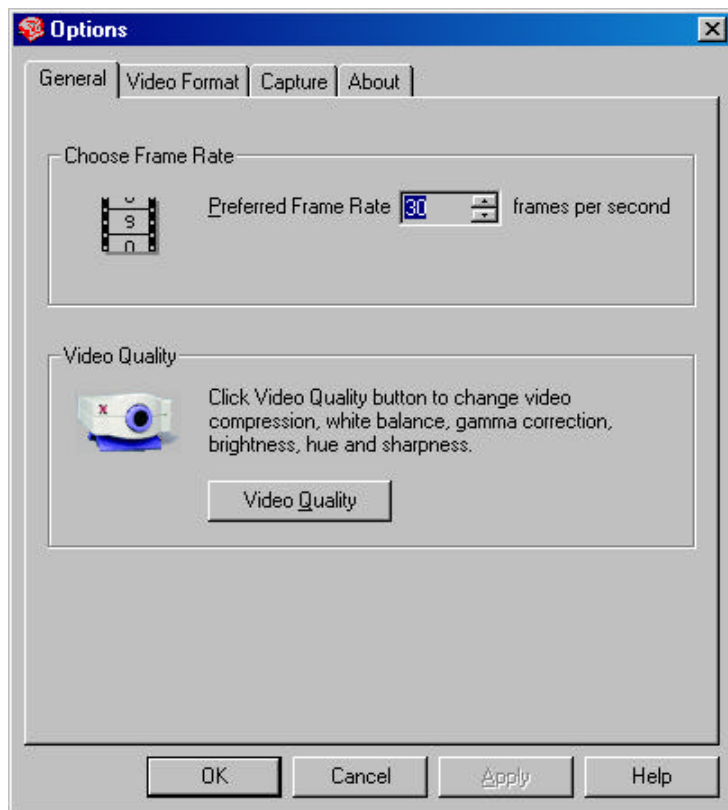
The Options dialog box that appears has three tabs for adjusting various elements of the video -- General tab, Image Format tab, and Video Quality tab. The About tab shows information about C-it.

To change the various options:

- 1 Click one of the tabs to see the different options.
- 2 Select the options you want.
- 3 Click Apply to see the changes and keep the dialog box open.
- 4 Click OK when you're satisfied with the changes.

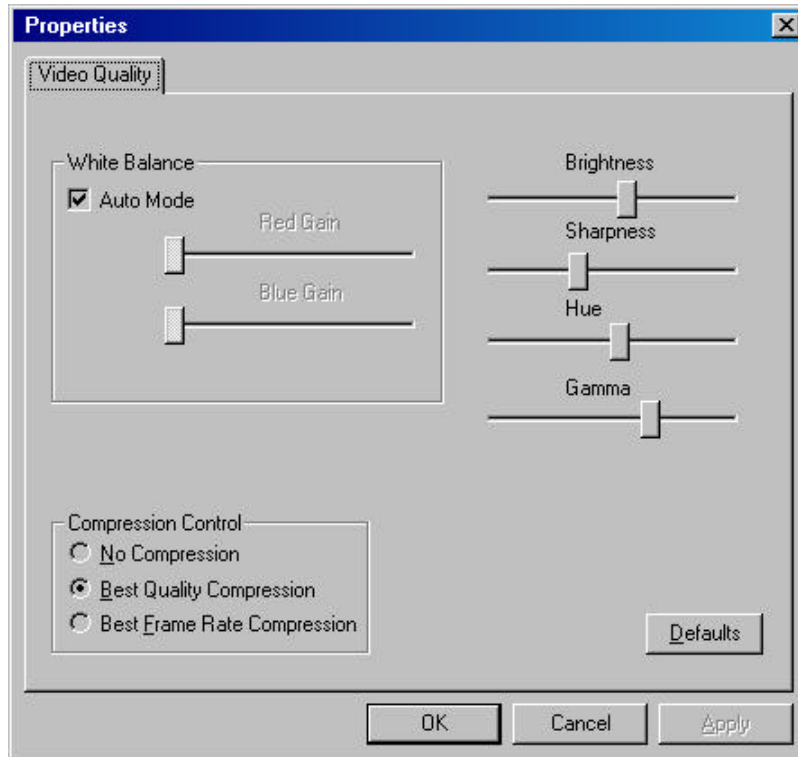
General Settings

The General tab will be selected when the Options dialog box opens.



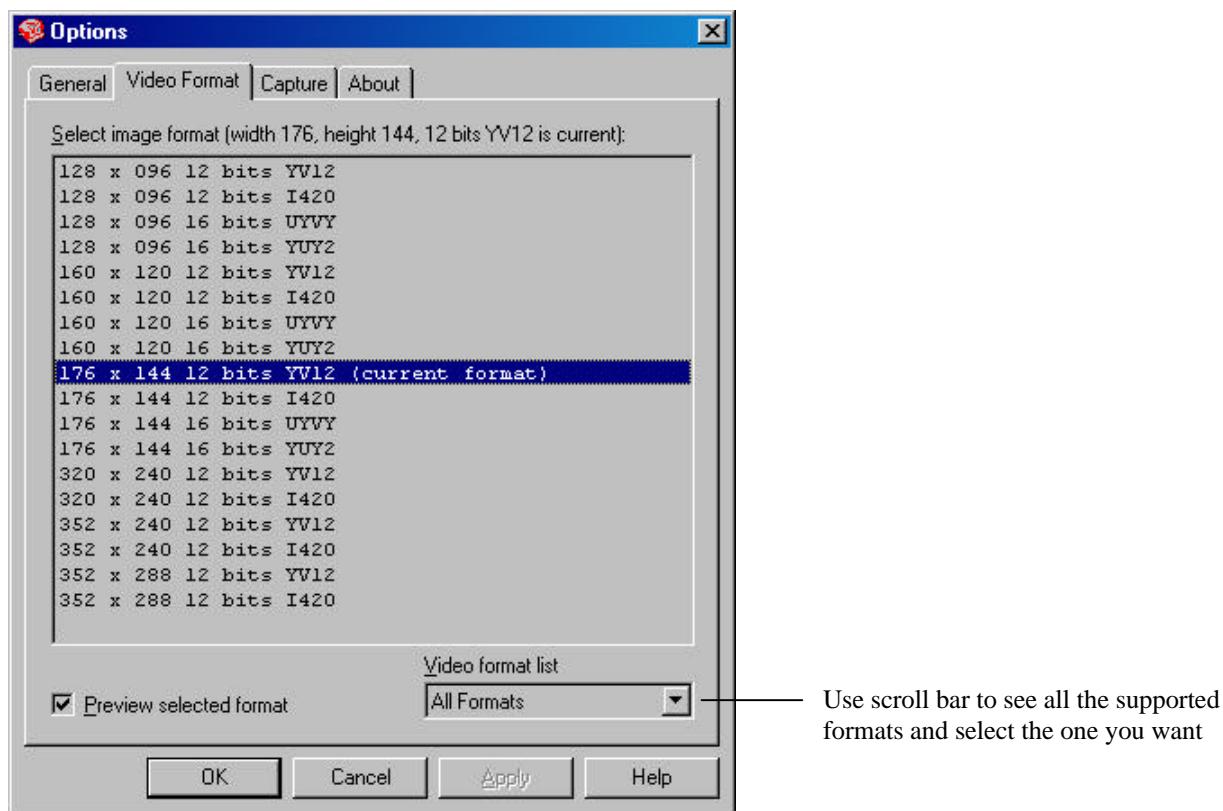
Choose Frame Rate – Sets the number of frames of video displayed in the Video Camera window when it is in front on your computer screen. The higher the number of frames the more lifelike the video image in the window, but the more processing the computer needs to do. Because you normally don't need full lifelike video until you want to capture a video, you should set this value to be 30 (or less). This reduces the processing devoted to the video, which makes more processing available for other programs.

Video Quality – This will open up another window as followed and with the video quality settings you can adjust the image to get the best possible video on your computer screen. Please refer to page 18-20 for detail description.



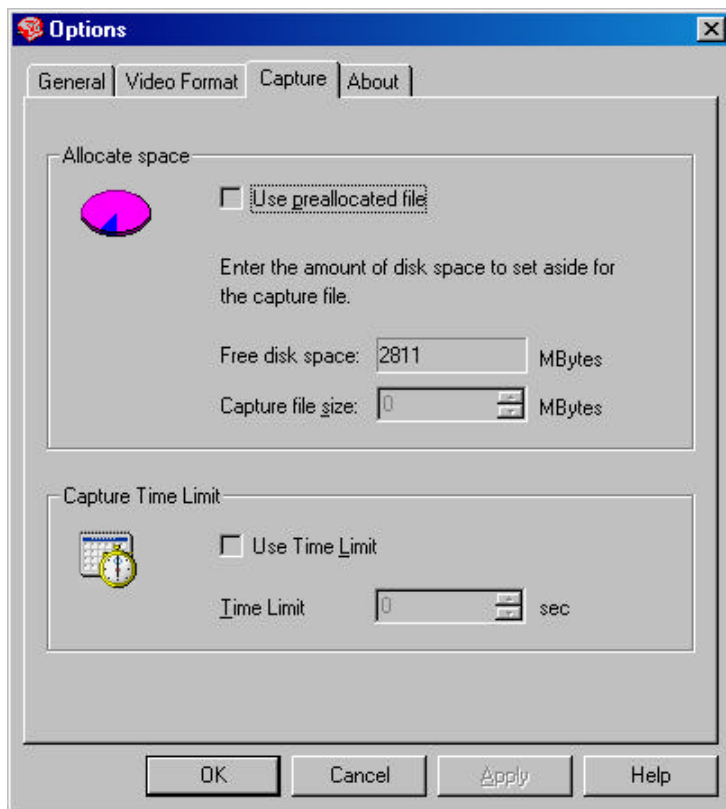
Video Format

The Video Format settings control the image size, number of bits used to process the image, and the format of processing (such as YV12).



The first two numbers, such as 176 x 144, set the image size. The smaller the image size, the more lifelike the motion of the video. Image size is expressed as pixels; the example above shows that the image will be 176 by 144 pixels on your computer screen. If you're having trouble getting lifelike video motion on the computer screen, try selecting one of the format options with a smaller size. The second set of numbers refers to the number of bits per pixel used to process the image. The higher the number, the better the image quality, but the more processing required by the computer. Selecting an option with a lower number of bits per pixel can also help you see more lifelike motion. The third set of values refers to the video format used for processing the luminance and chrominance of the image. The selections are the video formats available for the camera. Generally you do not need to choose an image format based on the video format alone.

Capture



Allocate Space – by putting a check mark here in the box next to **Use Preallocated File**, you are allowed to type in any number in the space provided next to **Capture File Size** as long as it is less than the number in the **Free Disk Space**. If you type in 28, that means the first 28 MB of your captured file are guaranteed to be saved to your hard drive. The Capture File Size must not exceed the Free Disk Space size, or such control will not ensure proper allocated disk space.

Capture Time Limit – by putting a check mark here in the box next to **Use Time Limit**, you are allowed to type in any number in the space provided next to Time Limit. If you typed in 10, that means your capture file will stop when it reaches 10 second.

C-it Video Conference Center

This chapter explains how to videoconference over the Internet or an Intranet with the C-it software.

Getting Started

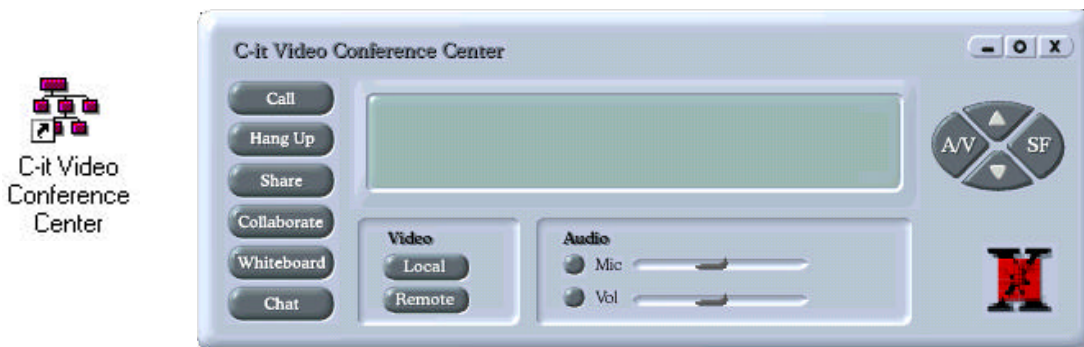
Before starting, inform everyone participating in the videoconference when it will begin. Each participant must be logged on to the Internet (or company Intranet), and have a camera and videoconferencing software up and running.

▼ **NOTE:** It doesn't matter if the participants are using other videoconferencing software. C-it software works with virtually any other videoconferencing software that meets the ITU H.323 standard. Therefore, although other participants have to be running their videoconferencing software, it does not have to be C-it (although, of course, we recommend it).



To start the software for videoconferencing:

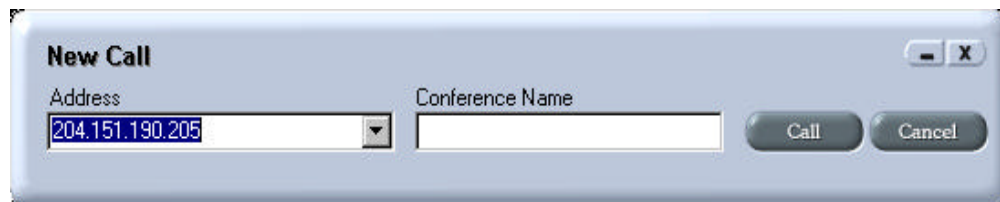
- Double-click the icon, C-it Video Conference Center.



▼ **HINT:** Make sure the camera is ready to go. Click the Local button to see the window for the image from your camera. Click Preview to see the image. Point the camera where you want. To adjust the camera's settings click the Options button at the top of the window.

Placing the Call

- 1 Log on to the Internet, or if your company uses an Intranet, log on to it.
- 2 Click the Call button on the Video Conference Center. The New Call dialog box appears.

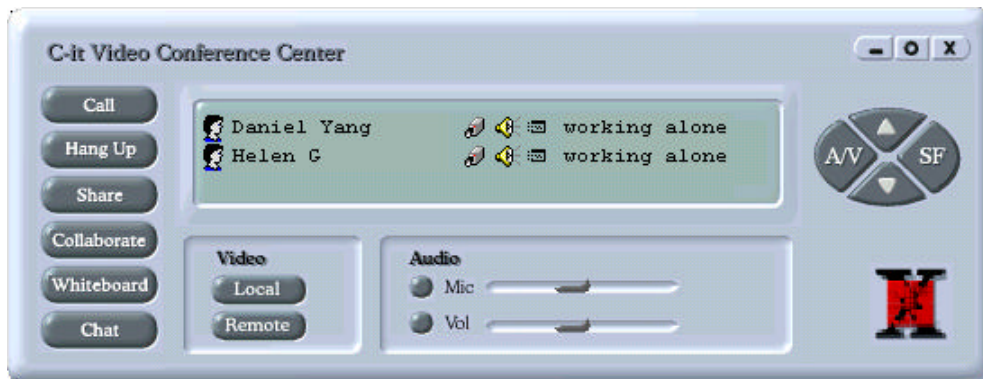


- 3 Enter the number to call in the Address box. See page 36-37 for more information about the types of numbers you can enter. Numbers and addresses you've called before are part of a built-in phone book. To call one of those numbers, click the down arrow next to the address box, then select the person to call.

To give the conference a name, such as Design Meeting 9/30, enter it into the Conference Name text box. This is optional.

4 Click the Call button.

The C-it Video Conference Center software now dials the number and makes the call. You don't have to worry about any connections. The Conference Center shows when the other person is connected.



The names of each person connected to the conference appear in the panel.

5 Click the Local and Remote button to see the video.



The local window shows what your camera sees. It's the image transmitted to the other conference participants.



The remote window shows the view from the other person's camera.

That's it. you're now set up to videoconference.

To add others to the conference, click Call again on the Conference Center panel and repeat the process for dialing other numbers. Each participant's name is added to the Conference Center panel.

6 When you're finished with the conference, click Hang Up.

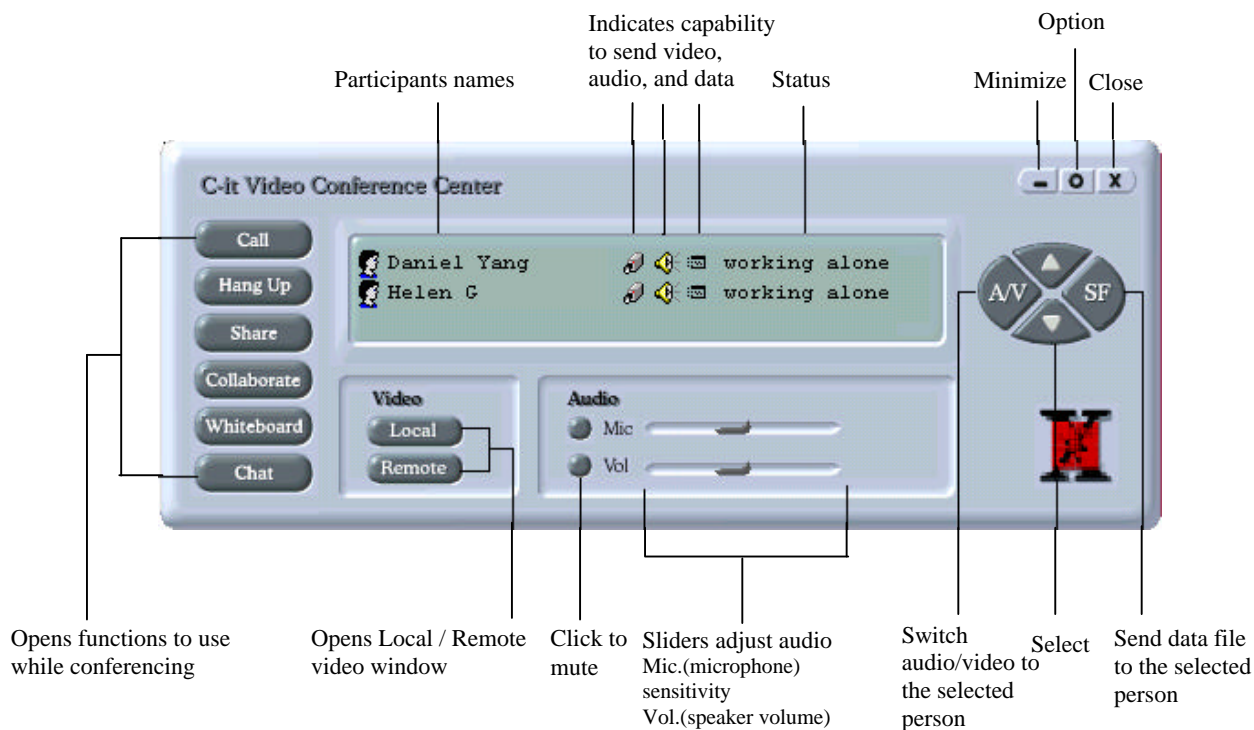
▼ NOTE: Hanging up ends the videoconference, but does not log off the Internet or your company's Intranet.

Calling Options

You can enter several different types of numbers and addresses in the New Call dialog box:

- ❑ IP Address -- An IP address is the numerical address of a server registered on the Internet. An IP address format is 123.456.789.00.
- ❑ Machine Name -- This option is normally for use with local area networks or an Intranet within a company. Servers in these types of networks are given names that are easier to remember than IP addresses.
- ▼ NOTE: Finding a person's IP address for videoconferencing on the Internet is often a confusing process. To help you find people's IP addresses easier, a number of Internet servers run the User Location Service, or ULS. To access a ULS server, use Internet Explorer to open Web sites at www.ULS.microsoft.com or at www.four11.com. (You can access several servers quickly at the Microsoft site by adding a number after the ULS, for example ULS1.micorsoft.com, ULS2.microsoft.com and so on.) The ULS servers not only list people by name, they also show the Person's current IP address to call to videoconference.

Window Control Buttons and Features



- From Left to Right:
- Minimize window
 - Reduce window size
 - Increase window size
 - Display camera options
 - Close the window
- Display / Stop video
Take a snapshot of the video image

Adjusting Settings While Conferencing

Adjusting the Audio

The two Audio sliders on the Video Conference Center control the microphone sensitivity and speaker volume. Drag the sliders to the left and right to adjust the audio. To mute the microphone or speakers, click the round buttons.

▼ NOTE: Mute the Mic (microphone) when you Don't want the other participants to hear the sound in your office. For example, if someone stops in with an important message while You're conferencing you may want to mute the microphone so everyone else in the conference does not hear the message.

Getting the Best Video Quality for a Conference

To achieve smooth video motion during the conference, the C-it camera must transmit between 10 and 15 frames of video every second. The frame rate and the frame quality are subject to network bandwidth you obtain while conferencing. A video frame is just like the individual frames on a strip of movie film. This is a tremendous amount of data to send over a network, and if the network is running slowly, the video motion may start to become "jerky" or to get out of synch with the audio (the sound and lip movements are not synchronized).

If the video is running slowly you may be able to solve the problem by:

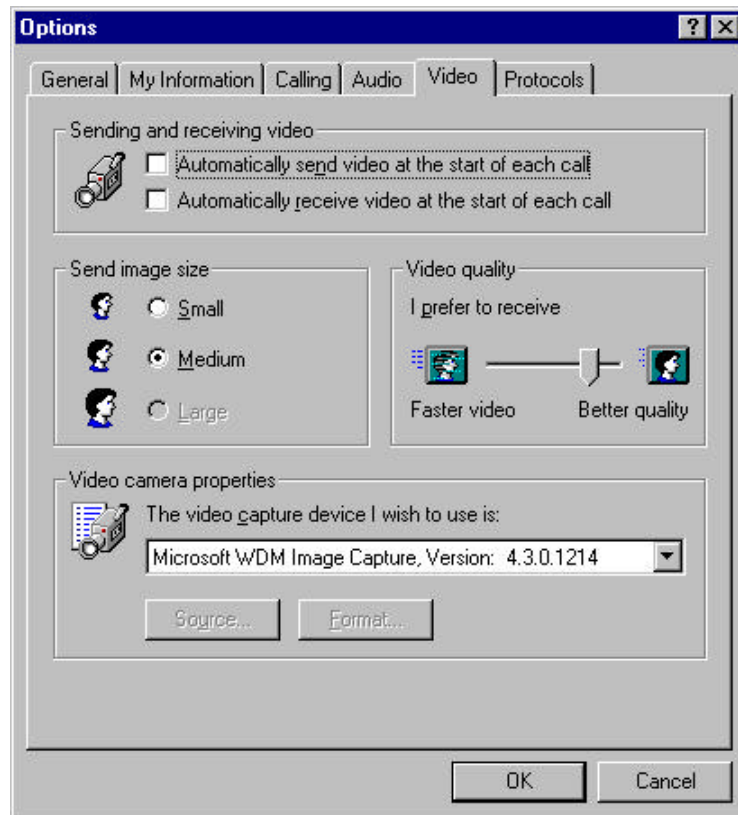
reducing the size of the video windows

reducing image quality

Both of these solutions reduce the amount of data being transmitted which allows the software to send more frames faster, which, in turn, makes the video run more smoothly.

Adjusting Image Quality and Size

- 1 Click the Options button on any one of the conferencing windows -- Local, Remote, or the Video Conference Center.
- 2 Click the Video tab.



3 Select options for the video.

Send Image Size -- The smaller the image size, the less data that has to be transmitted and therefore the smoother the video motion. Click Small if the video motion is jerky. Then, on the Local window itself, click the reduce button to set the window to be as small as possible. The best setting for a conference depends on the capabilities of the network You're using.

Video Quality -- The better the image quality, the more data that has to be transmitted and therefore the more likelihood that the video motions will become jerky. To transmit smoother video, drag the slider to "Faster Video." The actual setting you choose depends on the capability of the network You're using to videoconference. If motion is not important -- for instance the camera is pointed at a presentation screen in an auditorium -- drag the slider all the way to Better quality to see the best image.

Sending and receiving video -- Click these two options to automatically send and receive video as you start each conference. If they aren't checked, clicking the Local and Remote buttons on the Video Conference Center panel opens the Remote and Local windows and starts sending and receiving video.

Video Camera Properties -- These options are set for the C-it Video Camera and therefore do not have to be changed.

4 Click OK. You may see a momentary flicker while the camera and software adjusts to the new settings.

- ▼ NOTE: The other tabs on the Options dialog box offer features and settings available from Microsoft NetMeeting. Please see the documentation for NetMeeting for a description of those features and settings. You also need to set Full Duplex in the Audio Option.

Adjusting Window Size

The Local and Remote windows can be enlarged and reduced. The larger the size, the more data that has to be transmitted over the network. Thus, reducing the window sizes can help the video retain its smoothness during transmission.

To change the window size, click the left and right arrows on the Local and Remote windows. Each click of the left arrow reduces the window size by half. Each click of the right arrow doubles the window size.

The actual size depends on its initial setting for the window on the Video Options dialog box. To send the smallest possible window size, select Small image size first from the Video Options dialog box, then click the reduce button on the window itself to further reduce its size.

Pause the Video

Just like you can mute audio while conferencing, you can pause video in case you don't want other participants to see the image from your camera temporarily.

To pause the video:

- 1 Click the Stop button on the Local window. Your camera will stop transmitting video to the other conference participants.

To stop receiving video from someone else, click the Stop button on the Remote window. The Stop button now says Preview.



Click here to stop sending / receiving video images

- 2 To start sending or receiving video again, click the Preview button on the Local or Remote window.

You can also pause the video using the right mouse menu on the Conference Center.

Working While Conferencing

Seeing each other while you talk may be all the videoconferencing that you want to do. But the C-it software offers many more features to help you get the most out of videoconferencing. This section explains those features.

Conferencing with Another Participant

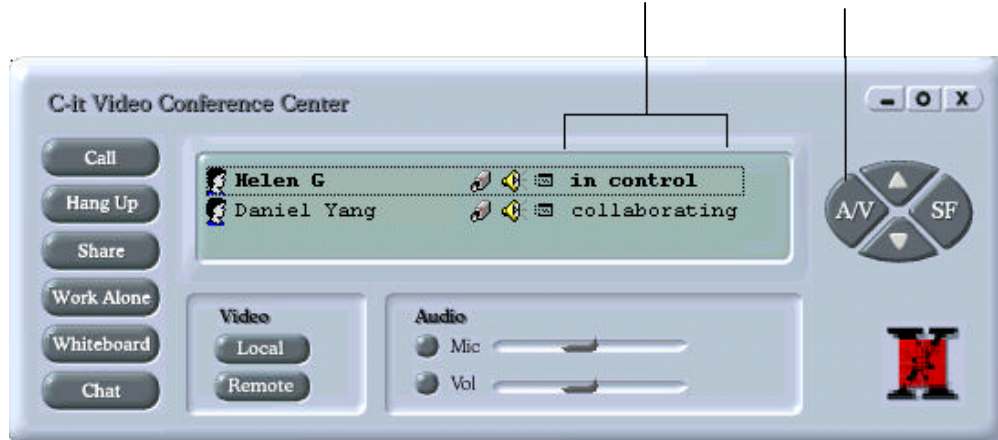
Several people can participate in a videoconference, but only two of you can conference at a time. The two windows (Local and Remote) show the two who are conferencing.

To switch among the participants to videoconference:

- 1 Click the Person's name in the list of participants. That person is selected.
You can also click the up or down arrows to move through the list of participants.
- 2 Click the A/V button on the Video Conference Center to switch to that person.

In this example Helen G is selected and will appear in the Remote window on your screen. Click any other participant in the list to select that person.

Click to switch to that person. Click up / down arrow to select another from the list.



The Remote window displays the image from that Person's camera.

You can also use the right mouse menu on the Conference Center to switch to others.

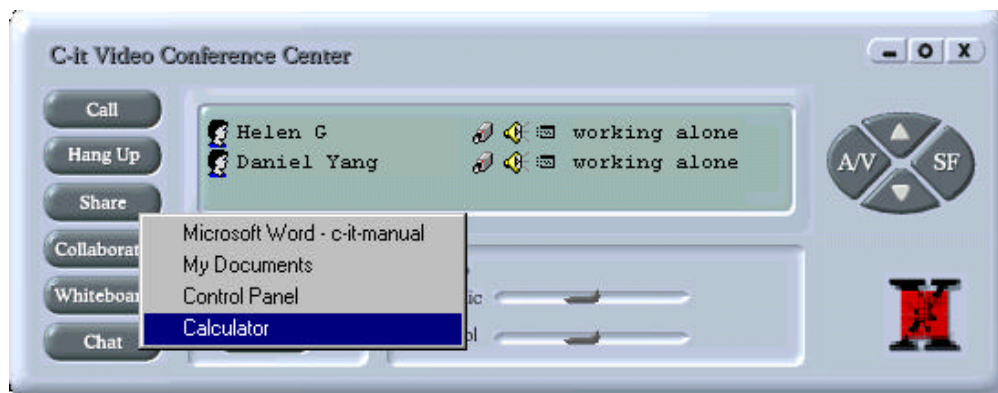
Sharing Work

While conferencing, the other participants can see any open application on your computer that you decide to share with them. The others participants do not need to have the application installed or open on their computers.

To share work:

- 1 Open the application and file that you want to share.
- 2 Click and hold down the Share button.

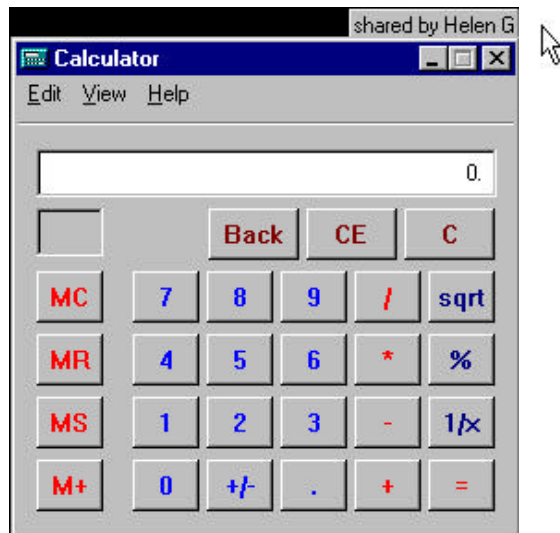
A list of the applications and windows already open on your computer appears on the pop-up menu.



- 3 Select the application that you want to share. In the example, Microsoft PowerPoint is selected.
- ▼ TIP: Make sure the application is not minimized when you select it from the list. If it's minimized, the other conference participants will only see the application's minimized icon.

The software sends a complete image of that application to all the participants in the conference. If a file is open, the conference participants see it too. This sample shows a PowerPoint presentation being shared. Note the tab at the top left corner that shows who is sharing the application.

Everyone in the videoconference will see the entire application window, even if they don't have the application on their computer. The share tap shows who "owns" the application and is sharing



it.

- 4 Click on the application's window to bring it to the front. This helps the other participants see the shared application better.
 - 5 To end the sharing, click the Share button again and deselect the shared item. The checkmark next to it indicates it's selected.
- ▼ NOTE: Sharing allows everyone else to see the item that you decide to share. Typically it is an application and file because that's how you can show work in progress. However, you could also share any open window from your computer desktop. Sharing is like "read only" in that people can see, but not work with, whatever you let them share.

Collaborating on Work

Collaborating means that other people in the videoconference can actually edit or make changes to the application and file running on your computer. It's like having that person sitting at your computer and working at your keyboard. The others participants do not need to have the application installed or open on their computers.

To collaborate:

- 1 Share the application and file as described above.
- 2 Click the Collaborate button on the Video Conference Center.
Now the pointer on your computer "freezes." that's because you have let the person working collaboratively be "in control" of your computer.
Note that the Collaborate button changes to "Work Alone."
The Video Conference Center shows who is collaborating. The person in control is able to work on the application.

In this example, Helen G and Daniel Y are collaborating on an application but only Helen G is able to work on it because she is the one in control.



Changes made by the collaborator appear on both computers -- in this example on both Helen's and Daniel's.

The pointer moves on both computers as the person in charge moves it. The pointer has the initials of the person in charge, like this:



H.G.

- 3 Double-click to get control back from the other person.
Now the pointer on that other Person's computer will freeze while You're in charge. Any changes you make appear on that other Person's computer too.
- 4 To end the collaborative work session, click the Work Alone button on the Video Conference Center.

Some Tips for Collaborating Effectively

- Before collaborating on a file, save a copy of the original file just in case you Don't want to accept the collaborative changes.
- While working together, let the other person know what change You're about to make to the file before you do it. You may want to discuss the change first.
- Let the other person know when you're going to double-click to put yourself back in charge again.
- As soon as You're finished working collaboratively, save the file so you Don't lose the changes.

Take a Snapshot

A snapshot takes a picture of the video image. You can take the snapshot from the Local camera, or from the Remote camera.

To take a snapshot:

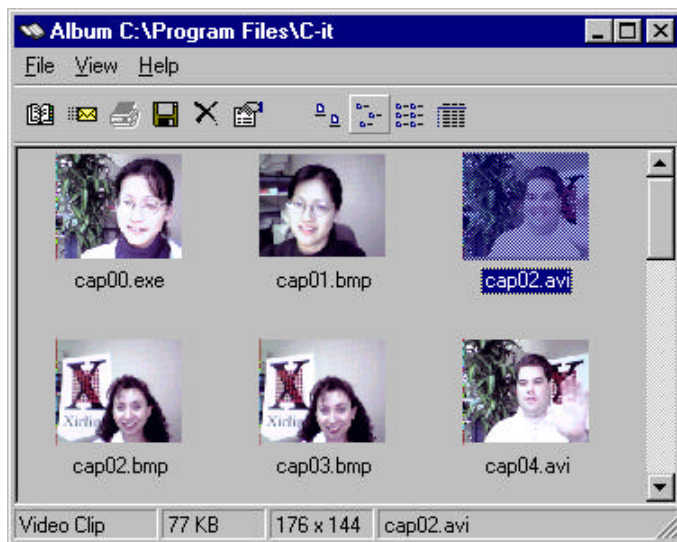
- 1 Click the Snapshot button on the Remote Window to take a picture from the other person's camera.

Click the Snapshot button on the Local window to take a picture from your camera.



Click Snapshot to take picture of the video. Because this is the Remote Video window, the snapshot is the image from the other person's camera.

The Album window appears. It shows snapshots you've already taken. Snapshots are captured as bit-mapped images and automatically receive the name cap0n.bmp, where the n is the next number for an image. For example if the last snapshot is named cap04.bmp, the one you just took is named cap05.bmp. here's a sample:



See "C-it Video Album" on page 50 for more information about using the Album.

Working on the Whiteboard

The Whiteboard during a videoconference is like a white board in a conference room except it appears on everyone's computer screen. Typically you use it to display graphics already saved on your computer.

To use the Whiteboard:

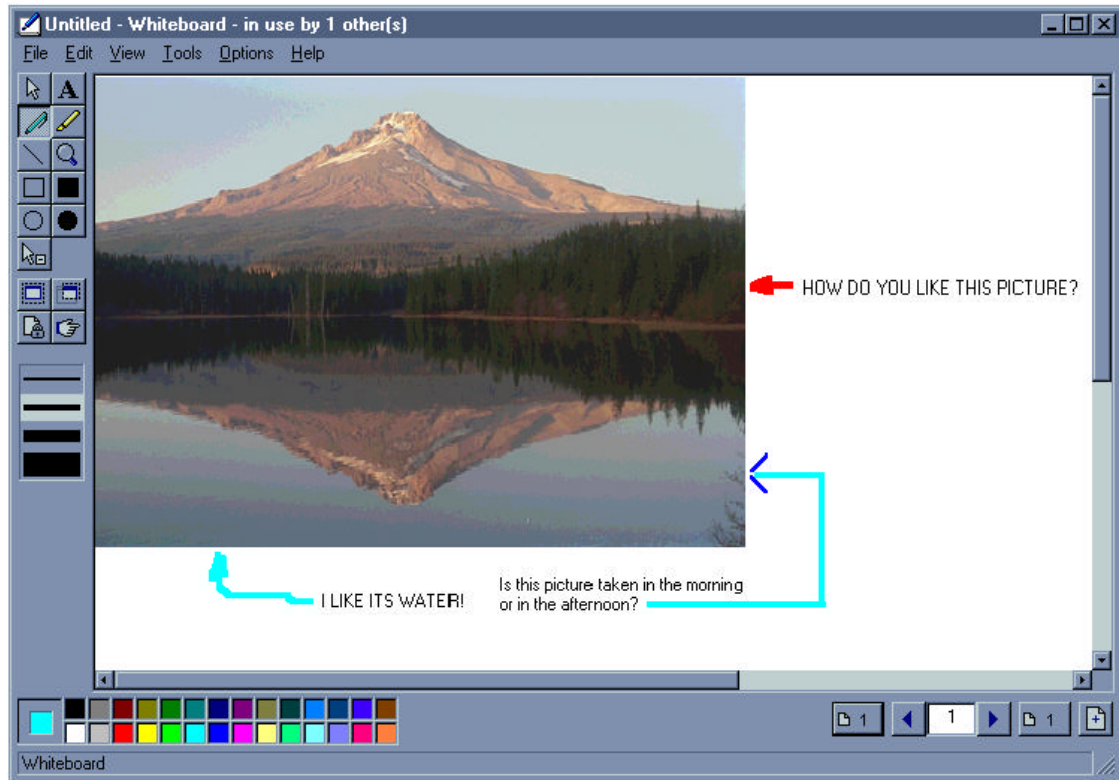
- 1 Click the Whiteboard button.

The Microsoft NetMeeting Whiteboard application starts.

- 2 From the File menu, choose Open and open the graphic that you want the other participants to see.

The Whiteboard and graphic appear on the screens of all the other conference participants.

Here's a sample:



Everyone in the conference can work on the Whiteboard.

- ▼ NOTE: The Whiteboard is the Microsoft NetMeeting Whiteboard feature. Please see the documentation that you received for NetMeeting for explanations of each function.

- 3 To close the Whiteboard, click the Close button on the Whiteboard window, or choose Exit from its File menu.

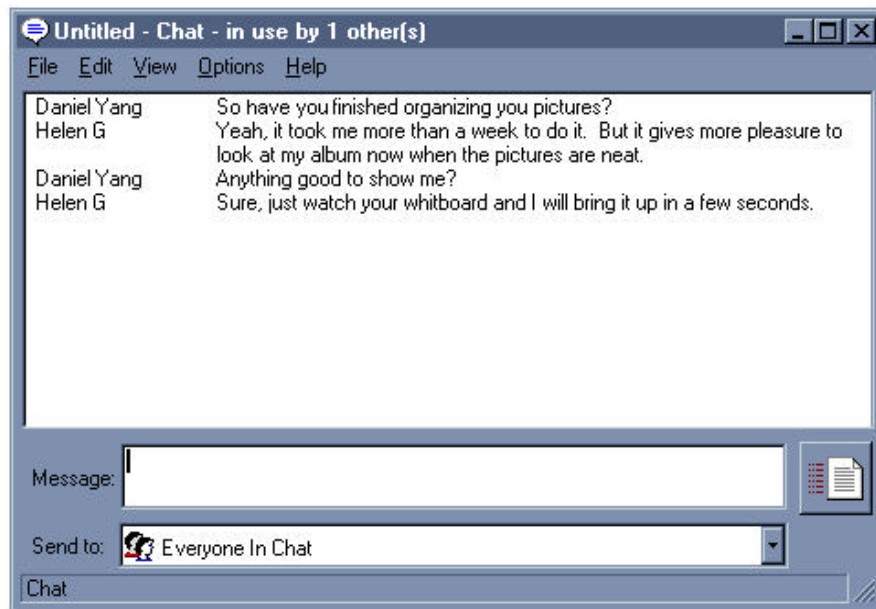
Using a Chat box

In addition to communicating with audio, you can communicate with one or more people on line using a chat box.

To use a chat box during a videoconference:

- 1 Click the Chat button on the Video Conference Center.

The Chat box appears. Here's a sample showing messages already sent back and forth:



- 2 In the Send to box, click the down arrow menu and select who you want to chat with. To chat with everyone in the conference, select Everyone in Chat.
 - 3 Type the message in the Message box.
 - 4 Press Enter or click the Send button to send the message.
- ▼ NOTE: The Chat box is the Microsoft NetMeeting Chat box feature. Please see the documentation that you received for NetMeeting for explanations of each function.

Sending and Receiving Files While Conferencing

You can send and receive files at the same time You're videoconferencing.

To send a file to the other person:

- 1 Select the Person's name in the Video Conference Center.
- 2 Click the SF button on the Video Conference Center.



A dialog box appears so you can select the file to send.



Select the file, or type its name in the File Name box. You can also select the type of files to see listed from the Files of type menu.

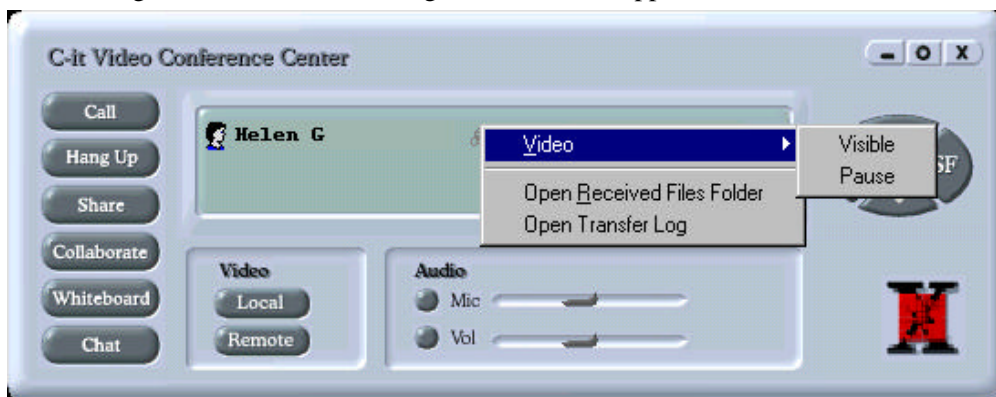
- 3 Click Open to send the file.
- ▼ **NOTE:** If you select yourself on the Video Conference Center and click SF, a window opens and shows files You've already received during videoconferencing.

Right Mouse Menu Shortcuts

Clicking the right mouse menu on the various windows displays shortcuts for several features.

Right Mouse Menu on the Video Conference Center

- 1 Put the pointer on one of the names of the participants in the conference and click and hold down the right mouse button. The right mouse menu appears.



- 2 Select Video to see the popup menu.
 - equivalent to selecting another person's name on the list and clicking the A/V button. The checkmark indicates the Remote window is open and displaying the view from the other person's camera. Select Visible again to remove the checkmark, which is equivalent to closing the Remote window.
 - equivalent to clicking the Stop button on your Local window. A checkmark next to pause indicates the video not transmitting. Select Pause again to begin sending video again, or just click the Preview button on the Local window.
- 3 Select Open Send/Received Files Folder. This option varies depending on the name selected in the Video Conference Center.

If you select your name, the option is Open Received Files Folder, and selecting it displays a window showing files you've already received while videoconferencing.

If you select another name, the option is Open Send Files Folder, and selecting it opens a window for you to send files to the other person.

Right Mouse Menu on the Local and Remote Windows

Put the pointer on either the Local or Remote Windows and click and hold down the right mouse button. The right mouse menu appears.



Copy -- equivalent to clicking the Snapshot button on the window.

Pause -- equivalent to clicking the Stop button on the window.

Always on Top -- keeps the window on top of all other windows on your screen.

Window Size -- shows a popup menu with window enlargement options. The one with the dot next to it is the current window enlargement factor. Select one to resize the window. This is equivalent to clicking the right and left arrow buttons on the window.

Properties -- equivalent to clicking the Options button on the window. The Options dialog box appears and the Video tab is already selected.

6

C-it Video Album

This section describes the C-it video album and its controls.

The C-it Video Album folder is a storage place for your video clips, video mails, and snapshots. The album holds three types of files:

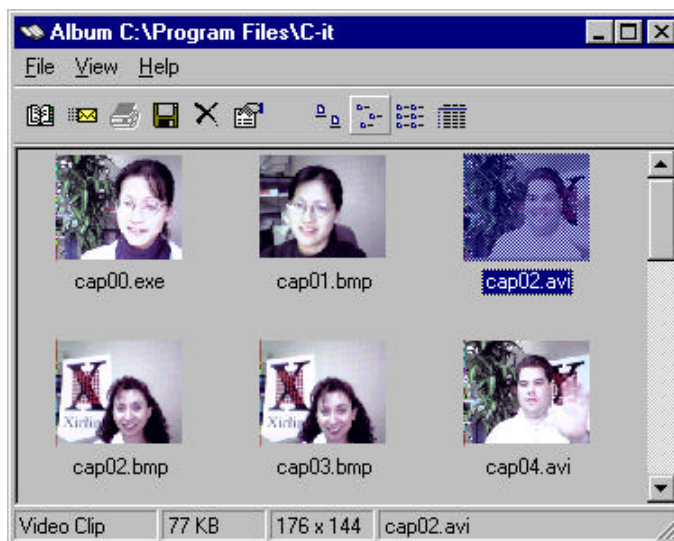
- Snapshots -- single frame images; their names end with .bmp (which stands for bit-mapped image).
- Video mails -- self-executable files, which are series of motion pictures with audio; their names end with .exe (which are OpArt Video Mail recording and could be run with no other additional software required).
- Video clips -- motion picture sequences; their names end with .avi (which are C-it video camera recordings).

Capture snapshots by clicking the Snapshot button on any one of the video windows -- Camera, Local, or Remote.

Capture video clips by clicking the Capture button on the Camera window.

To open the Video Album:

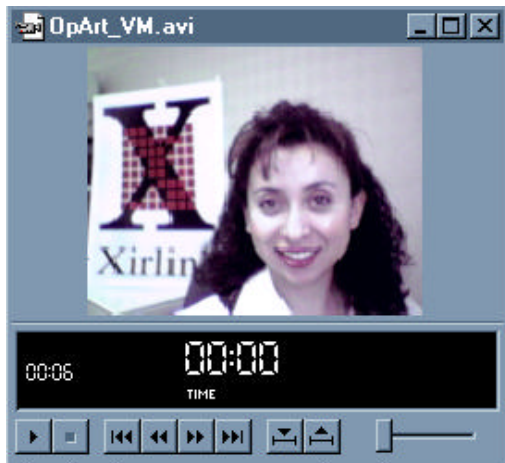
- Click on the Album button on the Camera window, or double-click the icon, C-it Video Album.



Playing Back an exe file from Album

- 1 Click the captured exe file icon on the album to select it.
- 2 Choose Open from the View menu. You can also just double click on the icon itself. Then the OpArt Player will play the video mail.

Here is an example of the playback window:



- Time control bar
- Microsoft movie playback control
- Click to stop playback or rewind
- Click to play or pause the playback

Playing Back an avi file from Album

- 1 Click the captured avi file icon on the album to select it.
- 2 Choose Open from the View menu. You can also just double-click on the icon itself. Then the Microsoft Video Player plays the video.

Here is an example of the playback window:



- Click here to stop / rewind
- Click here to playback or pause the captured file

Seeing a Snapshot

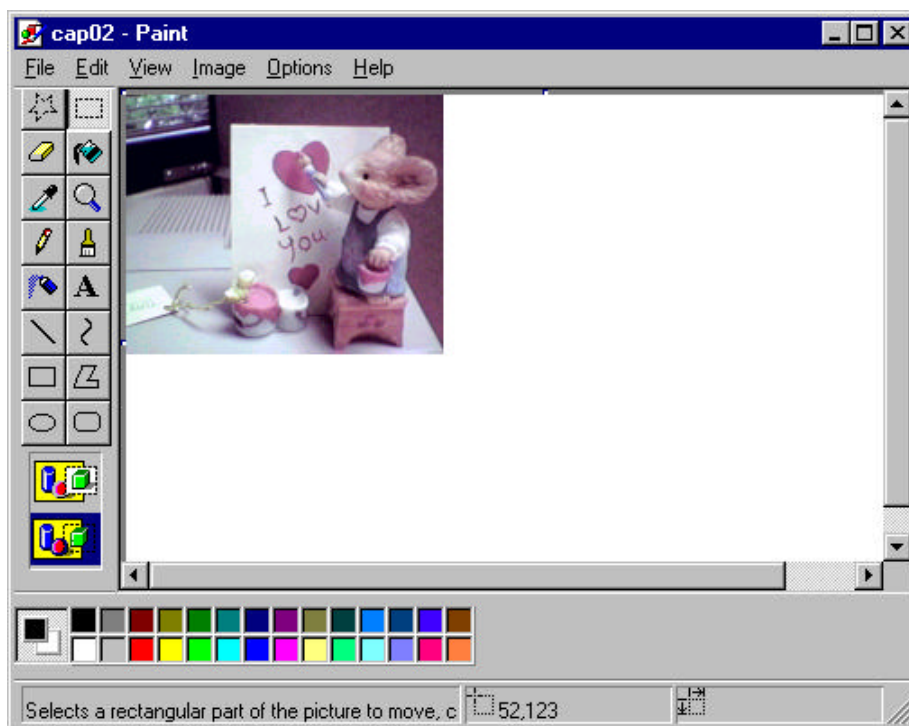
- 1 Click the snapshot's icon on the album to select it.
- 2 Choose Open from the View menu.

You can also just double-click on the snapshot's icon.

Microsoft Paint opens so you can see the snapshot and edit it.

- ▼ NOTE: If you have set up your computer to display .bmp files with another application, it will open instead.

Here's a sample of Microsoft Paint displaying a snapshot:



For descriptions of the editing features of Microsoft Paint, please see its user manual.

Sending a Video Mail, captured video clip or Snapshot with E-mail:

After capturing videos and snapshots with your C-it software, you can send them as attachments to e-mail messages.

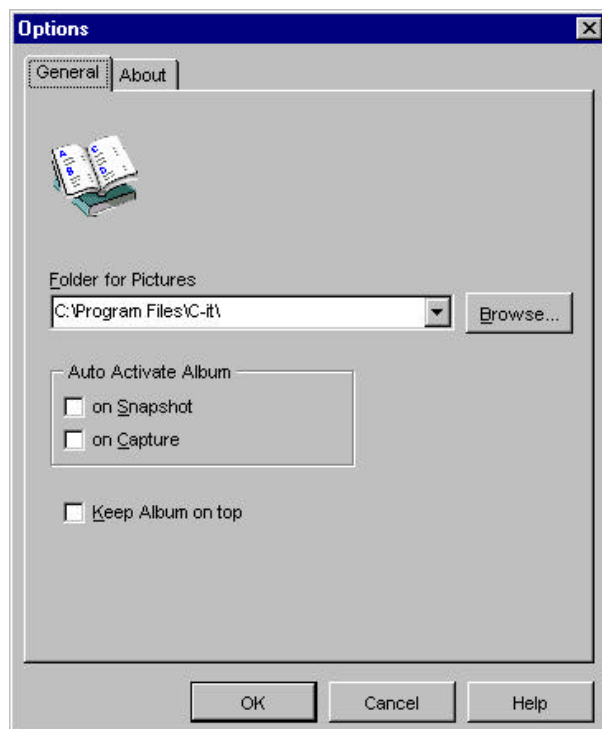
- 1 In the Video Album, click on the exe, avi, or bmp file to select the file you want to send.
- 2 Choose Send from the File menu.
Your e-mail message application opens. The snapshot or video that you selected in step 1 is attached to the message.
- 3 Type the e-mail message and send it in the normal manner. The video or snapshot will be sent with the message as an attachment.

- ▼ NOTE: If Microsoft Outlook is already open, drag the selected file from the album to the Outlook window. Microsoft Word opens with the selected file as an attachment, and you can compose a new message.

Setting Video Album Options

- 1 Open the Video Album.
- 2 Choose Options from the View menu.

The Album's Options dialog box appears.



- 3 Select the options you want for the album and click OK.

Folder for Pictures -- The folder where you want to save snapshots and videos captured with the camera. Enter a folder path name in this box, or click the Browse button and find a folder for the pictures.

Auto Activate Album -- Click either or both boxes if you want the album to automatically open when you take a snapshot or capture a video with the camera. If neither box is checked, the images will still be captured and saved, but the album won't open until you click the Album button on the camera window, or run the C-it Video Album application.

Keep Album on top -- Click on the box if you want the album always on top of any other application windows.

The C-it Video Album's Menu Commands and Tool Bar

The Video Album's menu commands are for playing back and working with the video clips and snapshots you captured during a video conference.

File Menu

Open -- If you select a snapshot file and then choose Open, Microsoft Paint opens so you can see the picture. If you select a video clip file and then choose Open, Microsoft Video Player opens so you can playback the video clip. Double-clicking an icon is a shortcut for choosing Open.

Rename -- Select the video clip or snapshot to receive a new name, then choose the Rename command. The image's name is selected so you can type a new name or edit the old one.

Save as -- Select the video clip or snapshot to save under another name, then choose the Save as command. The Save As dialog box appears so you can save the file with a new, more descriptive name.

Send -- Use this command to send a snapshot or video clip to someone as an attachment to an e-mail message. Select the snapshot or video clip on the album then choose the Send command. The e-mail editor opens with the selected snapshot or video clip already added as an attachment.

Delete -- Removes the selected file from the album. To keep a copy permanently, save it first with the Save As command before deleting the file from the album. If you save the file to another folder it will be available even if the file is deleted from the Album folder.

Print -- Prints a copy of the selected file on your printer. You can print snapshot files, but not video clip files. If you select a video clip file, the Print command is not available.

Exit -- Closes the Video Album.

View Menu

Select All -- Selects all the files that are stored in the Album.

Invert Selection -- Selects the inverted file of the previously selected one.

Large icons, Small icons, List, Details -- Select one of these commands to display the album icons in different ways.

Refresh -- Updates the album to display the snapshots and video clips that you may have just moved in or out of the Album subdirectory.

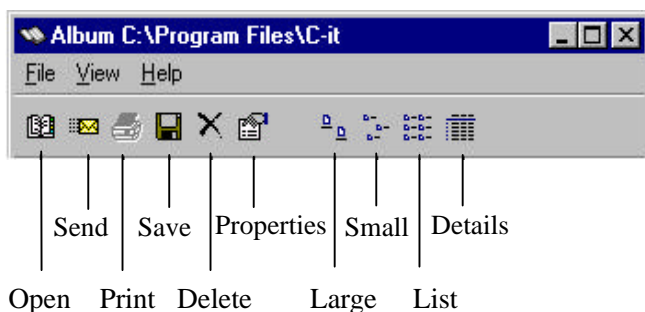
Options -- Displays the Video Album Options dialog box so you can select operating options for the album.

Help Menu

About -- Displays information about your C-it software. The About dialog box also displays the button, Connect to Xirlink, so you can quickly access the Xirlink Web Site.

The Video Album Tool Bar

The icons on the tool bar are shortcuts for the menu commands and other features.



Frequently Asked Questions

This section answers some of the most frequently asked questions about the C-it Video Camera, the OpArt Video Mail, and video conferencing in general.

Q *What does the USB stand for on my C-it Digital Video PC Camera?*

A Universal Serial Bus. It's a new way to attach things to your computer without having to go through a lot of hassle. It's a new "plug-and-play" feature.

Q *What do you mean, "Plug-and-Play"?*

A All you have to do is plug in the device and the computer already knows how it works. It eliminates the need to install cards into dedicated computer slots and reconfigure the system. Computers with USB automatically configure a device as soon as it is physically attached, without the need for you to reboot or run a setup program. Also, you can unplug the device and plug it back in without having to turn the computer off and on.

Q *Pretty neat. What other kinds of devices can I connect to my computer's USB port?*

A You name it: monitor controls, audio IO devices, telephones, modems, keyboards, mice, 4x and 6x CD ROM drives, joysticks, tape and floppy drives, imaging devices such as scanners and printers. USB's 12 Megabit/s data rate will also accommodate a whole new generation of peripherals, including MPEG-2 video-based products, data gloves and digitizers. Also, since computer-telephony integration is expected to be a big growth area for PCs, USB will provide a low-cost interface for Integrated Services Digital Network (ISDN) and digital PBXs.

Q *How do I know if my computer has a USB port?*

A Check on the back of your computer to see if it has a USB connector. See the picture on page 17 to see what a USB port looks like.

Q *What is a Digital Video Camera?*

A A video camera designed to work as an input device with your PC to do videoconferencing, still imaging and cool fun stuff. It doesn't use videotape like your camcorder; instead it converts images directly to digital files that your computer can process and send over the Internet or telephone wires.

Q *How does it differ from a digital camera?*

A The main difference between a digital video camera and a digital camera is that a digital camera can only take individual snapshots. A digital video camera, on the other hand, can not only take individual snapshots, it can also record and send video mail, communicate as a video phone or do complete videoconferencing with the appropriate software.

Q *Does that mean I can use other video input devices with the C-it Software?*

A No. The C-it Software was developed to work with C-it Digital Video PC Camera only.

Q *Is the sensor I choose in a digital video camera important?*

A Yes. Today, most digital video cameras use charged coupled device (or CCD) as the light-detecting component for image capture. But a new technology, known as CMOS sensors, is just beginning to come on the market.

- Q CMOS sensors? what's that? And why would I want it?**
- A CMOS sensor technology promises a better quality image at lower prices in the near future. The images will be clearer due to improved image capture (or less image "noise"), and the costs will come down based on new manufacturing techniques, circuit design, and lenses. So you'll get more for less.
- Q Everyone talks about the resolution of a digital video camera. What is resolution?**
- A Resolution determines how sharp and clear the picture is on your computer screen. Technically speaking, it's a measure of pixels and lines, width by height. In desktop videoconferencing, 2 common measurements are: CIF (common intermediate format) displays 352 pixels per line and 288 lines per picture and QCIF is 176x144.
- Q Why are Frames Per Second (FPS) important?**
- A Because it determines how "life-like" the video is on your computer screen. Frames per second is the number of individual images that you see on the screen per second. Thirty frames viewed in one second is "real time video," and is like watching a show on your TV set. In desktop videoconferencing, 5-10 fps is considered to be acceptable for viewing.
- Q What's the frame rate for C-it Digital Video PC camera?**
- A We can reach CIF 30 frames per second for local view.
- Q How do I adjust the color and contrast?**
- A Open the C-it Video Camera application first. Click the Options (O) button in the upper right corner of the Camera window. This will open the Options dialog box. Click the Video Format button to see the dialog box where you can adjust camera contrast, saturation, hue, etc.
- Q Can I zoom in or out?**
- A Yes. While using the Internet Video Conference Center, you can easily zoom in or zoom out the image by clicking the < and > buttons in the upper right corner of video windows.
- Q What's the standard length for USB cable? Can I replace the cable with the longer one?**
- A The standard cable length for PC USB device is 6 feet. The longer cable get more noise, so the video quality may be affected
- Q Can I go outside and use The C-it Digital Video PC Camera as a digital camera?**
- A Well, you can go as far as your USB cable can stretch without unplugging. The C-it USB camera is a desktop camera and should remain connected to the PC to operate.
- Q I already have an earlier version of the Xirlink software. How do I upgrade?**
- A Please visit the C-it Web page at www.Citnow.com and look for available upgrades.
- Q How much does C-it Digital Video PC Camera cost?**
- A Please visit the C-it Web page at www.Citnow.com and look for available upgrades.
- Q Are site license available?**
- A Yes. Please call us at 408-324-2100 for detailed information.
- Q what's required to run a C-it?**
- A Your computer should be a Pentium multimedia PC that runs at 90+ MHz, with at least 32 Mbytes of internal memory (RAM), 10 Mbytes of available hard disk space, and V.80 modem and/or Internet connection. And your computer must have USB port ready to use.

Q How much memory does C-it require?

A Your computer will need at least 16 Mbytes of RAM in order to run C-it software. However, to guarantee stable work with other open applications, the computer should have 32 or more Mbytes of memory.

Q Does C-it supports Windows NT?

A The current version NT 4.0 doesn't support USB. We will support C-it in NT5.0 when Microsoft releases it.

Q Is there a Macintosh Version?

A No.

Q Do I need any other devices to make my C-it Digital Video PC Camera work (capture card, Microphone, etc.).

A Your computer does not need a capture card of any kind. that's all taken care of by the C-it Digital Video PC Camera. Of course, your computer will need a USB (Universal Serial Bus) port to connect C-it Video Camera. Your computer should also be a multimedia PC with a CD-ROM drive, sound card, speakers, and microphone.

Q How do I install my C-it Digital Video PC Camera?

A First, make sure that your computer has a USB slot and that USB support is enabled (check BIOS settings). If everything is OK, you can install the software from C-it CD-ROM. When software installation is complete, plug in C-it USB Camera, and wait until the plug and play wizard completes the update configuration.

Q My computer does not have MMX Technology. Will the C-it still work?

A Yes, it will.

Q What is MMX technology anyway?

A Basically it's a series of enhancements to the Pentium processor specifically for improving multimedia and communications. With MMX, the visual media on your computer will play faster, smoother and appear more realistic.

Q Is it compatible with my TV?

A Normally no. The C-it Digital Video PC Camera is supposed to work with your desktop PC not a TV. The only time it might work with a TV is when you are using a TV set as a big monitor for your computer.

Q Why isn't the picture more like a TV?

A With the C-it Digital Video PC Camera you typically have two video windows: Local Video and Remote Video. The Local Video window shows the video being captured by your camera. You can expect good quality real-time video there. The Remote Video window shows the person you are calling. The picture quality in this Remote Video window can be lower quality for a number of reasons. The other person may have a low quality camera that does not produce a good image. The other person's software may be compressing the image before transmitting it through the phone line or the Internet. In some cases, the video signal is so tightly compressed that errors are introduced (called "lossy" compression). In fact, to transfer 30 frames per second QCIF (176x144) resolution video, the video phone system has to squeeze video by a ratio of more than 600:1! For motion video, that much compression almost guarantees losing a bit of precision. Also, the decompressor on the other end may create accumulating errors by reconstructing the image less accurately than normal. All these factors alone or together introduce errors that affect the quality of picture you receive.

Q What is a ULS?

A ULS is short for User Location Service. Before ULS, people wanting to call someone over the Internet had to type in the other person's IP address which are long numbers like this: 207.215.121.99. The ULS was developed so you don't have to deal IP addresses any more. Instead, you can type in the person's name or e-mail address, and the ULS will find and enter the proper IP address for you. It's like an on-line telephone operator who will dial the proper numbers to hook up with others over the Internet. ULS is actually a specifically designed web server that maintains the list of users currently available on the Internet. When someone starts the Internet Video Phone program, it connects to the ULS and uploads the information about that person (name, e-mail address, and so on). Also, ULS server registers IP addresses of every user connected. This way, when you want to call somebody by specifying the person's e-mail address, the ULS takes care of providing your computer system with the correct destination IP number.

Q What is image compression?

A A formula and process for eliminating unnecessary or redundant data in images to make the size of a compressed file as small as possible without sacrificing quality. Compressed video (or audio) files require less storage space, play back faster, and demand less of the computer's CPU for processing. There is currently a standard video compression technique (called the H.263 standard) for video email and video conferencing.

Q OK, so which image compression algorithm do I choose?

A Compression is a tradeoff between life-like motion and image quality. More compression means more frames can be transmitted per second, but at lower image quality. So the basic question becomes: "Do you want a clearer image or more 'life-like' motion?" You have to choose which is the most appropriate combination of compression and image quality for your particular video conference. The easiest way to find the answer for you is to try out several different compression algorithms to see which one fits best. By the way, there are a lot of other things you can do to make the motion more life-like besides image compression. Reducing the window size on the screen is one of the easiest ways to see more realistic motion because less data has to be transmitted for a smaller window.

Q Can I use OpArt Video Mail without sound card?

A Yes. You still can use OpArt Video Mail to capture video only video mail.

Q Can I send the video e-mail to any person with any system?

A You can send video e-mail to the person with Win95, Win98 or WinNT, but not for Win3.1.

Q What's kind of software needed to playback the video email?

A You don't need any extra software. You just need to install multimedia tools when you install operating system.

Q Can I get real time video and audio video email ?

A Yes. The video email you captured is real time. The audio and video quality is very smooth.

Q What's the frame size for the video email ?

A It is QCIF (176*144).

Q What's the compression ratio for video email?

A The answer could be 20 ~200 for video. It depends on the motion of the video. And it is 2 time compression for audio.

- Q What the file size will be if I capture 1 minute video mail?**
A The video mail file size depends on the time you capture and the motion of the video. The bigger the motion, the bigger the file's size. If you capture 1 minute with talking only, the file size will be around .
- Q Can I use C-it in my home to talk to other people?**
A You bet. The only thing you need is a USB PC with a modem and/or Internet connection. Just install the software, plug in the camera, and run C-it applications.
- Q How do I connect to someone who does not have C-it?**
A To be able to communicate with you, the other party should have any video conference system that complies with the H.323 standards. Most probably, the other person will have Microsoft NetMeeting software, which is a part of Microsoft Internet Explorer 4.0 or Windows 98. If this is a case, just run C-it Video Conference Center and call at the other person's IP address.
- Q Will C-it works over ISDN?**
A Yes, it will. And the life-like motion is more realistic than in videoconferencing over a standard telephone system.
- Q OK. So what is H.323?**
A A suite of standards designed for videoconferencing over packet-switched networks such as the Internet, Intranet or Ethernet. Microsoft NetMeeting is the leader in this environment and that product comes pre-installed on every new system. The C-it Internet Video Conference Center program interfaces with Microsoft NetMeeting to provide users with the capability of Internet videoconferencing.
- Q What communications protocols does C-it support?**
A The C-it software supports video conferencing standards: H.323 standard for the Internet videoconferencing.
- Q How do I know what the other person is seeing on the other end?**
A The person on the other side will see exactly what you can see in your local view window, which shows what your camera is transmitting to the other person. The other person may see a different quality image, though, based on the settings that person selected for image quality.
- Q Does everyone I want to video conference with have to have C-it software?**
A No, not at all. As long as the other person has a camera and software that meet the ITU H.323 standard for Internet you're all set.
- Q What do I do if I cannot get my local view to work?**
A First, make sure your camera is plugged in. If it is, but you still cannot see any picture, try to reboot the computer and check the BIOS to make sure USB support is enabled on your PC. If none of that works, unplug the camera, reinstall C-it software and plug the camera back in.
- Q How do I take a snapshot of something?**
A Just click the snapshot button in any video window in the C-it software.
- Q How do I take a snapshot of something?**
A Just click the snapshot button in any video window in the C-it software.
- Q If I can not connect with someone over the Internet what do I do?**
A First, make sure the other person is logged on to the Internet and available to receive your call. If you aren't sure if that person is on the Internet, use ULS server to locate the person. If you're

sure that person is waiting for your call, check the e-mail address, number, or name you're using to place the call. If you still can't connect, check that the other person's hardware and software are compatible with the H.324/H.323 standards. If there are incompatibilities, you will not be able to communicate.

Q *Can I talk to more than one person at a time?*

A Yes. Up to 30 people can connect to the videoconference at the same time. All these people can access raw data simultaneously. This means that everyone sees chat text, the whiteboard, transferred files, and shared applications. However, audio and video channels can be connected only on one-to-one basis. In particular, this means that you select one person at a time to talk to directly. To talk to another person, you disconnect the one you are already talking to, and connect with the next person.

8

Troubleshooting

Problem: *When installing the software you receive the message, "This product requires a Windows 95 version 4.00.950 B. C-it Digital Video PC Camera cannot be installed on your system since you have a different version of MS Windows."*

Solution: The C-it Digital Video PC Camera is available for several versions of Windows 95, Windows 98, and Windows NT. You have an earlier version of the software and need to upgrade to a newer release of Windows. Please see your retailer for Windows software.

Problem: *You receive the message, "USB port not found. Your system either does not have a USB port or USB is not enabled in BIOS."*

Solution: Verify that your computer has a USB port. If the port exists, enable it in the system BIOS by running your computer's BIOS setup program.

Problem: *The setup program does not start automatically when you insert the C-it Digital Video PC Camera CD.*

Solution: It can take a few seconds for the computer to read from the CD. Try inserting the CD into the CD-ROM drive again and waiting a bit longer. If the startup program still does not start automatically, click the Windows Start menu and select Run. If the CD-ROM drive is the D drive, type D:\SETUP in the Run dialog box. (If the CD-ROM is some other drive, type its drive letter instead, such as E:\SETUP.) Click OK to start Setup.

Problem: *You receive the message, "An error occurred during the move data process:-113".*

Solution: If you have already installed the C-it Digital Video PC Camera software, unplug camera, and un-install the software. Reinstall the software. If the problem persists, check the hard disk's integrity using the Window's ScanDisk utility. See your MS Windows 95 User's Manual for more information about the ScanDisk program.

Problem: *Installation does not finish properly.*

Solution: Unplug the camera first, then un-install the software. Close all other open applications on the computer. Then install C-it software again.

Problem: *The camera capture driver is not installed properly. This may happen if the camera was plugged in before or during the software installation.*

Solution: Unplug the camera first, the reinstall the software.

Problem: *You receive the message, "Capture device is in use."*

Solution: Another application that can use the camera is probably open on your computer. Check the applications that are open that can possibly use camera. Close all the open applications that can use the camera, then start the one you want. If that application still doesn't release the camera driver, you will need to restart the computer.

Problem: *The camera window is green, blue, or black; or your image does not appear in the window.*

Solution: Something is wrong with camera connection and/or camera drivers. Click right mouse button on the Windows icon, "My Computer" and select Properties. In the System Properties Wizard select Device Manager, and locate "Image device" in the device tree. You should be able to see "C-it Digital PC Video Camera" device there. Select this item and click Remove button.

Unplug the camera and reboot the computer. When the system is up, plug in the camera again. The system should auto detect the camera and reload the drivers.

Problem: *The video window has flashing vertical or horizontal colored lines.*

Solution: The computer may be having problems processing the large amounts of data sent through it during a typical video capture sequence. Try the following: a) select a smaller image size, b) close other applications on your system that may be open, c) avoid moving windows around the desktop while you are using video applications.

Problem: *The camera works for less than a minute then hang.*

Solution: This relates closely with the USB controller of the system. If the system has open HCI USB controller, or if it is using a USB add-on card, we would strongly recommend using Windows 98 operating system instead of Windows 95 because they work much better in Windows 98.

Problem: *When change image format, or try to change/enlarge, the screen freezes and keeps the last image, or gives a light blue screen.*

Solution: Since the graphic card is not very capable and stable, disabling the direct draw of the graphic card is required. Go to Settings from the Start icon → choose Control Panel → click on Display icon → click on the tap named Settings → click on Advanced Properties → click on tap named Performance → under Graphics, set the Hardware Acceleration to None → keep choosing OK to close all the windows and restart the computer. Remember to do the above procedures again after changing the display settings (i.e.16bit, 24bit, 32bit).

Problem: *Camera LCD light is on but shows a pink screen.*

Solution: Reduce the acceleration of the graphic card to None, like what is described above, or upgrade the operating system to Windows 98.

Problem: *Error message “C-it Video Camera was not detected.”*

Solution: If the camera is not plugged in yet, please do so now. If it is, then unplug it and plug it back in again. The system should detected this device and install the software for it. If the system still can not detected the device, then unplug the camera → restart the computer → plug the camera in.

Problem: *What if this “camera not detected” message resists?*

Solution: Before running the USB camera, you need to make sure you have Universal Serial Bus Controller installed. Check it from System → Device Manager, and the last device listed under the manager should be Universal Serial Bus Controller. Under the Controller folder, you should have both a host controller and a root hub listed. If you don't have this folder, please install USB supplement into your Windows 95 system. (We have a courtesy copy of this setup file in our CD under OSR2.)

Problem: *What is wrong when all the drivers, both USB supplement and C-it, are loaded but the camera still doesn't work? (return message “-3”)*

Solution: Go to BIOS set up when the computer first starts and make sure to enable USB device under the advance set up menu. If it is Award BIOS, it requires version 1.5 or above in order to select the USB set up option.

Problem: *Why is there no sound for Video Conferencing?*

Solution: Check out the volume control under Multimedia. The Microphone should be muted while all others shouldn't. Use full duplex for your audio by checking in the box from the audio option bar in Video Conferencing Center.

Problem: *The power light doesn't come on when the camera is plug in.*

Solution: The light will come on when you run any of the C-it applications.

Problem: *There is no update files available on your home web page.*

Solution: Our upgrade drivers are located at <ftp://xirlink.com> and all the posting files will be updated without further notice.



Technical Specifications

Digital Video Camera Specifications

- USB telephony peripheral compliant; up to 12 Mbps, Bi-directional, isochronous. No video capture card or power supply necessary
- C-it ViCE^a (Video Compression Engine) built-in
- Built-in microphone for audio input; 8kHz, 16-bit audio
- Supports standard 352x288 (CIF), 352x240 (SIF), 320x240, 176x144 (QCIF), 160x120 and 128x96 (sub-QCIF) video formats. Also provides software enhanced 704x576 (4CIF) and 640x480 formats for still images.
- 24-bit true color, YVU 4:2:2, YVU12 and YVU9 formats supported
- Adjustable lens for close-up to infinity
- Mechanical dimensions: 2.1" (h) x 2.6" (w) x 4.5" (d)
- +/- 20¼ tilt by 100¼ swivel movement

Software Specifications

C-it Video Camera Interface

- Cool 3D multimedia graphical user interface
- Scaleable 3D curved windows
- Total control over camera settings
- Supports DirectDraw graphic cards
- Captures high quality still images and real time audio/video
- Create, edit, preview and stores image in Video Album
- Built-in video e-mail feature allows you to send a still image or digital audio video clips
- Stores in BMP and AVI formats with optional H.263 and G.723 compression

Camera drivers for Windows 95 (OSR2), Windows 98, and Windows NT 5.0

- Fully USB WDM and Video for Windows compliant
- Provides on-the-fly decompression for ViCE^a compressed audio/video

Internet Video Conference Center

- H.323 Internet videoconferencing interface with Microsoft NetMeeting
- Powered by C-it H.263 compression engine
- Incorporates 3D multimedia user interface
- Conversation recording and playback options

OpArt Video Mail

- Internet E-mail server
- Sound blaster compatible sound card with microphone

System Requirements

- USB Pentium PC with 28K modem or above
- 16 MB system memory and 8MB hard drive space
- Internet ready PC for Video Conference Center