SETTOP 250™
User's Guide

VTEL™
Digital Visual Communications.℠

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FCC Notice

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generated, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his or her own expense.

Notice to Canadian Users

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

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicable aux appareils numériques de la class A prescrites dans le Réglement sur le brouillage radioélectrique édicté par le ministére des Communications du Canada.

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

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1. Read and understand all instructions in this manual.
2. Follow all warnings and instructions marked on the product.
3. Never spill liquid on the product or drop objects into the ventilation slots and openings. Doing so may result in serious damage to the components.
4. Do not remove the product cover. There are no user-serviceable parts. Attempting to disassemble the product can damage it and voids your warranty.
5. Repair or service must be performed by a qualified repair person.
6. The product is provided with a three-wire grounding type plug. This is a safety feature. Do not defeat the safety purpose of the grounding type plug. Do not staple or otherwise attach the AC power supply cord to building surfaces.
7. Do not use the product near water or in a wet or damp place (such as a wet basement).
8. Do not block or cover the ventilation slots and openings. They prevent the product from overheating. Do not place the product in a separate enclosure unless proper ventilation is provided.
9. Use only the supplied power supply and cord. Failure to do so will void the warranty and may cause severe damage to the product.

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VTEL makes the following limited warranties with regard to equipment sold:

The equipment shall be free of defects in material and workmanship under normal use for the lesser of one (1) year from the initial date of installation or fifteen (15) months from shipment date from VTEL, provided that the equipment has not been subject to accident, neglect, alteration, abuse, or misuse. VTEL provides this hardware warranty as a return to factory program. VTEL will ship a replacement part to Reseller, prepaid, within fifteen (15) business days of receipt of the defective part.

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1. Reseller has obtained a Returned Material Authorization (RMA) number from VTEL authorizing the return for such repair or replacement;

2. The equipment is returned to VTEL properly packaged, via overnight prepaid freight; and,

3. VTEL confirms that such equipment is defective.

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3. Defects related to Licensee's alteration of the Licensed Materials or reconfiguration of the hardware;

4. Defects appearing in the Licensed Material where any Licensed Materials are used in violation of the license granted;

5. That Licensed Materials will meet the requirements of the Licensee; - or -

6. That the operation of the VTEL equipment using the Licensed Materials will be uninterrupted or error-free.

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1 Setup & Configuration

This chapter guides you through the process to assemble your system and configure the network. On completion of this chapter you will be ready to make calls.

The following sections explain the cabling connections to the back panel, turning on the system, using the remote control, and entering the network information.

Before setting up your system, you must already have your network lines installed and have the required configuration information at hand.

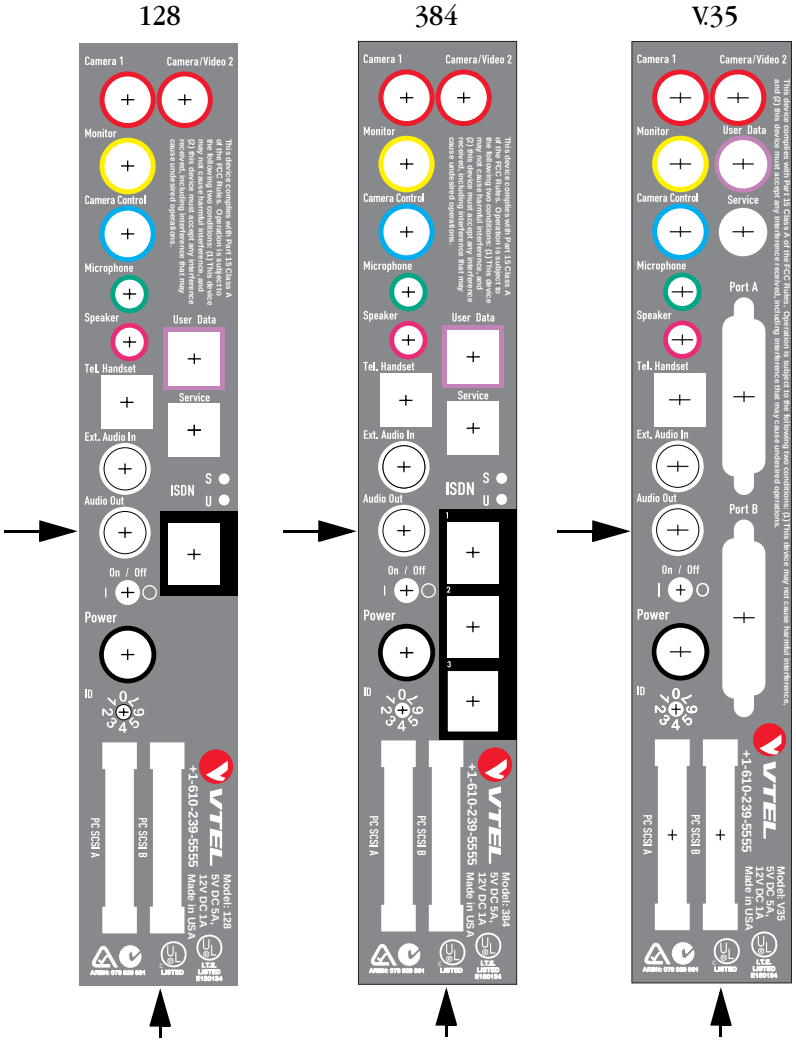
System Contents

The table below lists the components of your SETTOP 250 system:

Quantity	Part Number	Description
1	005-1898-01e	SETTOP Codec with S/T interface
1 to 3	290-314-01	RJ-45 Cable (ISDN models only, 128 = 1 cable, and 384 = 3 cables)
1 pair	290-320-01 or 290-321-01 or 290-322-01 or 290-323-01	V.35 Cable (V.35 model only) or RS-449 Cable or Ascend IMUX Cable or RS-530 Cable
1	600-2213-01	AudioTechnica Microphone with cable
1	605-774-10	Audio Cable
2	290-315-01	S-Video to Composite Cable adapters
2	290-316-01	S-Video Cables
1	600-2022-01	Sony D30 Camera and Power Cable Kit
1	290-318-01	Sony Camera Control Cable
1	290-324-01	NetMeeting Cable
1	600-2214-01	Remote Control Unit (RCU)
1	907-983-0x	User's Guide
1	907-984-0x	Installation Poster
1	005-1930-01	Installation & Orientation CD-ROM
1		Warranty Card

Connecting the System

The main connectors on the back of the unit are color coded to assist you in connecting cables.The figures below show the back of the 128, 384 and V.35 units. The arrows show foot placement.



1 **Foot -** Install the foot in either of the locations indicated by arrows on the previous page, depending on whether you intend to place the unit vertically or horizontally. Slide the clip on the foot over the side of the case until it clicks into place.

   If you are positioning the system vertically, insert the small button head screw from the accessories bag through the center of the foot and into the chassis for added stability. Tighten it with the hex key wrench provided.

2 **Main Camera -** Plug one end of a camera cable (red) into Camera 1, and plug the other end into the S Video connector on the camera. Next, plug one end of the camera control cable (blue) into the VISCA IN connector on the camera, and the other end into the Camera Control connector on the back of the unit. Connect the power adapter cable to the camera and into a wall outlet.

3 **Monitor -** Plug one end of the monitor video cable (yellow) into the Monitor connector on the back of the system, and the other end into the external video input on the monitor. This cable is designed for S-Video connections (multi-pin). If your monitor only has a composite connection (single pin), use one of the adapter cables that came with your system.

4 **Audio Out -** Plug one end of the audio cable (white) into the Audio Out connector on the back of the system, and the other into the left channel audio input on the monitor.

Note: Audio output is configured differently for connection to a VCR. See "Connecting a VCR" on page 55.

5 **Microphone -** Plug the microphone cord (green) into the Microphone jack.

6 **Network**

- ISDN S - For each line, plug one end of the phone cable (RJ-45) into the ISDN jack (black) on the back of the system, and plug the other end into the S/T connector on the NT-1. Connect the NT-1 to the network according to the instructions provided with the unit.
- ISDN U - For each line, plug one end of the phone cable (RJ-45) into the ISDN jack (black) on the back of the system, and the other end into the wall jack.
- V.35 - Connect one end of each cable (black) to the back of the system, and the other end to your Ascend IMUX or other network terminal adapter according to the manufacturer's instructions.

7 **Power Supply** - Plug the Power Supply Box into the Power Input. Then, plug the power cord into the Power Supply Box and the other end into a grounded outlet.

8 Turn on the camera.

9 Turn your monitor on and set it to Video 1 or Line 1.

10 Turn the SETTOP 250 system on. The On/Off switch is located on the back panel just above the power cord.

The power light flashes red and green as the system starts up. After about a minute, a VTEL logo screen displays. After a few seconds, the screen switches to the screen saver.

To see local video, move the camera using the remote control. After

Remote Control Buttons

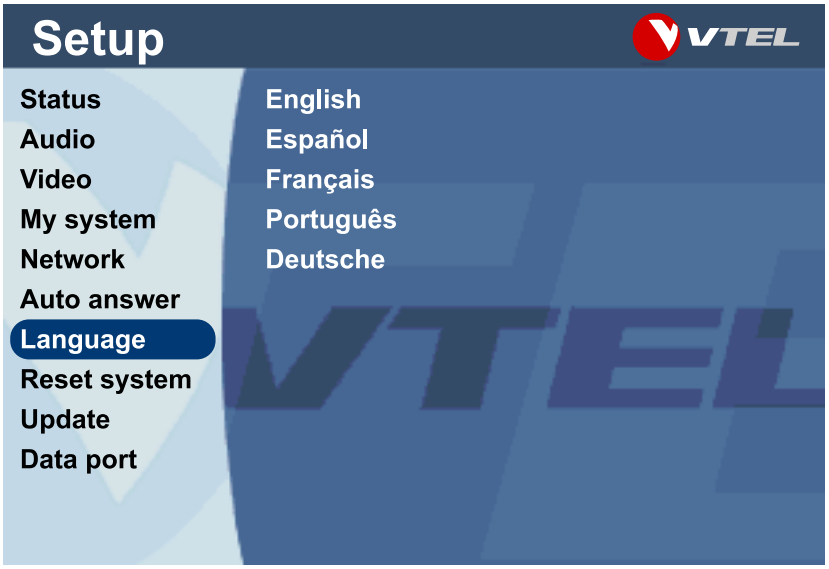
- **Hang Up -** Terminates a call.
- **Setup -** Accesses the setup menu options.
- **View -** Controls local and far end camera selection.
- **Call -** Opens the call menu.
- **Delete -** Backspaces and erases one character or number entry.
- **Save -** Saves local presets.
- **PIP -** Moves the Picture-in-Picture (PIP) around the four corners of the screen, full screen and turns it Off.
- **Snapshot -** Captures a still video image from either video source and sends it to the remote end. Also returns to viewing received snapshot.
- **Mute -** Turns off the microphone input. An icon appears in the upper portion of the screen to indicate when the microphone is muted.

- **Exit -** Leaves any menu and returns to the video if in a call, or to the screen saver if not in a call.
- **Here/There -** Toggles between control of your local cameras (Here) and control of the cameras on the other end of the call (There). An icon appears on the screen to indicate when you are controlling the far end camera.

- **Cursor keys** (up, down, left, right) **-** Control movement of the camera. Navigate up and down when in the onscreen menus. The menus are loops, so that going up from the first entry reaches the last, and going down from the last reaches the top of the menu. The left and right keys move between the right and left parts of the screen, and navigate through choices presented in pop-up menus.
- **Volume -** Raise or lower the audio volume level (+ / **-**)
- **Select -** Activates the highlighted screen function. Saves numeric and pop-up menu entries.
- **Zoom -** Press (+) for close ups, or press (**-**) for wider angle shots.
- **Dial Pad 0-9, *, # -** Enter numbers in menus, or select a name in the address book. During a conference, when no menus are showing, the number keys work as camera preset buttons. Buttons 1-4 are the local presets, and buttons 5-8 are the far-end presets.

Changing the Language

1 Press the **Setup** button to display the Setup menu.

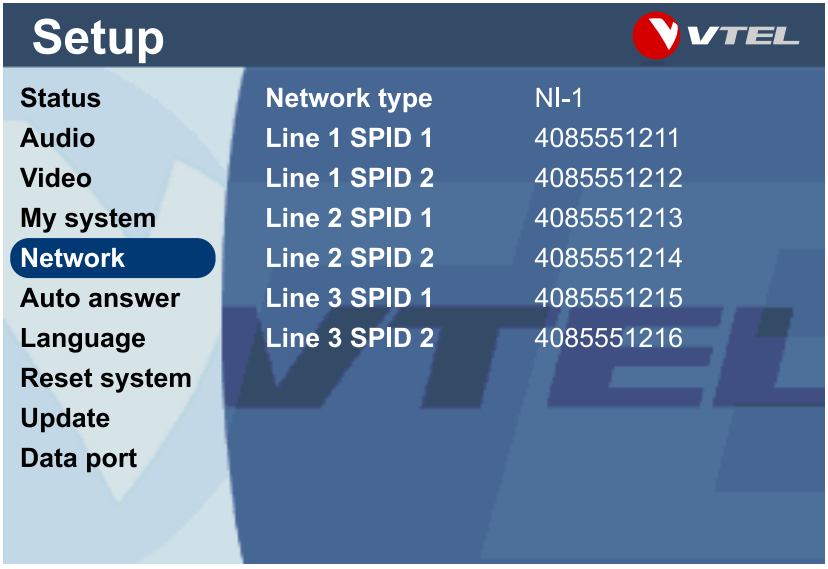


2 Move the highlight down to "Language" and press the right arrow.

3 Move the highlight down to the desired language and press **Select**. The menus will now be displayed in the language chosen.

Network Configuration

Press the **Setup** button to display the Setup menu. Move down to Network on the left menu, and the configuration menus for the type of network interface installed in your system will automatically appear on the right. Press the right arrow to enter the configuration menu.



ISDN

The information required to configure your ISDN network interface should have been provided to you by your network service provider when the lines were installed. Copy this information into the spaces provided below as a backup reference for service or reconfiguration. Then enter the information into the system.

Network Type

The choices are:

5ESS, NI 1, DMS 100,
NET3, EuroISDN, Deutsch 1TR6,
Aust. MLink, Aust. On Ramp,
VN4 France, and NTT Japan.

Network Type:_____

Service Profile Identification (SPIDs)

SPIDs are necessary in the United States and Canada for network types NI-1 and DMS 100 only. All other countries and network types do not use SPIDs. The SPID entry fields only display when the NI-1 or DMS 100 network type is selected.

NI-1 and DMS 100 networks require SPIDs, which are assigned by the telephone company. The SPID identifies your capabilities to the network switch. There are two B channels (telephone numbers) for each BRI line. The SPID can be the same as the telephone number for that channel, or it can be different. You may have one or two SPIDs for each line. Even if the SPID is the same for both channels, you must enter it in both places.

Line 1 B1: _____

Line 1 B2: _____

Line 2 B1: _____

Line 2 B2: _____

Line 3 B1: _____

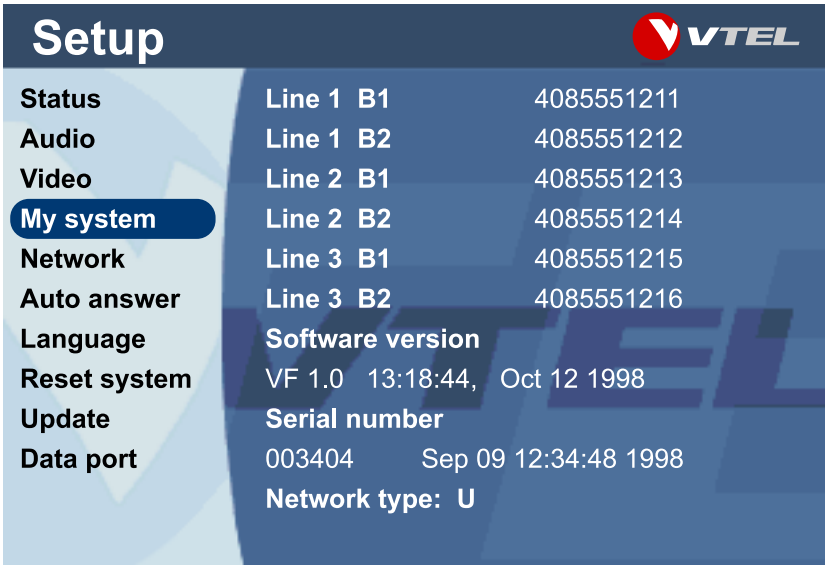
Line 3 B2: _____

To enter the numbers on the screen, move the highlight to the first line and press **Select**. Use the number keypad on the remote control to enter the numbers. If you make a mistake, press **Delete** to backspace. When you finish entering one line, press **Select** to save and exit that line. Move to the next line and repeat the procedure.

Important: Once you have finished entering all of the SPIDs on the screen, exit the menus and restart the system.

Telephone Numbers

After the system has restarted, open the Setup menu again and select My System. Enter the telephone numbers for all of the lines shown. The 128 system will only display two lines for phone numbers, while the 384 system will display six lines.



Line 1 B1: _____

Line 1 B2: _____

Line 2 B1: _____

Line 2 B2: _____

Line 3 B1: _____

Line 3 B2: _____

Note: When making actual calls, only the first number is used and the two connecting systems pass the other numbers to each other to simplify multiline dialing. (Exception: 2x56 and 2x64 calls require 2 numbers.) When giving your phone numbers to someone else, you would typically provide only the first one or two numbers.

V.35

Network Type

If your system will always be on and connected to another site, or will be controlled from a central hub so that calls are connected for you without dialing, select Dedicated.

If your system will operate like a telephone, where you will use an address book of telephone numbers to be speed dialed or manually dial calls, select Dial Up.

Call Profiles

If your V.35 system will be configured for operation on a dedicated network (no dialing), you do not need Call Profiles.

The Call Profile information is required for V.35 units that will be configured for operation on a switched network (dial up) through an external IMUX only. These profiles must match those required by your network terminal device (IMUX, DSU, etc.) and should be provided by your network administrator.

1 Channel Call Profile: _____

2 Channel Call Profile: _____

2x1 Channel Call Profile: _____

3 Channel Call Profile: _____

4 Channel Call Profile: _____

5 Channel Call Profile: _____

6 Channel Call Profile: _____

2 Making Your First Call

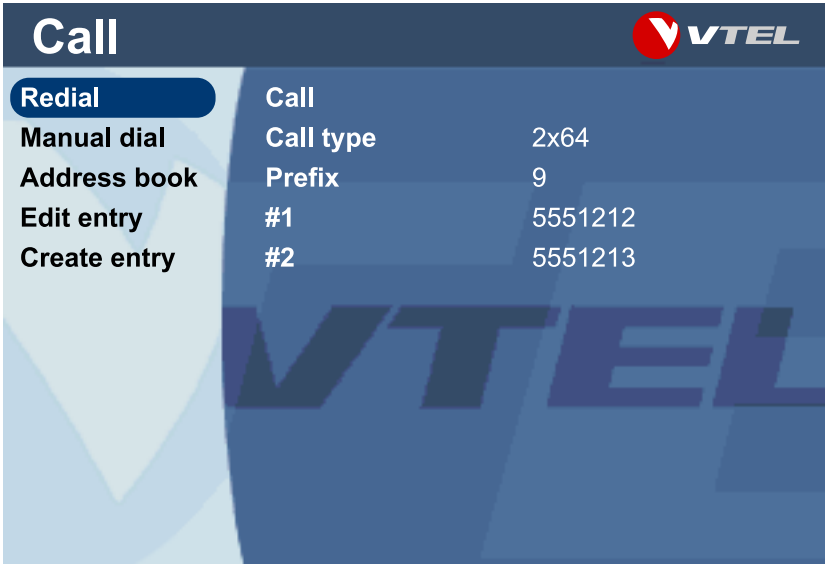
This chapter is a tutorial that will lead you through the process of entering a name and number in the address book. Then you will make your first call to a tutorial on how to use your system.

The basics are simple. You start a video call by pressing the Call button on the remote control. You end the call by pressing the Hang Up button. This chapter explains the details.

Note: Throughout the following instructions, *select* means moving the highlight to a menu entry using the arrow buttons on the remote control, then pressing the Select button.

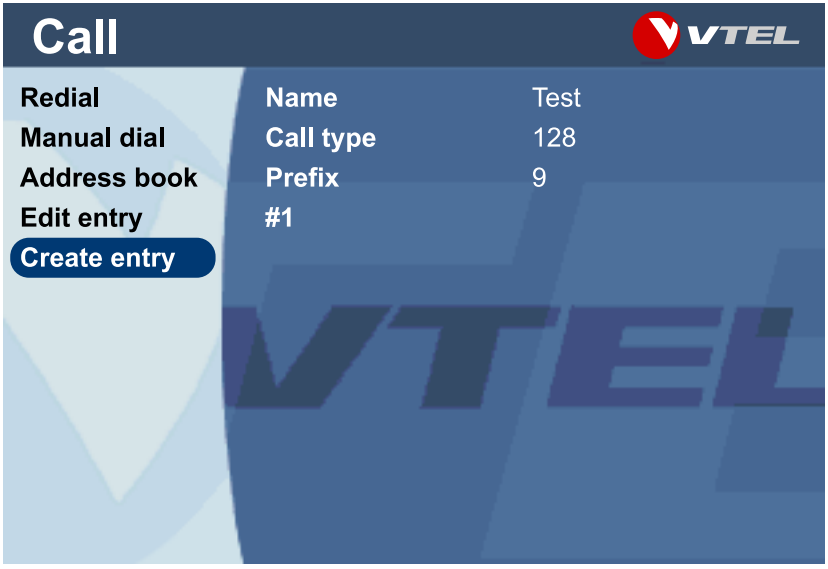
Call Menu

1 Press the **Call** button on the remote control to display the **Call** menu.



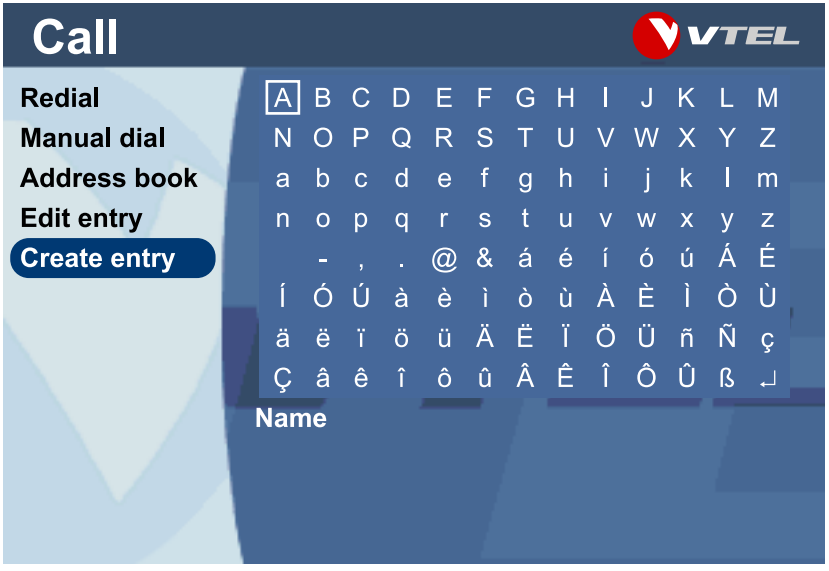
The highlight is on the top entry **Redial**. This menu also has selections for manual dialing, and an address book of speed dial numbers. Right now the address book is empty, so we will create a new entry.

2 Press the up arrow on the remote. Since the SETTOP 250 menus are loops, going up from the top entry will take you to the bottom of the list. You should now be on **Create entry**.



Create Entry

3 Press the right arrow to enter the menu on the right. The new highlight is on **Name**. Press **Select** to open up the Name entry screen shown below.

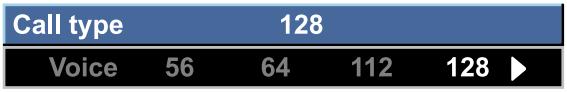


4 Enter the name "Test." Move around the alphabet using the arrow buttons on the remote. Once the square highlight is on the letter "T", press **Select** to enter it. A "T" now appears in the field at the bottom. Continue in the same way to enter the rest of the name. Remember, the highlight movement loops around the ends as a shortcut when the next letter is at the other end of a row or column.

If you make a mistake, use the delete button to erase backwards.

When you have finished, move to the carriage return symbol at the bottom right (↵) and press **Select** to save the name.

5 Move down to **Call type** and press **Select**. A horizontal drop menu of call rates appears. Move the bold selection to 128 and press **Select** again.



6 Move down to **Prefix** and press **Select**. The entry window on the right is activated. The prefix is whatever you need to dial to get out to the public network ('9' for example) or to make an international call. Enter the numbers directly from the remote number pad. When finished, press **Select** to close this item.

Note: When the number you have to dial is very long, you can put the international codes and area codes in this field if there is not enough room in the phone number field.

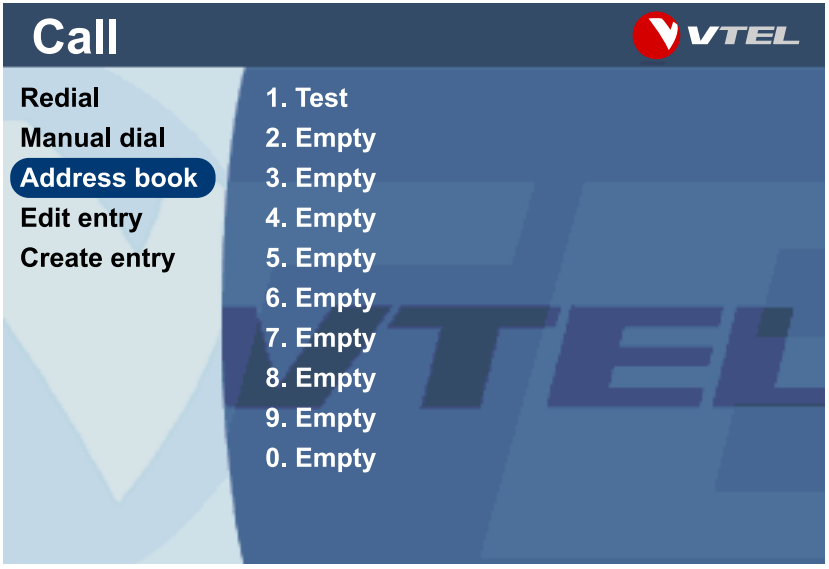
If you make a mistake, use the delete button to erase backwards.

7 Move down to **#1** and press **Select**. This is where the phone number is entered. This field holds up to 15 numbers. If you need more, put the prefixes and area codes in the Prefix box above.

Enter the number for the VTEL test video call listed on the insert in the accessories box. Then press **Select** to save it.

Congratulations! You have just created the first entry in your SETTOP 250 address book.

8 Press the left arrow to move back to the left menu and move up to **Address Book**. You will see the name you entered (Test) as the first entry on the menu if you are the first to use the system.Otherwise it will appear in alphabetical order.

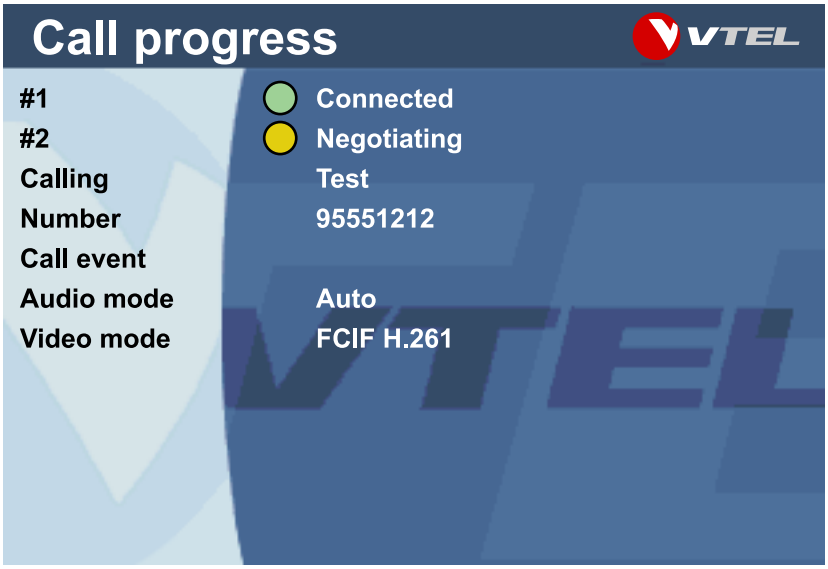


9 Press the number of the entry to jump to that selection (or press the right arrow and up/down), then press **Select** to begin dialing.

That's all there is to making a speed dial call.

Call Progress

The call progress screen shows you what happens on each channel as the call is connected. It also displays the name and number being dialed, and the audio and video modes used.



- (Red) Inactive - No connection.
- (Yellow) Dialing, Negotiating - Connection in progress.
- (Green) Connected - The connection is complete

Hang Up

When you have finished the video, press **Hang Up** to end the call.

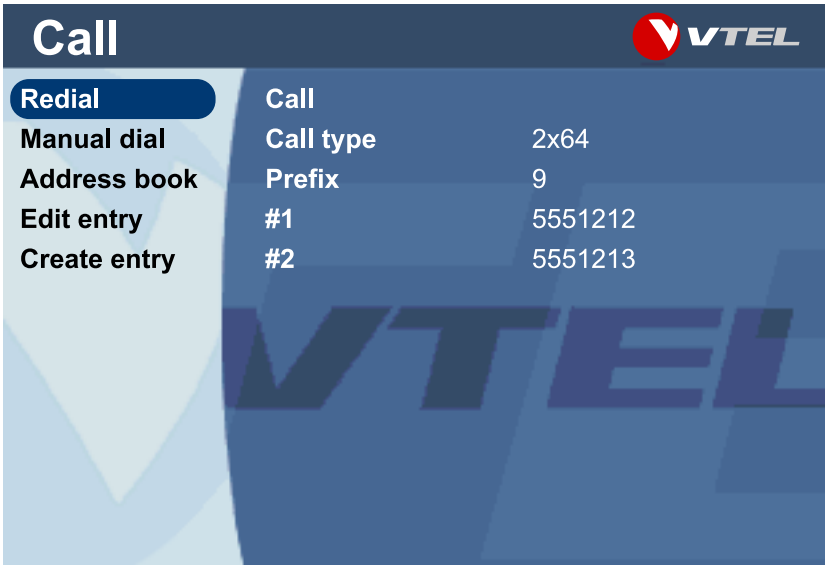
Congratulations! You have just done the most difficult task on the system. Once phone numbers are entered in the system, speed dialing is quick and easy.

You may want to leave this number in the address book so that other new users can make the test call and watch the video. When you want to delete it, select **Edit entry**, select the listing, and choose **Delete entry** from the bottom of the menu.

The other menu items are just as easy to use.

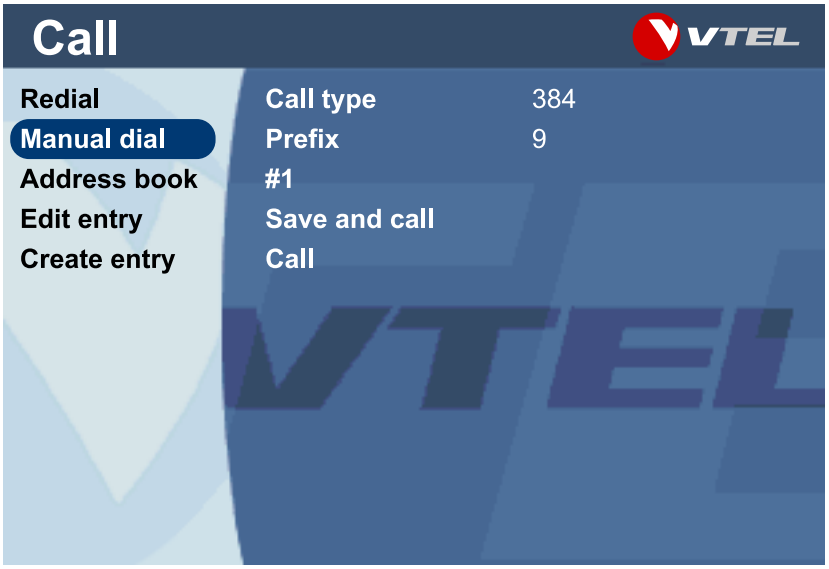
Redial

Redial displays the information from the previous call. Select **Call** from the center menu to redial the number. You can also change any of the information shown if the call was unable to connect on the last try.



Manual Dial

Manual dialing is used when you do not wish to create a permanent entry in the address book. It operates just like creating a phone book entry, but you do not have to enter a name, and you call directly from this screen.

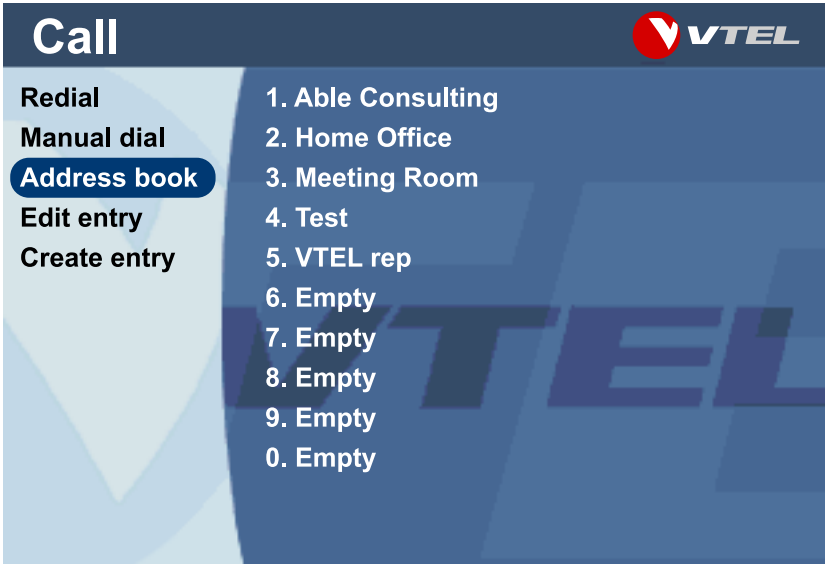


If you change your mind and want to add the number you just entered here into the address book, just select **Save and call**. This will take you to the Name entry page. Once you have saved the name, the listing is saved in the address book and the call begins to dial.

Otherwise, select **Call** to begin dialing.

Address Book

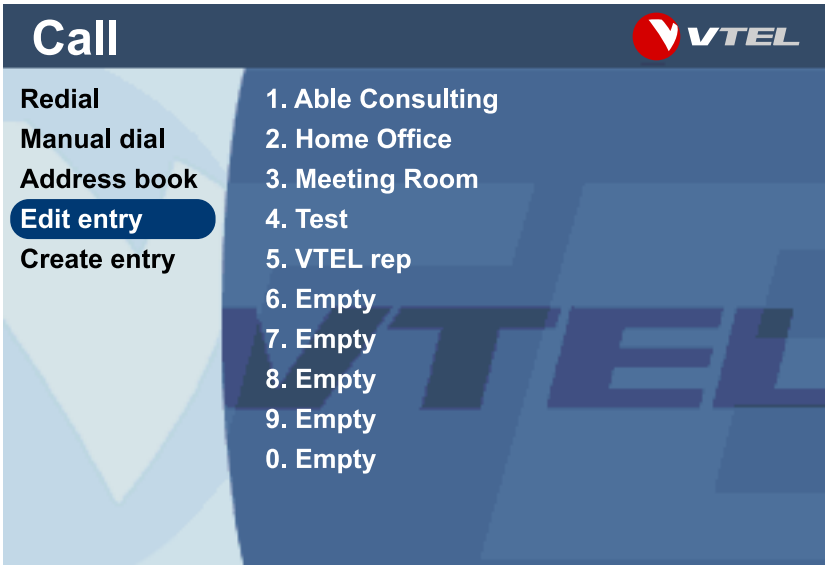
The address book contains the numbers you saved for speed dialing to frequent contacts. It is automatically alphabetized every time an entry is created or changed.



Press a number to select a name, or use the arrow keys to move the highlight, then press **Select** to dial the call.

Edit Entry

Edit Entry looks like the address book, but lets you review or change the information that was entered for any listing. Select the listing by number, then press **Select** to open it. Once opened it operates just like the Create entry menu.



3 Operation During Calls

This chapter explains the ways that you can control the experience during a video conference. It includes controlling the video display, moving the cameras on both ends, and sending high resolution still graphic snapshots.

Camera controls

Basic movement

Simple control of the camera movement consists of aiming it with the directional arrows on the remote control. These buttons control movement as seen in the image on the screen. For example, to view something to the left in the on-screen image, press the left arrow.

Zoom in for close-ups by pressing the button marked with a plus sign (+). Zoom out for a wide-angle shot of the whole group or room by pressing the minus sign (-).

Presets

Since moving the camera during a conference can be slow and interrupt your train of thought, there are four memory slots for you to save preset camera positions.

Before a call, select the places where you will want to point the camera during the call (each participant, whiteboard, etc.). Move the camera to each of these positions in turn, press **Save** on the remote, then a number from 1 to 4. Once saved, you can move the camera quickly to any of these positions by pressing the corresponding number button.

You can also save or change presets any time during a call. You can even save presets on the camera at the other end of the call. See "Here/There" on page 31.

Camera selection

Press the View button on the remote control to access the camera selection menu.

Use this menu before a call to preview your cameras, or during a conference to switch cameras. The basic SETTOP 250 system has only one camera, but you can add a second camera, document camera or VCR as a second video source. See chapter 5 for information on how to connect a second video source.

You can also change the video source on the other end of the call if that system supports far end camera control. See the Here/There section below.

Here/There

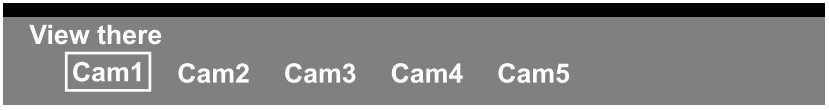
Have you ever been in a conference where the other side forgot to move their cameras? The speaker changed, but no one moved the camera to the new speaker. Someone's drawing on the whiteboard, but you're still looking at the table.

Since it is easier to control what you're looking at than to remember what someone else is seeing, the SETTOP 250 allows you to control the cameras on the far end of the call. You can move and zoom the camera, save presets, and switch which camera they are using as long as the other system supports the far end camera control standards.

Switch to far end camera control by pressing the Here/There button on the remote. This button toggles your control back and forth between local camera control (Here) and far end camera control (There). Whenever you are in far end camera control an icon of a camera with the word "FAR" will appear on the screen.

Controlling the far end camera is exactly like controlling your own camera, except for a minor time delay in the camera response. Move and zoom their camera. Save far end presets on buttons 5 through 8. (The presets are actually saved on their system.)

When you press View to change the video source, the menu says View there and shows up to five camera choices.



There are five choices because larger conference room systems from VTEL and other manufacturers can support up to five different cameras and video sources.

Display controls

Volume

Control the system volume with the buttons on the remote.

Note: Do not change the volume on the monitor. If the system does not respond when you raise the volume with the remote, check the monitor volume setting. The monitor volume should be left at 75% of its maximum setting.

Mute

Press the Mute button on the remote turn your microphone off. You still hear and see them, but they can no longer hear you. They still see you. Whenever the mute is active, an icon of a microphone with a slash through it will appear on the screen. This allows you to have a private discussion on the local end without the other end hearing it.

PIP

The SETTOP 250 supports a picture-in-picture (PIP) function. The PIP allows you to keep an eye on yourself in the small picture for camera control, while viewing the other end in the large picture.

Press the PIP button to turn it on, off or move it. The button cycles through each corner of the screen, full screen, and off.

Snapshots

A snapshot is a higher resolution still picture that can be sent or received during a call. Press the **Snapshot** button to send a snapshot. A pop-up menu appears:

Select a camera with the left/right arrows on the remote. Press **Select** to send the image. During the transmission of the snapshot, the system displays the message: *Sending snapshot.*

When the process of send or receiving a snapshot is complete, the system displays the snapshot just sent or received with the message: *Press Exit when done viewing snapshot*. The message times out after a few seconds and disappears from the screen.

When you press Exit, the screen returns to normal live video display of the far end. If you want to go back and view the latest snapshot sent or received, press **Snapshot**, and select View.

Only the last snapshot sent or received is held in memory. Sending or receiving a new snapshot overwrites the previous image.

The snapshot menu remembers your previous selection, in case you need to send more than one snapshot from the same camera.

Note: Snapshots are not provided for in the H.263 standard. If you are in an H.263 video mode for send, you will not be able to send snapshots.

4

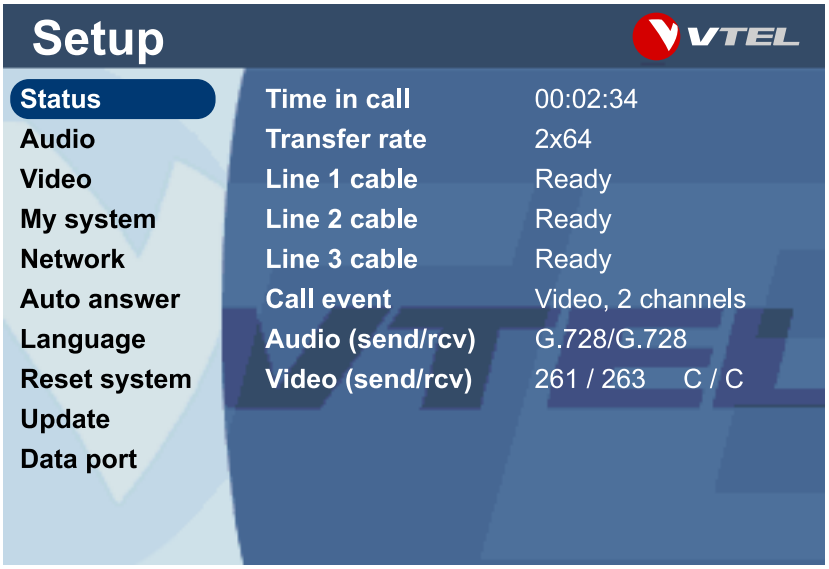
System Settings

This chapter discusses the options available to manage your system. The Audio and Video settings are set at the factory to default values that provide the best quality in most situations. However, you can change the audio and video settings to suit your own needs.

Note: Throughout the following instructions, *select* means moving the highlight to a menu entry using the directional arrow buttons on the remote control, and then pressing the Select button.

Status

The status menu does not provide any configurable settings, but provides a report on the current operating status of the system.



Time in call keeps track of the duration of the current call.

Transfer rate displays the bandwidth used for the current call.

Line 1,2,3 cable shows whether the network cables are connected properly and functioning.

Call event displays the last system event related to a call. When the system is idle it should record a "Normal hang up."

Audio (send/rcv) displays the current audio modes for send and receive.

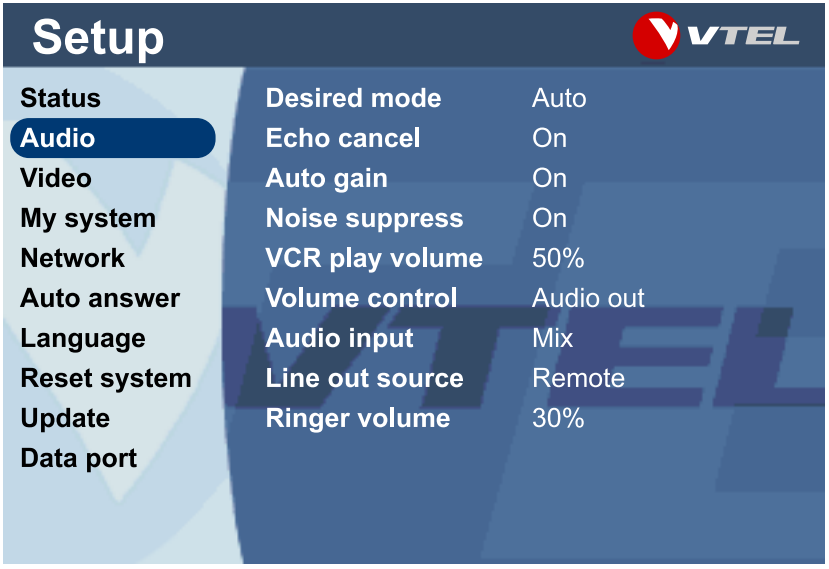
Video (send/rcv) displays the current video modes used for send and receive.

261 = H.261
263 = H.263
C = CIF (FCIF)
Q = QCIF

Note: The SETTOP 250 is capable of asymmetric audio and video modes, so the audio and video modes used for reception may be different from those used for transmission.

Audio

Press the **Setup** button to display the Setup menu, and move the highlight down to Audio.



The settings shown are defaults that are adequate for most situations. The only times you would normally need to change these settings would be to adjust the VCR play volume, ringer volume, or for unique room configurations or testing.

Desired mode

There are six audio mode choices.

Auto G.728 G.711 G.722 56 G.722 48 Off

These are not forced settings, but preferences. The system will always negotiate with the other end of a call to arrive at the best of the compatible modes, but will try your preference setting first.

- **Auto** is the default and preferred setting. It allows the system to negotiate the best possible mode for each call, depending on the other system's capabilities. Use the other settings only to try for a specific mode.
- **G.728** is the most efficient audio. With less bandwidth (16kbps) used for audio, there is more available for video, so G.728 allows the best possible video image. This is the auto setting for calls of 128 Kbps or lower.
- **G.711** audio is an older mode. It is better than G.728, not as good as G.722, but requires as much bandwidth as G.722. Never leave the system in this mode, as it is the most inefficient and is included for special compatibility problems with older systems only.
- **G.722** provides the highest quality audio. It is automatically used on higher bandwidth calls. It also uses more bandwidth (56 or 48kbps). If you use G.722 on low bandwidth calls, the video will suffer.
- Select **Off** if you want a video-only or video-plus-data connection. You will not send or receive any audio.

Echo, Gain and Noise

The next three items are Echo Cancel, Auto Gain and Noise Suppress. Although they can all be turn set to On or Off, they should all be left on. There is no reason to turn them off except for testing purposes.

Echo cancel eliminates any echo feedback that would otherwise occur when the sound from the speakers is picked up by the microphone and retransmitted to the other end. It prevents the other end from hearing an echo of themselves. You will not hear any difference on your end. If you ever hear an echo of yourself during a conference, tell the other end to turn on their echo cancellation function.

Auto gain adjusts the input level to compensate when people speak softly or are far from the microphone, as opposed to times when another person is speaking very loudly or close to the microphone.

Noise suppress filters out background noises like fans or air conditioning vents that would otherwise make the audio you send to the other end less clear.

VCR play volume

This setting controls how loud a tape will sound when played back on the VCR during a conference. It does not affect the volume during recording. Since most commercial VCRs provide no volume control, the volume must be controlled in the display system, which in this case is not just the local monitor, but the audio transmitted to the other end of the conference.

Select it to activate the slider bar on the right, then use the left and right arrows to adjust the volume.

Volume control

The volume control setting determines which output connector the volume buttons on the remote will control. It depends on your configuration.

Audio out Speaker

- Select **Audio out** if no VCR is connected to your system, and the Audio Out connector leads to the TV monitor.
- Select **Speaker** if a VCR is connected to your system and you are using external speakers instead of the monitor.

Audio input

Audio input controls the audio mixing for transmission to the other end of the call.

Mic Line Mix

- Select **Mic** if you are using the Microphone jack on the back of the unit as the only audio input.
- Select **Line** if you have connected a line level mic mixer to the Ext. Audio In connector as the only audio input.
- Select **Mix** if you are using the Microphone input and have a VCR or other audio source plugged into the Ext. Audio In input for playback.

Line out source

This setting controls which of the possible audio sources is mixed together and sent to the Audio Out connection.

There are three options for the Line out source.

Remote Remote w/mic Remote w/line

- **Remote** routes only the audio from the other end of the call to the Audio Out connector. Use this setting when there is no VCR connected to the system, and the Audio Out is connected to the TV monitor.
- **Remote w/mic** mixes the microphone input (local audio) with the remote audio (received from the other

end) for output to Audio Out. It would be used to record a conference on a VCR (see page 57), with the audio from both sides mixed. Do not use this setting when the Audio out is going to the TV monitor.

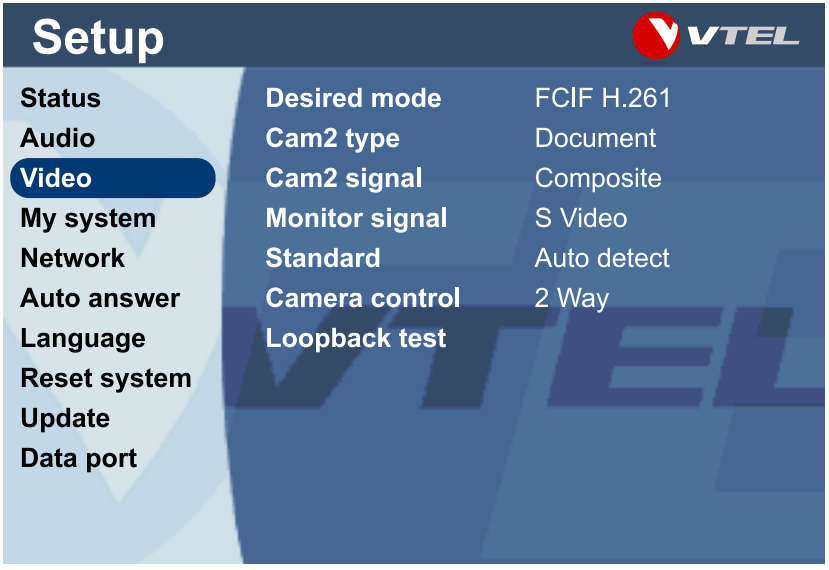
- **Remote w/line** mixes the line level input from the Ext. Audio In connector with the remote audio for output to Audio Out. Select it when using a VCR in the play only configuration (see page 56), or using a line level mic mixer input in a VCR record only configuration (see page 61).

Ringer volume

This volume setting controls how loud the system will sound the incoming call ring when auto answer is turned off. Select it to activate the slider bar on the right, and use the left and right arrows to adjust. Press Select again when done.

Video

Select Video on the Setup menu to display the list of settings. Most of these are set to defaults that are adequate for most situations.



Desired mode

There are four video mode choices.

FCIC H.261 QCIF H.261 FCIF H.263 QCIF H.263

- **FCIF** (Full Common Interface Format) provides higher resolution.
- **QCIF** (Quarter Common Interchange Format) is lower resolution.
- **H.261** is an older standard supported by all existing videoconferencing equipment.
- **H.263** is a newer compression standard.

These are not forced settings, but preferences. The system will always negotiate with the other end of a call to arrive at the best of the compatible modes within the restrictions of your preference setting here. This means that if you set it to H.263 or FCIF modes, but another system you are calling only supports H.261 or QCIF, it will negotiate down. But if you set it at the lower mode, it will not negotiate up.

Note: The SETTOP 250 allows asymmetric video modes, so the mode used for reception may be different from that used for transmission.

Cam 2 type

If you have an auxiliary source connected to the **Camera/Video 2** connector on the back of the system, define its type here.

None **Video camera** **Document** **VCR**

- Select **None** if nothing is connected.
- Select **Video camera** if you are using a video camera.
- Select **Document** if you are using a document camera.
- Select **VCR** if you are using a VCR, DVD or other non-camera video source.

Cam 2 signal and Monitor signal

Both the Camera/Video 2 input and the Monitor output connectors support either S-Video or composite video signal formats. The connector on the SETTOP 250 system is the same, the difference is the connector on the TV, camera or other device. Select which type of signal each of these devices uses.

Composite **S Video**

- **Composite** uses a single pin and sleeve (RCA) connector. If you need the cable adapter, select composite.
- **S Video** uses a four-pin connector. If you are using the cable provided with the system without the adapter, select S Video.

Standard

Auto detect should work in most situations to adjust to your local standard automatically. Otherwise, select which video display standard your monitor uses.

Auto detect NTSC PAL

- Select **NTSC** for North America or Japan.
- Select **PAL** for European video format.

Camera control

The SETTOP 250 is capable of controlling the cameras at the other end of the conference, and allowing the other end to control yours. This is useful when one side or the other forgets to move their camera when the speaker changes. The Here/There button on the remote controls which side's cameras you are controlling. Normally, this should be left on 2 Way, but there may be situations in which you want to block control or turn it off completely.

None Block incoming 2 Way

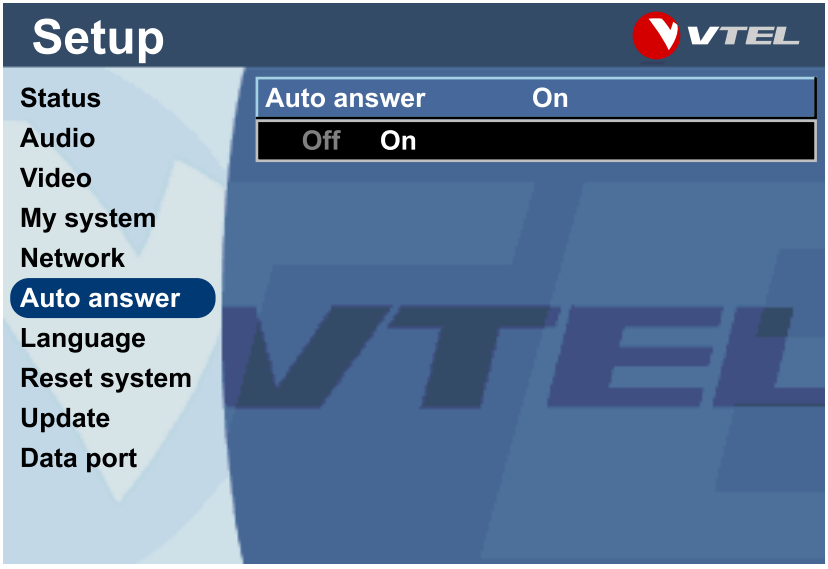
- **None** turns off far end camera control in both directions.
- **Block incoming** allows you to control their cameras, but ignores their attempts to control your cameras.
- **2 Way** is the default setting to allow control in both directions.

Loopback Test

This is a quick test of the overall functioning of your entire system. It is like calling yourself. The video and audio inputs are coded and compressed, then looped around just before the network connection and treated like an incoming conference data stream for decompression, decoding and display on the monitor.

Auto answer

Auto answer can be turned on or off. On is the default setting.



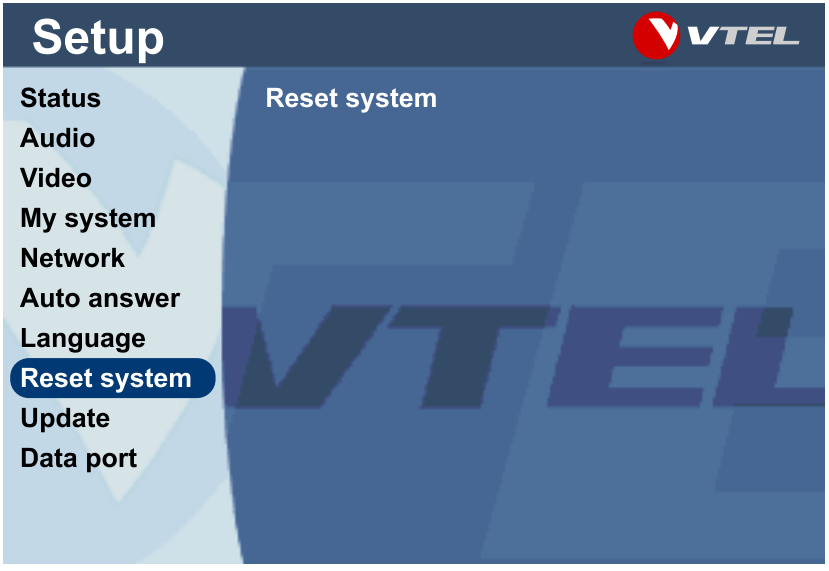
- On: The system automatically answers and connects incoming calls. This is convenient for scheduled conferences.
- Off: The system rings until the user presses Select to answer the call. By operating like a regular telephone, it prevents line charges and unauthorized viewing of the premises when no one is present to answer.

Reset system

Reset the system whenever you:

- enter or change the SPIDs or local phone numbers
- update the system software

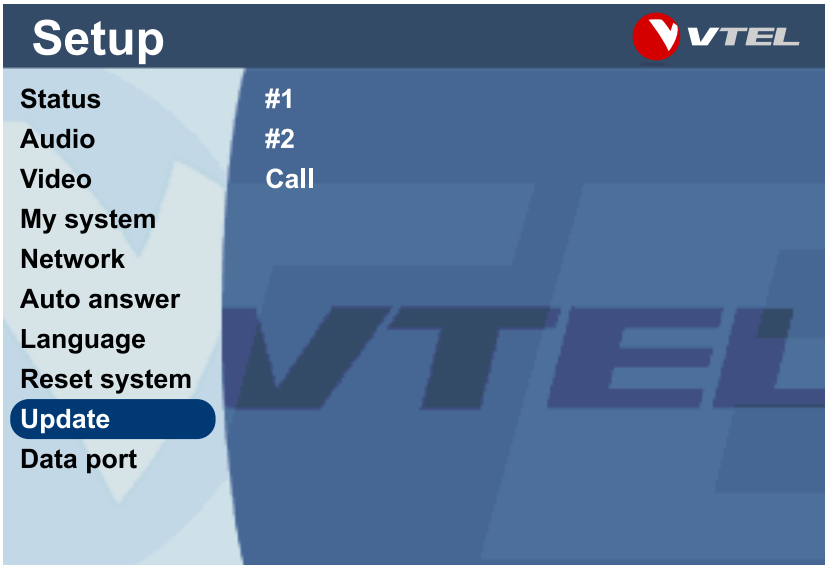
To reset your system, select **Setup**, move the highlight down to **Reset System**. Press the right arrow to move to the right, and press **Select**.



Press **Select** again to confirm.

Update

Update allows you to place a video call to VTEL and automatically update your system software.



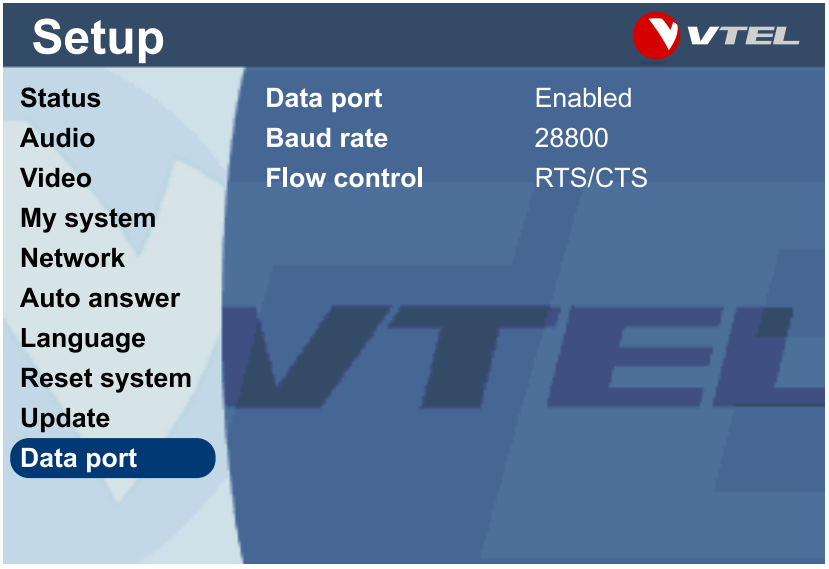
Whenever a software update is available you will be notified. If you are eligible for a free upgrade (first 90 days, extended service plans), the download number will be included. Otherwise you will be given a number to contact. Update notices will also be posted on our website at www.vtel.com.

When ready, select **Call** to dial the call. Follow the on-screen prompts to request and complete your update. When the update has successfully completed, hang up and reset your system.

Note: If for any reason it was not successful, do not reset your system, but try the upgrade again.

Data port

The data port default settings are designed for use with NetMeeting on an external PC.



Enable the data port only when you plan to use it. Opening the data channel will use up video bandwidth and affect video quality.

Baud rates from 300 to 57600 baud are supported. On a 64k network, baud settings of 19200 through 38400 require audio to be set to G.728 in order to fit both on the first channel. The 57600 setting can only be used when the audio mode is set to Off.

Flow control supports none, X-on/X-off and RTS/CTS.

5

Connecting Options

This chapter explains how to connect a second camera, VCR, or microphone mixer to the system, and the special configuration considerations associated with each type of device.

Connecting a Second Camera

VTEL provides the extra cable necessary to connect any video camera or document camera as a second video input source.

Note: If configuration of the Camera/Video 2 device also involves audio input, or output of video and audio to record, please refer to the VCR configuration instructions on page 55.

Connect one end of the cable with red connector sheaths to the Camera/Video 2 port at the top rear of the SETTOP 250 chassis. Connect the other end to the camera. If the camera provides S-Video output, you will not need the adapter. If the camera provides only composite output like most hand-held cameras (the connector has only one hole), use the adapter between the cable and the camera.

Note: The camera connection for the second camera does not provide power or pan, tilt and zoom control. The second camera must be powered and controlled separately.

Using the remote control, open the **Setup** menu and the **Video** submenu. Select **Cam2 type** and identify which type of video device you have connected (Video camera, Document or VCR; see page 46). Then select **Cam2 signal** and identify which type of video signal is coming from the camera. Select **S Video** if no adapter was used in the connection, or **Composite** if the cable adapter was necessary.

Select the second camera for live transmission by pressing the **View** button on the remote, moving the highlight to Cam2 and presseing **Select**. Cam2 can also be used for snapshots.

Connecting a VCR

Video

Connect the video cable to the **Camera/Video 2** port as described in "Connecting a Second Camera" on page 54.

Audio

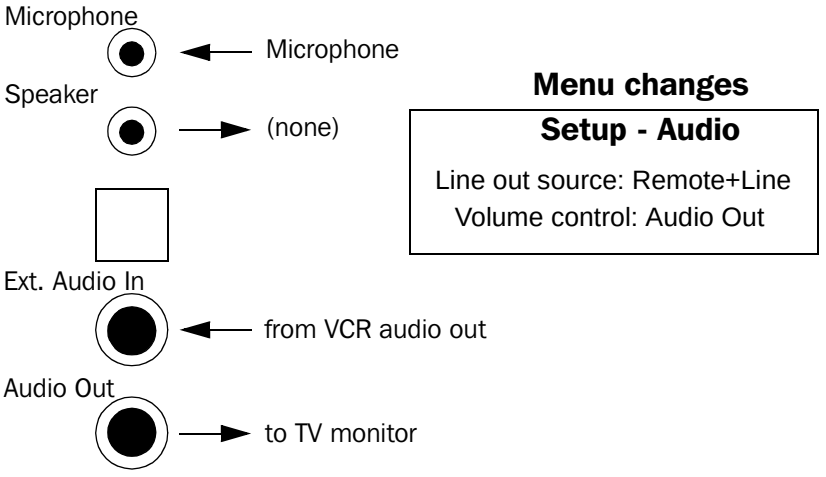
There are two different configurations for the VCR audio cabling and software configuration depending on whether you add an external speaker to the system.

Note: When playing a VCR tape during a conference, do not use the **Mute** button. Mute silences all audio transmission from your end, not just the microphone. You may still hear the VCR locally, but the other end will not hear it.

Note: The **Speaker** connector output is amplified. It provides a direct connection to simple speakers of the type used for home stereo systems. ***Do not use computer type speakers*** or any other system that provides its own power and amplification, as it may damage the speaker.

Audio: VCR, No Speaker (Play Only)

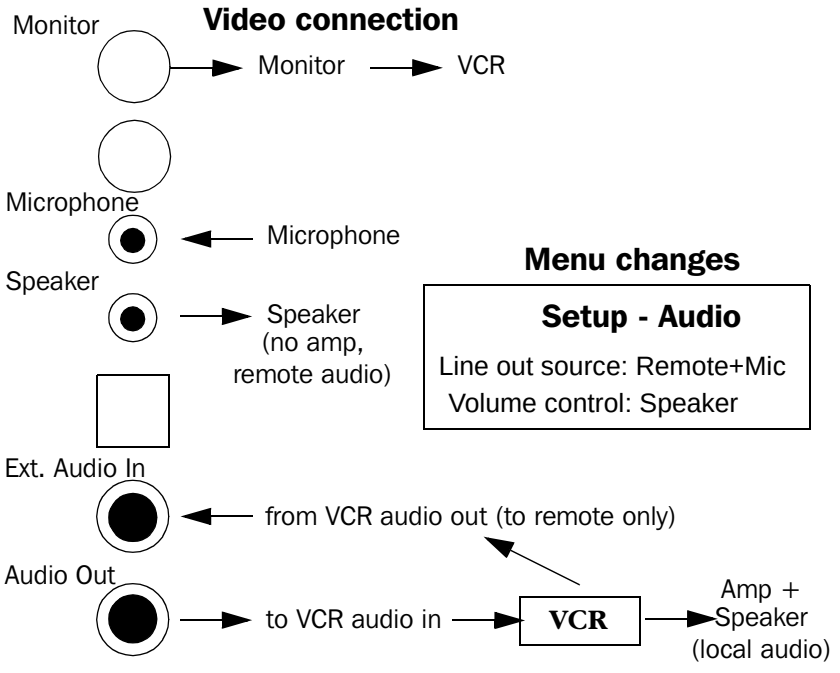
The first configuration requires no speaker, but limits the VCR functionality to playback only. It requires changes to the Setup menu as shown below.



Note: Never link the audio out to the monitor through the VCR by connecting them to each other as you would do at home. If you try to record both sides of a conference this way, the microphone input would have to be added to the output by changing the Line out source setting. This would cause feedback as the input from the microphone is played back on the monitor speakers.

Audio: VCR with Speakers

The second configuration provides full VCR operability, but requires the addition of two external speakers and changes to the Setup menu as shown below.



The video output to the monitor must be extended to the VCR by connecting a cable from the TV output, if the TV has one. Otherwise the video can be connected through the VCR first and then out to the monitor.

The monitor is no longer used for speaker output in this configuration, so turn the volume level on the monitor down to zero.

The **Speaker** connector output is amplified. It provides a direct connection to simple speakers of the type used for home stereo systems. ***Do not use computer type speakers*** or any other system that provides its own power and amplification, as it may damage the speaker.

The **Speaker** connector on the Settop 250 outputs the audio from the far end only, and does not mix in the Ext. Audio input, because it would cause feedback in other configurations. In order to hear the VCR playback locally, you must connect a second speaker (in this case, amplified) to the VCR.

Never link the audio out to the VCR and the monitor by connecting them to each other as you would do at home. In order to record both sides of a conference, the local microphone input is added to the output. This would cause feedback as the input from the microphone is played back on the monitor speakers.

Note: When recording on a VCR in this configuration, always set the Audio input to Mic. Otherwise the other end of the call will hear an echo of themselves through the VCR.

Telephone Handset

If desired, a telephone handset can be plugged into the Tel. Handset jack on the back of the system. It requires no special configuration, but should not be used in conjunction with an external line level microphone mixer.

Note: Do not connect a complete telephone to this jack. It is intended for the handset only.

Connecting a Microphone Mixer

Microphone mixers come in two varieties: those that provide line level output, or microphone level output. Some models are configurable for either type of output via internal DIP switch or jumper. Line level output must be connected to the Ext. Audio In (RCA type) connector on the back of the system. Mic level output must be connected to the Microphone connector on the back of the system.

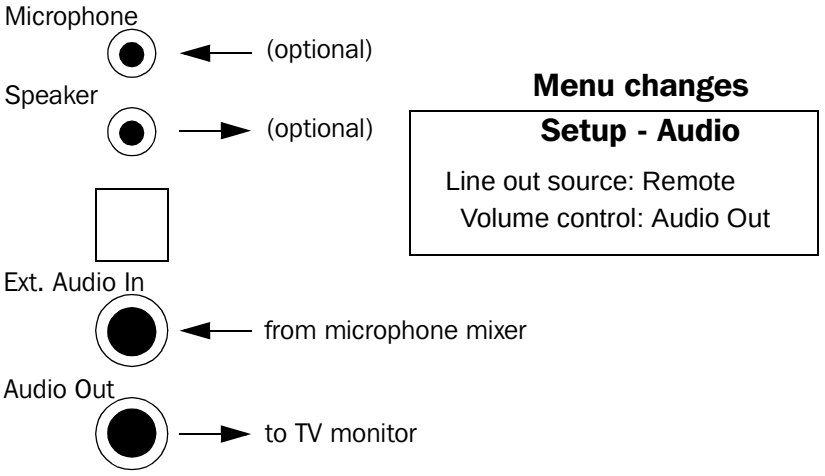
Note: Since line level output will restrict VCR usage to record only, it is suggested that you configure your mixer to mic level output.

Mic Level Mixer

With mic level output, the mixer simply replaces the microphone provided and no special configuration is required.

Line Level Mixer Only

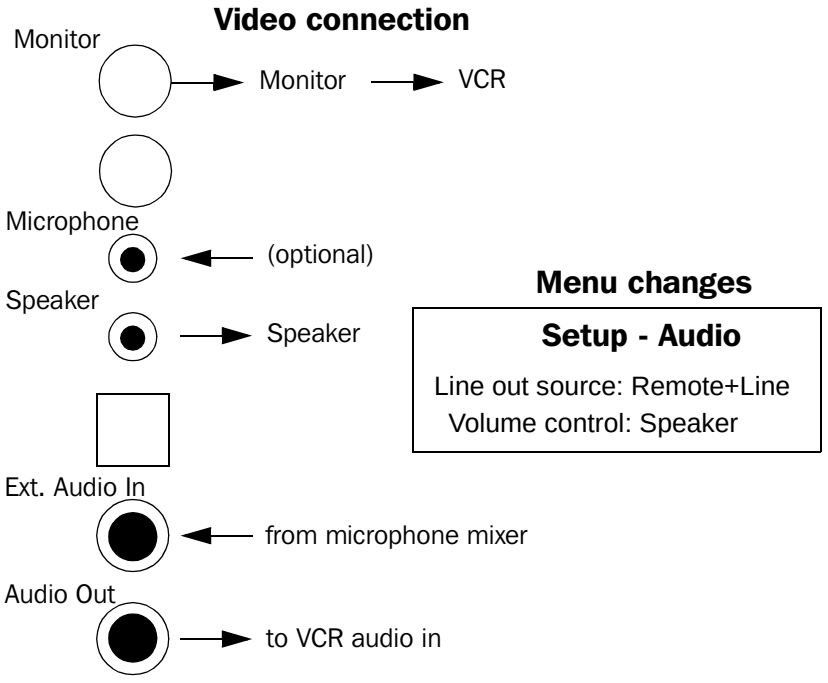
This configuration uses a line level external microphone mixer instead of (or in addition to) the microphone provided with the system. It uses the default settings on the Setup menu.



Note: If the Line out source is set improperly it will cause feedback as the microphone input is output to the monitor.

Line Level Mixer with VCR (Record Only)

This configuration uses an external line level microphone mixer along with a VCR. It requires the addition of an external speaker and changes to the Setup menu as shown below.



The video output to the monitor must be extended to the VCR by connecting a cable from the TV output, if the TV has one. Otherwise the video can be connected through the VCR first and then out to the monitor.

The monitor is no longer used for speaker output in this configuration, so turn the volume level on the monitor down to zero.

The **Speaker** connector output is amplified. It provides a direct connection to simple speakers of the type used for home stereo systems. ***Do not use computer type speakers*** or any other system that provides its own power and amplification, as it may damage the speaker.

Note: It is not possible to record both the Microphone and Ext. Audio In inputs when a line level output external mixer is coupled with a VCR for recording. The setting above for **Line out source** as **Remote+Line** assumes that the mixer is the primary local audio source.

Note: It is not possible to play back a tape on the VCR in this configuration, since there is no audio input for the VCR. Never mix the VCR audio input with the microphones for playback to the far end, because it will create an echo loop to the remote site during recording.

6

Data Collaboration

This chapter describes how to configure your system and connect it to a PC to use NetMeeting™. For NetMeeting instructions refer to Microsoft's documentation or online help.

Configuring the SETTOP

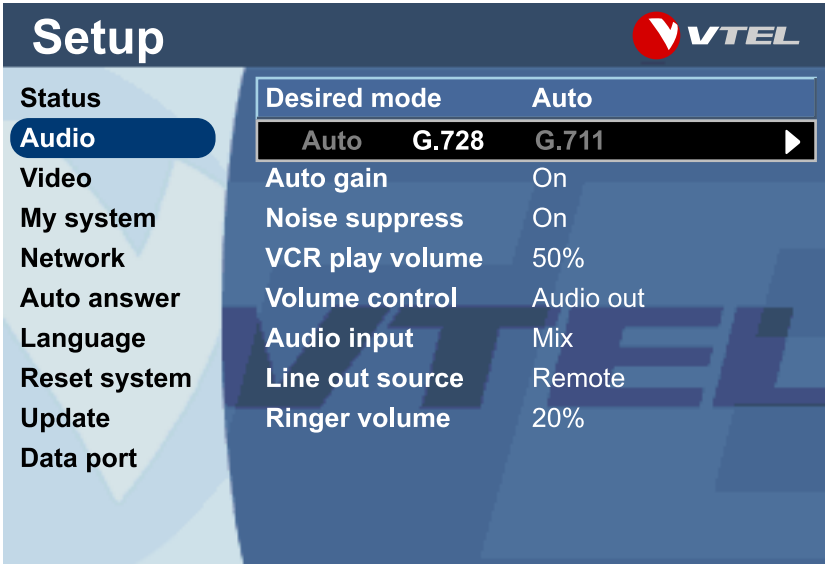
You must use the top RS-232 (serial) data port on the system for connection to the PC. This port is labeled User Data on the rear panel of the unit.

Set Audio to G.728

The data and audio must both fit in the first network channel, so the G.728 audio algorithm, which uses more advanced compression, provides the best data performance.

Note: Using G.728 audio on a 56 kbps network channel leaves 40 kbps of the bandwidth available for data transfer, while G.722 and G.711 leave only 8 kbps.

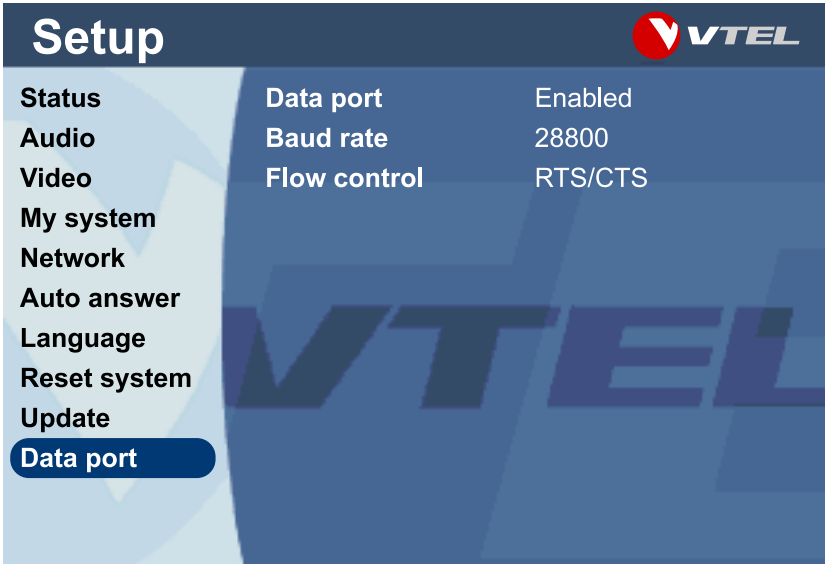
1 Press the **Setup** button on the remote control to display the Setup menu and move down to **Audio**.



2 Select **Audio** and select **G.728**.

Configure Data Port

Move the **Setup** menu highlight down to **Data port**.



1 Set the **Data port** to **Enabled**.

2 Set the **Baud** rate to **28800** or **38400** kbps.

Note: The rates on both ends of the call must match before initiating the NetMeeting connection.

3 Set the **Flow control** to **RTS/CTS**.

Connecting the SETTOP to the PC

You need a miniDIN-to-DB-9 serial cable (part number 290-324-01). Plug the female DB-9 connector into an available 9-pin serial port on the PC, and the miniDIN connector end of the cable into the User Data serial port.

Note: If your PC has only a 25-pin serial port available, you must obtain a 9-pin-to-25-pin adapter. If you require a longer serial cable, you can use a standard *straight-through* 9-wire serial cable with a female DB-9 connector on one end and a male DB-9 on the other, to extend the serial cable. Both the adapter and the extension serial cable are readily available at computer and electronics stores.

Configuring the PC

Install the SETTOP as a Modem

The SETTOP must be installed as a modem device in the Windows configuration. The following procedure is for Windows 95 and Windows NT only. You require a configuration file, SETTOPxx.INF, available from VTEL.

To install the SETTOP as a modem:

1 Access the Control Panel folder (Select Start> Settings > Control Panel).

2 Double-click on the **Modems** icon. In the Modems Properties dialog, click the **Add** button.

Note: If you are using a computer equipped with PCMCIA card slots (most portable computers), you are asked if the modem is a PCMCIA modem or not. If you are using a desktop computer, you will most likely not be asked this question. For desktop computers, skip the next two bullets.

- Select **Other**. The SETTOP does not use a PCMCIA modem configuration.
- Then click the **Next** button. At the Install New Modem dialog, check **Don't detect my modem I will select it from a list** and click the **Next** button. The PC will be busy for several seconds building a device list.

3 Click the **Have Disk** button when the device list shows, and the *Install From Disk* dialog appears.

4 At the *Install From Disk* dialog specify the path to the SETTOP.INF file and click **OK**.

5 Click the **Next** button when the SETTOP device is shown highlighted.

6 Select the COM port to which you connected the SETTOP serial cable and click **Next**.

Windows finishes installing the modem device. Under Windows NT, you MUST reset the PC before using the modem device with NetMeeting. Under Windows 95, this is not required but it is recommended. Some Windows 95 configurations may not operate correctly with the newly installed modem device until Windows is restarted.

Caution: The COM port assigned to the SETTOP should not be used by any other device. NetMeeting will not operate correctly if more than one device uses a COM port. If you have other modems installed and configured to use the same COM port as the SETTOP, you must either delete them or change their configuration to use another serial port.

Configure NetMeeting

NetMeeting must be configured to use the SETTOP for data collaboration. In addition, unless both parties will be connected to the Internet while using NetMeeting, the ILS server mechanism should be disabled to eliminate annoying timeouts NetMeeting will experience if ILS support is enabled and there is no Internet connection. Typically, NetMeeting is used over SETTOP connections without the PCs at either end being connected to the Internet.

NetMeeting version 2.0 is the only version that will work. Version 2.1 made radical changes in its operating methods that are incompatible with the SETTOP 250. Download NetMeeting 2.0 for free from Microsoft over the Internet at:

http://www.microsoft.com/netmeeting

The download process includes a drop-down list for selecting the version of NetMeeting you want. Release 2.0 has separate versions for Windows NT and Windows 95.

The first time you run NetMeeting after installation, a configuration wizard guides you through the configuration process. The wizard has steps for Audio tuning that are unnecessary for use with the SETTOP, and the wizard does not set all necessary configuration options. Enter the minimum necessary information to complete the wizard configuration and follow the manual setup procedure below.

When configuring NetMeeting, keep in mind that NetMeeting is primarily oriented toward use over the Internet. Furthermore, NetMeeting was developed to perform low-quality video conferencing using inexpensive PC cameras and sound boards. When using NetMeeting with the SETTOP, the audio and video are handled by the SETTOP, and NetMeeting is used only for data collaboration.

In addition, as the SETTOP has already been used to dial the call, NetMeeting's ILS locator server protocol is unnecessary. Therefore, the bulk of the configuration choices made with NetMeeting are to disable the audio, video, and ILS support.

After running the NetMeeting configuration wizard and entering the minimum necessary information, follow these steps to manually configure NetMeeting.

1. Start NetMeeting, and select the **Options** dialog from the Tools menu.

2. Select the **General** tab.

   - Check **Show Microsoft NetMeeting icon on the taskbar**.
   - Check **Automatically accept incoming calls**.
   - Un-check all other boxes in the General tab.
   - The *Network bandwidth* setting is irrelevant as it has to do with audio and video tuning. Set it to **28800 bps or faster modem**.
   - The File Transfer folder is the where NetMeeting will place files that are sent to you during a NetMeeting session. Select the default or change the folder used.

3. Select the **My Information** tab and personalize your setup as you want. The information entered here is irrelevant, except for the name, which will display on the other end when you enter a NetMeeting session.

4. Select the **Calling** tab and uncheck all of the checked boxes. Set *Automatically add Speed Dials for people I call and people who call me* to **Never**.

5 Select the **Video** tab and un-check **Automatically receive video at the start of each call**. Everything else is irrelevant.

6 Select the Protocols tab and un-check all protocols except **Modem**. Ensure that the Modem protocol is checked, click on it to highlight it, and click the **Properties** button to access the Modem Protocol Properties dialog box and do the following:

- Check **Use modem to answer incoming calls**.
- Set to **Let the phone ring 0 times before picking up** (zero rings).
- In the Connection group, set **Connect using: the SETTOP modem device**.
- Click **OK** to exit the Modem Protocol Properties dialog.

Click **OK** in the Options dialog to store the settings, then exit NetMeeting. The new configuration does not take effect until you restart NetMeeting.

Operating NetMeeting over a Video Conference Call

The recommended method for using NetMeeting in a conference call is to:

1. Establish the video conference using the standard SETTOP calling procedure described in Chapter 2. NetMeeting should not be running while the call is being established.

2. After the call is established and both ends agree to use NetMeeting, both ends should start NetMeeting.

3. To start a NetMeeting session, one side must initiate a dummy call. Press the Call button, then enter any single-digit phone number (like "1") in the Address box, and select **Modem** in the **Call Using** drop-down list. Then click the **Call** button.

Note: NetMeeting stores the number dialed, along with the Call Using setting. After you make your first call with NetMeeting over a SETTOP connection, you can just pick the number entered from the drop-down list of Addresses, and *Call Using Modem* is automatically set.

   The NetMeeting session should connect in about 5 seconds. Once the connection is established, the names of both parties are displayed in the main NetMeeting window.

Refer to NetMeeting online help for using other NetMeeting functionality.

Once a NetMeeting session is terminated, both ends should close NetMeeting before another NetMeeting session can be started.

A

Specifications

This appendix contains the specifications of your SETTOP 250 system and the camera.

Video

Algorithms

H.261 QCIF, FCIF

H.263 QCIF, FCIF

Annex D Still-Image Graphics

4x FCIF Resolution

Frame Rate

@128 kbps up to 15 fps

@384 kbps up to 30 fps

Video Inputs

S-video/Composite 2

Video Outputs

S-video/Composite 1

Main Camera - Sony D30/31

Optics

Zoom Range: 12x

Focal Length/Fstop: 5.4mm f 1.8
64.8mm f 2.7 (full zoom)

Angle of View: 48.8x37.6
4.3x3.3 (full zoom)

Min. Illumination 7 lux

Operation

Pan/Tilt/Zoom/Focus Automatic

Pan Speed: 80° per sec.

Pan Coverage: 200°

Control: RS-232

Power: AC

Audio

Algorithms

G.728

G.711

G.722

Full Duplex Echo Cancel (IDEC II)

Noise Reduction

Auto Gain Control

Standard Audio Inputs

External Mic 1 *

Telephone Handset1 *

Line Level1

* only one in use at any point in time

Standard Audio Outputs

External Speaker 1*

Telephone Handset 1*

Line Level 1

* only one in use at any time

Networking

Transmission Rate Choices

56 kbps up to 384 kbps

Interface Choices

ISDN Single BRI (128 kbps, with S/T or U interface)

ISDN 3 BRI (384 kbps, with S/T or U interface)

V.35/RS-449 Interface

Data

User Data Port RS-232

Control Systems

Far End Camera Control

H.281

User Interface

IR Based Remote Control Unit RCU

Languages: English, French, Spanish, German, Portuguese

Physical, Electrical, and Environmental Characteristics

Physical

Dimensions (w x h x d): 3.75 in x 12 in x 11 in (without foot)

Foot: 5.25 in wide

Weight: 8.25 lbs

Electrical

Power Consumption: 50 Watts

Operating Voltage: 90-265 VAC

Frequency: 47-63 Hz

Environmental

Operating Temperature: 10 - 40°C

Operating Humidity: 5 - 90% (non-condensing)

Elevation: 0 - 12,000 ft.

Standards Supported

Communications

H.320

H.221, H.224, H.234, H.242,

H.261, H.263, H.281

EIA

RS-232E, RS-366, RS-449

Compliance

Safety

UL 1950, cUL, IEC950,

EN41003, EN60950

Regulatory

EMI/EMC Compliance

FCC Class A Part 15,

EN 55022 Class A (CISPER 22A),

EN50082-1 (IEC 801-2,3,4)

ISDN Compliance

Net 3 (European Union),

AUSTEL (Australia), VN4 (France)

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