UF/IFAS Interactive Videoconferencing Network Handbook

by

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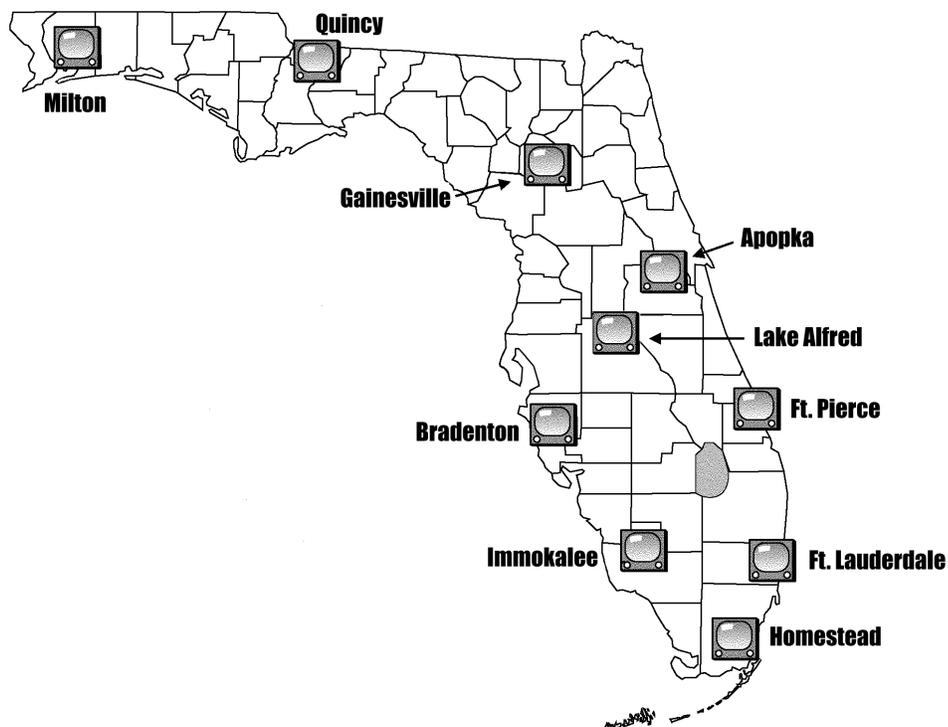# UF/IFAS Interactive Videoconferencing Network (IVN)

The UF/IFAS Interactive Videoconferencing Network provides live, two-way audio and video communication among participating locations. This allows faculty, staff, and administrators to teach courses, conduct extension programs and in-service training, or hold meetings and interviews across the state. Each site is equipped with a PictureTel Videoconferencing System which is voice activated (see page 13 for *Equipment Descriptions).*

The network operates by sending audio and video signals through digital telephone lines. Either point-to-point (two sites) or multi-point (three or more sites) videoconferences can be scheduled. (Use an *Interactive Videoconferencing Network Request Form* to schedule a videoconference.).

During point-to-point videoconferences, you always see the other site. During multi-point videoconferences, it takes five to ten seconds for the video to follow the audio, and you see who spoke right before you. For example: If someone in Gainesville is speaking, and then someone in Milton starts to talk, everyone sees Milton after about five seconds, except Milton—they continue to see Gainesville because Gainesville spoke last. You can always see yourself in the picture-in-picture window.

The UF/IFAS Interactive Videoconferencing Network is a dedicated network that uses a Bell South MCU (multi-conferencing unit). The network does <u>not</u> use satellite or ISDN technology. Refer to the *Technology Glossary* on page 16 for more technical details about how this network functions.

UF/IFAS Interactive Videoconferencing Network Sites
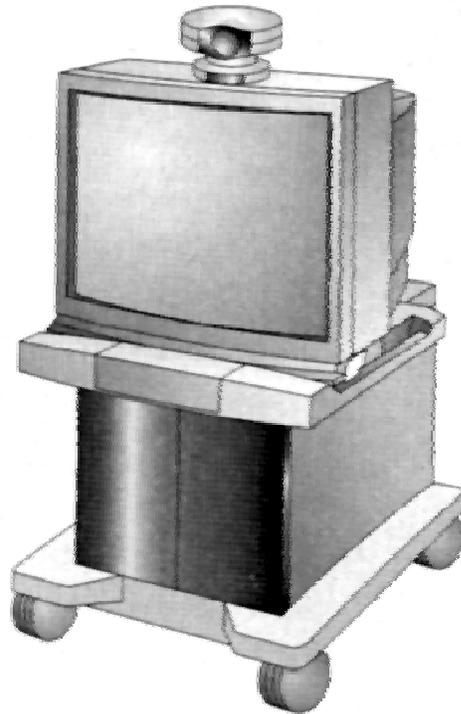
PictureTel Videoconferencing System

The PictureTel Videoconferencing System consists of several components. These are described in more detail in the *Equipment Descriptions* on page 13.

All IFAS Interactive Videoconference Network sites have the following standard equipment:
- Wireless Keypad
- Camera
- Television Monitor
- Microphone
- Speaker
- "White Box" (ADTRAN TSU)
- "Black Box" (Electronics Module)
- Video Cassette Recorder (VCR)
- Power Strip (surge protector)
- Videoconferencing Extension Cable (10 Base-T Cable)
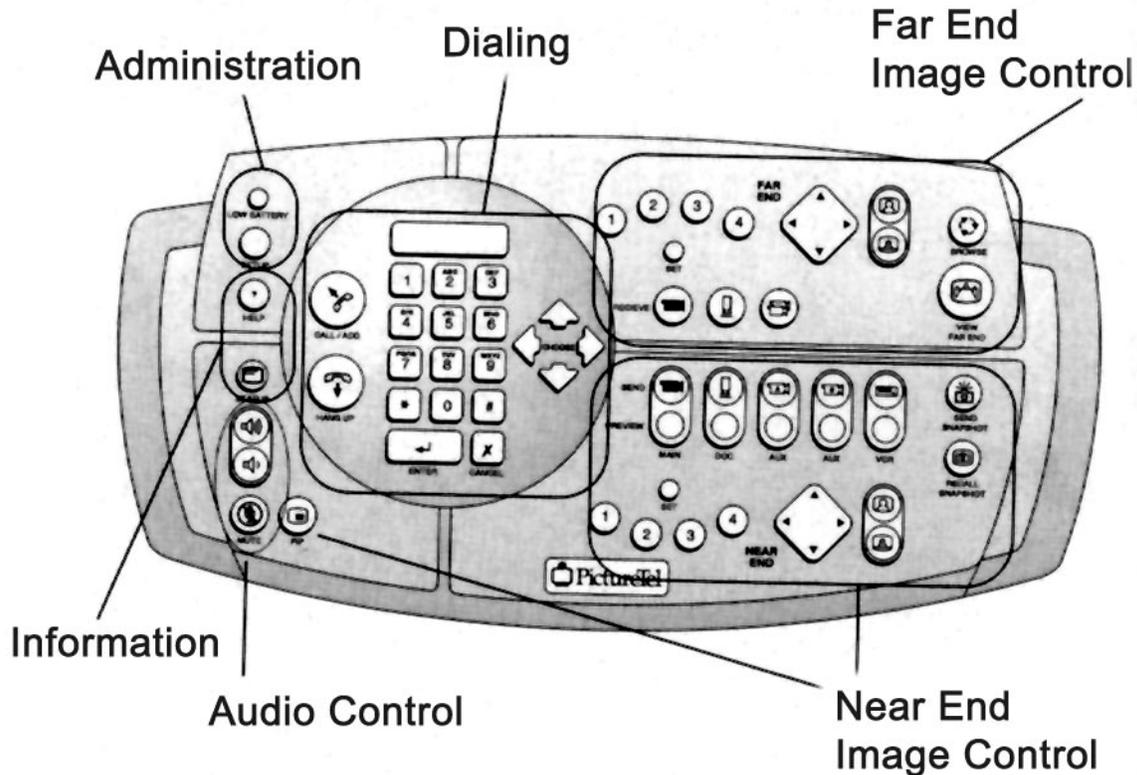- Cart

Some sites may have the following additional equipment
- Document Camera (Visual Presenter)
- Computer (with appropriate scan converter)
- Additional Microphones and Audio Mixer
- Additional Camera(s)
- LCD Projector

Wireless Keypad Operation (Remote Control)

The wireless keypad controls audio and video by sending an infrared signal to a receiver in the main camera atop the television monitor. If the wireless keypad is not pointed at the camera, it will not work. You can operate the wireless keypad up to 50 feet from the camera. The wireless keypad is divided into six basic sections shown below. **Only a few of the buttons are needed to participate in an interactive videoconference.** Please see page 4 for descriptions of the important keypad buttons.

Preview vs. Send

There are five buttons in the Near End Image Control section of the wireless keypad, which control the video source. The first button is for the main camera, and the last one is for the VCR. For some sites, these are the only buttons that are operational. The second button is for a document camera, and the third and fourth buttons are auxiliary sources, such as additional cameras or a computer/scan converter. Pressing "Preview" on any of the buttons puts the image from that video source on the main part of the television monitor. **OTHER SITES WILL NOT SEE THIS IMAGE**. Pressing "Send" on any of the buttons will put that video source on the picture-in-picture part of the monitor AND will send the image to other sites.

Descriptions of Keypad Buttons

(Near End Image Control) press to SEND an image from your "main" camera atop the television monitor so the remote locations can see site.

(Near End Image Control) Press to SEND video from your VCR. **You can not play and record video from the VCR at the same time.**

(Near End Image Control) Press to zoom the "main" camera in or out making objects at your site appear close or distant to the camera.

(Near End Image Control) Press to pan or tilt the "main" camera at your site.

(Near End Image Control) Press to set or use the four pre-sets for your "main" camera. Pan or tilt the camera to a desired location; press SET button; then press number 1, 2, 3 or 4. To move the camera to a pre-set location, press the corresponding number.

(Near End Image Control) Press to display or remove your Picture-in-Picture (PIP) widow.

(Audio Control) Press to adjust the volume on your speaker.

(Audio Control) Press to MUTE your microphone. **ALWAYS** keep your microphone muted when no one at your site is speaking.

(Information) Press for HELP or refer to the *PictureTel User's Guide*

Never press the snapshot button!! This sends a still image, which is not useful in the videoconference. If someone inadvertently sends a snapshot, press VIEW FAR END on the Far End Image Control section to clear the snapshot and restore the video.

Presenting "On-Camera"

You may need to alter your presentation style for interactive videoconferencing. The tips below give you an idea of some things to consider when planning your videoconference.

"Ground Rules"
Lay down the "ground rules" at the beginning of the semester or meeting and assure they are followed. One rule, for example, would be for students in Gainesville to always press the microphone button when they speak.

"Chunk" It
Present your material in "chunks." Don't spend more than 15 minutes lecturing without some type of change in the method of delivering information. Some examples of different delivery methods include panel discussions, group activities, or watching a video.

Walking Around
It is best to stand or sit at a desk because walking around may be distracting for viewers.

Hand Movements
Avoid quick, wide-sweeping hand movements. Because the video is sent across telephone lines at a lower frame-rate than broadcast television, the images tend to look a little "jerky", like a strobe light effect, if you move your arms too quickly.

Addressing the Camera
Look directly at the camera as much as possible, even to the point of addressing the camera when you talk to someone in the same room with you. This practice helps the participants at other locations feel more like they are also in the same room. Instructors and site facilitators should guide participants to also address the camera.

Pause
Pause more often than in a traditional face-to-face setting to give participants at other locations an opportunity to speak.

Practice
Practice using the equipment and prepare in advance. You may need several weeks of lead time to fully prepare a course conducted by interactive videoconferencing.

Relax
You will become comfortable with your environment, and participants will become comfortable with your presentation style.

Get Help
Find out what works from colleagues who have used interactive videoconferencing. Discuss their successes and problems. Be open for suggestions on how to improve your delivery on interactive videoconferencing.

Preparing Graphics

Ratio (height by width)
Visual materials need to be designed in a three (height) by four (length) ratio to fit a television screen. Computer graphics, photographic slides, and overhead projection materials usually have a two by three ratio. This means that the edges of the visual material will be cut off when it is converted to video.

Safe Area
The central 80 percent of a computer monitor is the "safe area" for transferring text and graphics to video. Keep all information in this area, or else it will be cut off when converted to video. This is true for all visuals materials to be designed for a three (height) by four (length) ratio monitor. (Visit the Web site of IFAS Communication Services' Distance Education Unit at http://disted.ifas.ufl.edu for a downloadable safe area template.)

Number of Words/Lines
The number of words per line and the number of lines per page should be limited. Too many letters and numbers on a television or computer screen make the information difficult to read. A good rule is to limit words to six per line and six lines per page. Information is best presented using "bullet" points or key words.

Letters
It is difficult to read all small or all capital letters. A combination of small and capital letters should be used.

Colors
Bright, saturated colors are difficult to read on a television or computer screen. A dark blue background with yellow or white text looks the best. The text should have a slight drop shadow.

Fonts (size and type)
Use a minimum font size of 32 points. Fonts that are sans serif, without lines on the ends of each letter, will be easier to read on a television screen. Arial and CG Omega are examples of sans serif fonts.

Presentation Software
It is recommended to develop your visual materials with presentation computer software such as Microsoft PowerPoint.

Conducting an Interactive Videoconference

During interactive videoconferencing presentations—whether they are academic courses, extension activities, or meetings - it's important to understand that <u>interaction</u> must be planned and orchestrated. The key to interactivity is thoughtful instructional design that takes into account the teaching objectives or purposes of the course, training, or meeting.

Roll Call
Open each videoconference with an informal "roll call" to make sure all sites are connected and give participants a chance to become accustomed to this communication method.

Call on Sites
Call on specific sites or people for questions or comments. Rarely will someone break in with a question. **You must encourage interaction.**

"10-Second Rule"
When you ask for a question from a remote site, give them a chance to respond. Wait at least 10 seconds before saying anything else or going to another site.

Delivery Systems
Integrate a variety of delivery systems for feedback and interaction, such as fax, chat rooms, electronic bulletin boards, e-mail, and individual or conference calls. All interaction does **<u>not</u>** need to occur during the videoconference.

On-site Activities
Arrange for concurrent group activities, like role playing or debating, at each local site. Then ask sites to respond so everyone participating in the videoconference can be involved in a large group discussion. The instructor may determine if a sample of responses is sufficient or if each group needs to respond. But don't do too many on-site-only activities; remember that videoconferencing time is money.

Course Materials
Provide a strong print or Web component to supplement the videoconferencing presentations. A course outline for participants is essential. Be sure to allow enough time for materials, if mailed, to reach their intended destinations.

Role of a Site Coordinator

Videoconferencing site facilitators/coordinators are a vital component in our Distance Education effort. There are two main divisions of responsibility. Some sites may assign both roles to one person and other sites may designate two persons. The first role is that of academic coordinator. This person coordinates Distance Education programs received by or originated from the site, and integrates them into the site's own teaching program, if any. He or she can assist instructors off-site in administering tests, conducting labs and so forth.

The second role involves technical support. This person keeps track of the videoconferencing schedule, maintains equipment, makes sure that rooms are open and equipment is set up properly for conferences, and so on. Whether or not this person has other duties, we strongly recommend that all sites ensure that this is a fulltime position. IFAS Communication Services personnel are ready to provide training and support for site facilitators, particularly on the technical side.

A site coordinator may be responsible for some, or all, of the following functions:

Publicizing the Event—A site coordinator, working in conjunction with the presentation originator, may help to identify participants in the area which would be interested in viewing the program.

Interacting with Participants—A site coordinator may lead discussion at their local site and provide subject-matter knowledge, where appropriate.

Operating Equipment—The site coordinator must operate the wireless key pad and related videoconferencing equipment.

Distributing Materials—A site coordinator may need to distribute books, handouts, etc. to participants.

Facilitator Guidelines for Better Videoconferencing

Turn on the PictureTel system at the very beginning of test time, rather than waiting until right before the conference begins. This will give us more time to correct any problems that may arise.

Encourage participants to sit in a closer grouping, and closer to the microphone. People don't like to be told where to sit, but this would make it much easier for other sites to see and hear whomever is speaking.

Make use of your four preset buttons to zoom in on small groups or individuals who may be speaking the most. Once again, this makes better use of the interactivity so other sites can see facial expressions and gestures of the speaker.
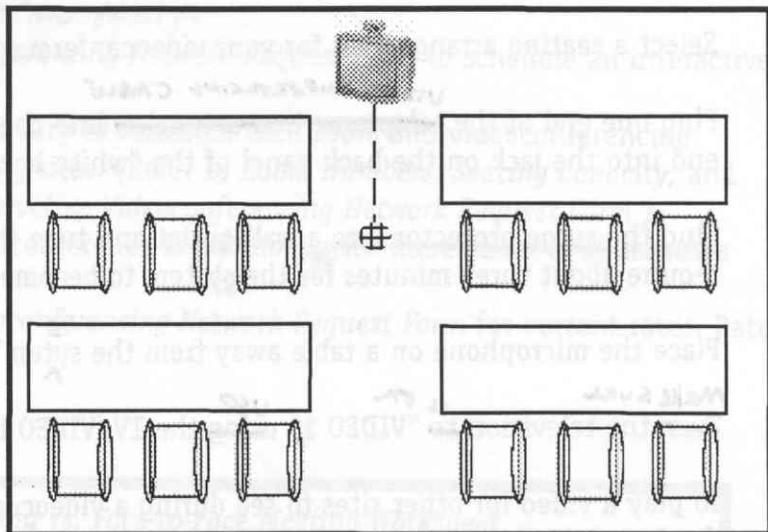
Mute your mike as soon as your site finishes speaking. When we don't, the undertone echo is a little distracting even with the echo cancellation software.

Advise participants beforehand not to conduct conversations while someone else at the site is speaking. This is particularly bad when the conversationalists are closer to the mike than the speaker.
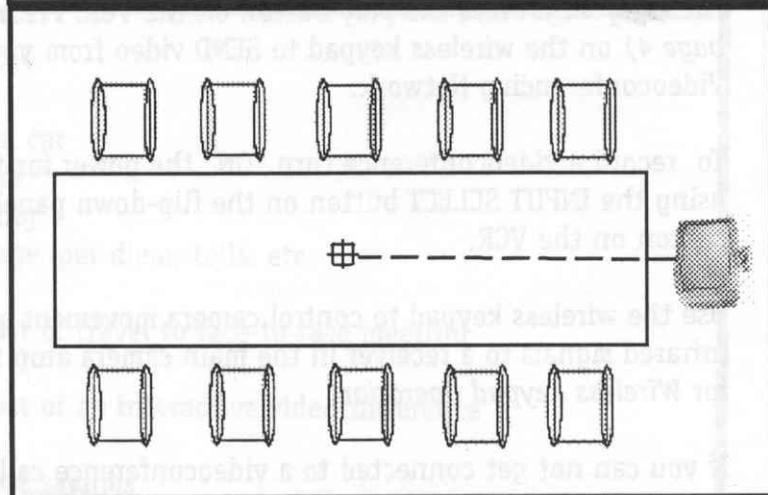
Seating Arrangements

Three common seating arrangements are shown on this page. Notice the placement of the microphone in each illustration.
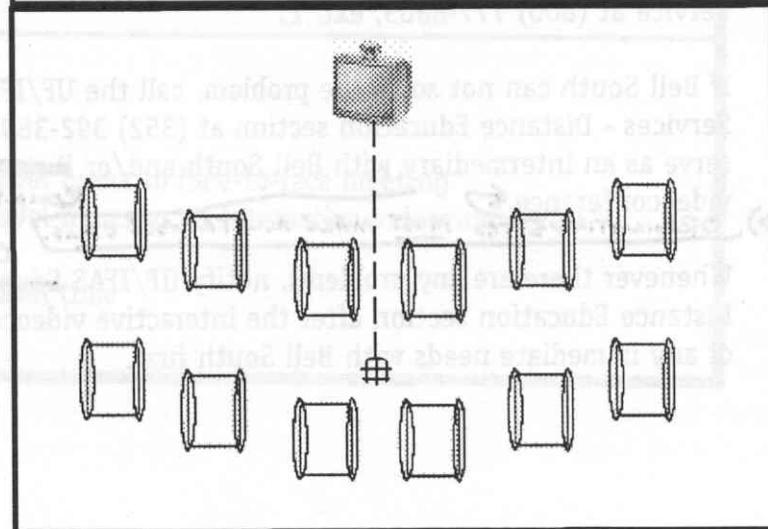
Classroom Style

Conference Style

Theater Style

UF/IFAS Interactive Videoconferencing Network Checklist

Complete and submit the *Interactive Videoconferencing Network Request Form.*

Plug one end of the videoconferencing cable into the videoconferencing wall jack and the other end into the jack on the back panel of the "white box" (ADTRAN TSU), marked "NETWORK."

Plug the surge protector into a wall outlet and turn the power switch to "ON." It will require about three minutes for the system to become operational.

Place the microphone on a table away from the system's speaker and in the center of participants to avoid audio feedback.

Make sure the television is on "VIDEO 1," using the TV/VIDEO button located below the screen.

To play a video for other sites to see during a videoconference turn "ON" the power for the VCR. Press the play button on the VCR. Press the *Near End Image Control* (see page four) on the wireless keypad to SEND video from your VCR using the Interactive Videoconferencing Network.

To record a videoconference, turn "ON" the power for the VCR. Set the VCR on L1 using the INPUT SELECT button on the flip-down panel in front. Press the record button on the VCR.

Use the wireless keypad to control camera movement and audio level. The keypad sends infrared signals to a receiver in the main camera atop the television monitor. See page 3 for *Wireless Keypad Operation.*

If you can not get connected to a videoconference, turn your equipment off and on again ("reboot"). If that does not work, call Bell South's Videoconferencing Service at (800) 777-8805, ext. 2.

If Bell South can not solve the problem, call the UF/IFAS Communication Services - Distance Education section at (352) 392-3893, or Suncom. 622-3893. They will serve as an intermediary with Bell South and/or the PictureTel service provider while you return to the videoconference. **Originating sites must make all trouble calls.**

Whenever there are any problems, notify UF/IFAS Communication Services Distance Education section after the interactive videoconference has ended, but take care of any immediate needs with Bell South first.

Cost

- All interactive videoconferencing charges are billed by UF/IFAS Communication Services, to the requesting party. If sites dial in via ISDN, any additional charges from those sites are the responsibility of the requesting party.

- Use the *Interactive Videoconferencing Network Request Form* to schedule an interactive videoconference.

- It is the requestor's responsibility to schedule each room and videoconferencing equipment at all participating sites. (Refer to *Room Numbers, Seating Capacity,* and *Site Coordinators* on the *Interactive Videoconferencing Network Request Form.)*

- The minimum time per videoconference is ½ hour.

- *Refer to the Interactive Videoconferencing Network Request Form* for current rates. Rates are subject to change.

Interactive Videoconferencing vs. Face-to-Face Meeting Worksheet

Cost

    _____ Cost of rental car
+ _____ Cost of airfare
+ _____ Cost of lodging
+ _____ Cost of mileage, per diem, tolls, etc.

= _____ Estimated cost of travel to face-to-face meeting

- _____ Estimated cost of an interactive videoconference

= _____ Estimated cost of savings

Time

    _____ Estimated travel hours to face-to-face meeting
    _____ Estimated travel hours to an interactive videoconference

= _____ Estimated travel time

Equipment Descriptions

The PictureTel Videoconferencing System consists of several components.

Wireless Keypad
The wireless keypad controls audio and video by sending an infrared signal to a receiver in the main camera atop the television monitor. The wireless keypad must always be pointed at the camera. You can operate the wireless keypad up to 50 feet from the camera. Refer to *Wireless Keypad Operation* on page three for more information.

Camera
The "main" camera atop the television monitor allows everyone in the room to be seen. Zoom, pan and tilt functions are controlled through the wireless keypad. The camera's focus and brightness are automatically adjusted.

Television Monitor
The 27"picture-in-picture (PIP) television monitor displays both local and remote sites during a videoconference. The PIP window usually shows you or the image you are sending. However, while you are previewing a camera or another source, the PIP displays a remote site. The PIP appears in the lower right corner of your screen.

Microphone
The microphone can pick up voices within a 14-feet radius. It should be placed in the middle of the room and away from the system's speaker to avoid feedback. Refer to *Seating Arrangements* on page 10 for illustrations on microphone placement.

Speaker
The system's speaker is designed for enhancing audio in large rooms; it enables you to significantly improve the quality of the audio in most videoconferencing environments.

"White Box" (ADTRAN TSU)
The "White Box" ADTRAN TSU serves as the link between your digital telephone line and the PictureTel Videoconferencing System. The videoconference cable plugs into the videoconferencing wall jack and the *"White Box"* Network jack on the back panel.

"Black Box" (Electronics Module)
The electronics module houses all of the PictureTel Videoconferencing System computer hardware and software. Audio and video cables connect to the back of *the "Black Box."*

Videocassette Recorder (VCR)
The VHS videocassette recorder allows sites to either record videoconferencing sessions on VHS videotapes, or play videotapes to both local and remote audiences. **You can not record and play a videotape on the VCR at the same time.** To play a video for other sites to see during a videoconference turn "ON" the power for the VCR. Press the play button on the VCR. Press the *Near End Image Control (see page 4)* on the wireless keypad to SEND video from your VCR using the Interactive Videoconferencing Network. To record a videoconference, turn "ON" the power for the VCR. Set the VCR on L1 using the INPUT SELECT button on the flip-down panel in front. Press the record button on the VCR.

Power Strip (Surge Protector)
It is recommended to plug the "black box", speaker, and "white box" into the power strip or surge protector. The television plugs into the back of the "black box" electronics module. The power-strip on/off switch controls the power to all the videoconferencing system components; however, you still have to turn "on" the power for the VCR.

Videoconferencing Extension Cable (10Base-T Cable)
The videoconferencing extension cable (10Base-T cable) plugs into the videoconferencing wall jack and the "white box" ADTRAN TSU Network jack on the back panel. The videoconferencing extension cable connects your videoconferencing system to the remote locations via the network bridge.

Cart
PictureTel's portable utility cart allows for easy movement from room to room for videoconferencing and storage.

<u>NOTE</u>: Refer to PictureTel user's guide, administrator's guide and installation booklets, the television and VCR operating instructions, and the ADTRAN TSU user's manual for more details.

Optional Equipment

Some sites may have the following additional equipment to transmit graphics and slides.

Document Camera
The document camera allows you to transmit text or graphics in a fashion similar to that of an overhead projector. It is very effective for displaying pictures and illustrations. It is recommended to use light blue paper for your overheads.

Slide-to-Video Converter (GAINESVILLE ONLY)
 The slide-to-video converter can be used to display 35mm slide images. Slides are stacked in a carousel like a standard slide projector.

Computer
A PC or Macintosh computer can be used to deliver graphics or presentation software. A scan converter is needed to convert PC or Mac computer signals to video signals.

Microphone and Audio Mixers
Additional microphones and an audio mixer can be added to enhance the audio portion of a site's videoconference.

Instructor Camera
LCD Projector

Technical Glossary

CODEC COde-DECode or COmpress-DECompress. Used to convert analog signals to digital signals for transmission over a digital medium and back again to the original analog form. The electronics module serves as the CODEC for the PictureTel Videoconferencing System.

Compressed Video A process of sending video signals over a communications channel. It transmits only the changes from one frame to the next. The compressed video signal quality decreases as the transmission speed decreases.

ISDN Integrated Services Digital Network. A switched digital service using two or more 56 kbps or 64 kbps channels for data transmission. ISDN has dial-out capability. The UF/IFAS Interactive Videoconferencing Network is **not** ISDN-based, but ISDN sites can dial in to the UF/IFAS network's bridge.

Kbps Kilobits per second. The transmission speed of video/audio signal through the digital telephone line. The UF/IFAS Interactive Videoconferencing Network uses 384 kbps, equivalent to ¼ T1 line.

MCU multi-conferencing unit or "bridge." Allows multiple sites to participate in a videoconference. The UF/IFAS Interactive Videoconferencing Network uses a Bell South MCU located in Charlotte, NC.

Pan Horizontal camera movement. You can pan the camera left and right using the wireless keypad.

T1 Digital telephone line used to transmit audio and video signals. A T1 signal is divided into 24 circuits which operates at 64 kbps each. The UF/IFAS Interactive Videoconferencing Network uses ¼ T1 line equivalent to 384 kbps.

Tilt Vertical camera movement. You can tilt the camera up and down using the wireless keypad.

Videoconferencing An electronic meeting at which you can see, hear and talk to a group of people at a one or more locations. The UF/IFAS Interactive Videoconferencing Network uses digital telephone lines to conduct videoconferences.

Zoom Camera lens movement which makes objects appear close or distant. You can zoom in and out on an object or person using the wireless keypad.

Equipment Troubleshooting

Problem	What to Do
Audio feedback	Move the microphone away from the system's speaker
Audio echo	Wait until all sites are connected. If echo still persists, reboot the system. Call Bell South at (800) 777-8805, ext. 2 after a couple of attempts.
Camera will not move	Make sure nothing is blocking the infrared signal between your wireless keypad and the camera, and make sure camera is plugged into the back of the "Black Box"
Other sites can not hear my site	Make sure the MUTE button on the wireless keypad is "off".
TV has no picture	Select "VIDEO 1" using the TV/VIDEO button located below the television screen.
VCR does not record	Select the VCR to "L1" using the INPUT SELECT button on the flip-down panel in front.
Videoconference will not connect	Make sure the videoconferencing line extension is plugged into both the wall jack and "White Box" ADTRAN TSU jack. Reboot the system. Call Bell South @ (800) 777-8805, ext. 2 after a couple of attempts.
Wireless keypad will not work	Check the low battery indicator in the upper left corner.