EnterpriseSeries®

ESA Conferencing System

System Administrator's Guide

TC1000
TC2000
LC5000

SmartVideoconferencing™

Document Edition	Part Number	Date
First	907-691-EN1.20	January 1997

VTEL Corporation
108 Wild Basin Road
Austin, Texas 78746 USA

Notices

Canadian Department of Communications Notices

Class A Limits

The digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus as set out in the Radio Interference Regulations of the Canadian Department of Communications.

Load Number

The Load Number (LN) assigned to each terminal device denotes the percentage of the total load to be connected to a telephone loop used by the device to prevent overloading. The termination of a loop may consist of any combination of devices subject only to the requirement that the sum of the load numbers of all devices does not exceed 100.

Attachment Limitation

The Canadian Department of Communications label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective, operational, and safety requirements. The Department does not guarantee the equipment will operate to the user's satisfaction.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. An acceptable method of connection must be used to install the equipment. The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations.

Repairs to certified equipment should be made by an authorized Canadian maintenance facility designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request that the user disconnect the equipment.

For their own protection, users should ensure that the electrical ground connections of the power utility, telephone lines, and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.

Caution: Users should not attempt to make such connections themselves, but should contact the appropriate electric inspection authority or electrician as appropriate.

FCC Notice

This equipment complies with Part 68 of the FCC rules. On the back of this equipment is a label that contains, among other information, the FCC registration number and ringer equivalence number (REN) for this equipment. If requested, this information must be provided to the telephone company.

The REN is used to determine the quantity of devices which may be connected to the telephone line. Excessive RENs on the telephone line may result in the devices not ringing in response to an incoming call. In most, but not all areas, the sum of the RENs should not exceed five (5.0). To be certain of the number of devices that may be connected to the line, as determined by the total RENs, contact the telephone company to determine the maximum REN for the calling area.

This equipment uses the following USOC jacks: RJ11C

An FCC-compliant telephone cord and modular plug is provided with this equipment. This equipment is designed to be connected to the telephone network or premises wiring using a compatible modular jack which is Part 68-compliant.

This equipment cannot be used on telephone company-provided coin service. Connection to Party Line Service is subject to state tariffs.

If this equipment causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of the service may be required. If advance notice isn't practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.

The telephone company may make changes in its facilities, equipment, operations, or procedures that could affect the operation of the equipment. If this happens, the telephone company will provide advance notice in order for you to make the necessary modifications in order to maintain uninterrupted service.

If trouble is experienced with this equipment, contact **VTEL Technical Assistance Center at 800-856-VTEL**, **+1 512 314 2750,** or **610-239-5555** for repair and (or) warranty information. If the trouble is causing harm to the telephone network, the telephone company may request that you remove the equipment from the network until the problem is resolved.

Any repairs to this equipment must be made by VTEL, or a VTEL-certified technician or repair facility.

It is recommended that the customer install an AC surge arrestor in the AC outlet to which this device is connected. This is to avoid equipment damage caused by local lightening strikes and other electrical surges.

Austel Notice: For Use in Australia

This equipment can be connected to a telecommunications service only by an Austel-permitted terminal adapter.

Contents

About This Guide

1 System Overview

2 Configuring AppsView

3 Preparing for Videoconferences

4 Monitoring System Operation

5 Troubleshooting

A Connecting to the Internet

About This Guide

The Enterprise Series Architecture™ (ESA) system is an open architecture, PC-based videoconferencing system manufactured by VTEL™ Corporation. VTEL's AppsView™ software program controls the videoconferencing functions of the system.

Who should use this guide

This guide is for people who configure and manage an ESA system at the site where the system is located.

This guide assumes that you are familiar with basic telecommunications connectivity terms and concepts and that you know how to use Windows® 95.

Other ESA system documentation

This book contains information for use *only* by the ESA system administrator.

The companion book for this guide is the *ESA Conferencing System User's Handbook*, which contains information about how to use the tablet and AppsView to perform videoconferencing tasks. The *ESA Conferencing System User's Handbook* should be placed on the conference table where it will be within easy reach of videoconferencing participants.

Online documents

Three online documents are included with the ESA System:

- *RS-366 Interface Description* (states.doc). Describes implementation of standards that apply to the connection between the ESA system and an external network interface via a DDM card. (The RS-366 interface controls call setup and dialing through the DDM card.) Use this document as a reference when working with vendors of external network interface equipment.
- *ISDN Positioning Interaction* (isdnbri.doc). Provides information about configuring an ISDN switch. Read this document if your ESA system is equipped with a Promptus Single or Quad BRI card.
- this system administrator's guide

For information about reading the states.doc and isdnbri.doc files, see the next section, "Reading online documents with WordView."

For information about the online system administrator's guide, see "Using the online version of this system administrator's guide" on pagexvii.

Reading online documents with WordView

To read the states.doc and isdnbri.doc files, use the Microsoft® WordView™ application:

*To display the Windows 95 taskbar, press **Ctrl-Esc**.*

1 To launch WordView, click the **Start** button on the Windows 95 taskbar, then select **Programs**.

2 Select **Accessories**, then select **WordView**.

3 In WordView, open the online document you need:

```
c:\vtel\appsview\states.doc
```

```
c:\vtel\appsview\isdnbri.doc
```

Using the online version of this system administrator's guide

The online version of the *ESA System - System Administrator's Guide* is an interactive document. Use the Adobe™ Acrobat™ Reader to display the document. The Reader lets you enter a text string to quickly jump to the information you need.

Opening the book

1 To start the Reader, enter:

__P__ for Programs, __V__ for VTEL programs.

```
Ctrl-Esc PV
```

2 Select **Administrator's Guide**.

The Acrobat Reader program starts and the guide opens.

Resizing the page

You can change the size of the page with the **Zoom To** option.

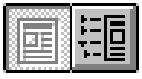
To access the **Zoom To** option, press **Ctrl-L** or select **Zoom To** from the **View** menu.

Enter a percentage in the **Magnification** box, or click the arrow and select from the list.

Searching for a string

Click the **Binocular** button on the Acrobat Reader toolbar, then enter the string you want to find.

Using the bookmarks and the Index



The two buttons at the left side of the Acrobat Reader toolbar show and hide the bookmarks. Bookmarks are similar to a table of contents that make it easy to click and jump to any topic you want to see.

To use the Index, click an Index entry to jump to the page referenced by the entry.

Minimizing the guide

If you want the guide to be available during your session, minimize the Reader window by clicking the standard Windows 95 **Minimize** button in the upper right corner of the window.

To view the guide again, click the **Acrobat Reader** button on the Windows 95 taskbar.

Closing the guide

Click the standard Windows 95 **Close** button in the upper right corner of the window.

Getting help

Contact your VTEL reseller or authorized service provider if you need to order replacement parts or optional hardware and software, or if you have a technical question about the ESA system or the AppsView software.

1 System Overview

This chapter provides basic information about your ESA system. It also gives you an overview of typical VTEL system administration tasks.

Configuring the system

This section lists configuration tasks you need to perform after your new system is set up.

To configure the system, follow the instructions in Chapter 2, “Configuring AppsView,” then complete the configuration by performing the procedures described in Chapter 3, “Preparing for Videoconferences.”

For information about installing optional software, see the instructions included with the optional software.

◀ ***Note:*** You do not need to install AppsView software. If you are setting up a new system, VTEL has already installed all the software on the system.

If you ever need to reinstall the software, see the *ESA Conferencing System TC2000/LC5000 Installation Guide*.

Guide to basic configuration tasks

The following steps list the basic tasks you'll need to perform to set up your system.

Note: This book includes information about other ways you can customize the system, but the following steps describe *basic* configuration tasks.

1 Perform all the procedures described in Chapter 2, "Configuring AppsView," including setting up a default communications profile ("Selecting a default communications profile" on page27).

2 If necessary, set up a communications profile for an atypical type of connection ("Adding or customizing a profile for your site" on page34).

3 Select and load the overlay to use with your system's tablet ("Selecting and loading a tablet overlay" on page46).

4 Set up Address Book entries ("Setting up Address Book entries" on page59).

5 Set up Speed-Dialer buttons ("Setting up Speed-Dialer site buttons" on page61).

6 Set default camera and preset camera positions ("Setting camera preset positions" on page62).

7 Fine-tune audio and video settings ("Fine-tuning audio settings" on page65 and "Fine-tuning video settings" on page67).

Performing backups

It is a good idea to back up data files (such as slide files) at least once a week. For more information, see the section in the Windows 95 user's guide that discusses how to back up data files.

Troubleshooting

If you encounter a problem when using the ESA system, first check the problems and solutions described in Chapter 5, "Troubleshooting."

If you can't find the answer to the problem there, call your VTEL representative.

Powering up the system and starting AppsView

1 Turn the ESA system on by pressing the on/off button (located on the powerstrip inside the cabinet) to the On position.

Windows 95 and AppsView start up automatically, and the AppsView icon appears in the lower right corner of the screen.

2 To make sure the tablet is set for the overlay you have chosen, use the electronic pen to click the **Tablet On** button.

Powering down the system

If you need to power down the ESA system:

1 If a call is in progress, hang up.

2 Use the right mouse button to click the **AppsView** icon, then select **Exit AppsView Immediately**.

Note: You can use the electronic pen to perform a right mouse click:

Move the pen lightly in the tablet's mousepad area until the cursor on the screen is on the AppsView icon, then press the button on the barrel of the pen. (Do not press down on the pen.)

To display the Windows 95 taskbar, click ***Ctrl-Esc****.*

◀ **3** Shut down Windows by clicking the Windows 95 **Start** button, then selecting the **Shut Down** option.

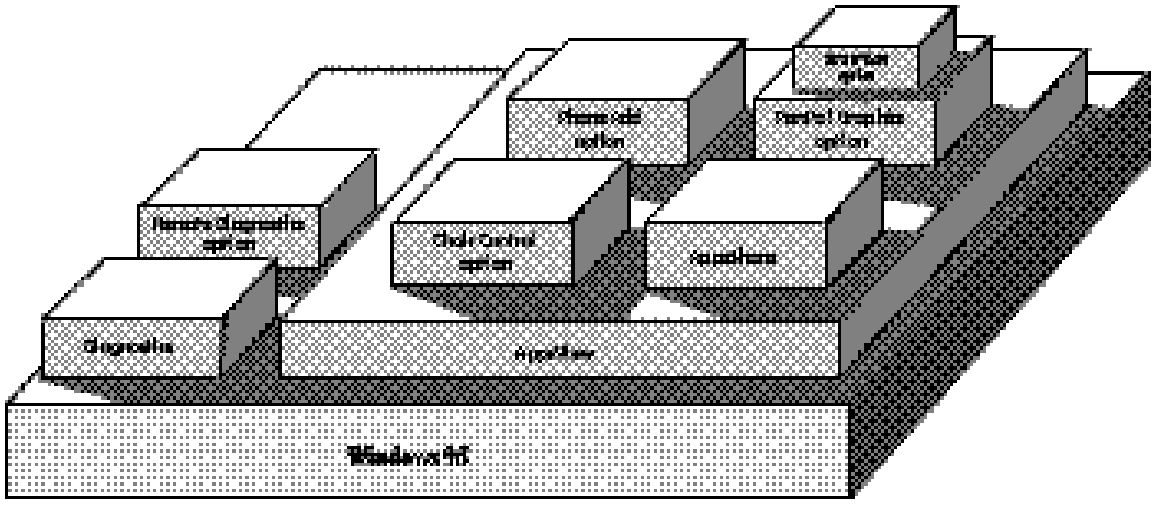
Note: You cannot shut down Windows 95 until you close AppsView.

4 Turn off the system by pressing the on/off switch to the Off position. (The on/off switch is located on the powerstrip inside the cabinet.)

Note: If you want to restart the system, wait 30 seconds after turning it off before you turn it on again.

Software overview

This diagram shows the main software components of the ESA system:



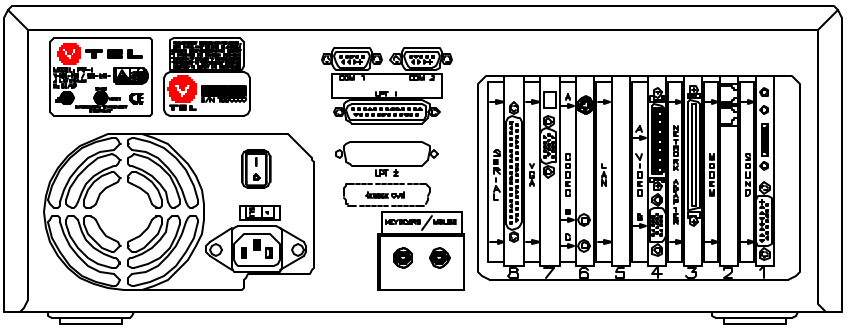
The videoconferencing applications run on the Microsoft Windows 95 operating system. The following list briefly describes each application.

AppsView	VTEL software required for all videoconferencing functions.
AppsShare™	Software that enables application sharing.
PenPal Graphics®	Optional VTEL software that lets users save and annotate video slides and snapshots. Includes an electronic tablet, pen, and tablet overlays.
Chair Control	Optional VTEL software that facilitates multiway conferences.
SmartView	Optional VTEL motion-detection software for dual-monitor ESA systems. SmartView automatically captures a document, sends it to the remote site, and returns control to the local camera.
Phone Add	Optional VTEL software that enables telephone caller to participate in a videoconference with your site.
Diagnostics	VTEL software that you or a service representative can use to identify problems with system components.
Remote Diagnostics	Optional software that facilitates remote diagnostic tests.

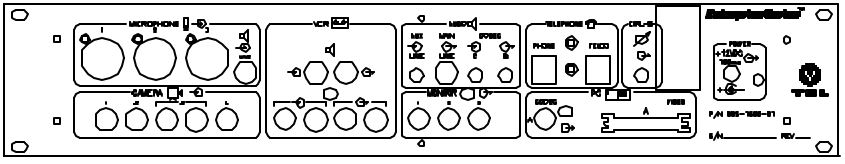
◀ *Chair Control requires the use of a Multipoint Control Unit (MCU).*

Hardware overview

These are the main hardware components inside the cabinet of the ESA system:

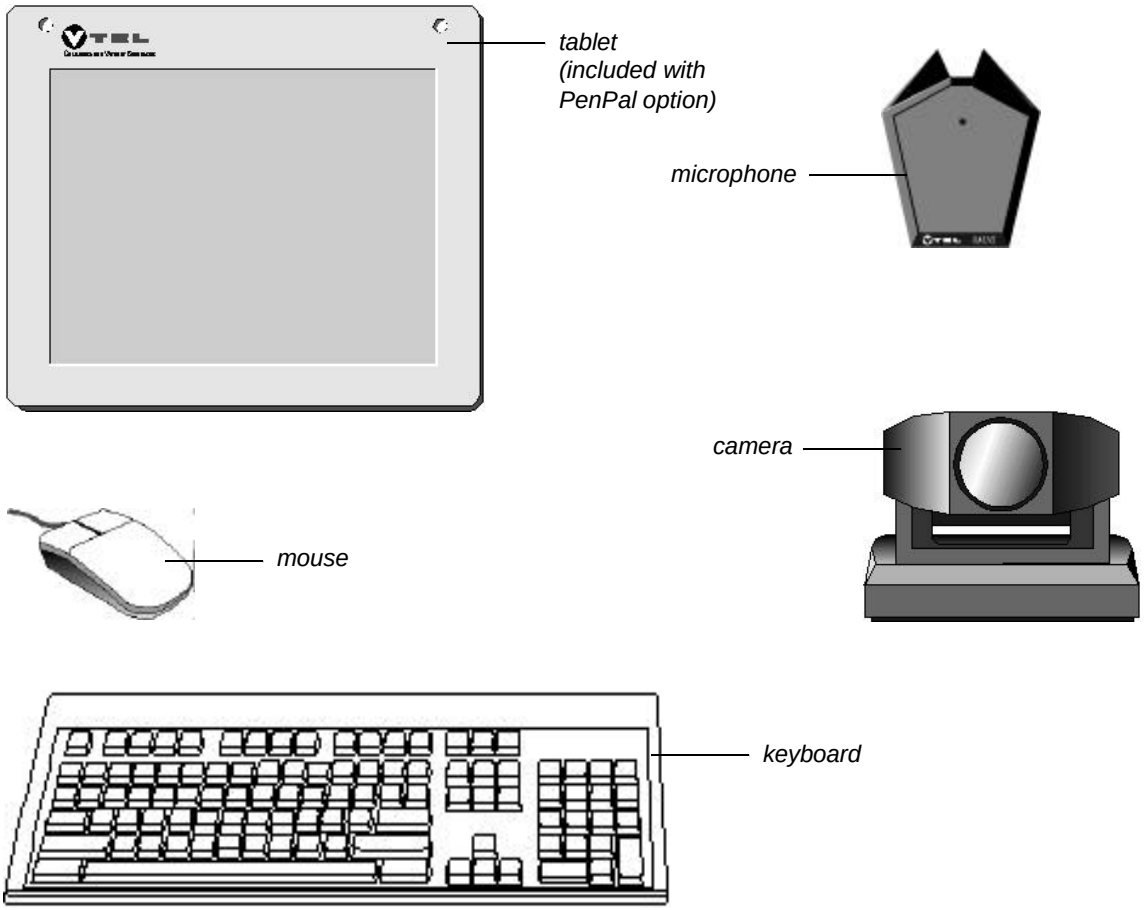


Pentium™ PC



expansion unit

Other main components include these items:



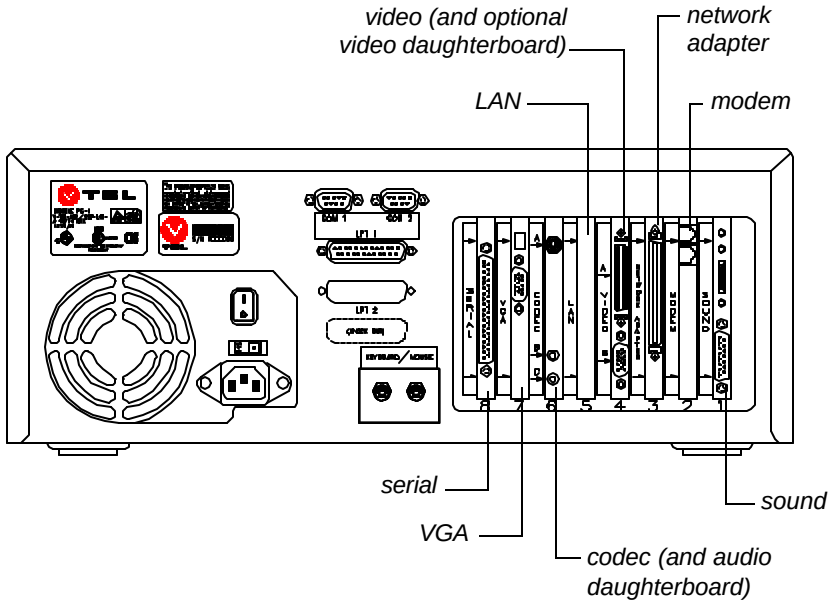
The system also includes a cable bundle (called the umbilical cable) that connects peripheral equipment from the conference table to the back of the system.

PC

The PC contains the CPU, hard disk drive, RAM, and other standard PC components, as well as the proprietary VTEL board set described in the next section.

ESA system board set

The following illustration shows the VTEL boards located inside the PC:



VGA board

The VGA board is a PCI-type graphics adapter with 2 megabytes of RAM. The VGA board is cabled to the video board, where video and VGA graphics are merged.

Video board

The video board (and optional daughterboard) is used with the codec board and a compatible VGA board. The video board performs these functions:

- Px64 video decoding
- VGA scan conversion
- chroma-key merging of VGA and live video

The video daughterboard includes an additional video input and video output to enable the use of dual monitors.

Codec board

The codec board (and audio daughterboard) is a PCI board that incorporates a video codec, an audio subsystem, a communications protocol, and a framing processor. The codec board includes a video input and performs Px64 video encoding.

The codec board also incorporates a communications processor for transmission of digital audio/video to various system resources, including the network adapter. The audio daughterboard includes two audio inputs and two line-level audio inputs, and performs digital audio compression/decompression and acoustic echo cancellation.

Network adapter

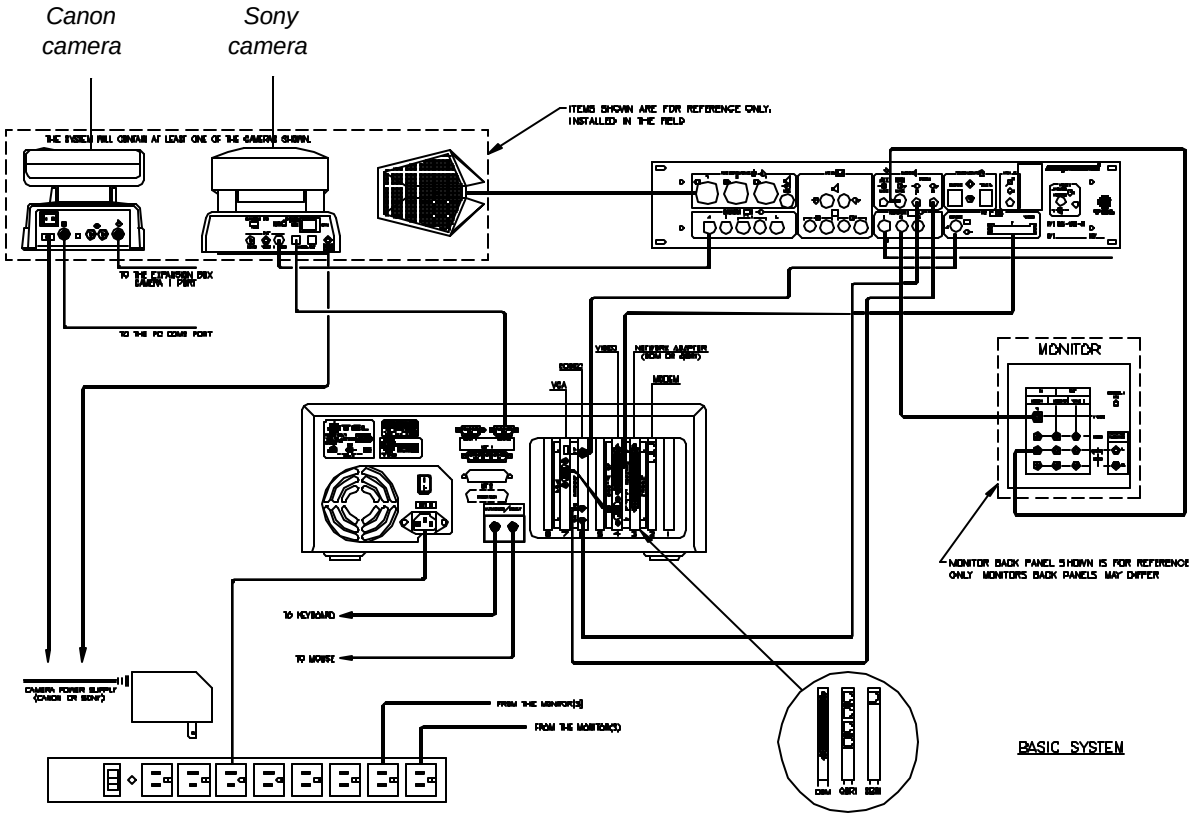
The network adapter is an ISA board that serves as a telecom wide area network (WAN) adapter for connecting the system to remote sites. This board is directly connected to the codec board via an internal MVIP ribbon cable. Multiple network adapter options enable the ESA system to support a number of different networking solutions and protocols.

Expansion unit

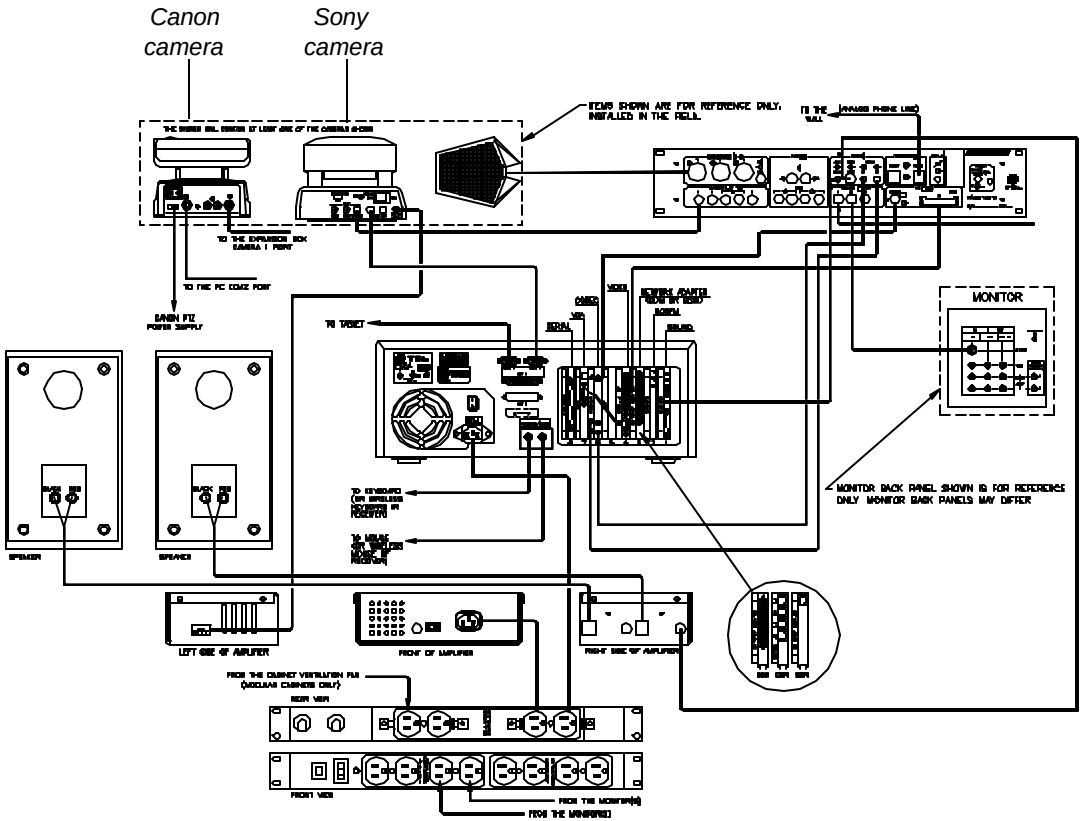
The expansion unit is a rack-mountable chassis that contains components that route peripheral video and audio equipment to system resources. The unit provides five video inputs and four video outputs for general purpose uses. It also provides video and audio connections to the system's codec and video boards.

Audio components of the unit support three microphone inputs, two line-level audio inputs (one mixed with microphones), and two line-level audio outputs.

TC1000 cabling diagram



TC2000/LC5000 cabling diagram



2 Configuring AppsView

Follow the steps in this chapter to set up AppsView. To complete the configuration, perform the procedures described in Chapter 3, “Preparing for Videoconferences.”

Setting up AppsView for the first time

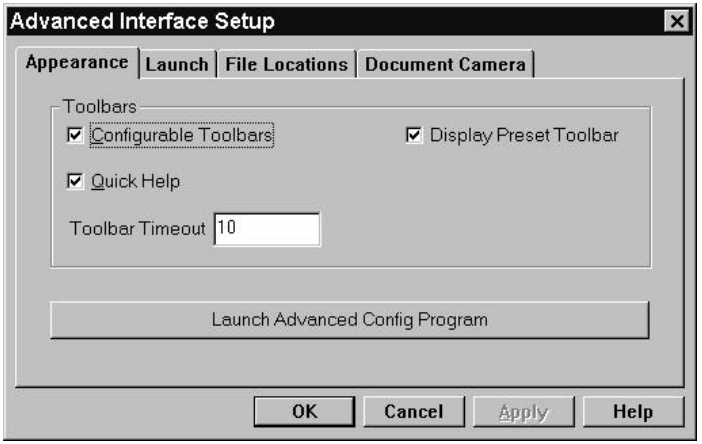
If you are setting up AppsView for the first time, when you turn on the system, the Configuration program automatically opens to the Welcome tab. Go to step 5 on page17.

Accessing configuration windows

1 Click the **AppsView** icon to display the AppsView toolbar.

2 Click the **System Tools** button on the AppsView toolbar to display the Configuration toolbar.

3 On the **Configuration** toolbar, click the **Set Configuration** button. The Advanced Interface Setup window opens:



The other options in the Appearance window are described in "Setting up AppsView display options," on page 49.

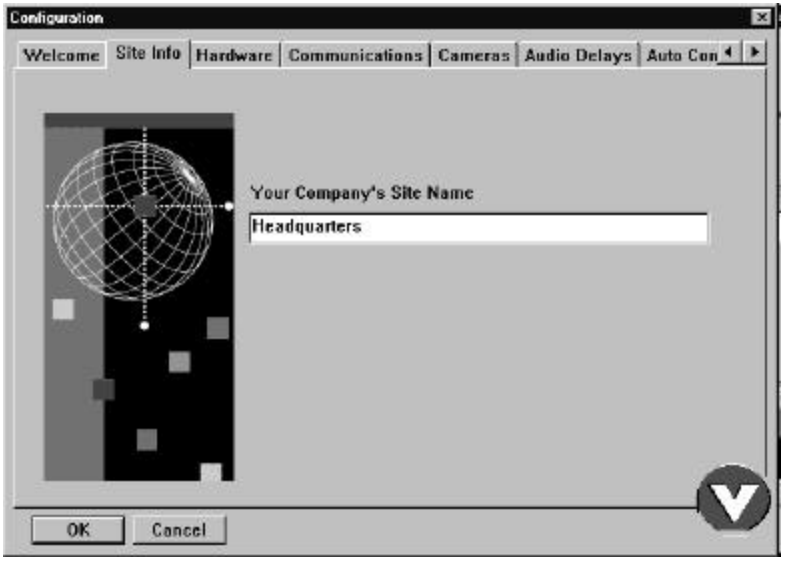
4 Click the **Launch Advanced Config Program** button. The Configuration window opens and displays the Welcome tab.

5 Click the tab for the configuration window you need.

If you are setting up your system for the first time, click the **Next** button to begin configuring the system.

Identifying your site

1 From the Configuration window, select the **Site Info** tab.



2 Enter your location's site name in the Site Info window.

Note: The Site Name is the identifier the optional Chair Control application will use for your site. This is the name that identifies the site to participants in Chair Control videoconferences.

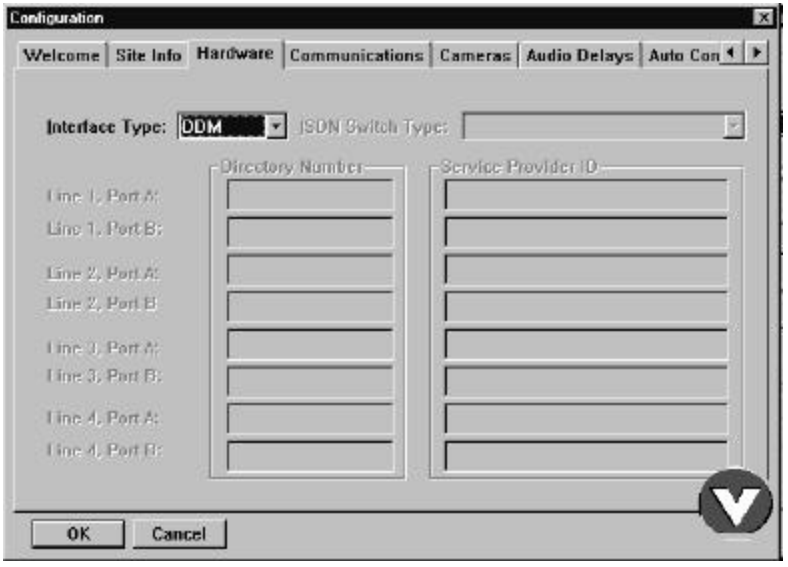
3 **If you are setting up your system for the first time**, click the **Next** button to continue configuring the system.

Hardware and ISDN interface connections

Configuring a new ESA system

If you are setting up a new system, follow the steps in this section to configure the hardware. (If you are adding new hardware, see "Configuring additional hardware," on page 21.)

1 From the Configuration window, select the **Hardware** tab.



2 **If your system uses a DDM interface**, click the Communications tab (or **Next** if you are performing initial system configuration) to proceed. (See "Setting communications parameters," on page 26.)

If your system uses a Quad BRI interface, set the ISDN switch type (such as NI-1 or NET3). If you do not know the switch type, check with the telephone company that provides your ISDN service.

If your ISDN connection requires the use of Directory Numbers (DNs) or Service Provider IDs (SPIDs), enter the DN or SPID for each ISDN line.

DNs and SPIDs are assigned by the telephone company that installs your ISDN line. If you do not know these numbers, contact the telephone company that installed the ISDN line, or contact your VTEL reseller.

Click the **Communications** tab (or **Next** if you are performing initial system configuration) to proceed. (See "Setting communications parameters," on page 26.)

Configuring additional hardware

If you are setting up a new ESA system, skip this section*. Continue setup by going to page26.*

If you are installing new VTEL boards or boards from other vendors, follow the instructions in this section to configure the new hardware.

Notes: You do not need to perform step 1 or step 2 in this section if you are installing plug-and-play or PCI boards, including the VTEL Enterprise TC video card or the VTEL Enterprise TC codec card.

You do need to perform step 1 and step 2 if you are installing non-plug-and-play ISA boards, except for the VTEL teleconferencing network adapters, which are automatically installed during AppsView installation.

If instructions are included with other vendors' ISA boards, follow the Windows 95 instructions included with those boards. If instructions for using the board with Windows 95 are not included, contact the board's manufacturer for information.

You do not need to perform this step if you are installing plug-and-play or PCI boards, including VTEL TC video boards, VTEL TC codec boards, and the standard configuration VTEL Teleconferencing Network Adapter board.

◀ **1** Use the Windows 95 **Add New Hardware Wizard** to set up the new hardware in Windows, as described in this step.

- Click the Windows 95 **Start** button.
- Select **Settings**, then select **Control Panel**.
- Open the **System** window, then select the **Device Manager** tab.
- Select **Other Devices**, then select **VTEL** as the manufacturer.
- Select the hardware that matches the board you are installing.

You do not need to perform this step if you are installing plug-and-play or PCI boards, including VTEL TC video boards, VTEL TC codec boards, and the standard configuration VTEL Teleconferencing Network Adapter board.

◀ **2** If the wizard detects a resource usage conflict between existing hardware and the new hardware, select **Continue** to run the Hardware Conflict Troubleshooter.

You may need to change settings for the existing hardware or for the new hardware, or make additional resources available.

It is likely that you will need to change IRQ settings to allow for the new hardware. If the system does not need to use a printer port, disable LPT1, which frees IRQ 7 for use. If the system does not use a secondary IDE controller, disable it, which makes IRQ 15 available.

Use the BIOS setup program to change IRQ settings as follows:

Reboot the system. When you see the memory test running, click the **F1** key.

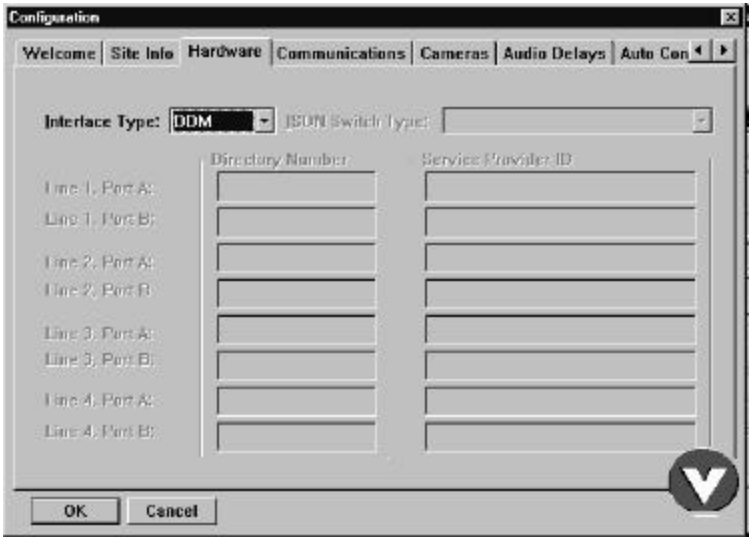
- Under **Advanced/Peripheral Configuration**, disable the **Secondary IDE controller** and/or the **Parallel Port**.
- Under **Advanced/Plug and Play Configuration**, set **IRQ 7** and/or **IRQ 15** to **In Use by ISA** or to **Available**.

*Use **In Use by ISA** if the IRQ will be used by a legacy ISA card. Use **Available** if the IRQ will be used by a PNP ISA card or a PCI card.*

If resources used by VTEL ISA boards must be changed, select **Basic Configuration 1** or **Basic Configuration 2**, which allows you to specify different Input/Output Range and IRQ settings.

For the I/O Range, make sure the switch settings on the board match the beginning value you set in Windows 95.

3 From the Configuration window, select the **Hardware** tab.



4 Set the Interface type.

Interface Type

Setting	Description
Quad BRI	Network adapter for ISDN BRI networks.
Single BRI	Network adapter for ISDN network (1 plug, 2 lines).
DDM	Network adapter that supports T1, switched dual 56/64, and ISDN BRI networks.

5. Set the ISDN switch type (such as NI-1 or NET3). If you do not know the switch type, check with the telephone company that provides your ISDN service.

6. Enter the Directory Number and Service Provider ID (SPID) for each ISDN line.

   DNs and SPIDs are assigned by the telephone company that installs your ISDN line. If you do not know these numbers, contact the telephone company that installed the ISDN line, or contact your VTEL reseller.

Setting communications parameters

This section explains how to set up a default communications profile and, if necessary, alternate profiles.

You can use one of these methods to set a default AppsView communications profile based on your system's hardware and the types of connections your site usually makes:

- Select one of the default profiles provided with AppsView.
- Copy a default profile, save it under a new file name, then modify configuration parameters for your site's communications setup.
- Create a new communications profile.

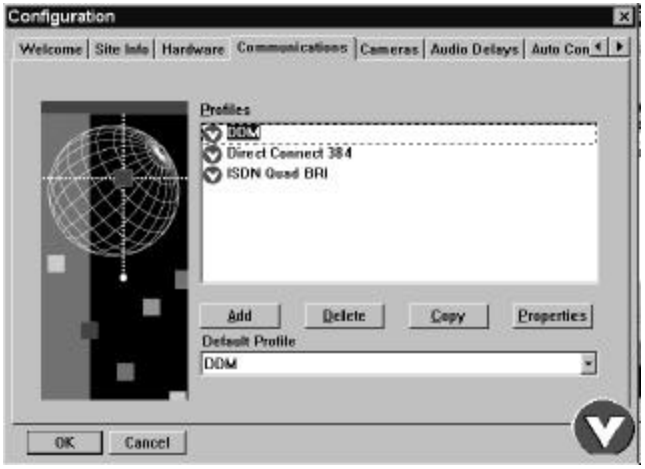
Note: To configure communications settings, you must know the types of external equipment to which your system is connected (for example, dialer, MUX, or IMUX).

You can also set up alternate profiles for use in atypical situations (for example, if your system sometimes uses a dial-out prefix that is different from its usual prefix, or occasionally uses a single port call when your site usually makes dual port calls). See "Adding or customizing a profile for your site," on page 34.

Selecting a default communications profile

See "Setting up AppsView for the first time," on page 15.

1 From the Configuration window, select the **Communications** tab (or click **Next** from the Hardware tab).



Do not change the properties of a default profile. If you were ever to reinstall AppsView, settings you changed in a default configuration might be overwritten. Also, changing a default profile may make it more difficult to troubleshoot problems that may arise.

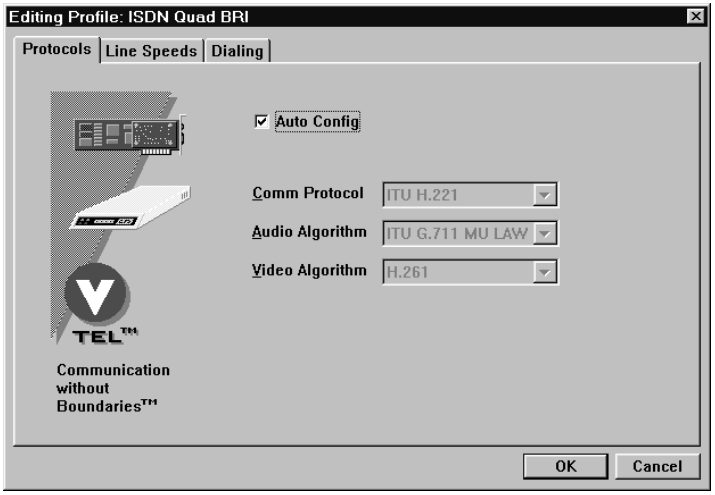
2 In the list of profiles, highlight the profile that seems to best match your system's equipment.

Proceed with steps 3 through 6 to make sure the properties of the profile you've selected are the best ones for your system.

If any property setting does not meet your needs, **do not change the setting**. Instead, follow this procedure:

- Return to the Communications tab.
- Create a new profile by following the instructions in "Adding or customizing a profile for your site," on page 34.

3 Click the **Properties** button to open the Editing Profile window.

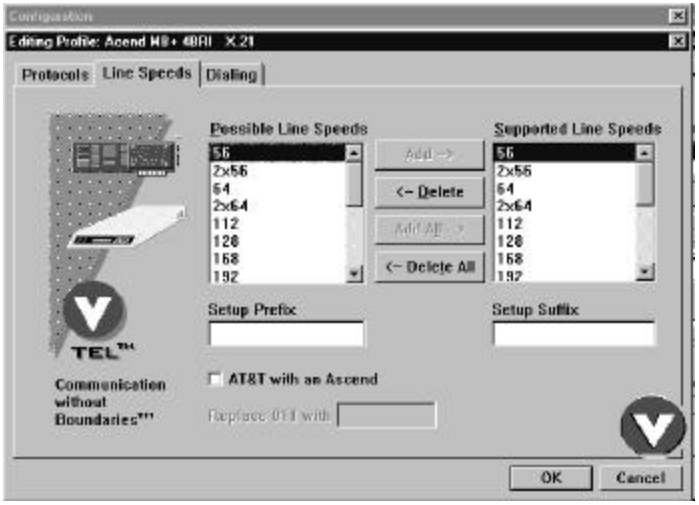


Select options in the Protocols window as described in the following table:

Protocols options

Option	Description
Auto Config	Selecting this option causes AppsView to determine the best communications setting for each call when the call is dialed. (If Auto Config is selected, you cannot change Audio Algorithm or Comm Protocol settings.)
Comm Protocol	For communication with another VTEL system, select VTEL HDLC. For communication with another type of system, select H.221.
Audio Algorithm	In North America, selecting a low algorithm (16 Kbps) allows more bandwidth for video. In Japan, select the highest available algorithm.
Video Algorithm	ESA systems use the H.261 algorithm.

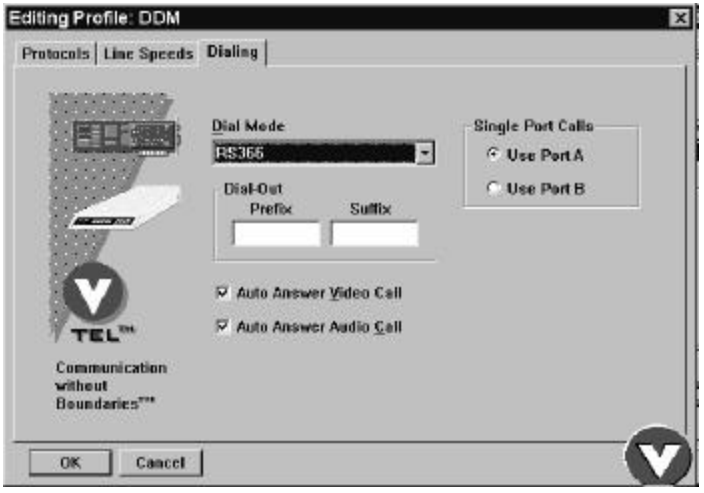
4 Select the **Line Speeds** tab.



In the Line Speeds window, make sure the options selected are suitable for your configuration (as described in the following table), then click the **Dialing** tab to proceed.

Option	Description
Possible Line Speeds and Supported Line Speeds	For each line speed your system supports: 1. Select the line speed in the list of Possible Line Speeds. 2. Drag it to the Supported Line Speeds list and drop it there (or press the Add button). From the Supported Line Speeds list, select the line speed to use for the default profile.
Setup Prefix Setup Suffix	Selecting certain line rates allows you to enter a dial-out prefix or suffix to use only with that selected line rate.
AT&T with an Ascend	If you select the AT&T with an Ascend option, you can enter a different prefix to replace the default 011 prefix. (For example, if a user enters the number for your UK office, which begins with the 011 prefix, but your network is set up to recognize the prefix 071 instead of 011, your 071 entry overrides the ESA system's 011 default setting, enabling the user's call to be completed.)

5 In the Dialing window, check the options described in the table, then click **OK**.



Dialing options

Option	Description
Dial Mode	Select the dial mode appropriate for your system's type of dialing interface.
Single Port Calls	Select Port A or Port B. Two communications ports are on the back of the PC. For calls that use high line rates, such as 384 Kbps or 768 Kbps, only one port is required. Use this field to select which port you will use. Calls that use 112 Kbps or 128 Kbps line rates typically require both ports, in which case no setting is required for this field.

Dialing options (continued)

Option	Description
Dial-Out	Enter a prefix or a suffix, if necessary. For example, if your system is connected to a PBX, you may need to enter the prefix 9 to dial out.
Auto Answer Video Call	Place a check mark in this box if you want AppsView to always automatically answer every video call it receives. Click the check box to add or clear the check mark for this option.
Auto Answer Audio Call	If your ESA system includes the Phone option, place a check mark in this box if you want AppsView to always automatically answer every audio (telephone) call it receives. Click the check box to add or clear the check mark for this option.

6 If the default settings in all the properties windows are correct for your system:

- Return to the Communications window and make sure your default profile is selected in the Default Profile field. (See "Accessing configuration windows," on page 16.)
- Select the **Cameras** tab (or **Next** if you are performing initial system configuration) to continue configuring the system. (See "Configuring camera, monitor, and VCR settings," on page 36.)

If any of the default settings are not correct:

Follow the steps in the next section, "Adding or customizing a profile for your site," on page 34 to create a new profile.

Adding or customizing a profile for your site

The default settings for the profiles listed in the Communications window may not match the requirements for your system's hardware or its connection types.

To set up a custom profile for your system, follow these steps:

1. From the Configuration window, select the **Communications** tab.

2. If the settings for a profile in the Profiles list match many (but not all) of the settings required by your system, select the profile, then press **Copy**.

   If you cannot find a profile in the Profiles list with settings that closely match the settings required by your system, select **Add**.

3. Enter the name of your new profile.

4. Highlight the name of the new profile in the Profiles list.

5. Press the **Properties** button.

6. Select options in the Protocols window, as described in the table on page29.

7 Select Line Speed and Dialing options as described in steps 4 through 6 of the previous section, "Selecting a default communications profile" (page27). Click **Finish** to complete your setup.

To use the new profile as the default:

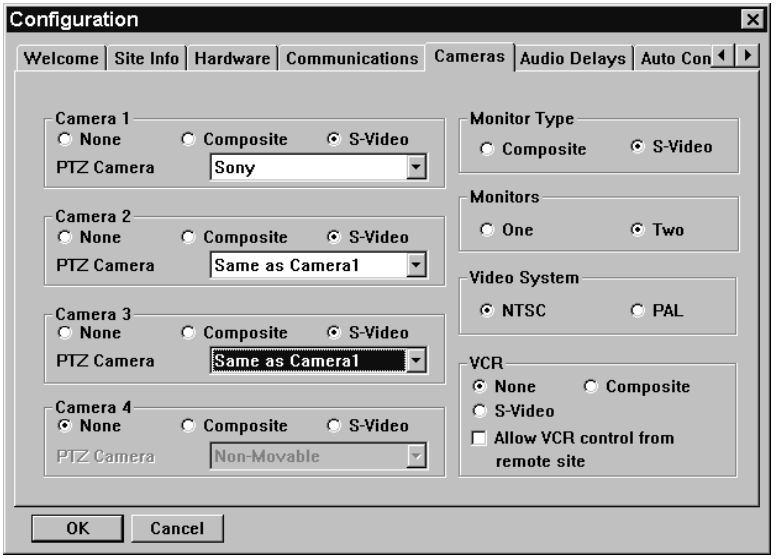
- Select the new profile in the **Default Profile** field on the Communications tab (page27).
- In the Address Book window, select the **Use Default profile** option. (See "Entering a new site in the Address Book," on page 60).

To use the new profile as an alternate profile, see "Entering a new site in the Address Book," on page 60.

8 **If you are setting up your system for the first time**, click the **Next** button in the Communications window to continue configuring the system.

Configuring camera, monitor, and VCR settings

1 Select the **Cameras** tab from the Configuration window.



2 Select the type of cameras your system uses.

The standard camera included with the ESA system is an S-Video camera. Cameras not purchased from VTEL may be composite cameras.

If your system includes multiple Sony PTZ cameras or multiple CameraMan cameras connected in a daisy chain, select the appropriate camera manufacturer from the **Camera 1 PTZ Camera** drop-down list, then select **Same as Camera 1** from the other PTZ Camera drop-down lists.

If your system includes a **Canon** camera, that camera is the only PTZ camera your system can include. Canon cameras cannot be connected in a daisy chain.

3. Select the type and number of monitors your system includes.

4. Select the video format standard your system uses: **NTSC** (North American) or **PAL** (European).

5. If your system does not include a VCR, select **None**.

   If your system includes a VCR, select the video type, **Composite** or **S-Video**.

6 Choose whether to enable **Allow VCR control from remote site**.

When you record VCR during a conference:

- With this option disabled, the sound won't be interrupted during your recording. (The remote site doesn't change the audio, even if participants choose to view the VCR instead of the camera source you are sending.)
- If the option is enabled, and the remote site changes the video source to the VCR, the VCR stops recording the conference.

When you play the VCR during a conference:

- With this option enabled, audio always matches video.
- If the option is disabled, audio continues to come from the VCR, no matter what video source the remote site selects.

7 **If you are setting up your system for the first time**, click the **Next** button to continue configuring the system.

Configuring audio delays

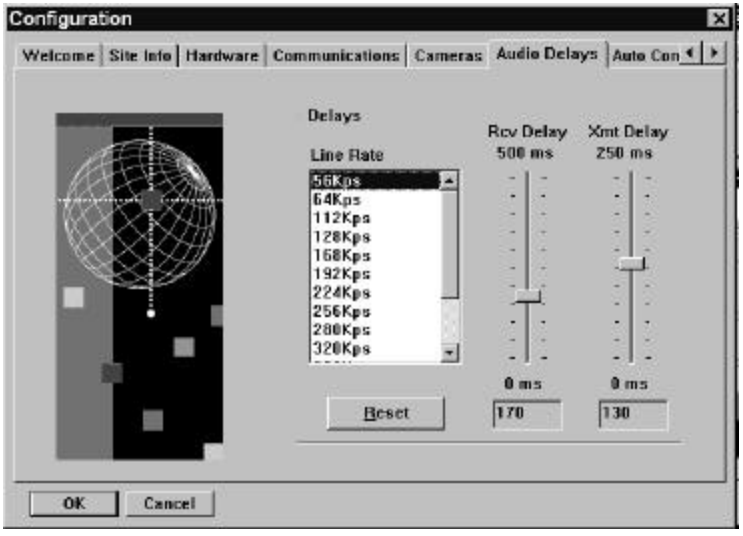
Video and audio synchronization is referred to as lip sync. *That is, the movement of a person's lips match the words they are saying.*

◀ The ESA system automatically compensates for delay between video and audio. In certain circumstances you may want to add a delay to the audio. The size of the delay varies according to these factors:

- line rate
- amount of motion in the video (The more motion, the longer the delay; the less motion, the shorter the delay.)

If you need to change the ESA system default audio delay settings (specific for each line rate) to improve lip sync, follow these steps:

1 Select the **Audio Delays** tab from the Configuration window.



2 Select a line rate.

3. Move the **Rcv Delay** and **Xmt Delay** slider bars to increase or decrease the delay, then click **OK**.

4. Repeat steps 2 and 3 for each line rate for which you want to configure audio delays.

   Note: **If you want to return the delays to the factory default values**, click the **Reset** button.

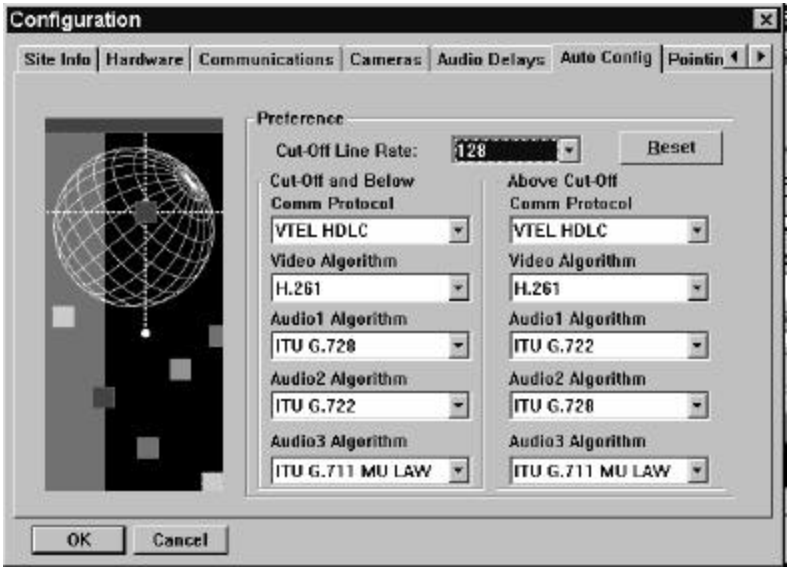
5. If you are setting up your system for the first time, click the **Next** button to continue configuring the system.

Setting preferences for auto configuration settings

Even if auto configuration is enabled, you can specify which audio, video, and communications algorithms you want the ESA system to use. The ESA system will always try to use the settings you specify, and will use the default auto configuration settings only if your settings do not work.

For example, with a line rate of 112, the system typically selects an audio rate of G.728 to improve the video quality. However, you can change the audio setting to G.722 to provide the highest quality audio.

1 Select the **Auto Config** tab from the Configuration window.



2 Select the **Cut-off Line Rate**.

3 Select your preferences from the **Cut-Off and Below** drop-down lists.

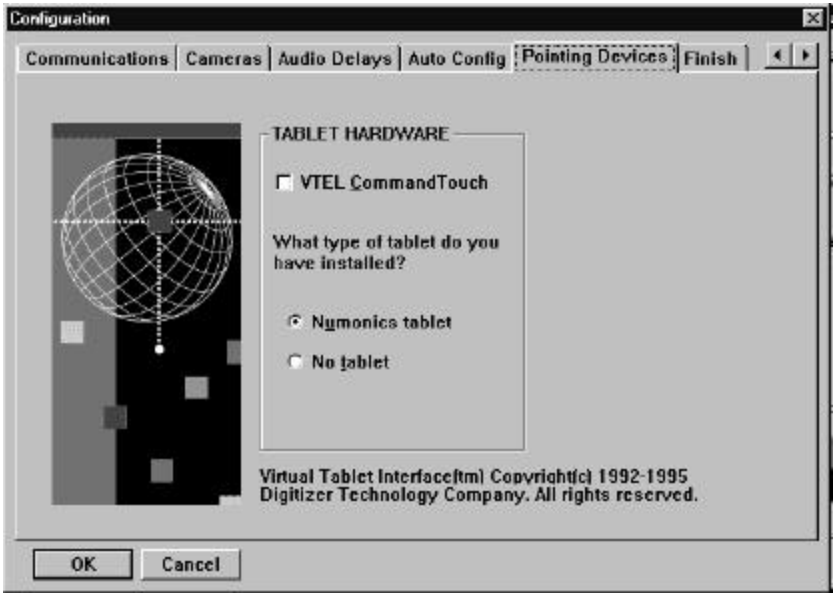
4 Select your preferences from the **Above Cut-Off** drop-down lists.

Note: **To return the delays to the factory default values**, click the **Reset** button.

5 If you are setting up your system for the first time, click the **Next** button to continue configuring the system.

Configuring pointing device settings

Select the **Pointing Devices** tab from the Configuration window.



1. If your system includes the optional VTEL CommandTouch™ panel, click the **VTEL CommandTouch** box to select it.

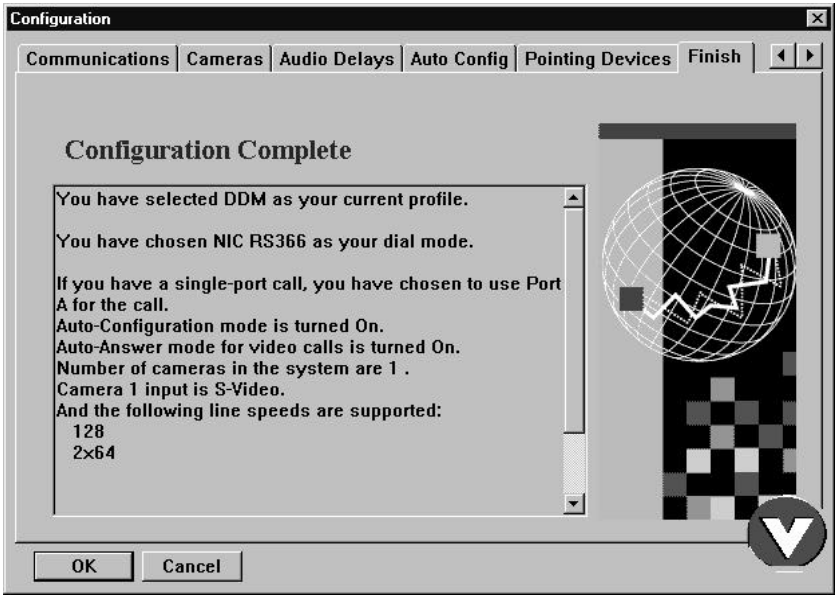
2. If your system includes the optional tablet, click the **Numonics** box to select it. If your system does not include a tablet, click the **No Tablet** box.

3. If you are setting up your system for the first time, click the **Next** button to continue configuring the system.

Completing system configuration

Viewing system configuration settings

From the Configuration window, click the **Finish** tab.



The Finish window shows your system's current configuration.

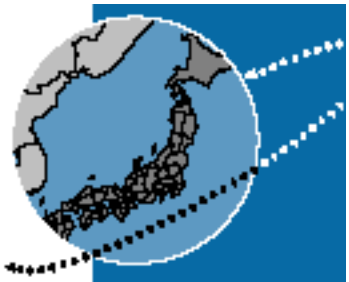
Saving configuration settings

In the Finish window, click the **OK** button to save the configuration.

Notes: If the system is currently in a call when you click the **OK** button, the new configuration is not saved until after the call is completed.

To exit without saving changes, click **Cancel**.

Next, configure other AppsView settings as described in Chapter 3, "Preparing for Videoconferences."



3

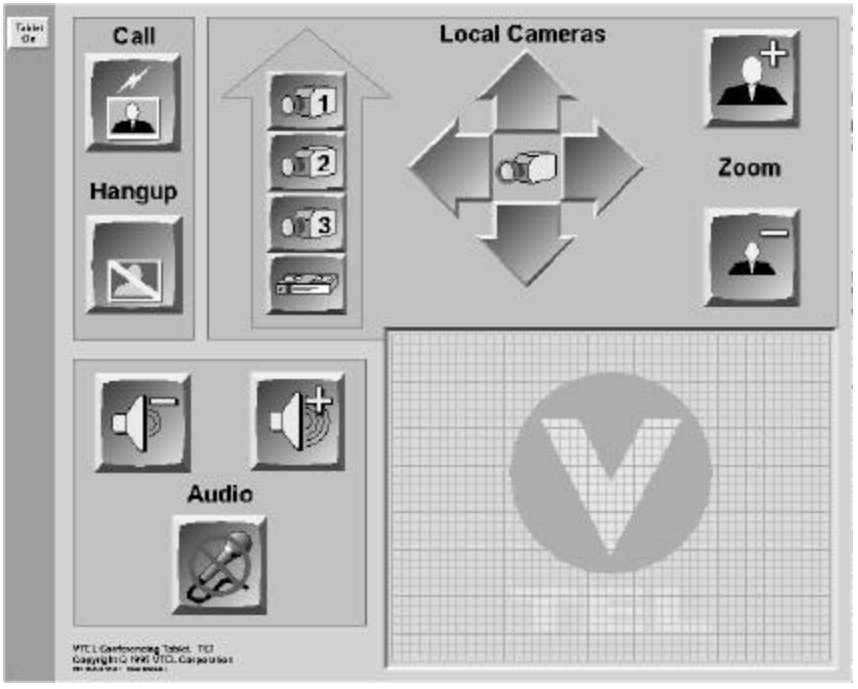
Preparing for Videoconferences

This chapter explains how to set up the system so users will be able to easily communicate with remote sites and use all the AppsView videoconferencing features.

Selecting and loading a tablet overlay

This section describes the three overlays included with the optional tablet, and explains how to load them.

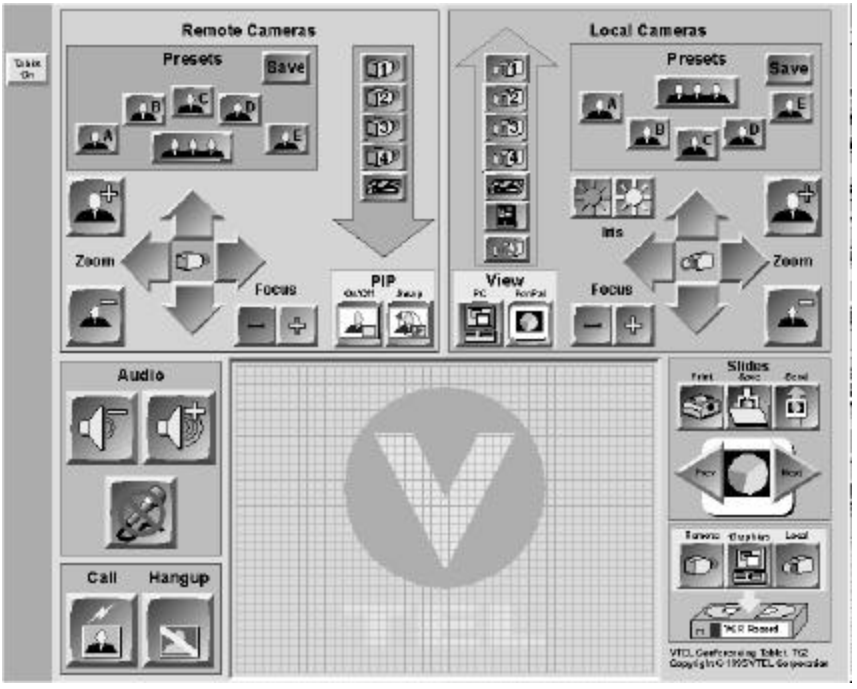
The **TC1 overlay** is a simple overlay for use with dual-monitor systems.



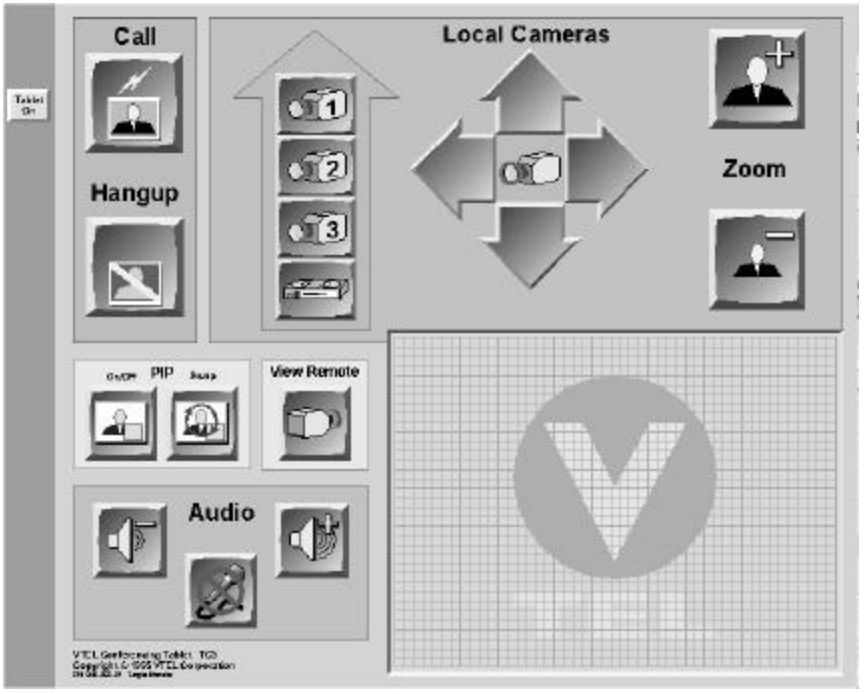
The **TC2 overlay** is a full-featured overlay for use with single- or dual-monitor systems.

Note:
Colors on the overlays indicate operational groupings as follows:

blue	*remote operations*
green	*local send operations*
yellow	*local view and PIP operations*
orange	*calling and hanging up operations*



The **TC3 overlay** is a simple overlay for use with single-monitor systems.



Place the overlay you want to use on the tablet. The overlay is loaded when you or an AppsView user turns on the tablet by pressing the overlay's **Tablet On** button.

Note: Each time you change a tablet overlay or restart AppsView, press the **Tablet On** button to load the new overlay.

Setting up AppsView display options

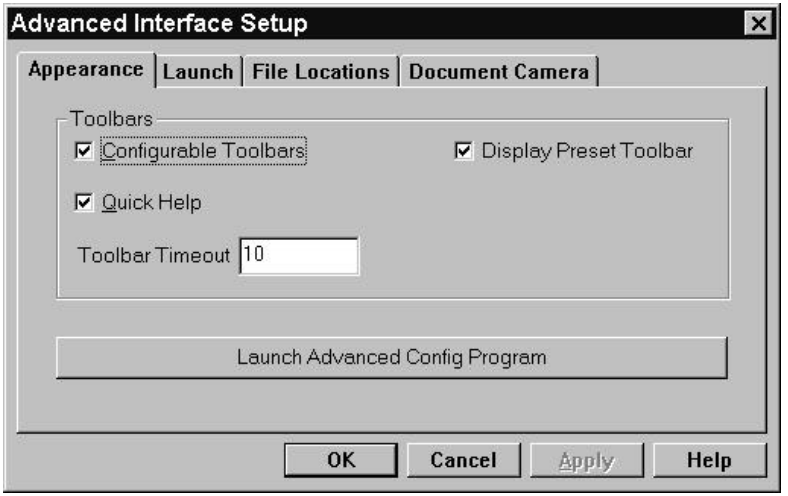
This section explains how to use the options available in the Advanced Interface Setup window to configure settings that affect the appearance of the video image on your monitors and that enable or disable certain AppsView functions.

Accessing the Advanced Interface Setup window

1 Click the **AppsView** icon to display the AppsView toolbar.

2 Click the **System Tools** button on the AppsView toolbar to display the System Tools toolbar.

3 On the System Tools toolbar, click the **Set Configuration** button. The Advanced Interface Setup window opens:



Setting display options

From the Advanced Interface Setup window, select the **Appearance** tab.

*The **Launch Advanced Config Program** button displays tabs for initial system setup and for setting communications profiles. See Chapter 2, "Configuring AppsView."*

The following table describes the options available from the Appearance window:

Option	Description
Configurable Toolbars	Select this option if you want to be able to customize AppsView toolbars by adding, moving, or removing buttons.
Quick Help	Select this option to turn on Tool Tips. This causes a pop-up to display the name of the toolbar button when the cursor is on the button.
Toolbar Timeout	The number of seconds AppsView toolbars stay on the screen after you move the cursor off the toolbar.
Display Preset Toolbar	Select this option to show the camera preset toolbar as one of the rotations of the AppsView toolbar.
Launch Advanced Config Program	Starts up the configuration program used for setting system configuration. See Chapter 2, "Configuring AppsView."

Showing or hiding the Call Status window

To show the Call Status window:

1 Click the **System Tools** button on the AppsView toolbar to display the configuration toolbar.

2 On the configuration toolbar, click the **Call Status** button.

To hide the Call Status window:

Click the **Hide** button on the Call Status window.

Setting up icons to launch applications from the AppsView toolbar

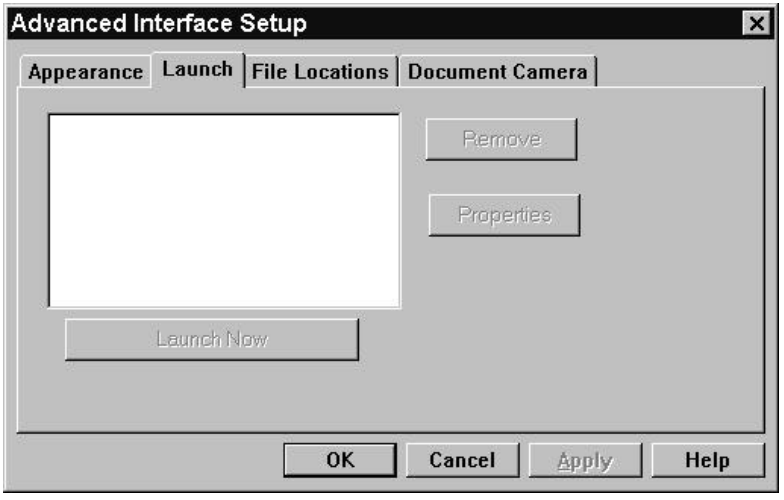
This section explains how to set up an icon so users can launch a Windows 95 application from the AppsView toolbar:

- First, add the application's icon to the AppsView Launch window.
- Then add the application's icon to an AppsView toolbar.

Adding an application icon to the Launch window

1. Open the Advanced Interface Setup window. (See "Accessing the Advanced Interface Setup window" on page 49.)

2. Select the **Launch** tab:



You cannot drag shortcut icons to the Launch window.

3 Drag the application icon you want from Windows Explorer to the blank area in the Launch tab.

For example, to add an Excel® icon:

- Click the Windows **Start** button, then select **Run**.
- Enter the path for the Excel application (or use **Browse** to locate it).
- Select the Excel application.
- Hold down the *right* mouse button and drag the application icon to the **Launch** tab.

To use the pen to perform a right mouse button operation, move the pen lightly in the mousepad area of the tablet so the cursor on the screen is in the location you want, then click the button on the barrel of the pen. (Do not press down on the pen.)

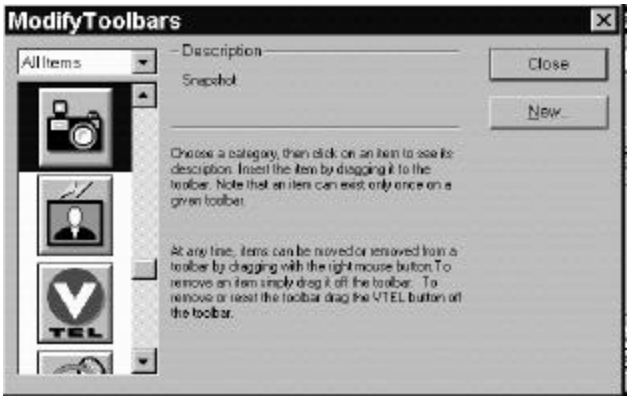
Adding an application icon to the AppsView toolbar

After you add the application to the Launch window, add the application's icon to the AppsView toolbar:

1 Display the AppsView toolbar to which you want to add the application button.

2 Place the cursor on the border of the toolbar and click the right mouse button.

The Modify Toolbars window opens:



3 Scroll through the icons until you see the icon for the application you want, select that icon, drag it to the AppsView toolbar, and drop it there.

Deleting a button from the AppsView toolbar

1 Display the toolbar containing the button you want to delete.

2 Use a right mouse button click to select the button you want to delete, then drag the button away from the toolbar.

Removing an application icon

From the Launch tab of the Advanced Interface Setup window, select the icon you want to remove, then click the **Remove** button.

Specifying a folder for incoming file transfers

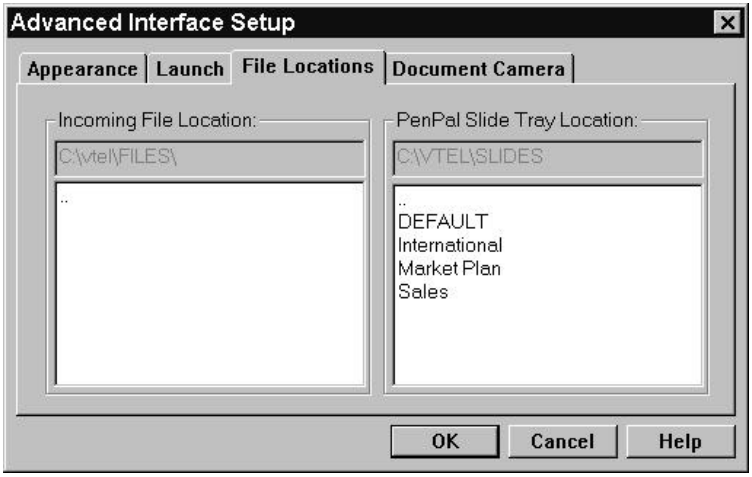
This section explains how to specify the folder for incoming files from remote sites.

By default, transferred files will be placed in this folder: **c:\vtel\files**.

If you want to change the location:

1 Open the Advanced Interface Setup window. (See "Accessing the Advanced Interface Setup window" on page 49.)

2 Select the **File Locations** tab:



3 Enter the path for the folder in which you want incoming files to be located, then click **OK**.

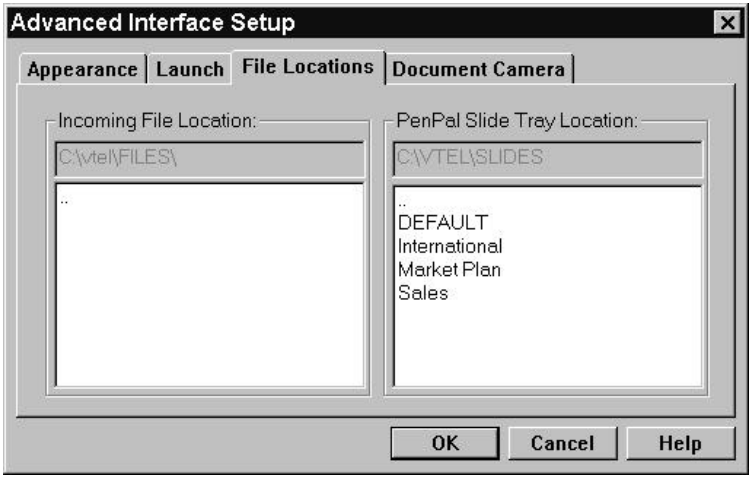
Specifying a folder for PenPal slide trays

By default, PenPal slide trays are located in the **c:\vtel\slides** folder.

If you want to change the PenPal slide location:

1 Open the Advanced Interface Setup window. (See "Accessing the Advanced Interface Setup window" on page 49.)

2 Select the **File Locations** tab:



3 Select the folder in which you want your slide trays to be located, then click **OK**.

Designating the document camera

Your ESA system must have more than one camera in order for you to be able to use the document camera feature.

◀ The document camera feature lets PenPal for Windows users capture and send slides by simply pressing the **Send Slide** button *on the tablet*. After the slide is sent, control is automatically switched back to the local camera.

Send Slide button

To designate one or more local cameras as the video source for the document camera (typically the camera on the document stand, camera 3):

1 Open the Advanced Interface Setup window. (See "Accessing the Advanced Interface Setup window" on page 49.)

2 Select the **Document Camera** tab.
The Document Camera window opens:

3 Check the box for each camera that you wish to use as a document camera.

Notes: Although the document camera is typically assigned to the document stand camera, the camera you select does not have to be the document stand camera; it can be any motion camera (except a VCR).

If you do not select a camera from the Document window, the document camera feature is disabled.

If your ESA system has the SmartView option installed and enabled, the document camera feature is disabled for Camera 3.

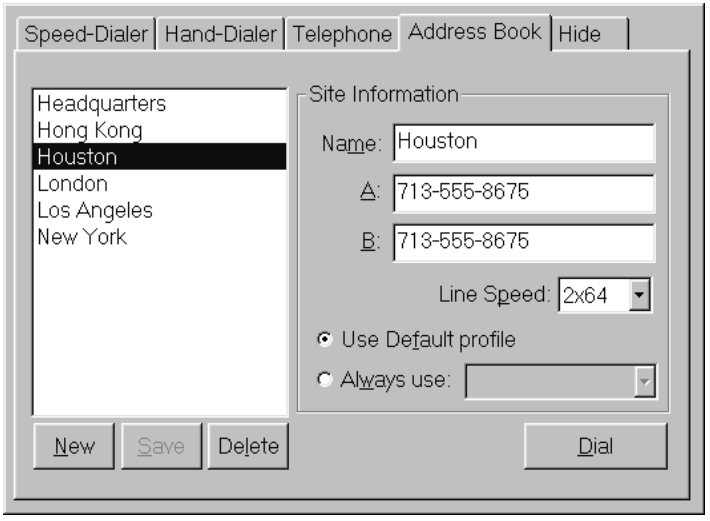
To disable and reenable SmartView, press the **SmartView** button on the AppsView toolbar. The button is gray when SmartView is disabled.

Setting up Address Book entries

You can set up entries for videoconferencing sites in the Address Book to make it easy for users to call those sites.

Accessing the Address Book

To access the Address Book, press the **Call** button, then select the **Address Book** tab.



Entering a new site in the Address Book

1. Click the **New** button.
2. Enter the name of the site in the Name field.
3. Select a line speed.
4. Use the keyboard to enter the site's number in the Port A field (and the Port B field, if necessary).
5. Select the communications profile to use:
   - If you want to use the default profile, select **Use Default profile**. (The default profile is the profile displayed in the Default Profile field in the Communications window. See page27.)
   - If you want to use a profile other than the default profile, select **Always use**, then select the profile name in the drop-down list.
6. Click **Save** to save the new entry.

The site name is now listed in the Address Book and in the Speed-Dialer List.

Dialing a site from the Address Book

1. Highlight the site's name in the list.
2. Click **Dial**.

Deleting a site from the Address Book

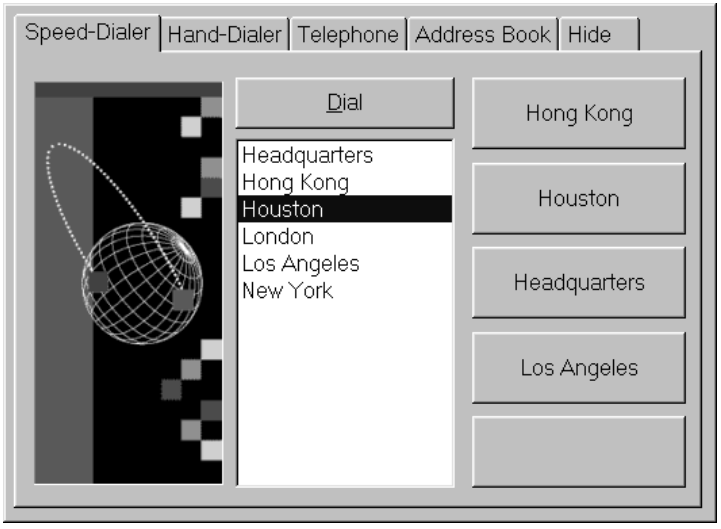
1 Highlight the site's name in the list.

2 Click **Delete**.

Setting up Speed-Dialer site buttons

This section explains how to set up Speed-Dialer site buttons so users can dial frequently called sites by clicking a single button.

After you set up a site in the Address Book, that site name appears in the Speed-Dialer window:



Drag the name of the site from the list to a site button.

Setting camera preset positions

When you first set up the ESA system, you may want to set camera positions for local or remote cameras, which users will be able to select from the presets toolbars.

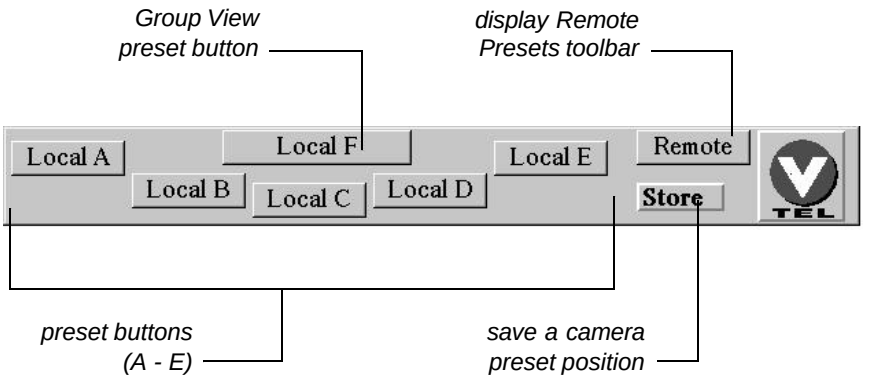
Setting a camera preset for a local camera

To set a local camera preset position:

1. Select a local camera you'll use for sending video to the remote site. (The *ESA Conferencing System User's Handbook* contains information about how to select a camera.)

2. Use the AppsView on-screen cursors to adjust camera settings (or use the Zoom, Iris, and camera movement buttons on the tablet). (You must focus a document stand camera manually.)

3. Click the **Rotate Toolbars** button to display the Local Camera Presets toolbar.



4 Click the **Store** button on the Local Camera Presets toolbar.

5 Click one of the preset buttons on the Local Camera Presets toolbar (or on the tablet).

If you wish, set additional preset positions for this camera or for other cameras by repeating steps 1 through 4. (Remember to select a different preset button for each preset.)

Setting a camera preset for a remote camera

You cannot set remote camera presets if the remote site does not support remote camera control.

◀ To set a remote camera preset:

1 Establish a videoconference call with the remote site.

2 Select a remote camera. (The *ESA Conferencing System User's Handbook* tells how to select a camera.)

A document stand camera must be adjusted manually.

◀ 3 If the camera is a PTZ (pan/tilt/zoom) camera, use the AppsView on-screen cursors to adjust camera settings (or use the Zoom, Iris, and camera movement buttons on the tablet).

4 Select the **Rotate Toolbars** button to display the Local Camera Presets toolbar, then click the **Remote** button to display the Remote Camera Presets toolbar.

5 Click the **Store** button on the Remote Camera Presets toolbar.

6 Click one of the remote preset buttons on the Remote Camera Presets toolbar (or press one of the Remote Camera Preset buttons on the tablet.)

If you wish, set additional preset positions for this camera or for other cameras by repeating steps 3 through 5. (Remember to select a different preset button for each preset.)

Fine-tuning audio and video settings

This section explains how to use the AppsView Control Panel to fine-tune the system's audio and video.

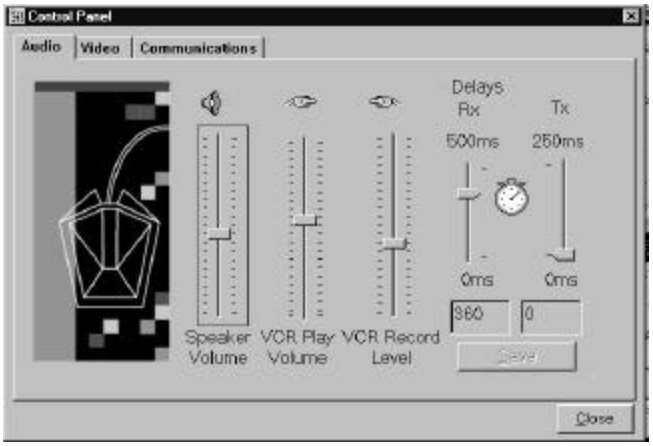
Accessing the Control Panel

1 Click the **System Tools** button on the AppsView toolbar to display the configuration toolbar.

2 Click the **Control Panel** button on the configuration toolbar. The Control Panel window opens.

Fine-tuning audio settings

The Control Panel's Audio tab lets you set audio levels:

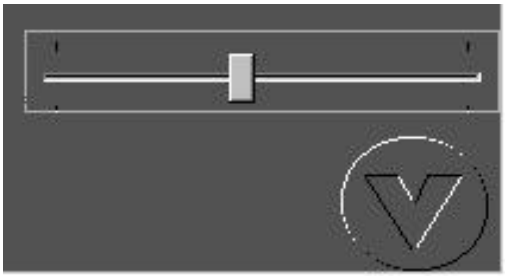


Changing the audio level

Move the control button on the vertical slide bars to increase or decrease volume levels as shown in the following table.

Setting	Description
Speaker Volume	Audio level of the speaker at the local site.
VCR Play Volume	Audio level of the sound from the VCR going to the expansion unit's VCR In port.
VCR Record Level	Audio level of the sound going from the VCR Out port of the expansion box to the VCR.

Note: You can also control the audio level by moving the volume control slider over the AppsView icon.



Setting audio delay (adjusting lip sync)

During a call, if mouth movements are not in sync with the words the speaker is saying, the *lip sync* is not correct.

The ESA system provides audio delay of incoming speech in order to synchronize with the video, because the video compression process requires additional time. The compression time varies, depending on the data rate and the amount of motion. Audio delay is preset to the best value for each line rate. In *unusual circumstances*, you may need to adjust the audio delay.

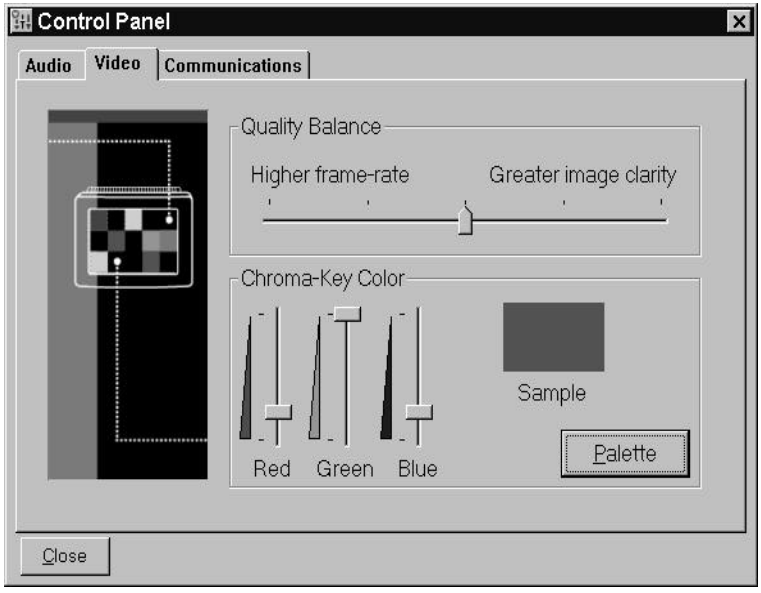
The Rx (receive) and Tx (transmit) fields indicate the data reception and transmission rates in milliseconds.

Add 40 milliseconds to the Receive field by moving the button on the vertical slide bar. Continue to add to the Rx field in 40-millisecond increments until lip sync is correct.

To help a system administrator at a remote site adjust lip sync, change the rate in the Tx field.

Fine-tuning video settings

To adjust video settings, select the **Video** tab from the Control Panel:



Quality balance

Adjust the quality of the video by moving the slider to attain the best balance between a higher (faster) frame rate and greater image clarity.

Chroma-key color

The default chroma-key color is magenta.

The chroma-key color you select determines the PC VGA color that is replaced by live video on your ESA system screens.

If you see video showing through other applications, those applications are using the same chroma key that AppsView is using. Select a different AppsView chroma-key color, one that is not likely to be common in the applications you run.

If you do want to change the chroma-key color, click the **Palette** button and select a color from the palette, or move the **Red**, **Green**, and **Blue** slider bars to create your own color.

Customizing AppsView toolbars

This section describes how to customize the AppsView toolbars.

Note: Before you can customize toolbars, the Configurable Toolbars option must be selected in the Advanced Interface Setup window. See "Setting display options" on page50.

Specifying toolbar timeout length

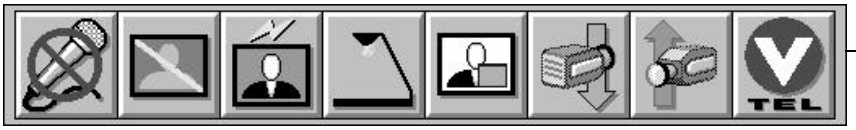
To specify how long AppsView toolbars remain visible after they are selected, use the **Toolbar Timeout** option on the **Appearance** tab of the Advanced Interface Setup, as described on page50.

Adding a function button to a toolbar

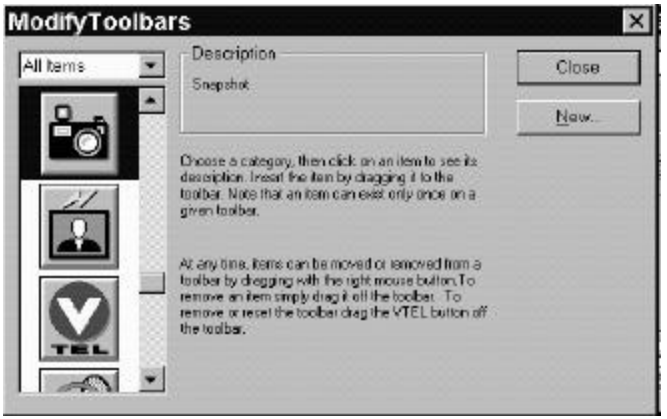
To add a button for launching a Windows 95 application from the toolbar, see "Setting up icons to launch applications from the AppsView toolbar" on page52.

1 Display the toolbar to which you want to add a function.

2 Place the cursor on the border of the toolbar and click the right mouse button.



The Modify Toolbars window opens:



3 Select the icon for the function you need, then drag it to the toolbar.

Adding a Windows application button to a toolbar

You can add buttons for Windows applications to the AppsView toolbar so that users can launch applications by selecting them from the toolbar. See "Setting up icons to launch applications from the AppsView toolbar" on page52.

Deleting a button

1 Display the toolbar containing the button you want to delete.

To perform a right mouse button click with the tablet pen, move the pen lightly in the tablet's mousepad area until the cursor on the screen is in the location you want, then click the button on the barrel of the pen. (Do not press down on the pen.)

2 Use a right mouse button click to select the button you want to delete, then drag the button away from the toolbar.

Removing and restoring an AppsView toolbar

You may find that your site does not need one of the AppsView toolbars. This section explains how to remove and restore a toolbar.

Note: You cannot remove all the AppsView toolbars. One toolbar must always be available.

Removing and restoring camera presets toolbar

To remove a camera presets toolbar:

1 Display the Appearance window of the Advanced Interface Setup program. (See "Accessing the Advanced Interface Setup window" on page49.)

2 Clear the **Display Preset Toolbar** check box.

To restore a camera presets toolbar:

1. Display the Appearance window of the Advanced Interface Setup program. (See "Accessing the Advanced Interface Setup window" on page49.)

2. Check the **Display Preset Toolbar** check box.

Removing and restoring other AppsView toolbars

1. Display the toolbar you want to remove.

2. Hold down the right mouse button while you drag the **Rotate Toolbars** button off the toolbar.

When you press the **Rotate Toolbars** button on the remaining toolbars, the toolbar you removed no longer appears.

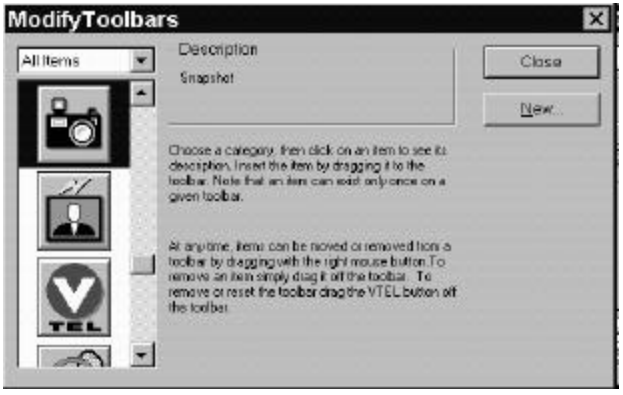
To restore a toolbar you remove (other than a camera presets toolbar), *rebuild* a new toolbar by following the instructions in "Adding an AppsView toolbar" on page72.

Adding an AppsView toolbar

To add a toolbar to the AppsView toolbar rotation:

1 Display any AppsView toolbar.

2 Place the cursor on the border of the toolbar and click the right mouse button. The Modify Toolbars window opens:



3 Click the **New** button.

4 Enter a name for your new toolbar. A new **Rotate Toolbars** button appears.

5 Select an icon from the icons displayed in the Modify Toolbars window. Hold down the left mouse button and drag the icon to the new **Rotate Toolbars** button. Repeat this step for each icon you want to appear on your new toolbar.

Note: The icons do not appear as buttons on the new toolbar until you click the **Close** button.

6. Click the **Rotate Toolbars** button on the new toolbar to change the orientation of the toolbar to a horizontal position.

7. Place the cursor on the border of the new toolbar and hold down the left mouse button while you drag the new toolbar to the AppsView icon in the lower right corner of the screen.

When you click the **Rotate Toolbars** button, your new toolbar now appears in the rotation cycle.

4

Monitoring System Operation

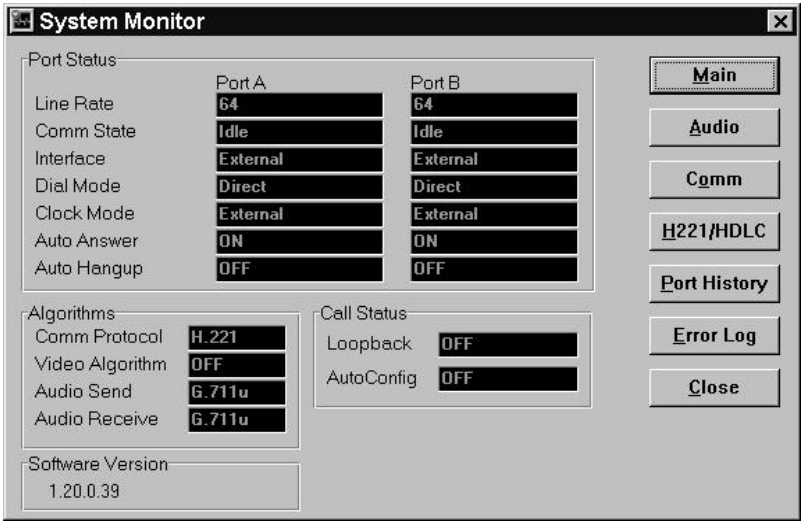
This chapter describes how to use the VTEL System Monitor application to check the current status of various ESA system operations.

Accessing System Monitor windows

1 Click the **AppsView** icon to display the AppsView toolbar.

2 Click the **System Tools** button on the AppsView toolbar to display the System Tools toolbar.

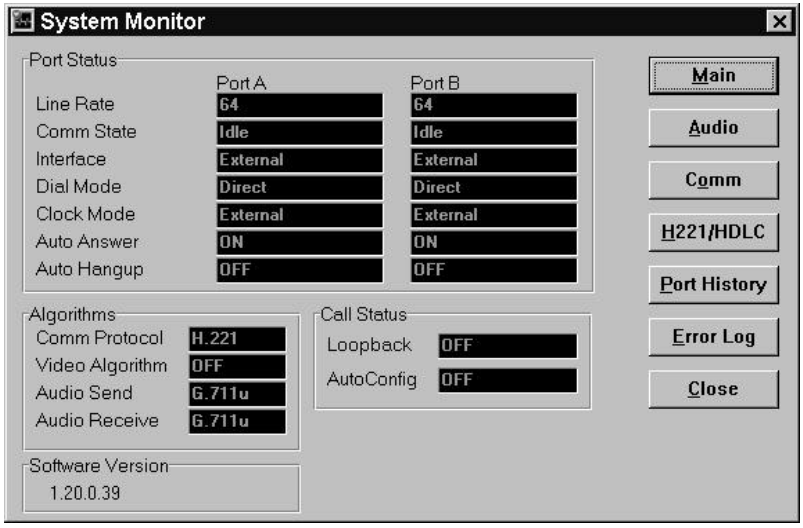
3 On the System Tools toolbar, click the **System Monitor** button. The System Monitor window opens.



4 Click the appropriate button on the right side of the System Monitor window to display the type of system information you need. For example, to view the Error Log, click the **Error Log** button.

System Status

This section provides explanations of the parameters in the Main window.



Comm Status parameters

Line Rate

Actual measured transmission clock rate. The line rate should stabilize at ±1% of the data rate.

If this rate is 0, AppsView is not detecting a clock.

If this rate changes frequently, the clock source is unstable. Check the cable type and your network interface equipment.

Comm State

Indicates the status of the port(s). The following table describes the dial state associated with the state of the port indicated in the Comm State field:

Port status dial states

State of port	Dial state
Idle	No call is in progress.
Dial tone	Network indicates ready to call.
Ringing	Network has sent alerting signal to calling site.
Busy	Network has sent busy signal to calling site.
Connected	Call is in progress; connection successful.
Ringback	Network has sent progress signal to calling site.
Error	Internal terminal adapter is not connected to ISDN.
Lockout site	Network has sent a disconnect signal to the calling site.

Port status dial states (continued)

State of port	Dial state
Releasing network	Calling site has sent disconnect signal to the network.
Routing	Calling site has initiated call.
Unregistered network	Calling site SPIDs have not been accepted by the network.
Unknown	Unrecognized call state.
Dial Wait with call	Waiting on external TA modem control.
Dial1 with call	Waiting on external TA modem control to proceed with call.
Dial2 with call	Waiting on external TA modem control to proceed.
Connecting	Dial complete; waiting for external TA to signal.
Connected	Connection made.
No Line	Call initiated, waiting for modem control signals and call times out.
No Answer	3-minute timeout has expired waiting for connection to complete.
Income1	Processing ring indicated signal from modem control lines.
Income2	Processing ring indicated signal from modem control lines.
Answer 1	Processing inbound call.

Port status dial states (continued)

State of port	Dial state
Answer 2	Processing inbound call.
Answer 3	Processing inbound call.
Disconnecting	User has hung up; or Terminal Adapter (TA) signals hangup from other site.
Disconnected completed InitIdle	Hangup is complete: external TA modem control signal. Modem control signals are transitioning inactive.
Await H.221	The specified port to complete BAS exchange before proceeding with the call.

Interface

The port's physical interface, required to support the network connection:

Interface	Description
ISDN	Internal ISDN.
External	All other interface types.

Dial Mode

The dialing interface specifies which type of network interface protocol the system uses when a call is made:

Dial mode	Equipment and protocol used
Direct	External terminal equipment modem control signaling to connect with external terminal adapter.
RS-366	External terminal equipment with RS-366 dialing protocol.
ISDN Internal	Basic rate ISDN. ISDN equipment automatically supports all the dialing services required to place the call.

Clock Mode

Indicates the source of the system communication clock:

Clock source	Description
Internal	Used when an internal loopback test is performed.
External	The system uses a clock from a network source, such as a multiplexer or terminal interface equipment.

For an ISDN connection, Auto Answer is set to On.

Auto Answer

◀ **On** indicates that AppsView automatically answers all calls.

Off indicates that the user can select whether to answer a call or not.

Auto Hangup

Always set to On. The terminal interface equipment automatically hangs up a call if the line drops.

Algorithm parameters

Comm Protocol

The current communication protocol:

- H.221
- VTEL HDLC

Video Algorithm

The current video algorithm:

- **H.261**. Allows different vendors' video codes for international audio/video services to interoperate. Enables the use of FCIF and QCIF video resolutions.

Audio Send

The current bandwidth used for sending audio. These are the audio compression algorithms:

Audio compression algorithms

Algorithm	Description
16 Kbps, G.728	This is a low bit-rate algorithm. It consumes only 16 Kbps of a call. Its best use is for low bit-rate calls, especially 128 Kbps or lower, or ISDN calls. The audio bandwidth is 3.4 KHz and the audio quality is good. This is a standards-based algorithm, but it may not be available on some non-VTEL systems.
48 Kbps, G.722	This algorithm uses 48 Kbps of bandwidth and provides better audio quality than G.711 and G.728 at lower (for example, 128 Kbps) transmission rates. The audio bandwidth is 7.0 KHz, and the audio clarity is about twice that of a standard telephone.
56 Kbps, G.722	This algorithm uses 56 Kbps of bandwidth and provides better audio quality than G.711 and G.728 at lower (for example, 128 Kbps) transmission rates. The audio bandwidth is 7.0 KHz, and the audio clarity is about twice that of a standard telephone.
64 Kbps, G.711 µlaw	Uses 64 Kbps of the video call. This algorithm is used when the video call bandwidth is large (greater than 128 Kbps) or when the receiving end is not capable of G.728 or G.722. The audio bandwidth for G.711 µlaw is 3.4 KHz. This algorithm is predominant in the USA. G.711 Alaw is for use in Europe.
64 Kbps, G.711 Alaw	G.711 Alaw characteristics are the same as G.711 µlaw. G.711 Alaw is primarily for use in Europe.

Audio compression algorithms (continued)

Algorithm	Description
64 Kbps, G.722	This algorithm uses 64 Kbps of the video call with an audio frequency range of 7.0 KHz for higher fidelity than the G.711 and G.728 algorithms. Although this is a standards-based algorithm, it may not be available on some non-VTEL systems.

Audio Receive

The current bandwidth used for receiving audio:

For descriptions of these algorithms, see the table in the previous section, "Audio Send."

- 16 Kbps, G.728
- 48 Kbps, G.722
- 56 Kbps, G.722
- 64 Kbps, G.711 µlaw
- 64 Kbps, G.711 Alaw
- 64 Kbps, G.722

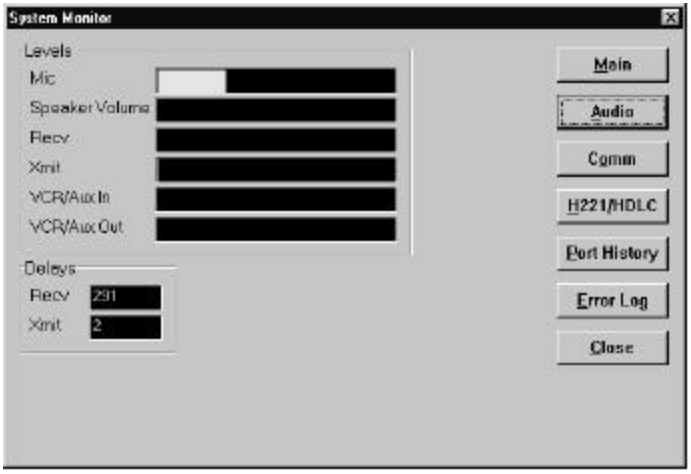
Call Status

Loopback indicates that the system is set to perform a loopback test (On) or is not set for a loopback test (Off).

AutoConfig indicates that the system is set to automatically configure the audio algorithm and communications protocol (On) or not (Off).

Audio

This section provides explanations of the parameters in the Audio window.



The bar graphs displayed for some of the parameters indicate audio levels as follows:

Green and yellow (low to mid-range) indicates that the audio level is acceptable. When local participants are talking, the level should be green (mid-range).

Red (upper range) indicates that the audio level is too loud.

Mic

Audio level of the microphone.

Speaker Volume

Level of the audio output to the speaker.

Recv

Level of the audio received by the audio board via the comm channel.

Xmit

Level of the audio transmitted by the audio board.

VCR/Aux In

Audio level (play volume) of the VCR.

VCR/Aux Out

Audio level (record volume) of the VCR.

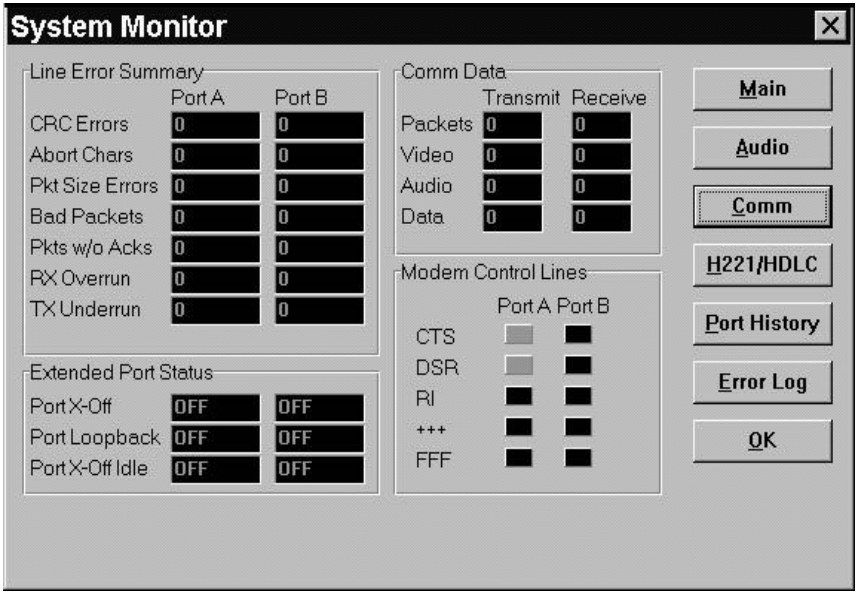
Delays

Recv delay is the number of milliseconds incoming audio is delayed to achieve synchronization with video.

Xmit delay is the number of milliseconds transmitted audio is delayed to achieve synchronization with video.

Communications

This section provides explanations of the parameters in the Communications window.



Line error summary parameters

(Messages displayed in these fields are generated by the system's hardware.)

Error	Description
CRC Errors	Number of packets received with CRC errors.
Abort Chars	Number of packets with abort characters.
Pkt Size Errors	Number of packets in which the number of bytes in the packet do not match the number of bytes the packet should contain.
Bad Packets	Number of packets that could not be accepted.
Pkts w/o ACKS	Number of packets not acknowledged.
RX Overrun	Number of packets received in which the DMA and the data are not in sync.
TX Underrun	Number of packets transmitted in which the DMA and the data are not in sync.

Extended port status parameters

Port X-Off

On indicates that the port has shut down because of errors.

Port Loopback

Indicates whether the port is in loopback (on) or not (off).

Port X-Off Idle

On indicates that the remote site has detected line errors above the error threshold. The other system has made your port idle because of line errors.

Comm Data parameters

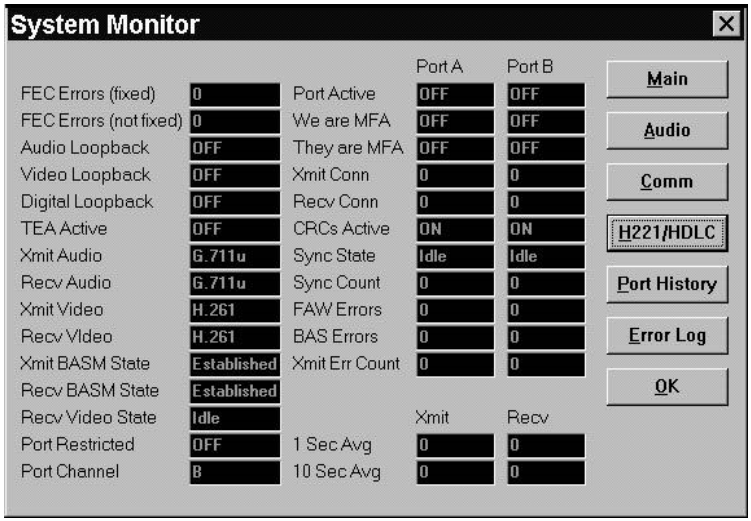
Type of data	Description
Packets	Kilopackets per second transmitted and received from Comm channel. For HDLC.
Video	Kilobits per second used for video.
Audio	Kilobits per second used for audio.
Data	Kilobits per second used for data.

Modem control line parameters

Control line	Description
CTS	Clear to send (on or off).
DSR	Data set ready (on or off).
RI	Ring indicator (on or off).
+++	X.21 ASCII + DCE data treated like modem control line (on or off).
FFF	Used in X.21 dialing. When FFF is off, the port is in an idle state. When FFF is on, the port is connected.

H.221/HDLC

This section provides explanations of the parameters in the H.221/HDLC window.



Connection Status parameters

FEC Errors (fixed)

The number of incorrect Forward Error Correction (FEC) video data values that were fixed.

The FEC is an 18-bit code that corrects any 2-bit errors in a 511-bit video frame.

FEC Errors (not fixed)

The number of incorrect Forward Error Correction (FEC) video data values that could not be fixed.

Audio Loopback

Indicates whether the system is in audio loopback (on) or not (off). The value should be Off.

Video Loopback

Indicates whether the system is in video loopback (on) or not (off). The value should be Off.

Digital Loopback

Indicates whether the system is in digital loopback mode (on) or not (off). In this state, any data received by the system is immediately returned to the transmitting system. The local system still manipulates the data as though it were a normal connection, but only the data received is looped back to the transmitter. Data processed for transmission is looped internally.

TEA Active

Indicates whether the remote system has set its terminal equipment alarm (TEA). This value is 1 (on) when an internal terminal equipment fault at the remote site causes the remote site to be unable to receive or to act on the incoming signal. Normally this value is Off.

Xmit Audio

Indicates whether audio has been enabled for transmitting from the local end of the connection. Values are G.711 Alaw, G.711 μlaw, G.722, G728, or Off.

Recv Audio

Indicates whether audio has been enabled for receiving at the local end of the connection. Values are G.711 Alaw, G.711 µlaw, G.722, G728, or Off.

Xmit Video

Indicates whether video has been enabled for transmitting from the local end of the connection. Values are H.261 and Unknown.

Recv Video

Indicates whether video has been enabled for receiving at the local end of the connection. Values are H.261 and Unknown.

Xmit BASM State

Counter that indicates the current state of the transmitting side of the bit-allocation signal (BAS) manager. It changes as the BAS manager goes through its various states of capability exchange. Xmit BASM State values are:

Xmit BASM State	Description
Idle	The system is idle, awaiting connection.
Capability Exchange	The transmitting side is exchanging its audio and video capabilities with the remote system's receiving video.
Awaiting MFA	The BAS manager is waiting for the receive synchronization to indicate that multiframe alignment has been achieved.
Established	The transmitting side has successfully exchanged capabilities and is ready to process outgoing BAS commands. This is the expected value once a connection has been established.

Recv BASM State

Counter that indicates the current state of the receiving side of the bit-allocation signal manager. It changes as the BAS manager goes through its various states of capability exchange. Recv BASM State values are:

Recv BASM State	Description
Idle	The system is idle, awaiting connection.
Capability Exchange	The receiving side is exchanging its audio and video capabilities with the remote system's transmitting video.
Awaiting MFA	The BAS manager is waiting for the receive synchronization to indicate that multiframe alignment has been achieved.
Established	The receiving side has successfully exchanged capabilities, and is ready to process incoming BAS commands. This is the expected value once a connection is established.

Recv Video State

Indicates the current state of the receive video frame module. The H.261 standard specifies that a number of video frame alignment words must be successfully received before the video signal is considered synchronized. This counter reflects the various states involved in this process.
Recv Video State values are:

Recv Video State	Description
Idle	The receiving video frame module (RVFM) is idle, awaiting video input.
No Sync	The RVFM is searching for a frame alignment word (FAW).
Sync Shift	The RVFM has found an FAW that requires shifting to be aligned in memory.
FAW Found Once	The RVFM has found an FAW that is properly aligned in memory.
FAW Found Twice	The RVFM has found a second aligned FAW.
Frame Sync	The RVFM has found a third aligned FAW. Received video can now be processed. This is the expected value once a connection is established.

Port Restricted

Indicates whether one's density must be maintained by the system during a connection (on) or not (off).

Port Channel

Indicates whether the connection(s) are structured as B or H0 channels. These are H.221 designations that describe how the data will be arranged. The H.221 subsystem looks for the various frame alignment signals based on this indicator.

Port Status parameters

Port Active

Indicates whether the port is currently being used (on) or not (off).
It is the first flag activated at the initialization of a connection.
Only one port should be active during a single channel connection; both ports should be active during a dual channel connection.

We are MFA

Indicates whether the port is currently multiframe aligned at the local site (on) or not (off).

The H.221 standard requires that a certain number of frame alignment signals must be successfully received on each end before a connection is considered established.

This flag is set when the local system has received the prescribed frame alignment signals from the remote site and reflects the current state of the A-bit in the frame alignment word currently being transmitted.

They are MFA

Indicates whether the port is currently multiframe aligned at the remote site (on) or not (off).

This flag is set when the remote system has received the prescribed frame alignment signals from the local site and reflects the current state of the A-bit in the frame alignment word currently being received.

Xmit Conn

Each channel is assigned a connection number by the H.221 processing code. This number is transmitted as part of the frame alignment word. This field reflects the value assigned to the transmit connection for an active port. The value for Port A is usually 1. The value for Port B is usually 2.

Recv Conn

Each channel is assigned a connection number by the H.221 processing code. This number is transmitted as part of the frame alignment word. This field reflects the value assigned to the receive connection for an active port.

CRCs Active

Indicates whether the 4-bit cyclic redundancy check (CRC) is being used by an active port (on) or not (off).

This is an optional algorithm that helps provide end-to-end quality monitoring. If one end of the connection is not using the CRC facility, the other end's CRC facility must be turned off as well. (AppsView automatically turns the CRC facility on or off.)

Sync State

Indicates the current state of the receive synchronization module for each active port. The H.221 standard requires that a number of frame alignment signals must be successfully received before the connection can be considered synchronized. This counter reflects the various states involved in this process. Sync State values are:

Sync State	Description
Idle	A connection is not being processed.
None	A connection has been made but the first frame alignment signal has not been detected.
FAW 1	The frame alignment word (FAW) has been detected once.
FAW 2	The FAW has been detected twice.
Sync	The FAW has been detected three times. The connection is considered frame aligned.
MFA has been established	The multiframe number and active bits have been detected. This is the expected state once a connection has been established.

Sync Count

The number of times the receive synchronization modules had to perturb the clock to optimize the frame alignment signal. Normally this field indicates a value of 0 or 1. It may indicate some other small number; the value should not change once the Sync State has reached 5.

FAW Errors

The number of times the receive synchronization module has detected a bad frame alignment word (FAW). This value can indicate the quality of the connection. The value can be any number between 0 and 225.

BAS Errors

The number of times the bit allocation signal (BAS) manager has detected a corrupted BAS that the BAS CRC cannot correct.

The BAS manager is the second level of synchronization in the H.221 standard. Once multiframe alignment has been achieved, the BAS manager begins to exchange capabilities with the other end of the connection. If the BAS Manager detects an erroneous capability or command, it attempts to correct the value (for example, if the value receive does not match the CRC received). If it is unable to correct the value, it increments this counter.

This value can indicate the quality of the connection. The value can be any number between 0 and 255.

Xmit Err Count

The number of times the Receive Frame Master has detected CRC errors from the other end of the connection.

This value is incremented whenever the E field of the frame alignment word is set when the other end has detected a CRC error. A value appears only when the CRC's Active flag is On for an active port.

This value can indicate the quality of the connection. The value can be any number between 0 and 255.

Video Status parameters

Xmit

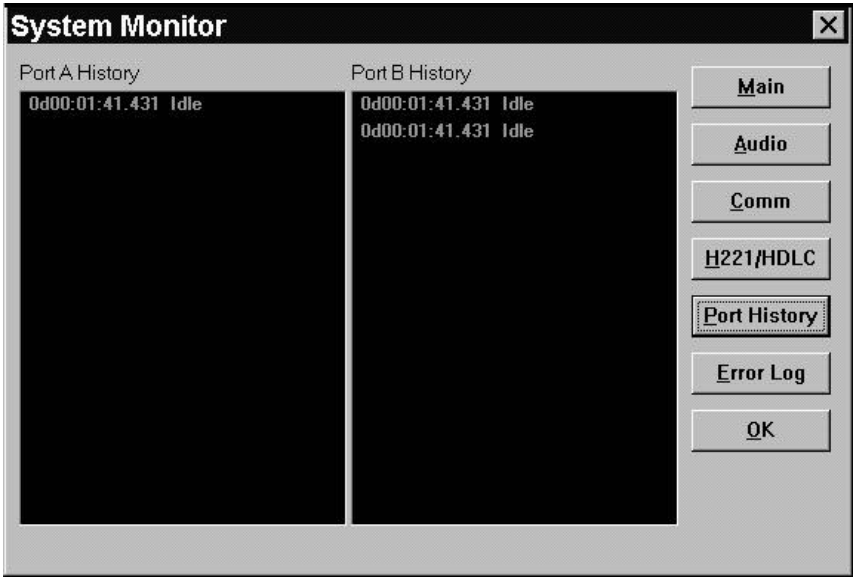
Value	Description
1 Sec Avg	Bandwidth percentages transmitted for the last second.
10 Sec Avg	Bandwidth percentages transmitted for the last 10 seconds.

Recv

Value	Description
1 Sec Avg	Bandwidth percentages received for the last second.
10 Sec Avg	Bandwidth percentages received for the last 10 seconds.

Port History

This section provides explanations of the parameters in the Port History window.



The Port History window shows the amount of time that Port A and Port B have been in particular states since the system was restarted. The time for each state is given in days, hours, minutes, seconds, and milliseconds from the time the system was restarted.

Note: For an explanation of each state, see "Comm Status parameters" on page78.

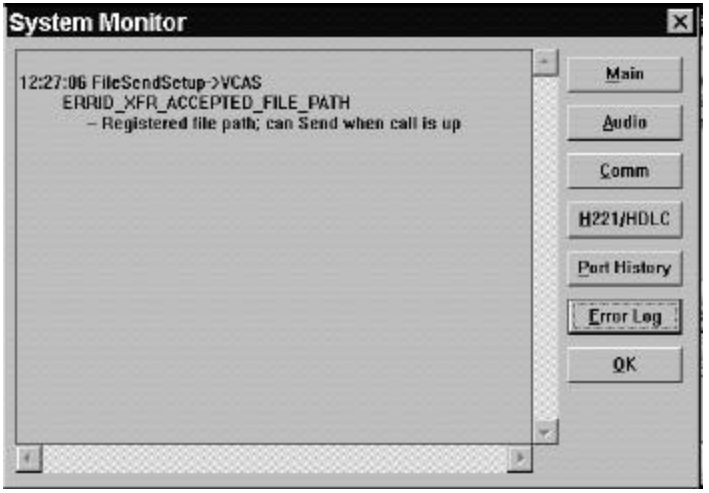
Error Log

The System Monitor's Error Log window shows errors reported since the last system boot.

Note: To look at error messages recorded for the previous system boot, open the **errprev.txt** file:

```
c:\vtel\appsview\errprev.txt
```

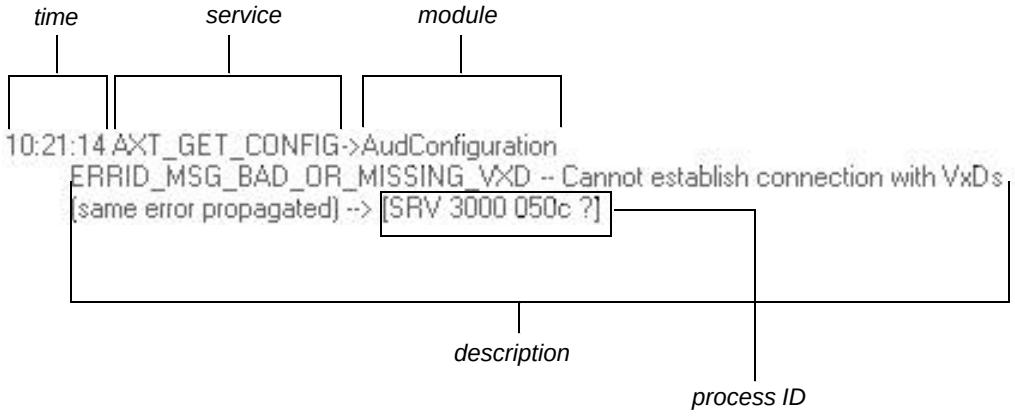
This section describes the parameters in the Error Log window.



The Error Log provides this information for each error:

- time the error occurred
- service (service being performed)
- module (software component that is the source of the error)
- description of the error
- process ID (the window handles on which the error occurred)

The following figure shows a sample error message and identifies the components of the message:



5 Troubleshooting

This chapter describes some problems you or videoconferencing participants may encounter, and provides some possible solutions.

Video problems

No local PC or camera video on a monitor

Check these conditions:

- Verify that the monitor is receiving AC power and that the monitor is turned on. (Use the remote control or power switch on the monitor.)
- Verify that the PC power switch is on and the system AC power cable is firmly seated in an electrical outlet.

- Verify (or adjust) the monitor video source select.

  To select S-Video or Video 1, use either the monitor's remote control or the TV/VIDEO switch on the monitor to cycle through the sources, until either the S-Video or Video 1 source appears.

- Verify that monitor PIP is turned off. (Use the monitor's remote control and monitor instructions.)

- Verify that the monitor S-Video cable is firmly seated at both the monitor and expansion chassis.

- If there is still no video on the monitor, connect another monitor and cable to determine if the monitor or cable is defective.

- Make sure the power LED on the expansion chassis is turned on.

- Make sure all cables are firmly seated in the expansion chassis and the PC.

Local monitor picture is bad

Check these conditions:

- Using the monitor's remote control, adjust the monitor video parameters. The best results are often achieved by setting the video parameters as follows for the S-Video/Video 1 channel:

- Make sure the S-Video cable is firmly seated at both the monitor and expansion box ends.

No local camera video or poor quality camera video (but PC video is good)

Check these conditions:

- The camera button you've selected is associated with an actual camera.
- The camera is plugged into an electrical outlet and is turned on.
- The lens cover is not on the camera.
- The camera is not in Standby mode.

- The camera is pointed at something other than a blank wall. (Check by pressing the **Operate** button on the camera's remote control.)
- Adequate local lighting is provided.
- The camera's iris is open wide enough.
- The camera's cables are all tightly connected at both the camera and system ends.
- If the camera is a document camera, the camera's power cord is plugged into an electrical outlet and the power switch is turned on.
- Verify that the camera port on the VTEL system is functioning by swapping the camera and cable with a camera and cable that you know are good.
- Verify that the cable is functioning by swapping it with a cable you know is good.

If you do not see video from the camera on the monitor, report the problem to a certified service representative.

No remote video (but local video is good)

Ask the remote site to check these conditions:

- The camera they selected to send video is an active camera.
- The camera is plugged into an electrical outlet and is turned on.
- The lens cover is not on the camera.
- The SmartCam camera is not in Standby mode. (Check by pressing the **Operate** button on the camera's remote control.)
- The camera is pointed at something other than a blank wall.
- The camera's iris is open wide enough.

- The camera's cables are all tightly connected at both the camera and system ends.
- If the camera is a document camera, the camera's power cord is plugged into an electrical outlet and the document stand power switch is turned on.
- If the remote operator sees video from the camera on their local monitor, ask them to restart the system and try again with a different camera. If it still doesn't work, report the problem to a certified service representative.
- If they do not see a picture from the camera on their monitor, the problem may be with their camera, camera cable, or power to the camera from the system.
- If this message appears when the remote site is using the document camera:

  `No Remote Video Input`

  Check to be sure that the input selected on the document stand camera control panel is EV-308 (in Europe: EV-408). Also check to be sure the Positive/Negative image switch is in the P position.

Remote video quality is poor (but local video is good)

These are possible causes for this problem:

- Inadequate lighting at the remote site.
- Dark backgrounds at the remote site.
- Excessive movement at the remote site.
- Very low line rates.
- Functions that require a lot of communications network bandwidth are being performed.

Remote video intermittently freezes (but local video is good)

This may occur during a session in which slides are being used, and is caused by time lags while slides are either being retrieved from hard disks, processed by the system, or transmitted.

This problem may also have these possible causes:

- Incompatible data rates are being used.
- Timing is not functioning correctly (problems with the communications network clock source).

Check the remote and local sites' data rate and clock source for compatibility. Both sites should have the same clock source, which is typically the network or the network interface device.

Audio problems

Audio not synchronized with video

If mouth movements are not in sync with the words the speaker is saying, the *lip sync* is incorrect.

To adjust audio delays for all calls at a specific line rate, see "Configuring audio delays" on page39.

To adjust the audio delay for a call in progress, see "Setting audio delay (adjusting lip sync)" on page 66.

Local site cannot hear remote site

Check the monitor's volume control. You can use the monitor's remote control or the volume knob on the front of the monitor to adjust the monitor's volume control. The suggested setting is 21 bars, which is 31% of full volume.

Check the AppsView volume control. (You can use the volume control slider over the AppsView icon to adjust the volume.)

Your speaker may be disconnected or not functioning. Check the cables connecting audio from the expansion unit to the codec and from the expansion unit to the monitor's audio inputs.

The remote site may have muted its microphone. Ask someone at the remote site to press the **Audio Privacy** button to test whether or not their microphone is muted.

The microphone at the remote site may have been disconnected. Ask someone at the remote site to test their microphone connections.

You can use the System Monitor application to check audio functions. See "Audio" on page85.

Remote site cannot hear local site

The remote site's speaker may be disconnected or not functioning. Ask someone at the remote site to check the audio cable connections.

Your microphone may be muted. Press the **Audio Privacy** button to test whether or not the microphone is muted.

Your microphone may have been disconnected. Check your microphone connections.

You can use the System Monitor application to check audio functions. See "Audio" on page85.

Local echo during a videoconference

The remote site's volume may be turned up too high. Ask someone at the remote site to turn down their volume.

If the remote site can't hear your audio when the volume is set at a normal level, check the placement of your microphones and make sure everyone who speaks is within range of a microphone.

Objects such as books and briefcases can cause echoes if they are placed too close to a microphone.

Tablet problems

Tablet does not work at all

Make sure the tablet is turned on. (See page48.)

Check to see that all tablet connections are secure at both the tablet and system ends.

Tablet does not work correctly

Contact your certified service representative.

Camera problems

Pan, tilt, and zoom controls do not work

1. Make sure the camera is a PTZ (pan/tilt/zoom) camera.
2. Make sure the tablet is working. (See "Tablet does not work at all" on page112.)
3. Check the camera cables to make sure they're secure.
4. Turn the camera off and then on again.

Keyboard problems

Keyboard does not work

Check the keyboard cable connection to be sure it is secure at both the keyboard and system ends.

Slide problems

Slides can't be annotated

Slides can be annotated only during HDLC calls.

Communications problems

Cannot connect to any remote sites

1. Verify that the system is connected to network interface equipment (multiplexer, terminal interface equipment, or terminal adapters).

2. Verify that cables between the system and network interface equipment are good.

3. Verify that system settings are correct for the network being used.

Note: Also see "Running a loopback test" on page122.

Cannot connect to a remote site and the System Monitor's Communications tab displays "CRC errors" message

CRC (cyclic redundancy check) errors indicate that the systems are unable to verify that information is being accurately transmitted. The problem may be caused by a failure within one of the VTEL systems or by a failure within the network interface equipment at either end. This condition may also indicate a problem with the communications circuit.

Report the problem to a certified service representative.

Note: Also see "Running a loopback test" on page122.

Multiway conference problems

During a multiway conference, one site's video cannot be seen by other sites

Ask the site to check these conditions:

- The camera they selected to send video exists.
- The lens cover is not on the camera.
- The camera is pointed at something other than a blank wall.
- The camera's iris is open wide enough.
- The camera's cables are all tightly connected.
- If the camera is a document camera, the camera's power cord is plugged into an electrical outlet.

Audio echo during conference

1. Have all the other sites mute their microphones.
2. Bring each site back one at a time. As each site is brought back, check for echoing by talking.
3. When you hear echoes, have that site turn down its volume.
4. Continue until all sites are back and the echo is gone.

Note: When you find a site causing an echo, do not assume that the problem is solved. Echo can be caused by more than one site.

Need to view Error Log to track down recurrent problem

Check the AppsView Error Log for information about problems. See "Port History" on page101. (How far back in time the Error Log goes depends on the size of the Error Log file. When the size of the file reaches its limit, the oldest errors are overwritten by newer ones.)

AppsView user interface problems

Cannot see the AppsView icon

1. Press the **Alt-Tab** key combination. The AppsView icon appears.
2. Place the cursor anywhere on the screen *except* on the AppsView icon, then click the right mouse button.
3. Make sure the **Always on Top** option has a check mark next to it.

AppsView software installation problems

During AppsView software installation, system locks up and installation cannot be completed

This problem may be caused by corrupted software or bad diskettes. Contact your VTEL reseller.

Location of serial number

The serial number is located on the system's back panel or can be found online in the Diagnostics Help menu. (See page 120.)

Using the ESA system diagnostics program

You can use the diagnostics application to test the operation of and identify problems with these system components:

- VTEL video board
- VTEL codec board
- VTEL expansion box
- board interconnections

Note: You cannot run diagnostics while a videoconference is in progress.

Accessing the diagnostics application

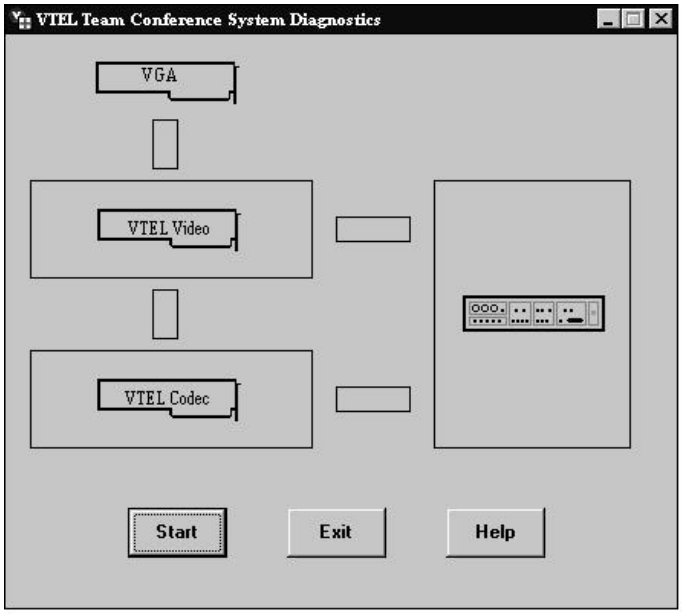
1 Before starting the diagnostics application, exit AppsView:

Put the cursor on the AppsView icon and click the right mouse button.

Note: If you try to run the diagnostics application while AppsView is running, you will receive error messages. If you receive an error message, terminate the diagnostics application, terminate AppsView, then restart diagnostics.

Press **Ctrl-Esc** to display the Windows 95 menu.

2 To open the Diagnostics window, click the Windows 95 **Start** button, then select **Programs**, **VTEL**, and **Diagnostics**.



Running diagnostics

Click the **Start** button. The system begins running tests. Each box is filled with the color green or red as the tests are run. All the tests are complete in less than five minutes.

Note: While the video test is running, the video is inaccessible at various times. (A message is displayed on the monitor that indicates when the video test is being run.)

Interpreting the results of diagnostics tests

The main Diagnostics window displays three types of items:

- Icons within outline boxes represent the subsystems that are included in the test.
- Icons without outline boxes represent components of the system that are not tested.
- Empty outline boxes represent the interconnections between the subsystems that are included in the test.

When the test completes, the **Stop** button changes to **Start** and one of the following two conditions exists:

- All boxes appear as green, which means that all tests passed.
- Some boxes appear green, others appear red, and others have no color.

If a box has no color, the associated test was not run due to a failing condition in another major subsystem. For example, if the codec box appears green and the VTEL video box appears red, the expansion box and all interconnect tests cannot be run because of the video board failure.

If the VTEL codec box and VTEL video box are green, but other boxes are red, this may indicate that an associated cable or interconnect is faulty.

Accessing the diagnostics program online help

For more information about diagnostics, press the **Help** button.

The Help menu lets you access information about the diagnostics program.

Board IDs Allows you to display the identification numbers of the VTEL assemblies in the system. Write down the assembly part numbers, serial numbers, and revision numbers before calling your service representative.

Index Displays the help file.

About Displays the revision information of the four software modules in the diagnostics program. Write down the software module revision number before calling your service representative.

Stopping diagnostic tests

When the test starts running, the **Start** button changes to **Stop**. Click the **Stop** button to stop the current subsystem diagnostics tests. Not all subsystems stop testing immediately. The video subsystem reinitalizes the VTEL video board and may take from five to ten seconds before completely terminating the test.

Note: If you stop the test, the subsystem that is currently being tested may be shown as failing. This does not necessarily indicate a problem with the board, but is a result of the test being terminated.

Exiting the diagnostics program

Press the **Exit** button in the Diagnostics window. The diagnostic program closes.

Restarting AppsView

To restart AppsView after you exit the diagnostics program:

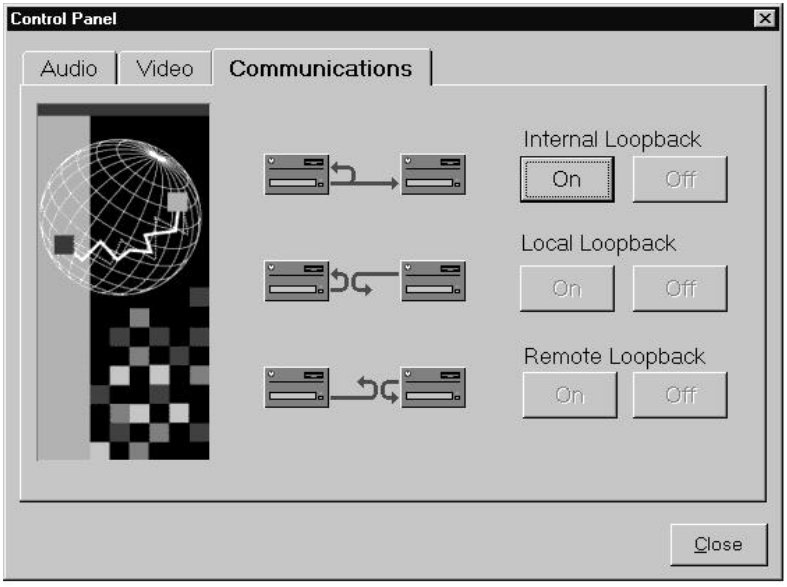
1. Press **Ctrl-Esc** to display the Windows 95 taskbar.
2. Click the **Start** button, then select **Programs**, **VTEL**, and **AppsView**.

Running a loopback test

1 Press the **System Tools** button on the AppsView toolbar to display the System Tools toolbar.

2 Press the **Control Panel** button on the System Tools toolbar. The Control Panel window opens.

3 Select the **Communications** tab.



4 Press one of the buttons in the Communications window to select the loopback mode you need. The following table describes each mode.

Loopback mode	Description
Internal Loopback (valid only when not in a conference)	Diagnostic test that verifies that the ESA system boards and expansion unit are working correctly. With internal loopback, you see yourself (the local view) on the main monitor. The local signal is sent back to you and to the remote site. This test must be performed when a call is not in progress.
Local Loopback (valid only when in a conference)	Diagnostic test within the local ESA system. Returns the remote site's communication signal to the remote site. The remote site can put your local system into local loopback mode. The local site sees the local site; the remote site sees the remote site. When you run a local loopback test during a VTEL HDLC call, the test functions regardless of whether auto configuration is enabled or not. The local loopback test is not for use during an H.221 call. After you run the local loopback test, turn Local Loopback *off* before you hang up.

Loopback mode	Description
Remote Loopback (valid only when in a conference)	**During VTEL HDLC calls:** Remote loopback tests all the lines at both the local and the remote sites. The local site sees the local site; the remote site sees the remote site. When you run a remote loopback test during a VTEL HDLC call, the test functions regardless of whether auto configuration is enabled or not. **During H.221 calls:** The remote loopback test invokes digital loopback at the remote site. The remote site returns the communications signal to the invoking site while continuing to process the invoking site's communication signal. Both sites see and hear the invoking site. Run the remote loopback test only when auto configuration is turned *off*. After you run the remote loopback test, turn Remote Loopback *off* before you hang up.

A

Connecting to the Internet

This appendix explains how to set up a connection that enables users to access the Internet via the ESA system's modem or a network.

Requirements for Internet connection

To establish an Internet connection, the system must meet these requirements:

- an Internet access method must be established
- Internet browser software must be installed

You can use either of these methods to access the Internet:

- an account with an Internet Service Provider (ISP). (An ISP provides dial-up Internet access via a modem for a monthly or an hourly fee.)
- connection to a Local Area Network (LAN) with TCP/IP connection to the Internet

TC2000 and LC5000 systems for use in North America include modems as standard equipment.

◀ **If you use an Internet Service Provider**, the ESA system must include a modem.

If your system is on a LAN that connects to the Internet, the ESA system must include a LAN board.

In order to play and to hear audio clips, your system must also include a sound board or a multimedia board.

Internet browsing software

A number of software packages are available for browsing the Internet. This appendix explains how to install two popular World Wide Web browsers for Windows 95:

- Microsoft Internet Explorer
- Netscape™ Navigator™

Setting up Internet access

This section describes the two main methods for setting up Internet access.

Setting up a dial-up connection for Internet service provided by an ISP

This section explains how to set up a dial-up connection after you have established an account with an ISP.

Note: You cannot use the instructions in this section to connect to large online service providers such as America Online®, Prodigy®, and CompuServe®. See the installation instructions included with the software provided by these services.

Obtaining information about your ISP account

Write this information down so it will be available when you configure the Internet software.

After you set up an account with an ISP, obtain the following information from your ISP:

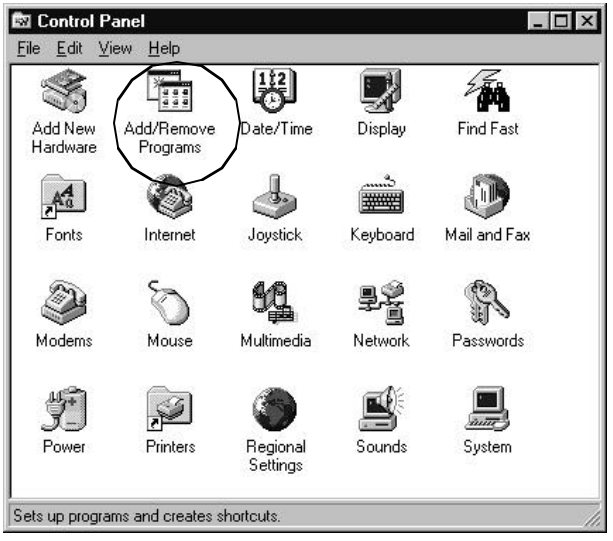
Information	Description
dial-up phone number	Number the user dials to connect to the ISP.
username	User's login name on the ISP system.
password	User's ISP account password.
IP address	Part of the TCP/IP protocol that routes messages across the Internet. If the number is not automatically assigned by the server, your ISP will provide you specific numbers.
domain name	Name that identifies the ISP's network on the Internet.
DNS IP (Domain Naming System Internet Protocol) address	Converts email addresses (such as bob@io.com) to Internet addresses for transmission. If the number is not automatically assigned by the server, your ISP will provide you specific numbers (primary and secondary).
POP (Post Office Protocol) server name	Name of the ISP server for the user's email account.
email address	User's ISP email address (such as bob@io.com).

Information	Description
NNTP (Network News Transfer Protocol) news server name or address	Server name or address for newsgroups.
SMTP (Simple Mail Transfer Protocol) mail server name	Server name for email message routing.

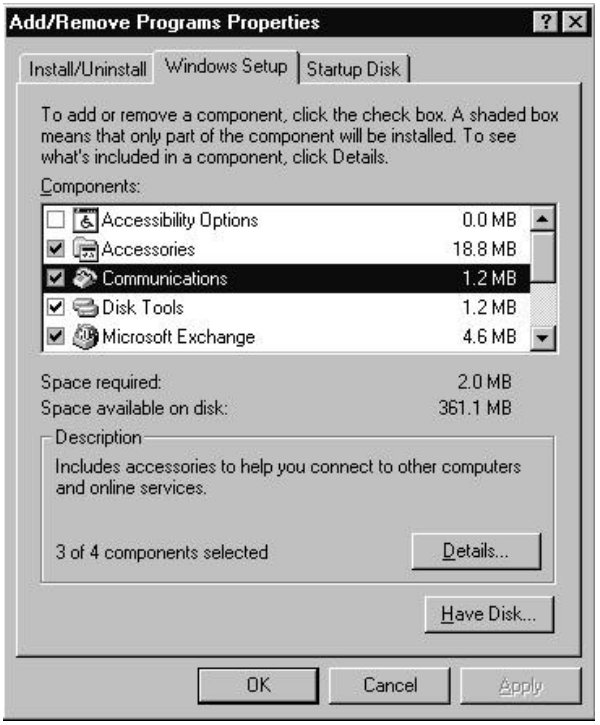
Setting up a new dial-up networking connection

1 Click the **Start** button on the Windows 95 taskbar, then click **Settings** and **Control Panel**.

2 In the Control Panel window, double-click **Add/Remove Programs**.



3 In the Add/Remove Programs window, select the **Windows Setup** tab, then highlight **Communications** and click the **Details** button.



4 In the Communications window, click the **Dial-Up Networking** and **Direct Cable Connection** check boxes to place a check mark in the boxes, then click **OK**. (If the boxes are already checked, skip this step.)

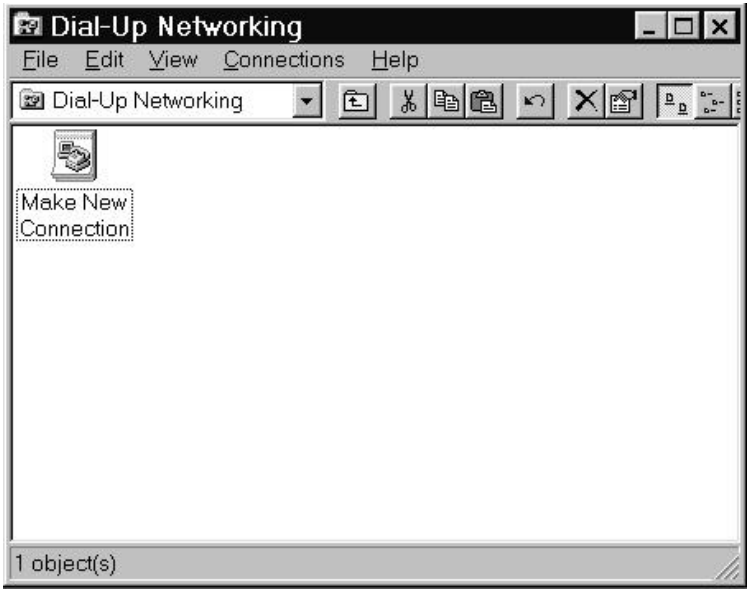
5 In the Add/Remove Programs window, click the **Apply** button.

6 When Windows prompts you to reboot the system, reboot it.

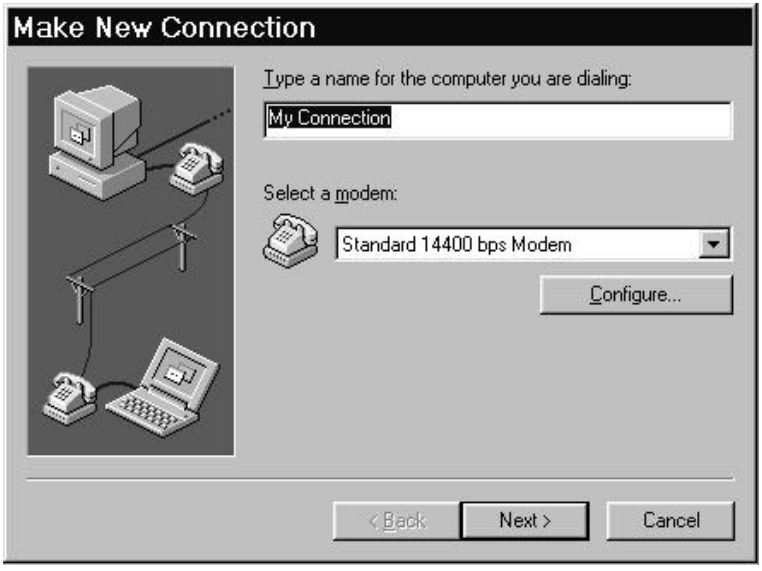
7 After the system reboots, double-click the **My Computer** icon on the Windows 95 desktop.

8 In the My Computer window, double-click the **Dial-Up Networking** icon.

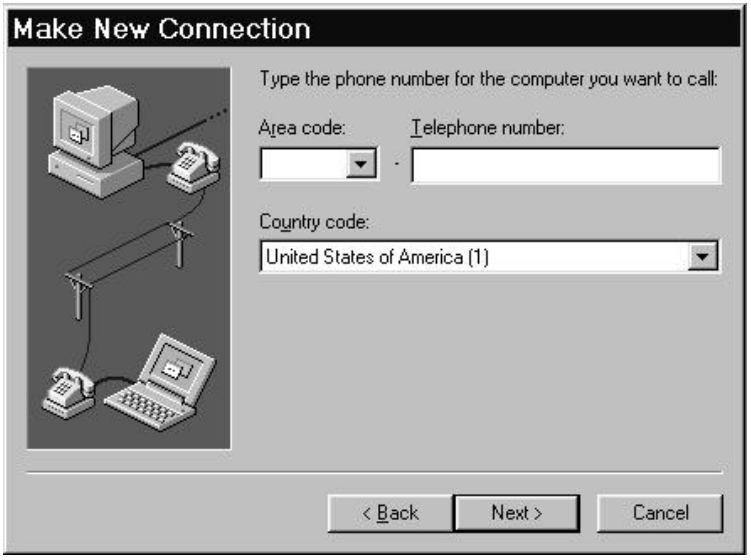
9 In the Dial-Up Networking window, double-click the **Make New Connection** icon.



10 In the Make New Connection window, type a name for the connection, then click the **Next** button.



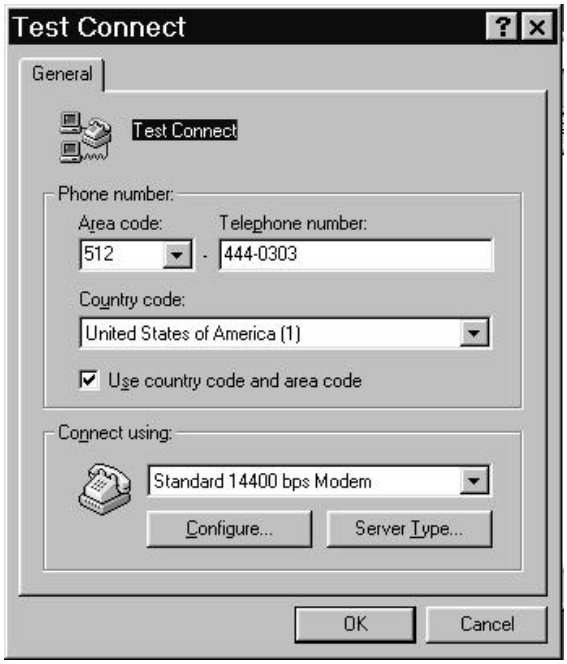
11 Type the dial-up number for your ISP, then click the **Next** button.



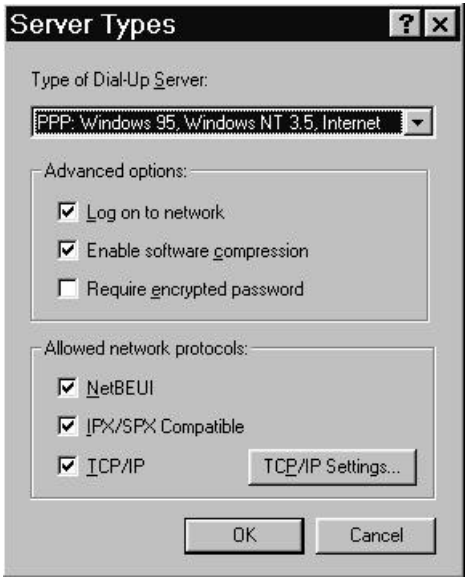
12 Click the **Finish** button.

13 In the Dial-Up Networking window, click the new dial-up connection icon to highlight it. Hold down the right mouse button and move the mouse pointer to **Properties**.

14 Click the **Server Type** button.

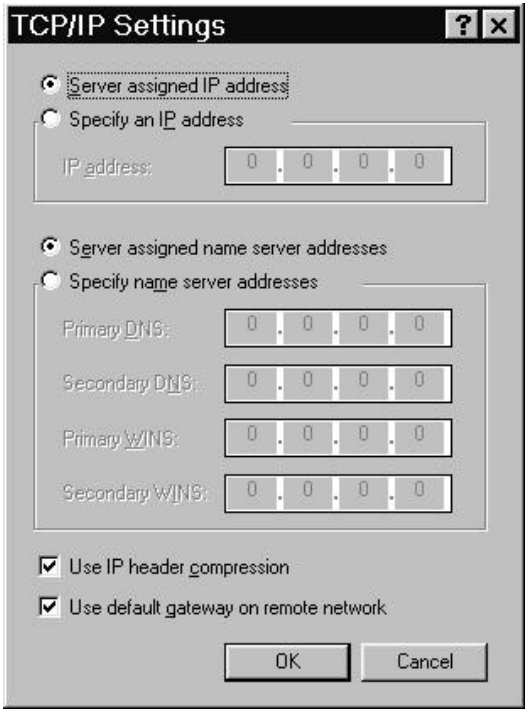


15 In the Server Types window, click the **TCP/IP Settings** button.



See "Obtaining information about your ISP account" on page128.

16 In the TCP/IP Settings window, specify the IP address and name server addresses, then click **OK**.



Setting up Internet access via a LAN

This section explains how to access the Internet via a LAN.

Before you begin

Your LAN administrator can tell you whether or not your network connects to the Internet.

◀ First, confirm that your local area network accesses the Internet.

If your LAN does not access the Internet, use an Internet Service Provider with dial-up networking. (See "Setting up a dial-up connection for Internet service provided by an ISP" on page127.)

If your system is connected to a LAN that accesses the Internet:

- Follow the steps in the next two sections, "Evaluating TCP/IP configuration" on page139 and "Checking LAN board installation" on page140.
- Obtain the following information from your LAN administrator:

Information	Description
IP address	Part of the TCP/IP protocol that routes messages across the Internet.
WINS addresses (primary and secondary)	Addresses in the Windows Internet Name Service database that correspond to IP addresses.
gateway address	Address of the computer that connects the LAN to the Internet.
domain name	Name that identifies the ISP's network on the Internet.

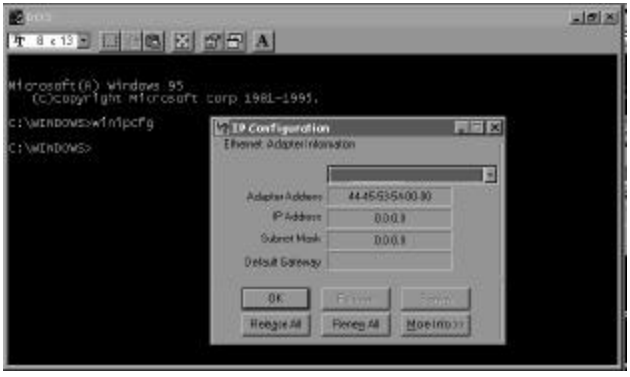
Information	Description
DNS (Domain Naming System) addresses (primary and secondary)	Converts email addresses (such as bob@io.com) to Internet addresses for transmission.
workstation name	Name of the system on the LAN.

Evaluating TCP/IP configuration

Perform this quick test to evaluate your system's TCP/IP configuration:

1 Click the **Start** button, then select **Programs** and **MS DOS**.

2 At the DOS prompt, type **WINIPCFG**, then press **Enter**.



If the IP Address box displays a number other than 0.0.0.0, the Enterprise Series system is already set up to access the Internet. You are now ready to install the Web browser software and can skip to "Installing a Web browser" on page 146.

If the IP Address box displays 0.0.0.0 or is blank, go to the next section, "Checking LAN board installation."

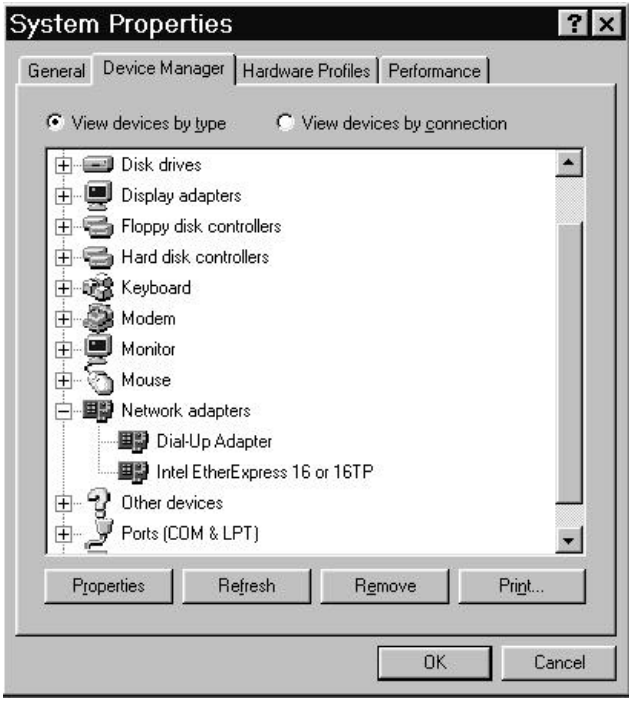
Checking LAN board installation

To make sure a LAN board is installed in your ESA system or to make sure the LAN board is configured correctly:

1. Click the **Start** button, then select **Settings** and **Control Panel**.

2. In the Control Panel window, double-click the **System** icon.

3 In the System Properties window, select the **Device Manager** tab, then double-click the **Network adapters** option.



If no devices are listed under Network adapters, either the ESA system does not include a LAN board or the LAN board drivers are not set up properly. Contact your information services group or LAN system administrator to install and/or to configure a LAN board.

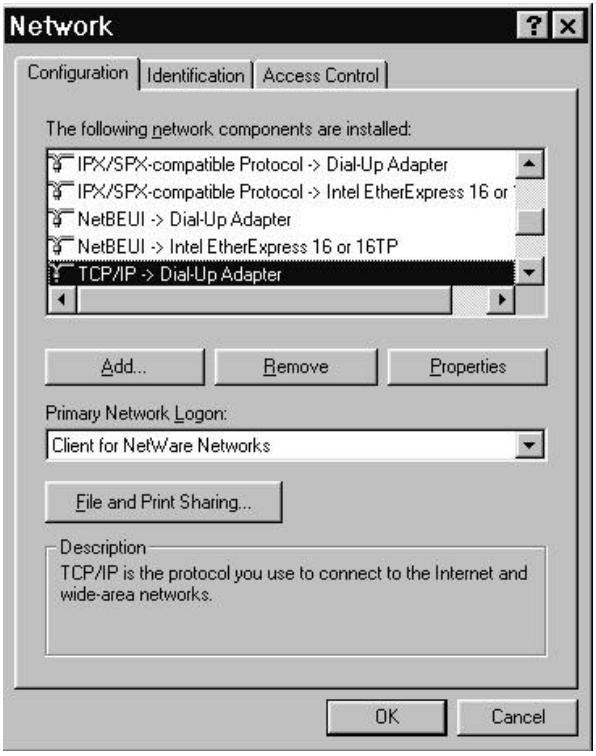
If devices are listed under Network adapters, follow the steps in "Setting up the Microsoft TCP/IP protocol" on page142.

Setting up the Microsoft TCP/IP protocol

1 In the System window, click the **Cancel** button.

2 In the Control Panel window, double-click the **Network** icon.

3 In the Network window, select the **Configuration** tab. Look for an icon labeled **TCP/IP** in the list window.

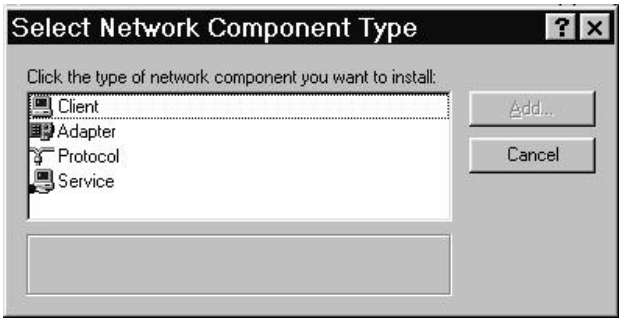


If the icon exists, skip to step 8.

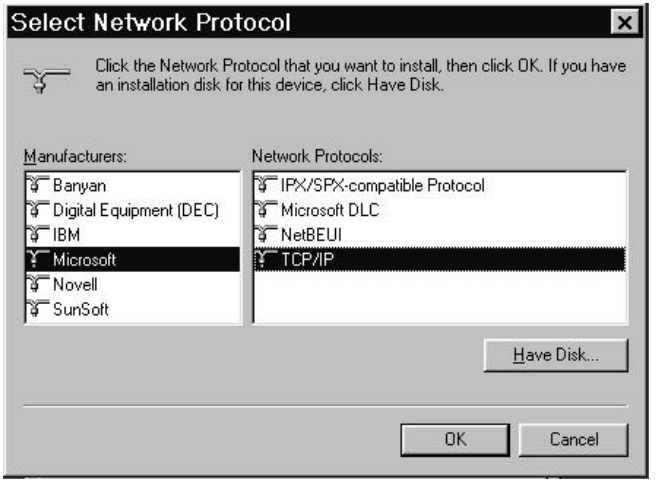
If the icon does not exist, continue to step 4.

4 In the Network window, click the **Add** button.

5 In the Select Network Component Type window, double-click the **Protocol** option.

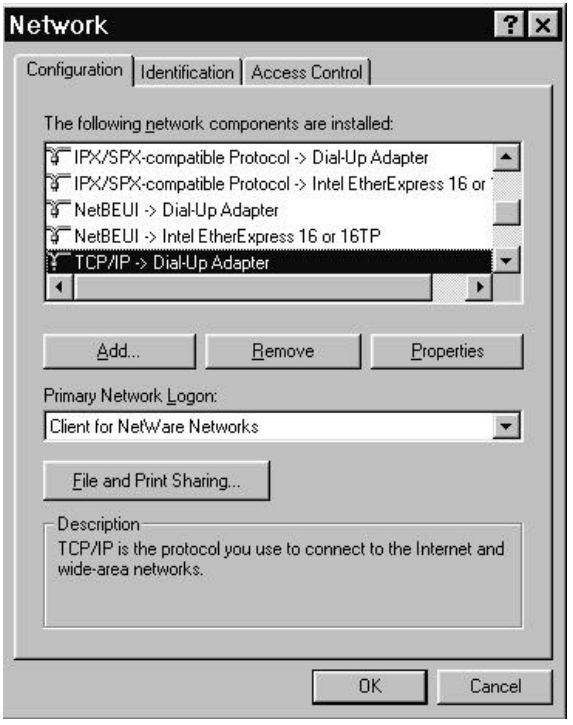


6 In the Manufacturers list box, select the **Microsoft** icon.



7 In the Network Protocols list box, select the **TCP/IP** icon.

8 Return to the Network window. In the Configuration list box, double-click the **TCP/IP** icon.



See "Before you begin" on page138.

9 Using the information you obtained from your LAN administrator, enter TCP/IP information as follows:

- **IP address.** Select the IP Address tab.
- **WINS addresses (primary and secondary).** Select the WINS Configuration tab.

- **gateway address.** Select the Gateway tab.
- **domain name.** Select the DNS Configuration tab.
- **DNS addresses (primary and secondary).** Select the DNS Configuration tab.
- **workstation name.** Select the DNS Configuration tab.

After your system is set up for Internet access, see the next section, "Installing a Web browser."

Installing a Web browser

This section explains how to install two popular browsers.

Installing Netscape Navigator

See the documentation included with the Netscape Navigator software for detailed information about installing and using Netscape Navigator.

1. Insert Disk 1 into your diskette drive (a: or b:).
2. Click the **Start** button, then click **Run**.
3. Type **`a:setup`** (or **`b:setup`**).
4. Follow the instructions on the screen. When the setup program asks if you want to use dial-up networking, select **Yes**.

When setup is complete, a Netscape icon appears on the Windows 95 desktop.

Installing Microsoft Internet Explorer

See the documentation included with the Internet Explorer software for detailed information about installing and using Internet Explorer.

1. Insert the CD in the CD-ROM drive (or place the first diskette in the diskette drive).
2. Click the **Start** button, then select **Settings** and **Control Panel**.
3. In the Control Panel window, select **Add/Remove Programs**.
4. In the Add/Remove Programs window, select the **Install/Uninstall** tab.
5. Click the **Install** button.
6. Follow the instructions on the screen. When the setup program asks if you want to use dial-up networking, select **Yes**.

Launching browsers from AppsView

After you install a browser, you can set up a button for the browser so users can launch the browser from the AppsView toolbar. See "Adding a Windows application button to a toolbar" on page70.

VTEL's Web site

See "Connecting to VTEL's Web site" on page149.

VTEL's site on the World Wide Web lets you use the Internet to access information about VTEL and VTEL's products and services. The Web site also serves as a source for current information about the videoconferencing industry.

The site contains many useful resources, including an introduction to videoconferencing, a videoconferencing tutorial, and a videoconferencing needs assessment form. The site also includes a list of other Internet sources of videoconferencing information.

VTEL's Web site includes topics such as these:

- videoconferencing news and information
- VTEL industry solutions
  - education
  - health care
  - corporate
  - government/military
  - financial services
  - manufacturing/high tech
- VTEL—the company
- VTEL's products
- VTEL's complete solution
  - training
  - support
  - VTEL User's Group Association (VUGA)

Connecting to VTEL's Web site

1. Enter this information in the URL window of your browser:

   `http://www.vtel.com`

2. Click the **Open** button, or press **Enter**.

Setting up an automatic link to the VTEL Web site

This section explains how to set up a link to the VTEL Web site from Netscape Navigator and from Microsoft Internet Explorer.

Setting up a link from Netscape Navigator

1. Load Netscape Navigator.
2. Select **Options** from the menu.
3. Click **General Preferences**.
4. Select the **Appearance** tab.
5. In the Start Up box next to Start With, click **Home Page Location**.
6. In the input box, type:

   `http://www.vtel.com`

   Then click **OK**.

Setting up a link from Microsoft Internet Explorer

1. Load Microsoft Internet Explorer.
2. Select **File** from the top menu.
3. Click **Open**.
4. In the Address box, type:

   `http://www.vtel.com`

   Then click **OK**.
5. Click **View** from the top menu.
6. Click **Options**.
7. Select the **Start Page** tab.
8. Click the **Current** button, then click **OK**.

B

Specifications

This appendix provides information about the physical and electrical specifications of the ESA system.

Standards compliance

The system's compressed video and audio components comply with ITU-T standards.

Compressed video

The H.261 standard algorithm is used for video coding/decoding.

Video is coded and transmitted in FCIF format (352 pixels x 288 pixels) at a maximum rate of 30 frames per second. The system can also operate in QCIF format (176 pixels x 144 pixels) at a maximum rate of 30 frames per second. The FCIF and QCIF video images are actually captured and displayed in standard NTSC or PAL format.

Audio

Audio standards supported include:

- G.711 μ-law and A-law
- G.722
- G.728

Multipoint-ready

The system is multipoint-ready through standards-compliant Multipoint Control Units (MCUs), such as VTEL's MCU-II.

Communications

Communications protocols

The system supports these protocols:

- H.221
- HDLC

Communications interfaces

The standard ESA system includes a DDM, a Single BRI, or a Quad BRI.

DDM

DDM supports dual RS-449, V.35, and RS-530 electrical interfaces.

DDM supports these dialing protocols:

- dual RS-366
- direct connection (direct connect for no-dial modes to multiplexing equipment)

Capabilities

- single port, with line rate range corresponding to option:
  - 56–128 Kbits/sec
  - 56–512 Kbits/sec with HighSpeed 512 option
  - 56–1536 Kbits/sec with T1 option
- dual port 56/64 Kbits/sec operation, with 56–64 Kbits/sec per port

Single BRI

Supports ISDN with the following line rates:

- single port 56 Kbps
- single port 64 Kbps
- dual port 56 (2 x 56 Kbps)
- dual port 64 (2 x 64 Kbps)

Quad BRI

Requires the HighSpeed 512 option. Quad BRI supports all Single BRI line rates, as well as IMUX line rates up to 512 (with the use of bonding mode 1).
(ISDN with 4 BRI ports: 8 channels x 64 Kbps = 512)

Clock synchronization

All internal communications operations are synchronized.

The ESA system requires exact multiples of 56 and 64 Kbits in externally provided network clocks. An external IMUX that uses proprietary bonding protocols must provide full bandwidth to the ESA system in order for the system to operate correctly. Protocols that reduce the bandwidth to the ESA system will cause the system to *not* operate.

Dialing modes

The system supports these dialing modes/protocols:

- RS-366
- direct connection (non-dial mode)
- ISDN

Communications connector specifications

The DDM is supported by an HD Champ 80-pin connector. Cables are provided that have the following standard network interfaces:

Connector	Specification
DB37	RS-449
34-pin Winchester DB25	V.35 RS-366
DB25 DB37	RS-366 RS-449
(Ascend MB+ Interface) HD44 HD44	 RS-366 V.35
DB25 DB25	RS-366 RS-530

ISDN is supported by one or four RJ-45 connectors (one for Single BRI or four for Quad BRI), and has an S/T interface.

Video

VCR and Camera 3 have dual inputs (S-Video and Composite). All other video inputs (Camera 1, 2, and 4) can be configured for S-Video or Composite video formats in AppsView and physically connected with cable adapters (S-Video to Composite).

All inputs, including VCR and Camera 3, must be configured for S-Video or Composite in AppsView.

Video inputs

The system can be configured for NTSC or PAL video formats—the expansion box accepts either video format.

The expansion box accommodates five video inputs: four cameras and one VCR.

The S-Video or Composite connections for each camera and VCR must be configured in AppsView. (See "Configuring camera, monitor, and VCR settings" on page36.)

- Connect Cameras 1, 2, and 4 with the standard S-Video connectors, or connect them as Composite by using the VTEL-supplied cable adapters.
- Connect the VCR and Camera 3 connections through dual video inputs. You can choose to connect them as S-Video or Composite—no cable adapter is necessary. (The Camera 3 designation is usually reserved for the document stand camera.)

Video input specifications

Standard: 75-ohm, PAL/NTSC video signals, S-Video/composite

Inputs to the expansion unit must operate at standard video levels:

- voltage level: 1 VP-P (volts peak-to-peak)
- input impedance: 75 ohms

Scan converted video output

- VGA video is converted to NTSC format and overlaid with scaled live video for systems used in the USA, Canada, or Japan.
- VGA video is converted to PAL format and overlaid with scaled live video for systems used in Europe, Australia, Asia, and South Africa.

User system video outputs

The expansion box provides one VCR and three monitor video outputs. Standard S-Video connectors are provided for all four video outputs. NTSC/PAL S-Video signals are supported, and the VCR output has an additional RCA connector to provide for direct composite video signal connection.

Video output specifications

Standard: 75-ohm, PAL/NTSC video signals, S-Video/composite

Monitor and VCR outputs can be configured as S-Video or Composite. Both monitors must be either S-Video or Composite. Connections must also be configured in AppsView. (See "Configuring camera, monitor, and VCR settings" on page36.)

Standard PTZ camera video to expansion unit

The current standard camera is a Sony. If your system includes another brand of camera, it's specifications may not match those shown here.

The PTZ camera's video output can be either composite video or S-Video. The ESA system makes use of the high resolution video output capability (S-Video).

- pickup device: 1/3-inch CCD
- total pixels: 410,000
- motorized pan, tilt, and zoom
- auto iris
- 350 vertical TV lines
- 460 horizontal TV lines
- video output signal level: 1 VP-P
- focal length: 5.4 to 64.8 mm
- zoom range: 12:1
- focus: automatic and manual
- pan/tilt range
  - horizontal 100º
  - vertical 25º
- minimum illumination: 7 lux (F1.8) with 50 IRE

Audio

Echo canceller TEC 96

The ESA system includes a built-in, full-duplex, acoustic echo-cancelling audio system. Most rooms do not need special acoustic treatment.

Audio selection

In-band audio with any of these line rates:

- G.711 (64 Kbits/sec, 3.4 KHz audio bandwidth)
- G.722 (48–56–64 Kbits/sec, 5.0 KHz–7.0 KHz audio bandwidth)
- G.728 (16 Kbits/sec, 3.4 KHz audio bandwidth)

Lip sync compensation is performed at all line rates.

Audio input

A built-in audio mixer in the expansion unit handles three microphone inputs and one line-level input.

Additional inputs are provided for VCR audio and multimedia input. These inputs are treated independently; they are not mixed.

Audio line input (mixer input)

The Line In audio source is intended for use with microphone mixers or for typical line level devices such as a tape deck, CD player, or additional VCR.

Input impedance: 6 K ohms nominal through an RCA connector

Input level: ~10 dBv nominal

Clipping level: +6 dBv

Microphone input

Each of the three microphone inputs is preamplified to line level, then all three are mixed through the audio line input.

Input impedance is 600 ohms nominal through the XLR connector.

Input level for microphones is from -85 dBm to -40 dBm (programmable via AppsView).

Maximum Mic In (clipping level) is -10 dBm.

VCR line input (VCR)

VCR Line In input impedance is 10 K ohms nominal, through an RCA connector.

Line In input level is -10 dBv, 300 mV RMS nominal, through an RCA connector.

Maximum Line In (clipping level) is +6 dBv.

Multimedia input

Multimedia input is intended to be connected to a PC sound card for inband multimedia.

Line input level is -10 dBv through a 3.5 mm jack.

Maximum input (clipping level) is 0 dBv.

Input impedance is 10k ohms 300 mV RMS with a 3.5 mm jack.

Audio output

Two line level audio output sources are available at the expansion unit:

- Line Out is used to drive the VTEL audio amplifier and speaker(s) to provide system audio output.

  Output impedance is 50 ohms nominal.

  Output level is -10 dBv nominal (output level varies with AppsView volume settings).

  The audio Line Out level varies with the volume setting. Adjustable from 0 (off) to 20 (full volume) via AppsView.

- VCR Line Out level audio output is used for VCR recording.

  Output impedance is 50 ohms nominal.

  Output level is -10 dBv nominal (output level varies with AppsView volume settings).

Frequency range

The audio frequency range is ±1.5 dB, from 50 Hz to 7.0 KHz.

PC

The system's PC is an IBM-compatible computer.
The PC includes this equipment:

- Pentium processor
- hard disk
- 1.44 MB, 3.5 inch diskette drive
- 16 MB RAM (factory-optional additional 16 MB available, for a maximum of 32 MB)
- High speed ATAPI CD-ROM drive
- 2 MB PCI video board
- Microsoft PS/2-compatible mouse
- 1 parallel port (uses a DB-25 connector)
- 2 RS-232 serial ports (use DB-9 connectors); 4 additional available through the Rocket Port option
- IBM® PS/2® compatible keyboard (uses a PS/2 style, 5 pin mini DIN connector). German and Spanish keyboards are also available.

Hardware option cards

These option cards are available (these cards are standard on some models).

- LAN (Token Ring and Ethernet) multivendor qualified
- SoundBlaster compatible plug-and-play
- Rocket Port (Comm RS-232)
- modem

Memory

The computer has a base memory of 640 KB. Available extended memory ranges from 16 MB to 32 MB, and can be configured up to 128 MB.

Operating system

The PC's operating system is Microsoft Windows 95.

PC environmental specifications

temperature	operating: non-operating:	10° to 35° C (50° to 95° F) -40° to 70° C (-40° to 158° F)
humidity	operating: non-operating:	80% RH @ 36° C (41° F) non-condensing 92% RH @ 36° C (50° to 95° F) non-condensing
altitude	operating: non-operating:	to 3,048 m (10,000 ft) to 15,240 m (50,000 ft)
noise at operator's position	41 dBA SPL maximum with peripherals idle	
electrostatic discharge	PC expansion unit tested to 15 kilovolts	
AC power	100 to 120 V AC, 50 Hz to 60 Hz (USA, Canada, Japan) 200 to 240 V AC, 50 Hz to 60 Hz (Europe, Australia, Asia, South Africa)	

PC physical specifications

height (with feet installed)	15.94 cm (6.25 inches)
width	43.35 cm (17.0 inches)
depth	43.99 cm (17.25 inches)
weight with diskette drive	9.7 Kg (21.4 pounds)

System diagnostics

System diagnostics include:

- audio level meter
- local/remote loopback capability, controlled by software
- internal clock generation for stand-alone testing
- on-screen communications diagnostics and error reports
- communications line rate measurement

Board diagnostics include:

- video
- codec
- expansion box
- interconnect
- board serial number and revision
- remote access capability

Error tolerance rates

With normal audio and motion, the system operates at error rates of 1×10^{-6} or less.

With limited audio and limited motion, the system operates at error rates of 1×10^{-5}.

C

Symbol Legend

This table gives you the meanings of symbols that appear on ESA system hardware components.

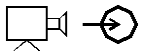
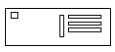
Symbol Legend

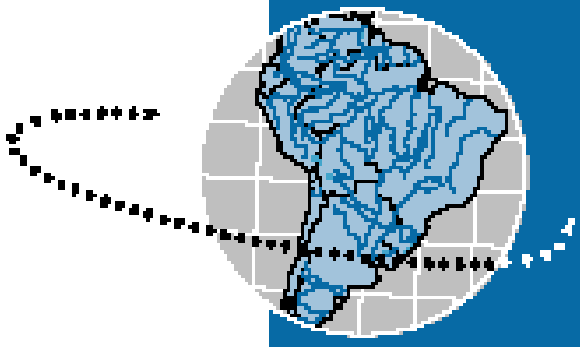
Symbol	Meaning
 INPUT	ENTRÉE EINGANG INPUT ENTRADA 輸入 입력
 OUTPUT	SORTIE AUSGANG OUTPUT SALIDA 輸出 출력

Symbol Legend (continued)

Symbol	Meaning
 MICROPHONE	MICRO MIKROFON MICROFONO MICROFONO 扩音器 마이크로폰
 AUDIO	AUDIO TON AUDIO AUDIO 音响 오디오
 VIDEO	VIDÉO BILD VIDEO VIDEO 影像 비디오
 VIDEO CASSETTE RECORDER	MAGNÉTOSCOPE VCR VCR VCR 录像机 VCR
 CONTROL S	COMMAND_S STEUERUNGEN CONTROL_S CONTROL_S 控制 제어부

Symbol Legend (continued)

Symbol	Meaning
 CAMERA VIDEO INPUT	ENTRÉE CAMERA KAMERA EINGANG INPUT TELECAMERA ENTRADA DE CAMERA 摄像机输入 카메라 입력
 MONITOR VIDEO OUTPUT	SORTIE VIDÉO BILD AUSGANG OUTPUT VIDEO SALIDA DE VIDEO 影像输出 비디오 출력
 PERSONAL COMPUTER	ORDINATEUR PERSONAL COMPUTER PERSONAL COMPUTER ORDENADOR PERSONAL 个人电脑 개인 컴퓨터
POWER	INTERRUPTEUR STROM ALIMENTAZIONE ENCENDIDO 电源 전원



Glossary

Annex D. H.221 standard for sending and receiving slides.

AppsView. VTEL's Windows-based videoconference user interface.

ATAPI. Attachment Packet Interface specification that standardizes the interface for CD-ROM and tape drives.

BRI. See ISDN.

CIF. Common Intermediate Format. A video format with an image size of 352 pixels by 288 pixels that transmits 36.45 Mbps at 30 frames per second.

codec. coder-decoder. A device that encodes an incoming analog signal into a digital signal for transmission to another codec, which decodes the digital signal into analog format. In videoconferencing, a codec typically codes and decodes video and audio.

composite video. A television signal where the chrominance signal is a sine wave modulated onto the luminance signal which acts as a subcarrier. Used in NTSC and PAL TV systems.

EIA. Electronic Industries Association. A United States organization that sets standards for electronic products.

FCIF. Full Common Intermediate Format. A video format with an image size of 352 pixels by 288 pixels.

frame rate. The frequency that video frames appear on a monitor, usually measured in frames per second (fps). Broadcast-quality video generally consists of 30 fps. Full-motion videoconferencing typically offers video in the range of 10 to 15 frames per second. At very low bandwidths, such as 56 or 112 Kbps, the frame rate may be lower.

full-duplex audio. Audio that allows remote sites to speak simultaneously without losing audio contact. Full-duplex audio may be provided in a point-to-point or multipoint conference.

G.711. ITU-T audio algorithm, 64 Kbps, 3.4 kHz.

G.722. ITU-T audio algorithm, 48-56-64 Kbps, 5 to 7 KHz.

G.728. ITU-T audio algorithm, 16 Kbps, 3.4 kHz.

H.221. A framing standard that is part of the ITU-T's H.320 set of video interoperability recommendations. Specifies synchronous operation in which the coder and decoder handshake and agree upon timing.

H.261. An ITU-T standard for a video codec used on ISDN lines.

HDLC protocol. High Level Data Link Control. In this guide, VTEL HDLC refers to VTEL's proprietary version of the standard bit-oriented protocol developed by the International Standards Organization (ISO).

IMUX. Inverse multiplexer.

ISDN. Integrated Services Digital Network. An international standard for transmitting voice, data, and video over digital lines at 64 Kbps. ISDN uses two B channels to carry voice and data and a third D channel for control signals.

BRI. Basic Rate Service. Provides two B channels and one D channel. In North America, Primary Rate Service (PRI) provides 23 B channels and one D channel. In Europe, PRI provides 30 B channels and one D channel.

ITU-T. International Telecommunication Union Telecommunication Standardization Sector (formerly the CCITT). An international organization that sets communication standards.

JPEG. Joint Photographic Experts Group. Worldwide standard for image compression.

kilobits per second. Measure of rate of digital transmission, often abbreviated Kbps.

MAXFax. VTEL's Informational Retrieval Service. The MAXFax number is 512-314-2551.

MediaConferencing. A conference in which information (including video, audio, document, and computer data) can be exchanged.

multiplexer. Electronic equipment that allows two or more signals to be transmitted over one communications circuit.

MCU. Multiway Control Unit. Device that allows more than two sites to be connected in a videoconference. Also called a digital switch or video bridge.

NT-1. Converts BRI from 2-wire public network format to the 4-wire consumer equipment. Conditions and monitors the line. May be a component of an inverse multiplexer.

NTSC. North American standard for analog video format.

PAL. European standard for analog video format.

Pixel. Picture element. A measure of resolution for video format.

QCIF. Quarter CIF. A video format that transmits 9.115 Mb at 30 frames per second, which is one quarter the speed of CIF. A lower resolution (176 pixels by 144 pixels) than FCIF, but is used on more videoconferencing systems than FCIF.

RJ-45. Registered Jack 45. An 8-connector modular jack used for data transmission over standard telephone wire.

RS-366. An EIA interface standard for auto dialing.

S-Video. A higher resolution version of composite video. See also composite video.

Switched 56. SW 56. Digital transmission at 56 Kbps, typically over a 2-wire or 4-wire switched 56 line. Switched 56 is primarily used in North America.

T1. Transmission system in which time division multiplexing is used to carry 24 digital voice or data channels at the rate of 1.544 Mbps over copper wire.

TA. Terminal Adapter. An adapter commonly used with an ISDN BRI line.

voice-activated switching. In multiway videoconferencing, lets all participating sites automatically see the site that is currently speaking.

V.35. Transmission interface between the codec and the transmission link that permits switched 56 connectivity.

Index

A

B

C

D

E

F

G

H

I

K

L

M

N

O

P

Q

R

S

T

U

V

W