EMBLAZE VCON

Group Videoconferencing Systems

Video Made Easy

HD2000

Set-Top Videoconferencing System
and Integrator's Codec
Version 2.5

User's Guide

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To comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules, only HD2000 original equipment should be used. All cables used to connect the HD2000 and peripherals must be shielded and grounded. Operation with non-certified accessories or non-shielded cables may result in interference to radio or television reception

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Modifications

The FCC requires the user to be notified that any changes or modifications made to this system that are not expressly approved by Emblaze VCON Ltd. may void the user's authority to operate the equipment.

Safety Notice

Do not open the HD2000 unit. There are no user-servicable parts inside. Opening the unit voids the warranty and can also cause injury. Please refer servicing to Emblaze VCON-trained service personnel.

When you use the HD2000 system, observe the following safety guidelines:

1. Make sure the monitor and attached accessories are electrically rated to operate with the AC power available in your location.
2. Plug the accessories' power cables into properly grounded power sources.
3. Do not use adapter plugs or remove the grounding prong from a cable. If you must use an extension, use a three-wire cable with properly grounded plugs.
4. Make sure that nothing rests on the cables and that the cables are not located where they can be stepped on or tripped over.
5. Do not spill food or liquids on the system or accessories.
6. Keep the system away from radiators and heat sources, and do not block cooling vents.
7. Do not run the equipment in an environment with ambient temperature higher than 35°C or lower than 10°C.

FCC Warning

Modifications not expressly approved by the manufacturer could void the user authority to operate the equipment under FCC rules.

The FCC Wants You to Know

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 generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

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 own expense.

R&TTE Declaration of Conformity

Issued according to ISO/IEC Guide 22 and EN45014 under the sole responsibility of the Manufacturer

We:

Manufacturer's Name: Emblaze VCON Limited
Manufacturer's Address: PO Box 12747
22 Maskit Street
Herzliya 46733
Israel

hereby declare entirely on our own responsibility that the product::

Product Name: HD2000 NTSC
HD2000 PAL

and all its associated peripherals manufactured by Emblaze VCON Ltd., to which this declaration relates is in conformity with the essential requirements specified in Article 3.1 (a) and 3.1 (b) of:
Directive 89/336/EEC (EMC Directive).
Directive 73/23/EEC (Low Voltage Directive – LVD).
Directive 99/05/EEC (Radio Equipment and Telecommunications Terminal Equipment Directive).

In accordance with the following Harmonized Standards-
The product is compliant with the following standards and other normative documents:

EMC: EN50081-1 : EN 55022: 1998, Class B
EN 55024: 1998
EN61000-3-2 : Harmonics
EN61000-3-3 : Flickers
EN61000-4-2 : ESD : Contact Discharge ±4Kv Air Discharge ±8Kv
EN61000-4-3 : Radiated immunity - 6V/m (27MHz-1000MHz)
EN61000-4-4 : Electrical Fast Transient and Burst ±1.0kV, 5KHz
EN61000-4-5 : Surges DM ±1.0kV CM ±2.0kV
EN61000-4-6 : Current injection immunity - 10Vrms
EN61000-4-8 : Magnetic field : 1Amp/m
EN61000-4-11: Voltage dips immunity
FCC Part 15, Class B
ICES-003

Safety / Low Voltage: EN 60950: 2000

Supplementary Information:
The product has been tested in a typical configuration. Technical file held by:
Emblaze VCON Limited
PO Box 12747
22 Maskit Street
Herzliya 46733
Israel

USA

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

CANADA

This Class B Digital apparatus, Complies with Canadian Standard ICES-003.

Regulatory Notice To European Customers

The "CE" mark is affixed to this product to demonstrate conformance to the R&TTE Directive 99/05/EEC (Radio Equipment and Telecommunications Terminal Equipment Directive).
The product has been tested in a typical configuration.
Technical file held by Emblaze VCON Ltd.
For a copy of the Original Signed Declaration (in full conformance with EN45014), please contact Emblaze VCON Technical Support at techsup@emblaze-vcon.com

About This User's Guide

This User's Guide explains how to videoconference with the Emblaze VCON HD2000. The chapters emphasize a how-to approach, and include detailed instructions for participating in conferences and getting the most out of the system's capabilities.

The following chapter summary briefly describes this guide's contents:

Chapter 1 **Welcome to HD2000**
Introduction to the HD2000 and its components.

Chapter 2 **Setting Up HD2000**
Instructions, drawings and cautions describing how to connect HD2000's components and accessories.

Chapter 3 **Getting Started**
Instructions for starting HD2000, navigating within dialog boxes, and making calls with the Manual Dialer.

Chapter 4 **Videoconferencing Basics**
Instructions for answering calls; creating, editing and deleting Phone Book entries; using Phone Book entries to start calls; and calling through a gateway.

Chapter 5 **Network Configuration**
Setting up HD2000's network configuration and various communication properties.

Chapter 6 **Video and Audio Adjustments**
Adjusting the video (monitors, cameras, display settings) and audio quality of videoconferences.

Chapter 7 **MultiPoint Conferencing - HD2000's Embedded MCU**
Instructions for participating in a multi-party videoconference through the HD2000's Embedded MCU.

Chapter 8 **Streaming Media**
Description of the HD2000's Streaming feature, including setting its configuration and starting a streaming session.

Chapter 9 **Data and Application Sharing**
Procedures for setting up data sharing and opening a data connection with a remote party.

Chapter 10 **HD2000's Web Management**
Instructions for setting various HD2000 configuration properties over the Internet from a remote computer.

Chapter 11 **MultiPoint Conferencing with Interactive Multicast**
Instructions for participating in Interactive Multicast conferences.

Chapter 12 **Telephony Exchange Functions**
Description of exchange functions (such as call forwarding, call pickup, call transfer, and inviting additional parties) that are available if the HD2000 is managed by an Emblaze VCON Media Xchange Manager® (MXM) system.

Chapter 13 **System Security**
Description and procedures of available system security options for the HD2000.

Chapter 14 **Troubleshooting**
Suggestions for solving possible issues.

Appendix A **Multi-language Interface**
Procedure for changing the language of the HD2000 menus and dialog boxes.

Appendix B **Software Upgrade**
Instructions for installing the latest version on a HD2000 that runs on an earlier version.

Emblaze VCON Technical Support

This User Guide and the HD2000 Online Help were designed to help you use your HD2000 system easily and to enjoy its many features.

If a situation occurs that is not covered by the supplied documentation, contact your local Emblaze VCON distributor, and request assistance from their Emblaze VCON-trained technical support department. Please describe the problem, device, and PC operating system (if applicable), and any other relevant details.

Also, you may access the Technical Support section of the Emblaze VCON website (http://www.emblaze-vcon.com/support/index.shtml) in order to check its knowledge base or initiate other customer support processes:

Page	Type of support
Support Notes	Troubleshoot or receive technical information about specific Emblaze VCON products.
Downloads	Download a new software release or a free product evaluation.
Demo Numbers	Test your videoconferencing system.
License Key Requests	Request a permanent license key for your organization's MXM(s).

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1 WELCOME TO HD2000

1.1 High-Quality Videoconferencing Codec

The HD2000 is a high-quality videoconferencing engine for integration into a custom multimedia room environment. When combined with external audio mixers, video switches and touch-screen control devices, product developers may create almost any rich media communication application for industries such as health care, education facilities, and corporate boardrooms. The HD2000 includes a suite of integration APIs (HDK) which add life-like video and crisp, clear audio to your products or services. You may download the HDK Programmer's Guide from Emblaze VCON®'s website (www.emblaze-vcon.com>Documentation>Manuals).

Functions which the HDK serial and IP-based APIs implement include:

Call initiation	Set network QoS parameters
Call termination	System reboot
Set call parameters	Multicast settings
Set system parameters	Debugging messages
Streaming control	Embedded MCU control

1.2 Set-top Conferencing System

The HD2000 is a high-quality set-top conferencing system combining videoconferencing, streaming video, and multipoint conferencing. The HD2000 provides several distinctive attributes and features which makes it an ideal solution for many group videoconferencing environments:

- **TV-like video and crisp audio quality**
  HD2000 includes Emblaze VCON®'s award-winning technology and solutions for maintaining high quality during video, audio and control transmissions. It supports H.261, H.263, H.263+, H.263++, and 60 bps interlaced video mode. It also supports G.711, G.722, G.723.1, G.728 and G.729 audio transmission. Features such as Automatic Buffering, Automatic Lip Synch Enabling, and Acoustic Echo Cancellation (AEC) provide superior performance.

- **Variety of Single and Dual Display Configurations**
  The HD2000 supports various single and dual monitor setups of TV-type and VGA-type monitors (VGA, XGA, SVGA). The dual TV and XGA+TV configurations allow the streaming of People and Content video using H.239 or DuoVideo technology.

  In a dual monitor configuration, one monitor (TV or VGA-type) displays the remote video and the other monitor (TV) displays local video and the system interface.

- **Multipoint Videoconferencing Through an Embedded MCU**
  An embedded 4-port Multipoint Control Unit (MCU) provides robust but easy-to-use multipoint conferencing capabilities. Users can initiate and control the Chair of multipoint conferences, participants may receive the floor temporarily, or an administrator can set up a dial-out conference, instantly connecting all parties. The HD2000 implements audio and video transcoding which enables all participants to receive the optimum conference quality supported by their systems. Additionally, the HD2000 employs speed matching, allowing all participants to connect at different speeds, as supported by their systems.

- **System Security**
  Administrators may restrict access to the system's configuration, prevent unauthorized outgoing calls, or lock the system completely.

  The HD2000 supports the H.235 protocol, which provides secure signaling, video and multimedia communications in an H.323 conferencing environment.

- **Quality of Service (QoS)**
  Emblaze VCON's PacketAssist™ Architecture preserves optimum quality of your videoconference according to available bandwidth and network traffic. The HD2000 applies mechanisms such as IP Precedence to prioritize the video, audio and control bits, and DiffServ to transfer packets according to the HD2000's specific needs.

- **Multicast and Unicast Streaming**
  The HD2000 applies HD Simulcast™ technology, which provides multiple ways of streaming live conferences out over your organization's network and over the Internet, where it can be viewed by any authorized person with a streaming viewer. Users can simultaneously stream a presentation and live video to remote sites. The streaming functions may be accessed through the HD2000's Web-based Management, allowing network administrators to begin and end streaming, freeing the conference leader (Chair) to control the meeting. The H.239 protocol enables video and data streams to appear in separate windows on other systems that also support H.239.

- **Participation in Interactive Multicast**
  Using Emblaze VCON's Interactive Multicast, all parties in the videoconference see and hear the same video, audio, and data sharing. HD2000 users may temporarily receive the floor, in which their video and audio are seen by the other parties until the floor returns to the session's controller (*Chair*).

- **Remote Management Through a Web Browser**
  From any computer on the same network as your HD2000, several functions may be accessed through Microsoft® Internet Explorer.

- **Media Xchange Manager® Support**
  Emblaze VCON's Media Xchange Manager® (MXM) provides centralized management of an organization's videoconferencing network. If the HD2000 logs into an MXM server, it receives gatekeeper services, bandwidth management, remote call initiation, and telephony functions, such as call forwarding, call pickup, call transfer, and ad-hoc videoconferencing.

- **Remote Software Upgrade**
  The HD2000's software version may be upgraded, using the HD Upgrade Utility, from an MXM (if the HD2000 is logged into it) or another computer at a remote location.

- **Multi-language Interface**
  The main HD2000 interface and web management program provide menus, commands and options in several languages.

- **Call Logging**
  The HD2000 can keep a record of outgoing and incoming calls, for administrative purposes such as call billing and network usage analysis.

1.3 HD2000 System Components

The HD2000, consisting of a main unit and remote control set, joins with separately purchased display monitor(s) and camera to constitute a complete set-top conferencing appliance. Optional accessories are available for enhancing the abilities of the standard system (see “Additional Accessories” on page 5). The software is preinstalled.

HD2000 Main Unit

The Main Unit contains the video card, software for operating the system, and various connectors for connecting the other components and accessories.

Remote Control

The hand-held remote control provides quick and easy access to all functions. Infrared signals are sent out from the bulb at the top of the remote control and are picked up by the sensor on the HD2000 unit.

For details about the remote control buttons, see “The Remote Control” on page 31.

IR Receiver

The HD2000 main unit has a built-in infrared (IR) receiver for receiving command signals from the remote control. However, the HD2000 main unit may be located at a different location than the TV monitor(s). Therefore, an infrared (IR) receiver increases the range from which the HD2000 receives command signals from the remote control, which then transfers those signals to the HD2000.

Additional Accessories

The following items are required for videoconferencing and may be purchased through your local Emblaze VCON distributor.

TV Monitor — Consult with your Emblaze VCON distributor for recommendations regarding monitors.

Pan/Tilt/Zoom Cameras — PTZ cameras are controlled through the system software, either from the hand-held remote control or from a remote PC using the Web-based Management program. You can pan, tilt and zoom the camera in many directions during videoconferences. Up to six pre-set positions can be set for instant recall through the remote control.

The following accessories are supported by the HD2000 and may be purchased through your local Emblaze VCON distributor.

Document Camera — A document camera displays documents that are placed on the camera's slide. High-quality resolution is guaranteed by the S-Video connection between the document camera and the HD2000.

Speakers — A three-piece computer audio system that delivers a high level of power (200 W) and accuracy. The system consists of two speakers and a subwoofer.

2 SETTING UP HD2000

This chapter explains how to set up the HD2000 and connect accessories.

2.1 Package Checklist

Before setting up the HD2000 for the first time, carefully unpack its package. Check that the listed items are included, in accordance with the supplied product.

If anything is missing or damaged, contact your local Emblaze VCON distributor as soon as possible.

- ❑ HD2000 main unit
- ❑ Microphone and cable
- ❑ Hand-held remote control
- ❑ External IR receiver
- ❑ Dual RCA cable (red/white)
- ❑ Dual RCA cable (yellow/white)
- ❑ Serial-to-dual terminal cable
- ❑ Communication cable RJ-45
- ❑ RCA-to-RCA cable (yellow)
- ❑ MiniDIN-to-MiniDIN 4-pin cable (2 units)
- ❑ Camera control cable (DB-9 to MiniDIN-8)
- ❑ Power cord 10A/250V or 10A/110V (according to region)
- ❑ HD2000 User's Guide

2.2 Connecting the Basic Components

CAUTION Before connecting accessories, turn off the power and disconnect the system and the accessory (if applicable) from their power supplies.

Carefully unpack the Main Unit, and position it on a stable horizontal area.

See the following sections for instructions about connecting:

- Single Monitor - TV and VGA-type
- Dual Monitor Configuration
- Tabletop Microphone
- Camera (purchased either separately or as an optional accessory from Emblaze VCON)
- External IR Receiver (if the main unit is located where it cannot receive command signals from the remote control)
- LAN
- Power Supply

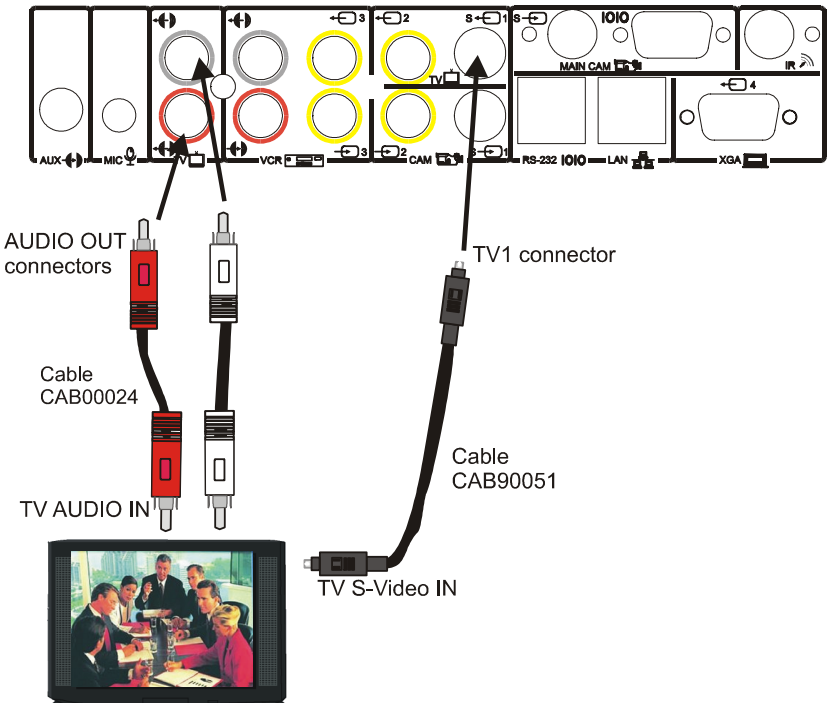
Connecting a Single Monitor

The HD2000's video may be displayed on either a TV monitor or VGA-type monitor (VGA/SVGA/XGA), such as Plasma or LCD monitors.

Connecting a TV Monitor

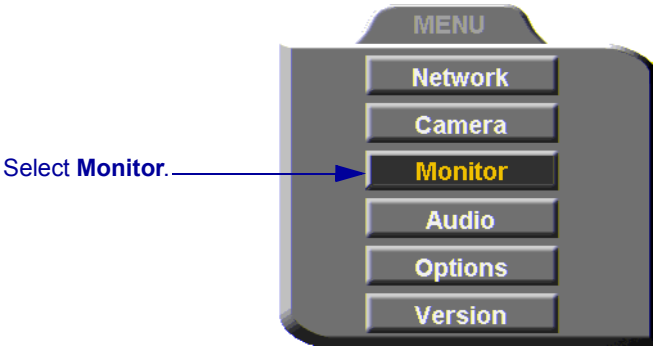
➤ **To connect a TV monitor to the HD2000**

1. Place the unplugged TV monitor on the cart, if provided, or on a sturdy surface near the HD2000 main unit.
2. Connect the S-Video cable (CAB90051) between the TV's Video In connector and the HD2000's **TV1** connector.
3. Connect the Audio cable between the TV's Audio In connectors and the HD2000's **AUDIO IN** connectors (Left=White, Right=Red).



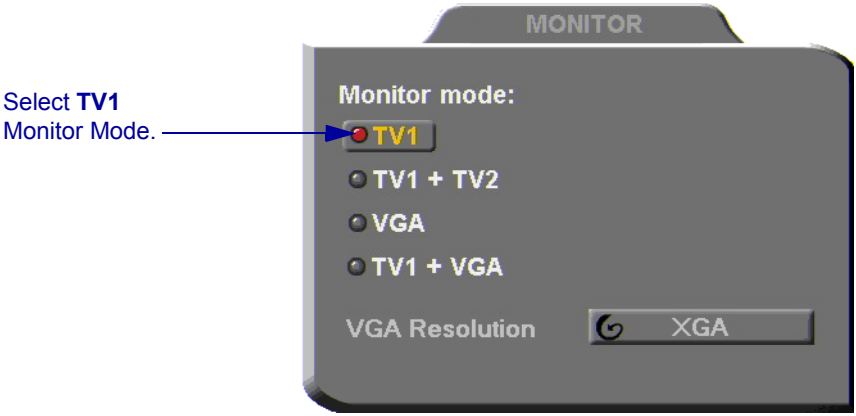
Connecting HD2000 to a Single TV Monitor

4. After starting the HD2000, press <Menu>. The main Menu appears. Select **Monitor**.



5. To view video and HD2000 menus and dialog boxes, you must define the monitor configuration. If this configuration is not defined correctly, your monitor will be blank. In the Monitor dialog box, set the following properties:

Monitor Mode Select **TV1**.



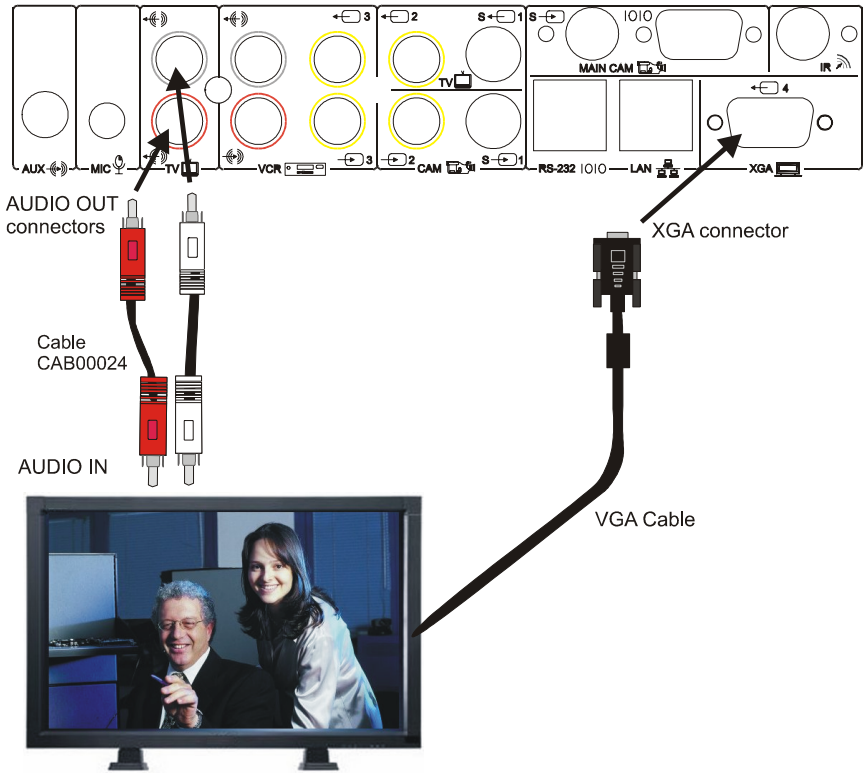
6. Press <OK> to apply the changes and close the dialog box.

Connecting a VGA-type Monitor

To enable the use of a VGA-type monitor with the HD2000 for the first time, you must first connect the HD2000 to a TV monitor and change the Monitor settings.

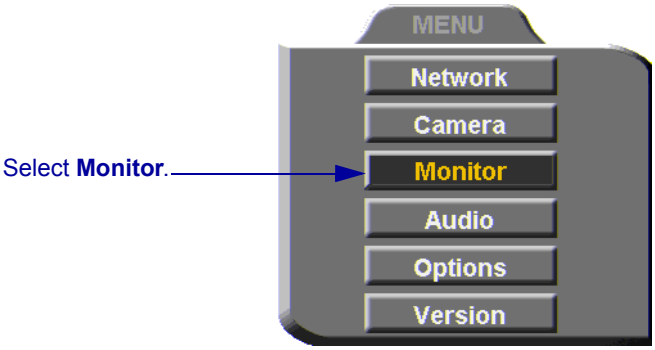
➤ **To connect a VGA-type monitor to the HD2000**

1. Place the unplugged monitor on the cart, if provided, or on a sturdy surface near the HD2000 main unit.
2. Connect the monitor's VGA cable (15-pin) to the HD2000's **XGA** connector.
3. Connect the Audio cable between the monitor's Audio In connectors and the HD2000's **AUDIO IN** connectors (Left=White, Right=Red).



Connecting HD2000 to a Single VGA Monitor

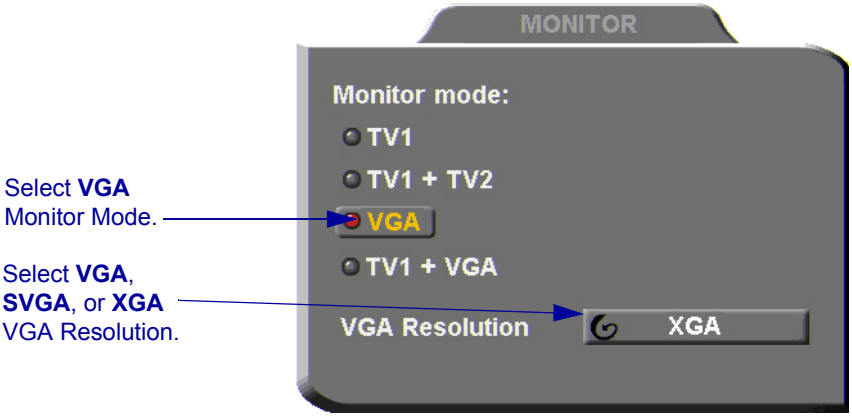
4. After starting the HD2000, press <Menu>. The main Menu appears. Select **Monitor**.



5. To view video and HD2000 menus and dialog boxes, you must define the monitor configuration. If this configuration is not defined correctly, your monitor will be blank. In the Monitor dialog box, set the following properties:

Monitor Mode Select **VGA**.

VGA Resolution Choose **VGA**, **SVGA**, or **XGA**.



6. Press <OK> to apply the changes and close the dialog box.

7. Disconnect the TV monitor from the HD2000.

Connecting a Dual Monitor Configuration

HD2000 supports the use of two monitors to display both parties on full screens during videoconferences. This configuration is called *Dual Monitor*.

A Dual Monitor configuration consists of:

- 2 TV monitors - An S-Video TV monitor displays local video and the application interface, and a Composite TV monitor displays remote video.

-or-

- 1 VGA-type monitor and 1 TV monitor - A VGA-type monitor (such as Plasma or LCD) displays remote video and the application interface, and an S-Video TV monitor displays local video.

Emblaze VCON supplies two types of cables to connect between the Main Unit and the VIDEO-IN connectors on the TV monitor. See the illustration on the next page.

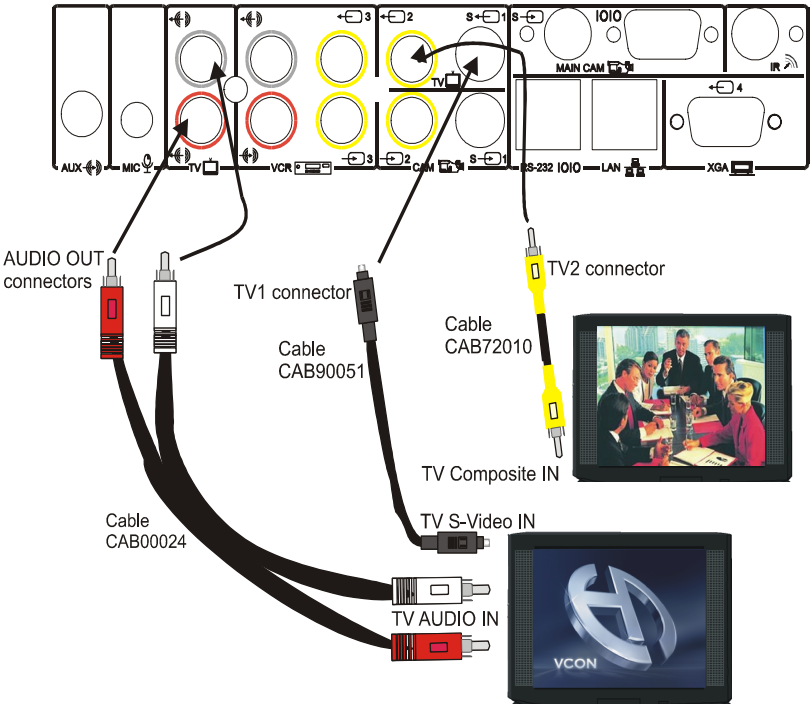
Connecting Dual TV Monitors

➤ **To connect dual TV monitors**

1. Place the unplugged TVs on the cart, if provided, or on a sturdy surface near the HD2000 main unit.
2. Connect the supplied video cables between the HD2000 and the TV:

S-Video Connection	Connect the S-Video cable (CAB90051) between the system's **TV1** connector and the Video In connector of the TV which will display remote video.
Composite Connections	Connect the Composite cable (CAB72010) between the Video In connector of the TV which will display the user interface and local video, and the system's **TV2** connector.

3. Connect the Audio cable between the TV's Audio In connectors and the system's **AUDIO IN** connectors (Left=White, Right=Red).



Connecting HD2000 to a Dual TV Monitor Configuration

Connecting a Dual VGA-type Monitor and TV Monitor Configuration

➤ **To connect a VGA monitor and a TV monitor**

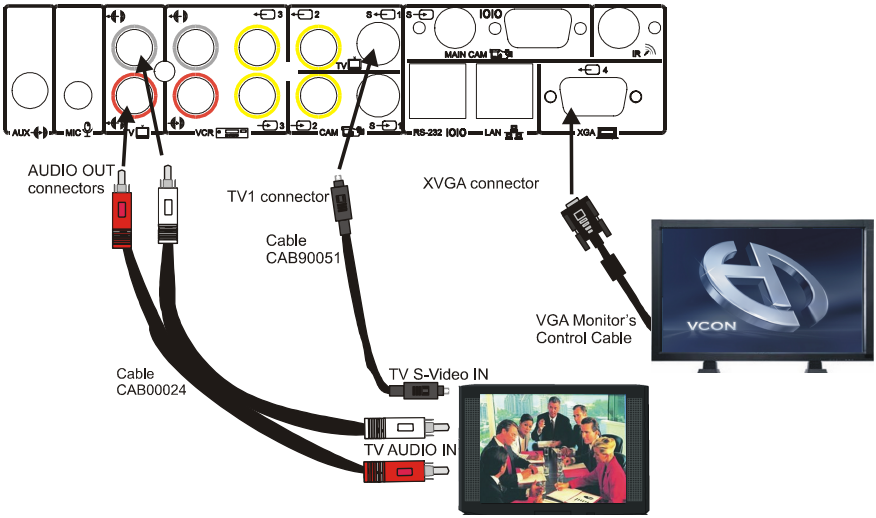
1. Place the unplugged monitors on the cart, if provided, or on sturdy surfaces near the HD2000 main unit.

2. Connect the video cables between the HD2000 and the TV:

VGA connection Connect the VGA-type monitor's control cable to the **XGA** connector on the HD2000's rear panel.

S-Video Connection Connect the S-Video cable (CAB90051) between the HD2000's **TV1** connector and the Video In connector of the TV which will display the user interface and local video.

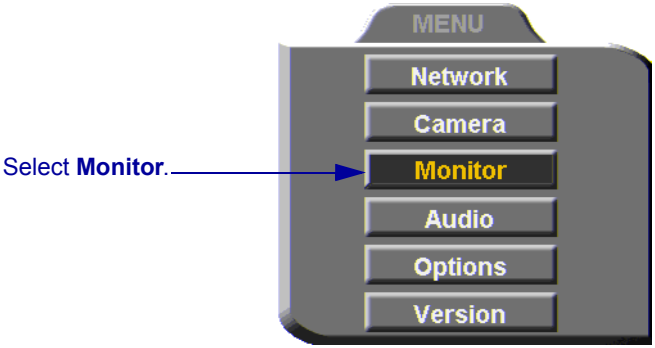
3. Connect the Audio cable between the TV's Audio In connectors and the system's **AUDIO IN** connectors (Left=White, Right=Red).



Connecting HD2000 to Dual VGA + TV Monitor Configuration

➤ **To define the dual monitor configuration in the HD2000**

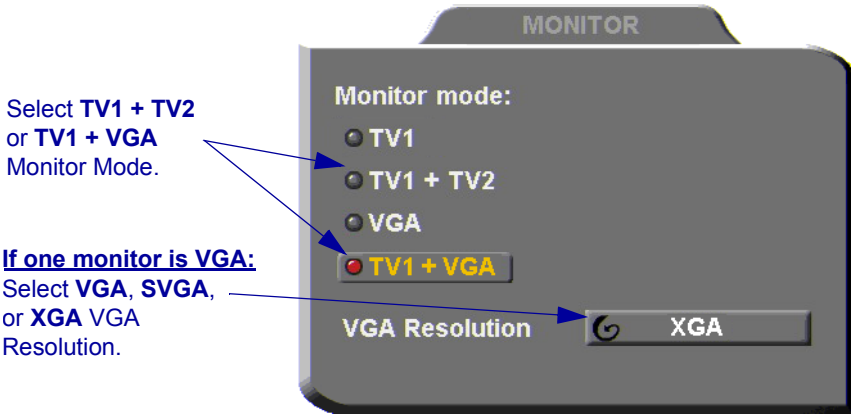
1. After starting the HD2000, press <Menu>. The main Menu appears. Select **Monitor**.



2. In the Monitor dialog box, set the following properties:

Monitor Mode Select **TV1 + TV2** or **TV1 + VGA**, depending on whether two TV monitors or a TV and VGA monitor, respectively, are connected to your HD2000.

VGA Resolution Choose the resolution for the VGA monitor of the configration.

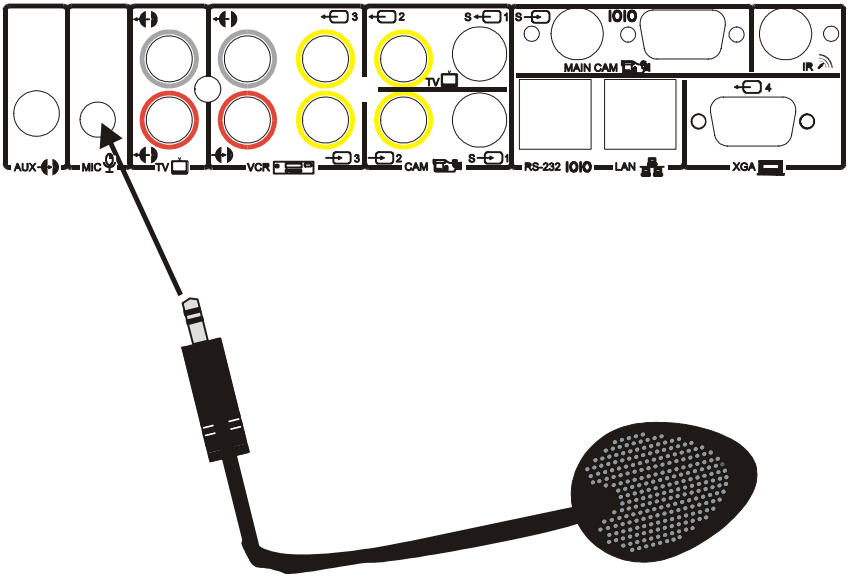


3. Press <OK> to apply the changes and close the dialog box.

Connecting the Tabletop Microphone

➤ **To connect the Tabletop microphone to the HD2000**

1. Connect the microphone to the **MIC** connector on the HD2000.
2. Place the microphone on the conference table with the cable stretching toward the HD2000. It is recommended that the microphone be placed at least 2 m (7 ft) from the TV speakers.



Connecting the Tabletop Microphone to the HD2000

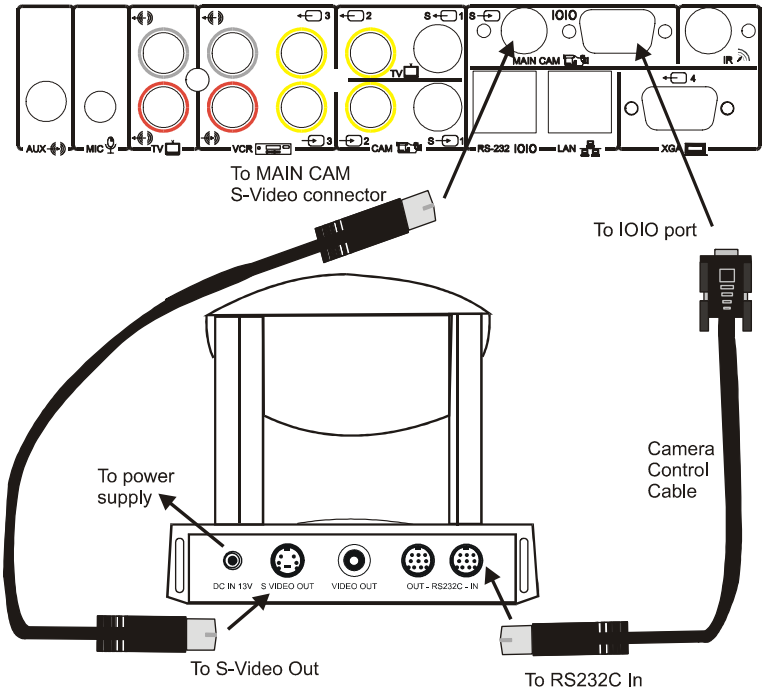
Connecting the Main Camera

The camera may be purchased separately or as an optional accessory from Emblaze VCON.

➤ **To connect the main camera to the HD2000**

1. Connect the 4-pin MiniDIN-MiniDIN cable between the HD2000's **MAIN CAM S-VIDEO** port and the camera's **S-VIDEO OUT** connector.
2. Connect the Camera Control cable between the HD2000's **IOIO** port and the camera's **RS232C IN** connector.
3. Connect the camera's power cord between an electricity source to its power supply, and then connect the power supply to the camera's **DC IN** connector.

To ensure that the HD2000 displays the correct NTSC/PAL video format, make sure that the camera is turned on before starting the HD2000.



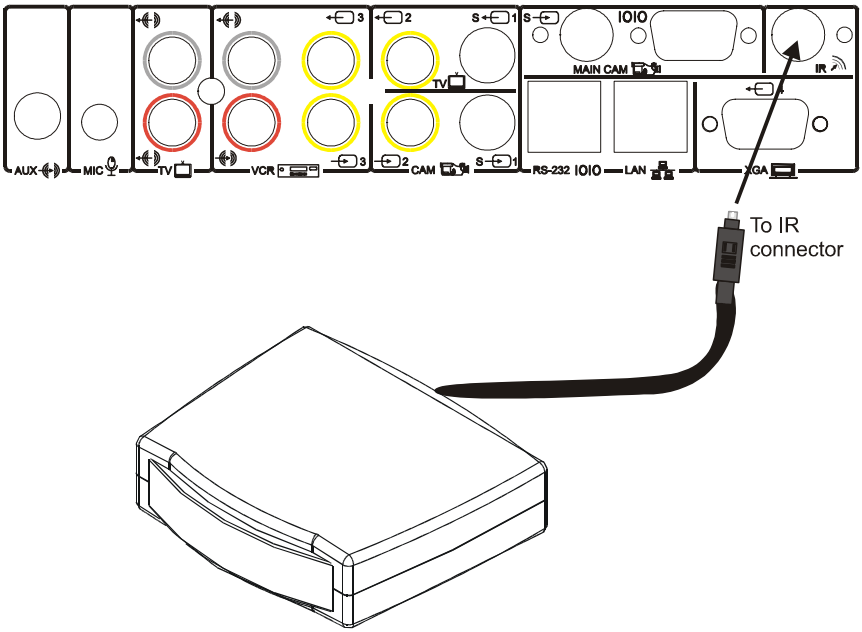
Connecting the Main Camera to the HD2000

Connecting the External IR Receiver

The HD2000 main unit has a built-in IR receiver for receiving command signals from the remote control. However, you may want to place the HD2000 main unit in a location that's not visible to your meeting room's occupants. To set up this type of room environment, connect and place the supplied external IR receiver so it receives signals in a straight line from the remote control.

➤ **To connect the external IR receiver to the HD2000**

❑ Connect the receiver's MiniDIN connector to the HD2000's IR connector.



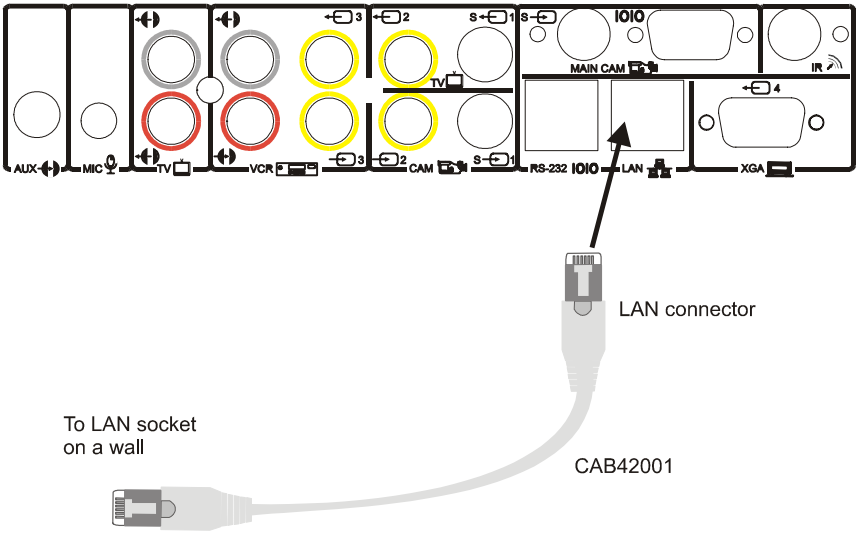
Connecting the External IR Receiver to the HD2000

Connecting the LAN

A standard RJ-45 interface for connection to your LAN is provided.

➤ **To connect a network (LAN) cable to the system**

❑ Connect the LAN cable between the LAN port (RJ-45) on the rear of the system and to the LAN socket on the wall.



HD2000 to LAN Connection

After you turn on the HD2000, check that the network connection is correct.

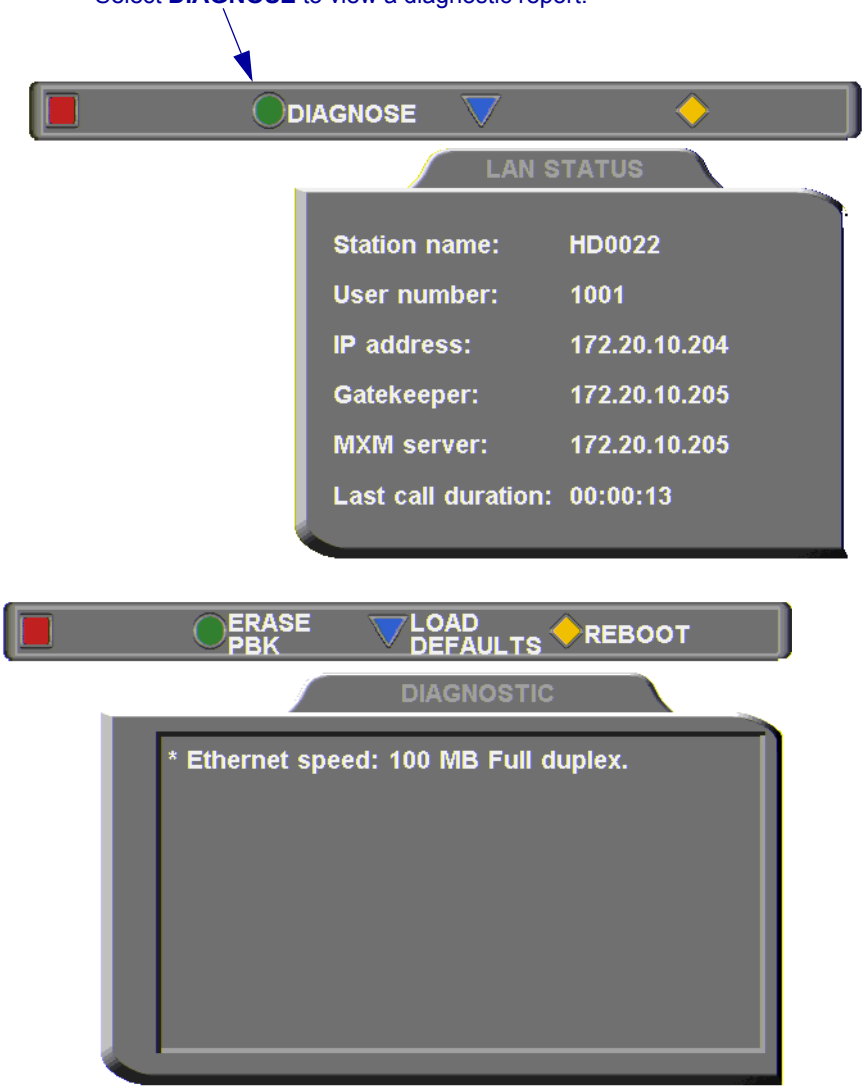
➤ **To check for correct network connection**

1. Press <Status>. The Status dialog box opens.

2. Press the green **DIAGNOSE** SoftKey. The Diagnostics dialog opens.

   If the connection to the network is working properly, the Diagnostics dialog box displays the line speed of the connection.

Select **DIAGNOSE** to view a diagnostic report.



Connecting to an Electrical Source

After connecting the HD2000 to the accessories, connect the system to an electric power source. A power cord suitable for your region's electricity system (100/250 VAC/50/60 Hz) universal power supply is supplied in the HD2000 package.

➤ **To connect the HD2000 to an electrical source**

1. Connect the power cable between the HD2000's AC Input socket (on the rear panel's left side) and a grounded AC wall socket.
2. Check that the HD2000 rests securely on a table or a shelf. Press the Power button next to the AC Input socket to turn on the HD2000.

2.3 Connecting Optional Accessories

See the following sections for instructions about connecting:

- Multiple cameras
- DVD/VCR for playback to the conference
- VCR for recording the conference

Connecting Multiple Cameras

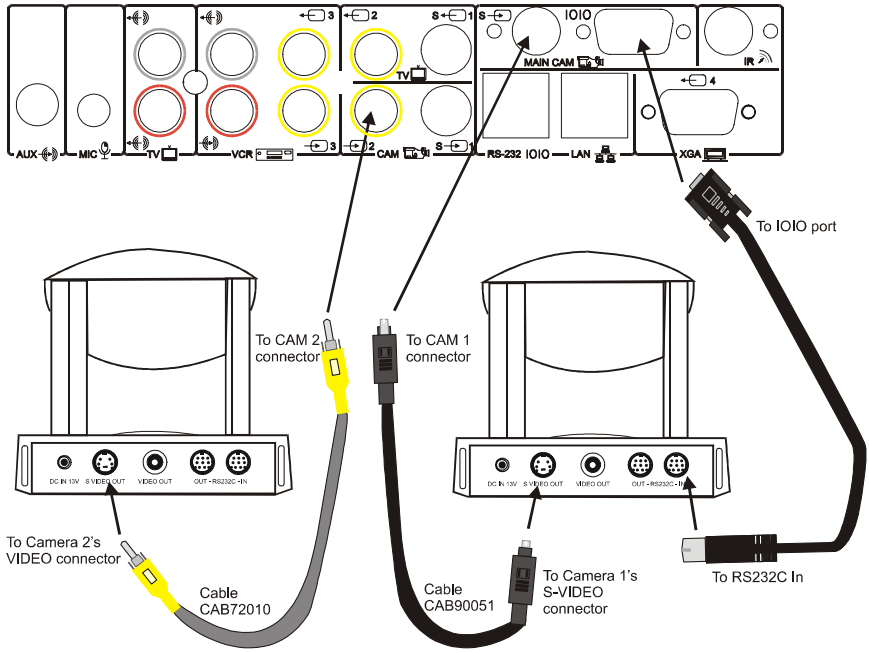
HD2000 supports the use of up to two additional cameras, which may be connected and controlled through the remote control and/or the web management program.

➤ **To connect additional cameras**

1. Connect the 4-pin MiniDIN-MiniDIN cable between the HD2000's **MAIN CAM S-VIDEO** port and the camera's **S-VIDEO OUT** connector.
2. Connect the Camera Control cable between the HD2000's **IOIO** port and the camera's **RS232C IN** connector.
3. Connect a Composite video cable between the Video connector of the camera and the system's **CAM2** connector.

If you are using only one additional camera, we recommend that you use the S-Video connection, which supplies higher quality video.

Do not connect the S-Video and Composite cables to the same camera, which causes degraded video quality.



Connecting HD2000 to Multiple Cameras

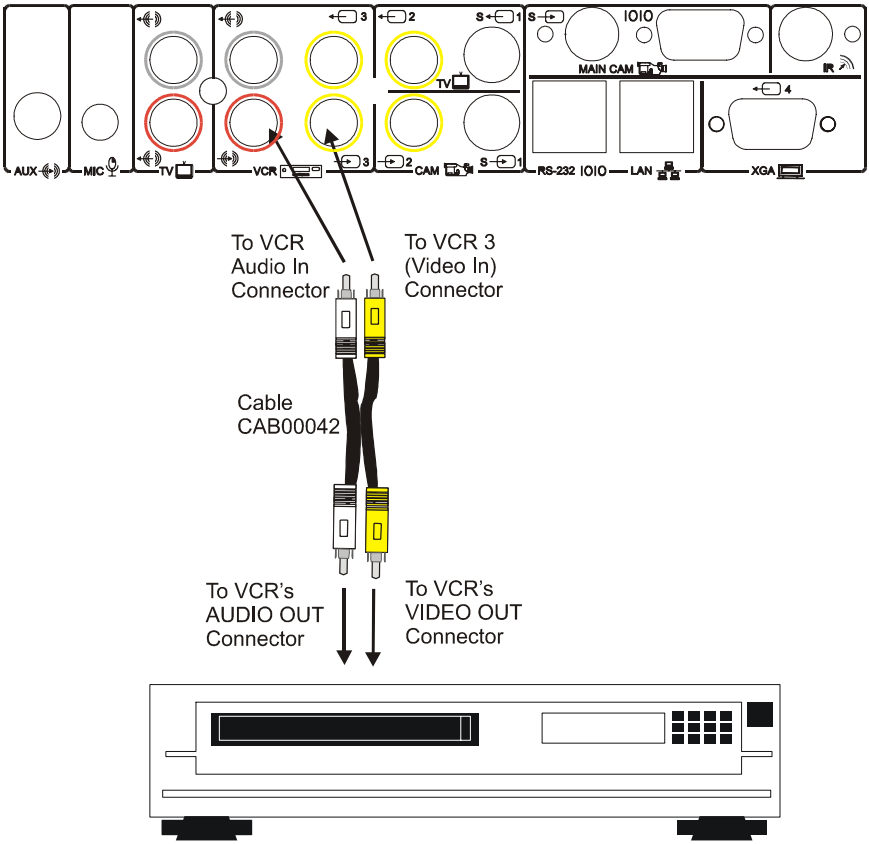
Connecting a DVD/VCR for Playing Back Videoconferences

The HD2000 supports the playback of a DVD or videocassette to a videoconference.

For specific instructions on installing and operating the DVD or VCR, see its accompanying user's guide.

➤ **To connect a DVD or VCR for playback**

1. Connect the video RCA cable (of cable CAB00042) between the VIDEO OUT connector of the DVD/VCR and the HD2000's lower **VCR 3** yellow (VIDEO IN) connector.
2. Connect the audio RCA cable (of cable CAB00042) between the AUDIO OUT connector of the DVD/VCR and the HD2000's lower **VCR AUD** (In) red connector.



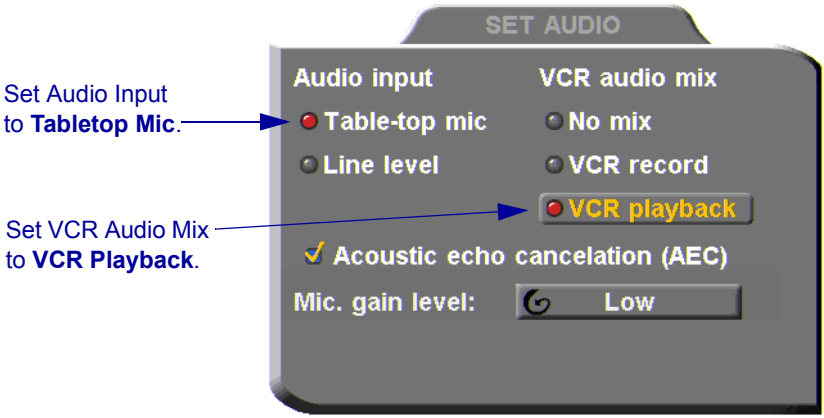
Connecting a DVD or VCR to the HD2000 for Playback

3. Connect the DVD/VCR to its power supply and insert the videocassette.
4. Navigate to the HD2000's Audio configuration. Define the following:

Audio Input Select **Tabletop Mic**.

VCR Audio Mix Select **VCR Playback**.

In this configuration, the remote side will hear a mix of the microphone (MIC) input and the HD2000's VCR Audio Input. See "Selecting a Microphone" on page 83 and "Setting Mixing Modes" on page 85 for instructions on how the playback can be mixed in with the videoconference.



Audio Configuration for VCR Playback

5. On the remote control, press <CAM> to open the Camera configuration. Select the VCR icon.

Connecting a VCR for Recording Videoconferences

The HD2000 supports the recording of a videoconference.

For specific instructions on installing and operating the VCR, see its accompanying user's guide.

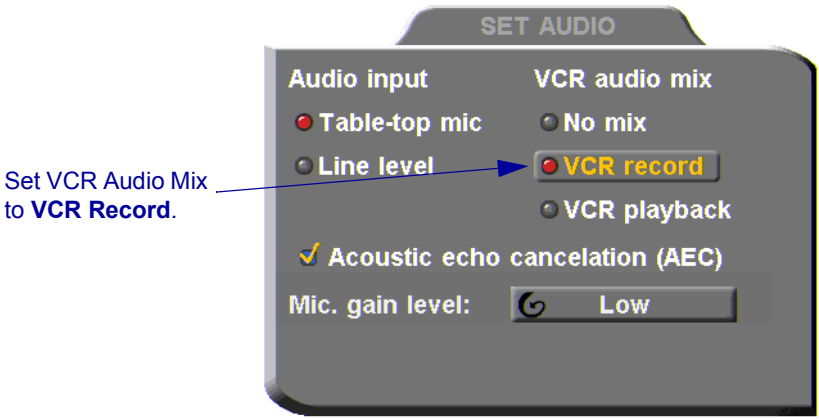
➤ **To connect a VCR for recording**

1. Connect the VCR's video RCA cable between the VIDEO IN connector of the VCR and the HD2000's upper **VCR 3** yellow (VIDEO OUT) connector.
2. Connect the VCR's audio RCA cable between the AUDIO IN connector of the VCR and the HD2000's upper **VCR AUD** white (Out) connector.

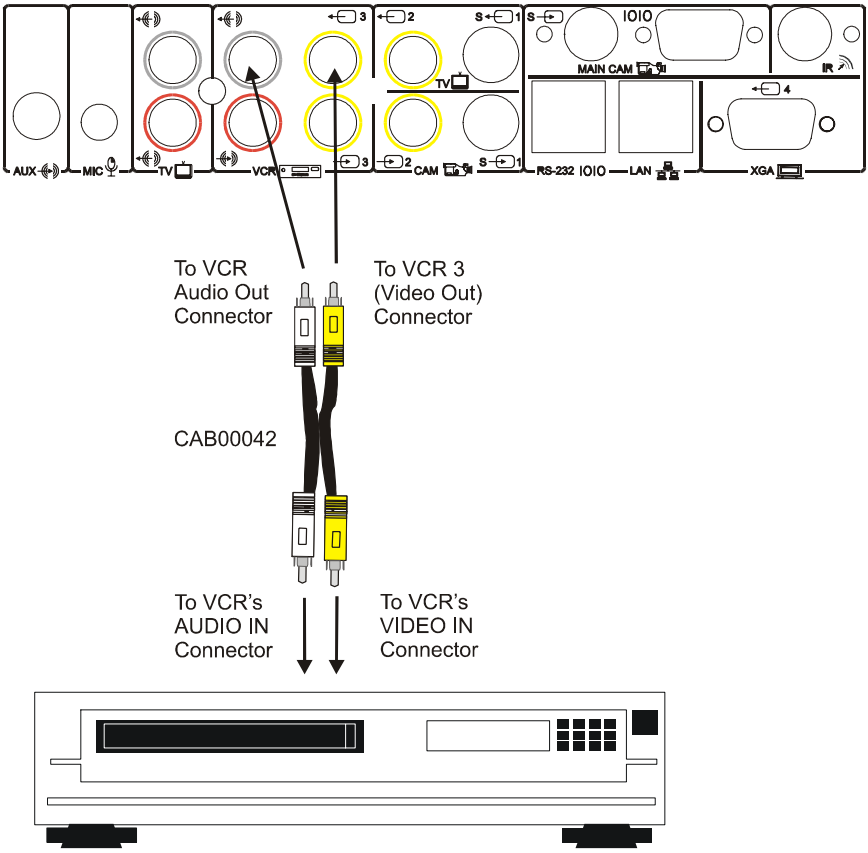
   See the illustration on the following page.
3. Connect the VCR to a power source. Insert an empty videocassette.
4. Navigate to the HD2000's Audio configuration. Define the following:

VCR Audio Mix Select **VCR Record**

In this configuration, the remote side will hear a mix of the remote and the local video. See "Setting Mixing Modes" on page 85 for instructions on how the recording can be mixed in with the videoconference.



Audio Configuration for VCR Recording



Connecting a VCR to the HD2000 System for Recording

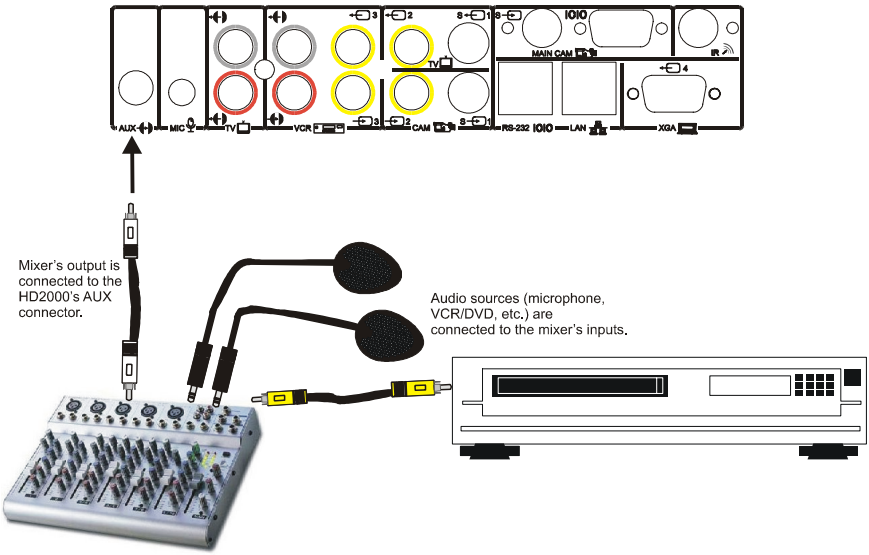
Connecting an Audio Mixer

Connecting an audio mixer lets you add several audio inputs to the HD2000.

These instructions are applicable to most audio mixers available in the marketplace. For specific instructions on installing and operating the audio mixer, see its accompanying user's guide.

➤ **To connect an audio mixer to the HD2000**

1. Connect all audio sources (microphones, DVD/VCR, etc.) to the mixer.
2. Connect an unbalanced mono cable between the Mono LINE OUT connector of the mixer and the HD2000's **AUX** connector.
3. Since connection to the HD is through a single line, configure the mixer for mono (or monophonic) sound production.



Connecting an Audio Mixer and Audio Components to the HD2000

3 GETTING STARTED

This chapter explains how to operate HD2000 and to make a call. It includes the following sections:

- Starting and Shutting Down HD2000
- The Remote Control
- HD2000 Screens
- Navigating in HD2000
- Setting up the Network Configuration
- Starting a Videoconference from the Manual Dialer

3.1 Starting and Shutting Down HD2000

Make sure the system is set up, the camera and TV monitor are turned on, and the cables are connected properly. See "Connecting the Basic Components" on page 8.

➤ **To start up HD2000**

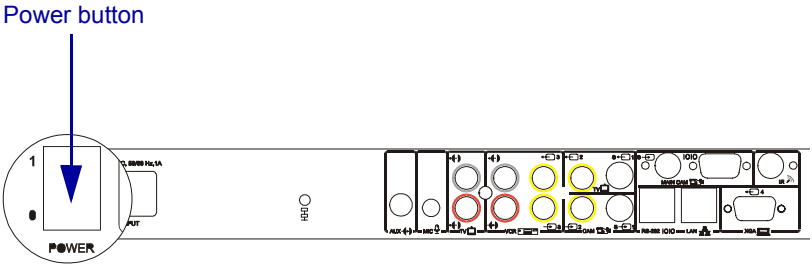
1. On the back of the Main Unit, press the **POWER** button on, marked (I).
2. Wait until the HD2000 Ready Screen appears, and HD2000 is ready to make and receive calls.

Ready Screen

If the Ready Screen does not appear after 1 minute from the time you started the system, see Chapter 15, "Troubleshooting".

➤ **To shut down the HD2000**

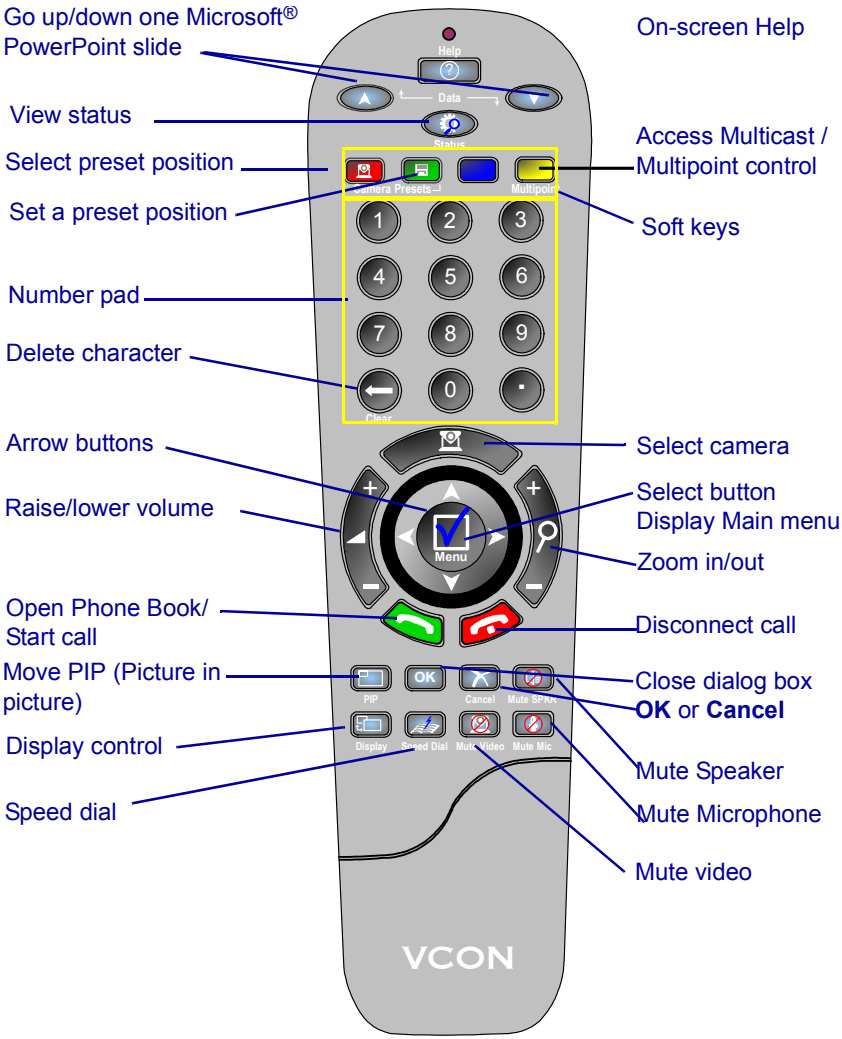
❑ Press the **Power** button on the rear of the HD2000.



3.2 The Remote Control

Use the remote control to work with the HD2000. Operate the remote control within six meters of the HD2000 unit.

Use only alkaline batteries in the remote control device.



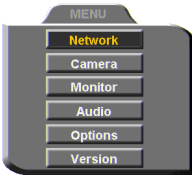
3.3 HD2000 Screens

The HD2000 screens provide an efficient videoconferencing environment. The types of elements displayed by the system are:

HD2000 Ready Screen

- ❑ Indicates that HD2000 is operational and provides a home screen.
- ❑ <Dial>, <Menu>, <Status> and <Help> are active.

Dialog Boxes



HD2000's dialogs provide on-screen information. They can contain checkbox options, menu options, and data-entry boxes. Press the arrow buttons to move among the options and boxes.

Tabs

Some dialogs contain various tabs, which are related sets of categorized options.

- ❑ Press the up and down arrows to move among tabs.
- ❑ Press the right arrow to open a dialog.
- ❑ Press the left arrow to leave a dialog and move among the tabs again.

SoftKey Guide

The four colored keys located on the covered part of the remote control are the SoftKeys.
SoftKey functions change according to the status of the system and the displayed dialog. The SoftKey Guide at the top of the screen indicates the current functions.

3.4 Navigating in HD2000

Whether making videoconference calls or setting configurations, you use the supplied remote control to navigate and enter information.

Moving Around the Menus and Dialog Boxes

To perform various functions, you must access the system's menus and dialog boxes. Many dialog boxes are divided into tabs (groups of related options and configuration properties). This section explains how to navigate among the menus, dialog boxes and tabs, and how to select entries or items.

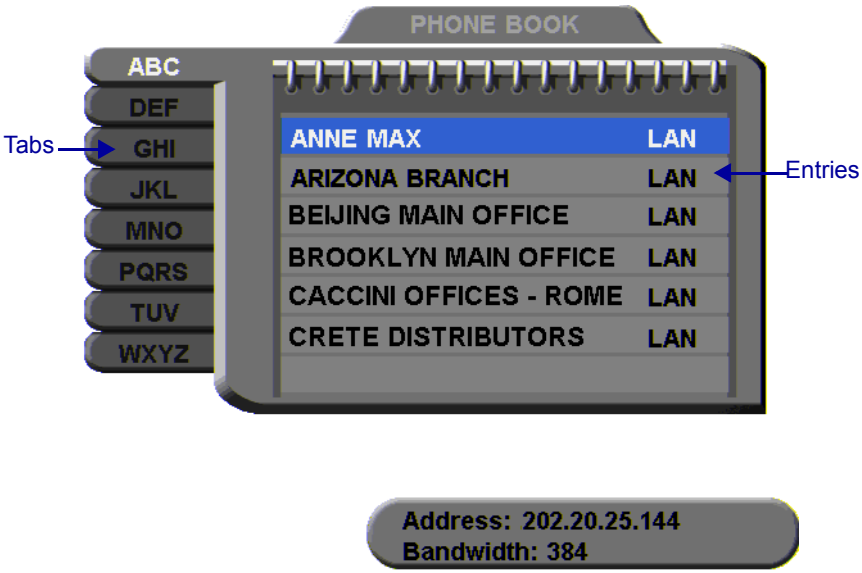
➤ **To navigate using the remote control**

❑ Press the arrow buttons.

— To move along tabs or entries in dialog boxes, press the up and down arrows.

— To enter a tab or an entry inside a dialog box, press the right arrow.

— To exit a tab, press the left arrow.



➤ **To select an option**

1. Navigate to the menu or checkbox option.
2. Press the Select (Menu) button, located in the middle of the arrow buttons.
   To deselect an option, press the Select (Menu) button again.

➤ **To close a dialog box**

❑ To apply changes and close the dialog box, press <OK>.

-or-

To close a dialog box without applying changes, press <Cancel>.

Entering Data

Some dialog boxes contain text boxes for entering data.

➤ **To enter numbers in a text box**

1. Enter numbers by pressing the number pad's keys on the remote control.

If you make a mistake, press <Clear>.

➤ **To enter alphabetical characters**

1. Navigate to the box in the dialog where the data is to be entered.

2. Press the yellow **KEYBOARD** SoftKey on the remote control. The on-screen keyboard appears.

On-screen Keyboard for Alphanumeric Data Entry

To enter lower case letters, press the red **LOWER CASE** SoftKey on the remote control. To enter upper case letters, press the red SoftKey again.

Press the arrow keys to navigate to the character you want to enter.

3. Press the Select button to select the character.

   If you make a mistake, select the **DEL** button on the on-screen keyboard or the <Clear> button on the remote control.

4. Press <OK> to close the keyboard. The characters you selected are entered in the dialog box.

3.5 Setting up the Network Configuration

To initiate and receive calls, the HD2000's network LAN and H.323 configuration must be defined correctly.

1. Press <Menu>. The main Menu appears. Select **Network**.

2. Define LAN and H.323 properties as required. For a full explanation of the Network Configuration, see "Communication and Network Configuration" on page 55.

3.6 Starting a Videoconference from the Manual Dialer

Numbers dialed in the Manual Dialer are not stored in the Phone Book. It is more efficient to store frequently repeated destinations in the Phone Book. See Adding New Phone Book Entries.

Before Calling

Before you start videoconferences, you can mute the microphone to ensure that the other side does not overhear a local discussion before you notice that the connection is made. See “Adjusting the Volume” on page 81 and “Automatically Muting the Microphone During Incoming Calls” on page 82.

Calling Through the Manual Dialer

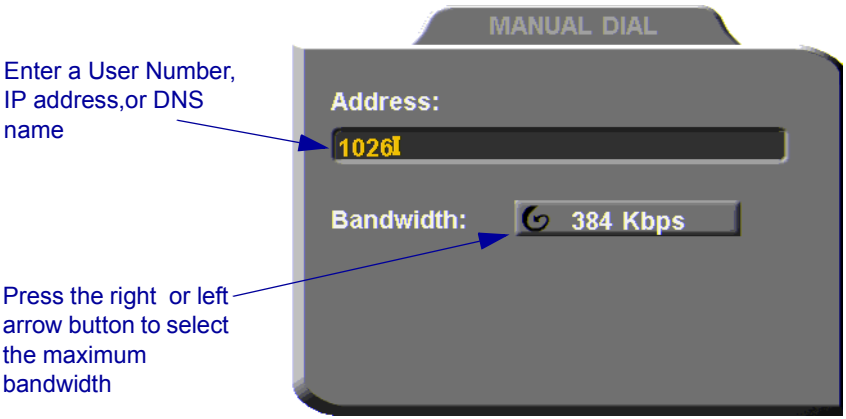
➤ **To dial through the Manual Dialer**

❑ To dial a number, press the buttons on the Number Pad. The Manual Dialer dialog box appears. The numbers that you press appear in the **Address** box.

-or-

1. Press <Dial>. The Phone Book screen appears.

2. Press the blue **MANUAL DIAL** SoftKey. The Manual Dialer dialog box appears.



Manual Dialing

3. Enter the IP Address, DNS name or User Number of the party.

IP Address	Example: 123.124.125.126
DNS Name	Example: john.widget.com
Station Name	Example: HeadOffice
User Number	Example: 102

4. Navigate to the **Bandwidth** value and press the right or left arrow button until the maximum bandwidth required for this call appears.

5. Press <Dial> to dial the number.

6. To dial the previous number, press the red **REDIAL** SoftKey on the remote control.

4 VIDEOCONFERENCING BASICS

This chapter provides instructions on videoconferencing with HD2000. It includes the following operations:

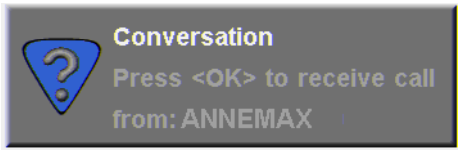
- ❑ Answering a videoconferencing call
- ❑ Adding and editing Phone Book entries
- ❑ Starting videoconferences from the Phone Book, the Speed Dial, and Redial buttons
- ❑ Ending videoconferences.

4.1 Answering Videoconferencing Calls

You can accept and reject incoming calls manually, or answer them automatically.

Manually Answering Calls

When there is an incoming call, HD2000 rings. A message, including the caller's station name or address, asks if you want to answer the call.



➤ **To answer the call**

- ❑ Press <OK>. HD2000 completes the connection.

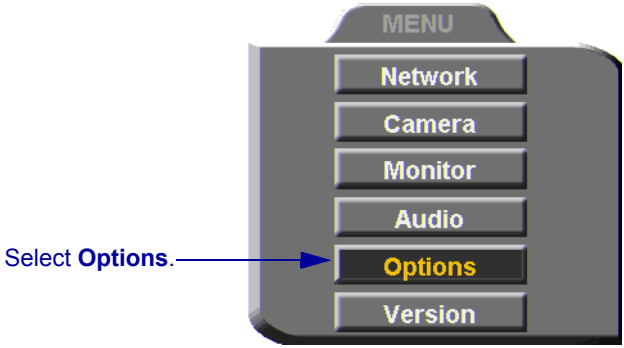
The other party's (*remote*) video appears on your monitor. The In Call icon appears, indicating that the call has been successfully connected.

➤ **To reject the call**

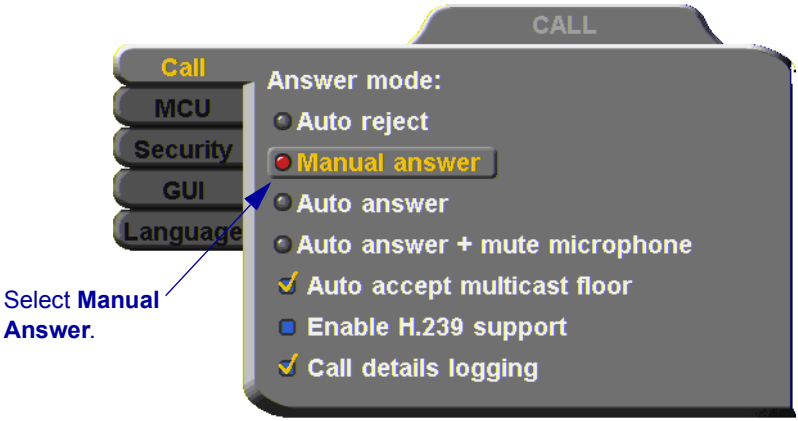
- ❑ Press <Cancel>.

➤ **To set Manual Answer**

1. Press <Menu>. The main Menu opens. Select **Options**.



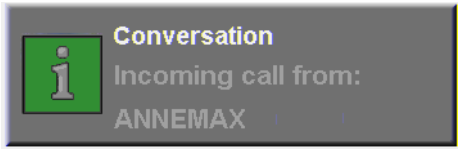
2. If you want to accept/reject calls as they come in, select **Manual Answer**.



3. Press <OK> to apply changes and close the dialog box.

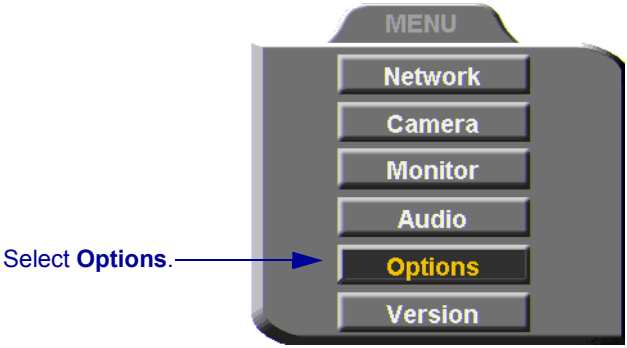
Automatic Answer

If Automatic Answer is selected, incoming calls connect automatically. The remote video appears on your monitor, and the In Call icon appears.

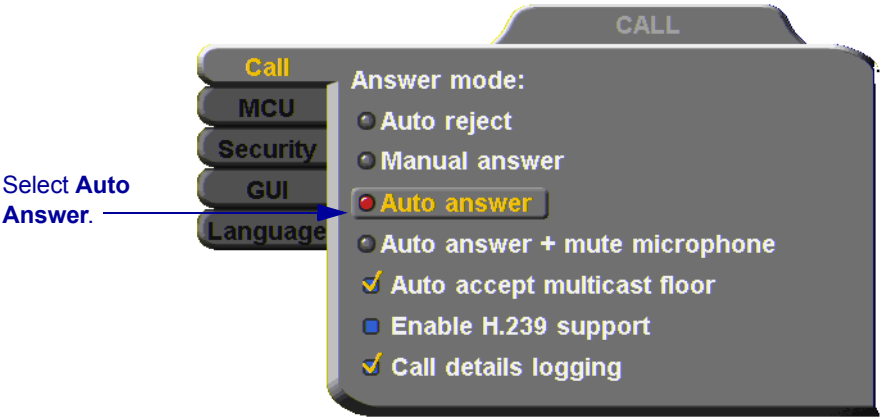


➤ **To set Auto Answer**

1. Press <Menu>. The main Menu opens. Select **Options**.



2. Select **Auto Answer**.



3. Press <OK> to apply changes and close the dialog box.

Other Call Answering Options

In addition to basic manual and automatic answering, HD2000 provides additional options for answering incoming calls.

Point to Point

Point-to-point conferences are calls between two end points.

Auto Reject — Select to automatically reject all incoming point-to-point calls (*Do-not-disturb*).

Auto + Mute Mic. — Select to automatically accept point-to-point incoming calls but to mute the outgoing audio at the beginning of the conference. After the conference begins, you may turn the audio back on.

Auto Accept Multicast Floor — During interactive multicast conferences, the *Floor* (one user's video and audio being broadcast to all participants at the same time) may be granted to you by the conference's organizer (*Chair*).

Select this option to automatically accept the floor when it's granted to you.

Multipoint

Multipoint conferences include more than two end points. They are managed by the HD2000's embedded MCU.

In the **Options** menu, browse to the **MCU** tab to set the multipoint answer mode.

Auto Reject — Select to automatically reject all incoming multipoint calls, if the system is already engaged in another call.

Manual Answer — Select to answer multipoint calls by manually accepting an incoming call request.

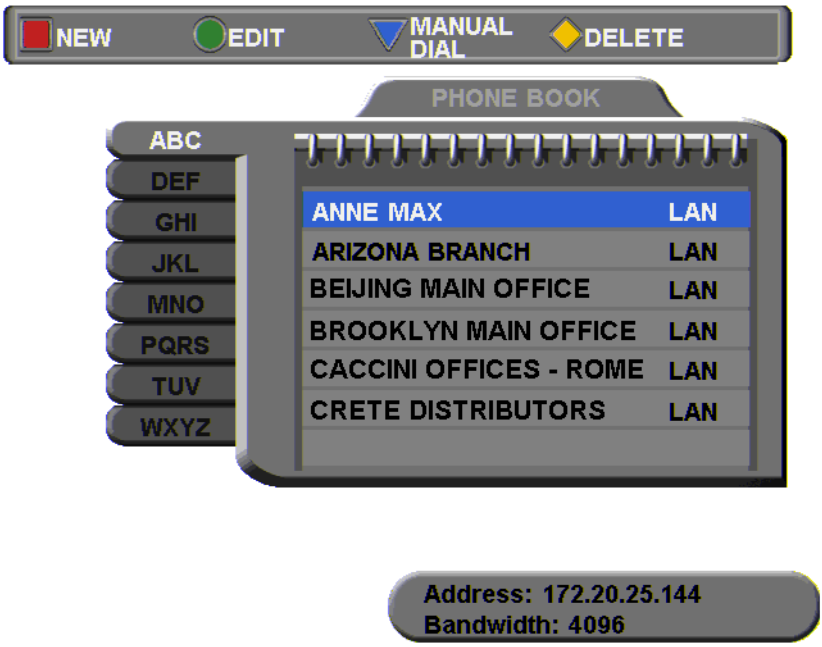
Auto Answer — Select to answer multipoint calls automatically.

4.2 Adding New Phone Book Entries

It is more efficient to store frequently repeated destinations in the Phone Book.

➤ **To create a new Phone Book entry**

1. Press <Dial>. The Phone Book opens.



2. Press the red **NEW** SoftKey. The New Entry dialog box opens.

3. Enter a **name** for this entry (to open the on-screen keyboard, press the yellow **KEYBOARD** SoftKey - see "Entering Data" on page 34). The name must begin with a letter; it cannot begin with a number or symbol.

4. Enter the entry's IP Address, DNS Name, Station Name or User Number (see "Dialing Options" on page 48).

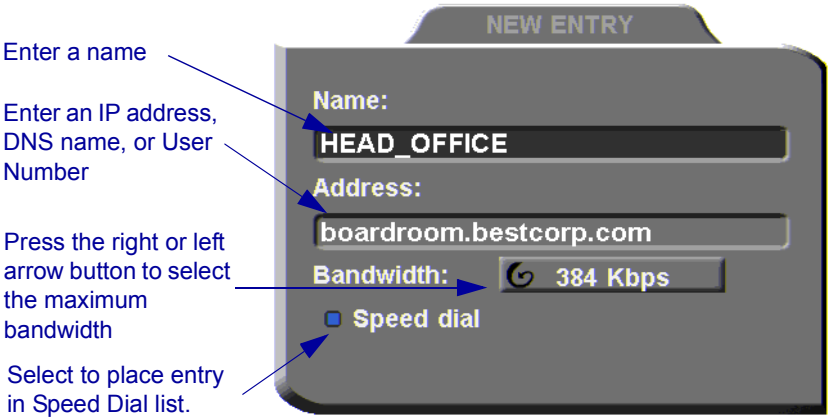
The DNS name is case-sensitive. For example, if the host name of the station you want to call is HEAD_OFFICE, enter it in all caps, including the underscore: HEAD_OFFICE.emblaze-vcon.com

5. Set appropriate dialing properties and options:

Bandwidth Press the right or left arrow key to choose the maximum bandwidth for calls dialled to this contact.

Speed Dial Select if you want this entry to appear in the Speed Dial list, with the shown entry number. See "Starting Videoconferences from the Speed Dial list" on page 50.

6. Press <OK> to add the entry and close the dialog box.



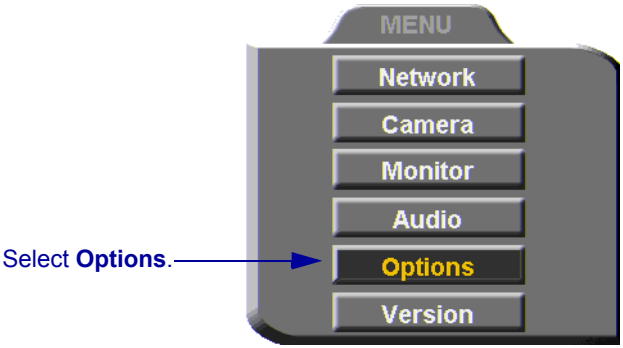
New Phone Book Entry

Automatically Adding the Remote Party to the Phone Book

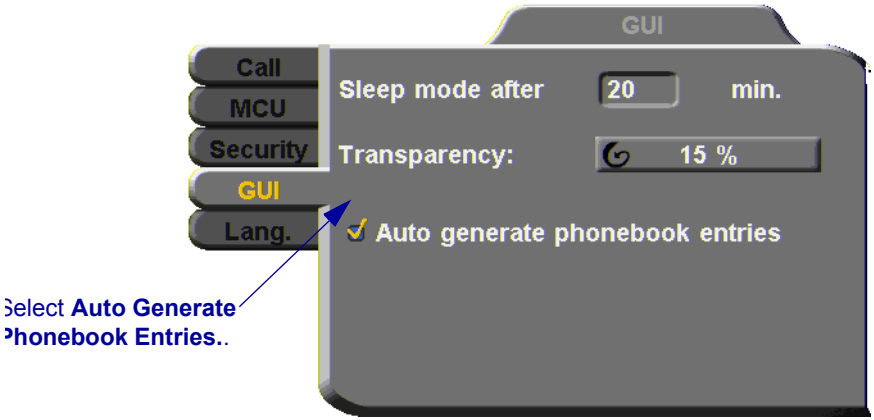
If the remote party in a conference is not listed in the Phone Book, the HD2000 provides an option to add its entry to the Phone Book after the call ends.

➤ **To enable automatic entry addition to the Phone Book**

1. Press <Menu>. The main Menu opens. Select **Options**.

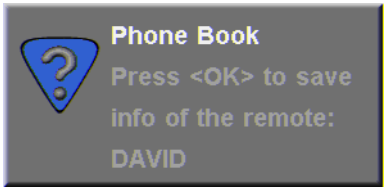


2. Navigate to the **GUI** tab and select **Auto Generate Phonebook Entries**.



3. Press <OK> to apply changes and close the dialog box.

4. After the call ends, the request to add the remote party to the Phone Book appears. Click **OK** to complete it.



Editing and Deleting Phone Book Entries

➤ **To edit an entry**

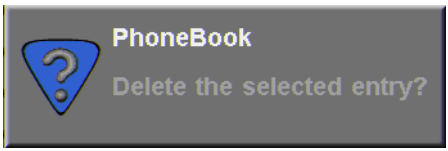
1. Navigate to a Phone Book entry. Press the green **EDIT** SoftKey. The Edit Entry dialog box opens. It looks like the New Entry dialog box and contains the information entered earlier.

2. Change data appropriately. Press <Clear> to erase the character to the left.

3. Press <OK> to apply the changes and close the dialog box.

➤ **To delete an entry**

1. Navigate to the Phone Book entry. Press the yellow **DELETE** SoftKey. A message appears to confirm the deletion.



2. Press <OK> to delete the entry and close the dialog box.

4.3 Starting Videoconferences

You can start a videoconference either from the Manual Dialer dialog box as described in "Calling Through the Manual Dialer" on page 36, or by using one of the following methods:

- Starting Videoconferences from the Phone Book
- Starting Videoconferences from the Speed Dial list

Dialing Options

The following table defines the network address types supported by HD2000. Enter one of these address types in the Manual Dial dialog box or in a New Entry dialog box of the Phone Book.

Address Type	Example	Applicable When
IP Address	212.219.130.100	Always applicable. Usually dynamic, changing without notification, so the other address types are often preferred.
DNS Name	Room1.corp.com	The IP addresses of a DNS server and of a WINS server are configured. The HD2000 Station Name is the first part of the DNS address.
User Number (E.164)	259	Both HD2000 and the remote system are registered with an Emblaze VCON Media Xchange Manager® (MXM) or Gatekeeper. Any number.
Station Name (H.323 Alias)	Room1	Both HD2000 and the remote system are registered with a Gatekeeper. Any string of characters beginning with an alphabetical letter.

Starting Videoconferences from the Phone Book

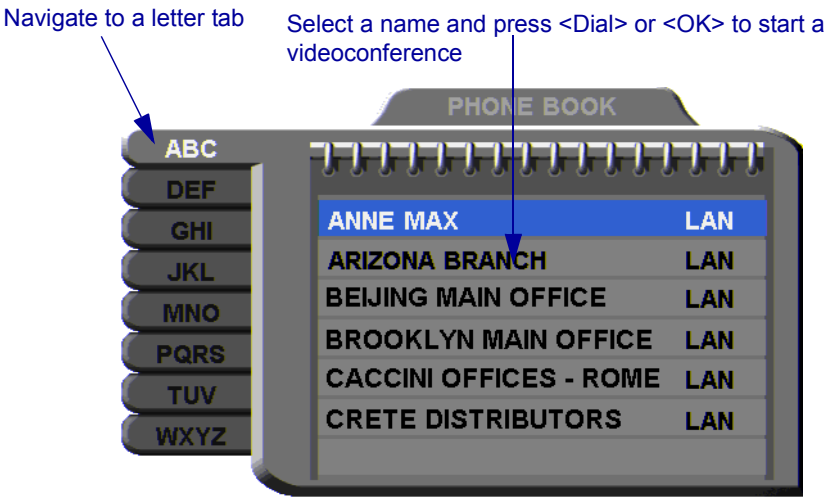
Phone Book entries makes dialing easier and more efficient. From the Phone Book, you can dial without entering the address or phone numbers again.

➤ **To dial from the Phone Book**

1. Press <Dial>. The Phone Book opens.
2. Navigate to the alphabetical tab that contains the entry you want to dial. Press the right arrow button to enter the tab.
3. Navigate to the entry that you want to dial. The entry shows the following information:

Name	The name of the videoconferencing contact.
Address	The address of the contact is listed below the phone book.
Bandwidth	The bandwidth listed below the phone book shows the maximum bandwidth setting for the selected entry.

4. Press <Dial> or <OK>. HD2000 dials the number.



Starting Videoconferences from the Speed Dial list

Dialing out from the Speed Dial is faster than from the Phone Book. You don't have to search through tabs and various entries, because they are all in one dialog box. Also, you can dial a Speed Dial entry simply by pressing its number instead of navigating within the dialog box.

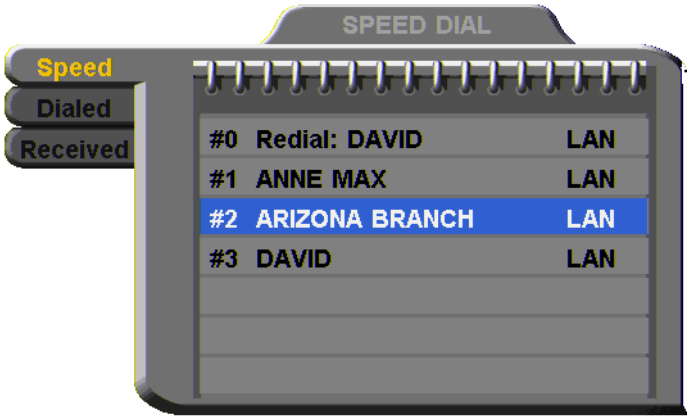
In addition, through the Speed Dial, you may dial the most recent parties that you called and from whom you received calls.

➤ **To add an entry to the Speed Dial**

❑ In the New Entry or Edit Entry dialog boxes, select **Speed Dial**.

➤ **To dial a number from the Speed Dial**

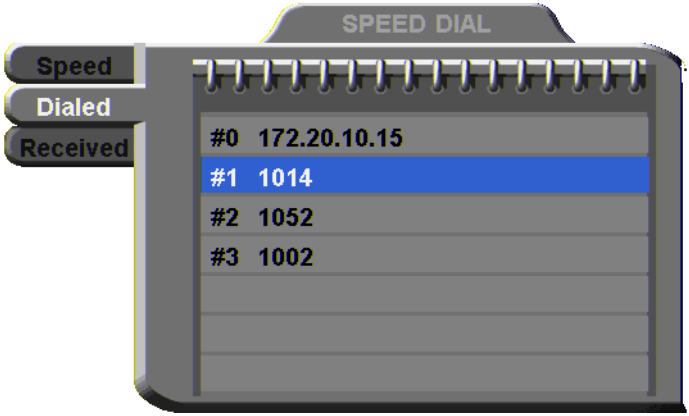
1. When the screen is clear of dialog boxes, press <Speed Dial>. The Speed Dial list appears.



2. Press the number of the Speed Dial entry that you want to dial. The selected entry is dialed. You don't have to press <Dial>.

-or-

Navigate to the **Dialed** or **Received** tab to call a party that you engaged in a recent conference.



➤ **To redial a Speed Dial entry**

❑ From the Speed Dial screen, press <0> or <Speed Dial> again.

➤ **To delete a Speed Dial entry**

1. Navigate to the entry you want to delete and then press the red **DELETE** SoftKey. A message asks for confirmation.

2. Press <OK>. The entry is deleted from the Speed Dial list (the Phone Book entry is not affected).

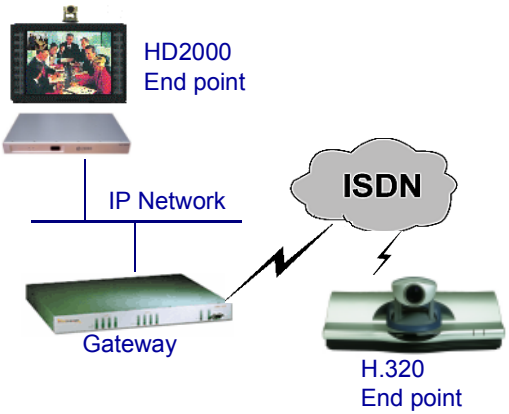
-or-

1. Navigate to a Phone Book entry. Press the green **EDIT** SoftKey. The Edit Entry dialog box opens.

2. Deselect **Speed Dial**.

Calling Through Gateways

On certain occasions, you may need to call out from your local network (LAN call) to parties who are connected to different networks, ISDN lines, or telephone exchanges. In such situations, dialing through a gateway is required.



HD2000 to Gateway to an ISDN Address

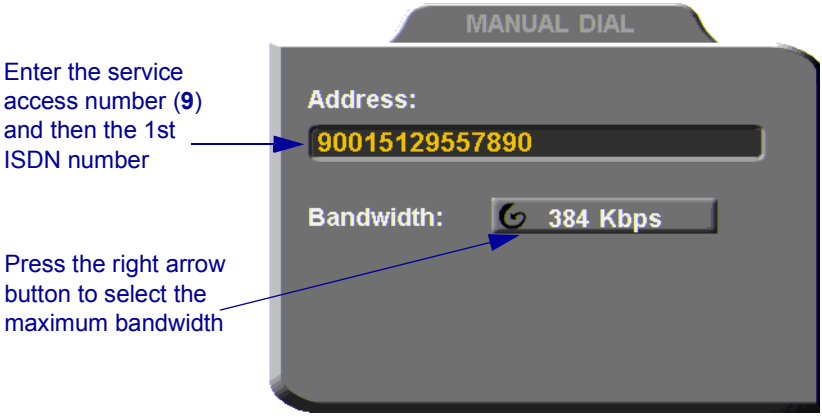
Before attempting a Gateway call, ask the system administrator to give you the calling syntax. The syntax includes a service access number and, in some cases, a variation of punctuation signs.

➤ **To call through a Gateway**

1. Open the Manual Dial dialog (see "Starting a Videoconference from the Manual Dialer" on page 36) and dial [*service access number*][*ISDN number(s)*] in accordance with the system administrator's instructions.
2. Set the required **Bandwidth** or use the default bandwidth.
3. Press <Dial>.

   The gateway's gatekeeper receives the call. It recognizes the syntax that the system administrator instructed you to enter, and it passes the call onto the Gateway. You must be registered with a Gatekeeper to reach a Gateway (see "H.323 Network Registration and Properties" on page 58 for details).

   The Gateway calls the destination, and when it receives an answer, it begins the videoconference, continuously translating between H.320 (ISDN) and H.323 (IP).

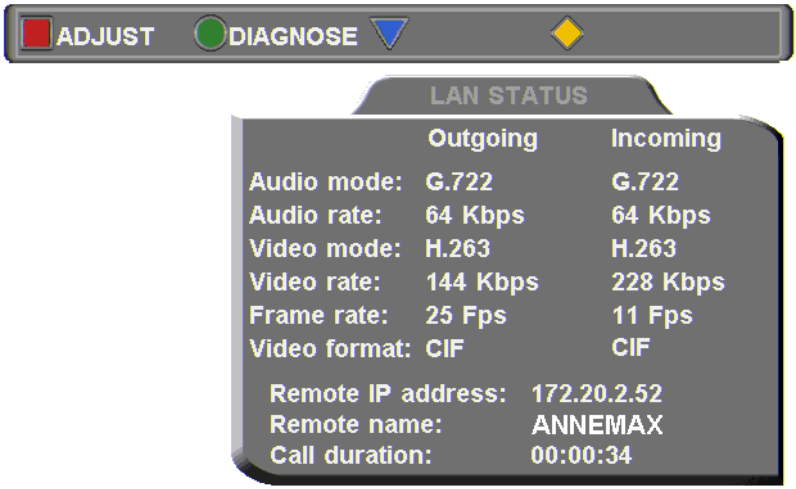


Verifying the Status of a Call

During an active videoconference you can check the status of the call to see the identification of the remote party, the bandwidth of the call, the current compression modes, etc.

➤ **To check the status of the current call**

1. Press <Status>. The Status dialog box appears.

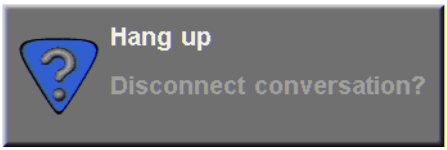


2. Press <OK> to close the dialog box.

4.4 Ending Videoconferences

➤ **To end a point-to-point call**

1. Close any open dialog boxes.
2. Press <Hang up>. A message appears, asking for confirmation.



Hang Up Confirmation Message

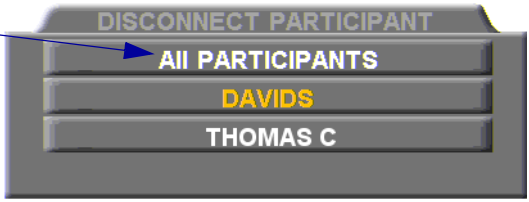
3. Press <Hang up> again or <OK>. The videoconference is terminated.

To cancel the Hang up command and continue the videoconference, press <Cancel> in response to the confirmation message.

➤ **To end a multipoint conference**

1. Press <Hang up>. A list of participants appears.
2. Select **All Participants** and press <OK>.

Select **All Participants** and press <OK>.



5 NETWORK CONFIGURATION

This chapter explains how to set up HD2000 to operate with your network connections. Network options may be edited at any time, from the HD2000, from a remote station through a web browser (see *HD Web Management User's Guide*), or from the Media Xchange Manager® (MXM).

5.1 Communication and Network Configuration

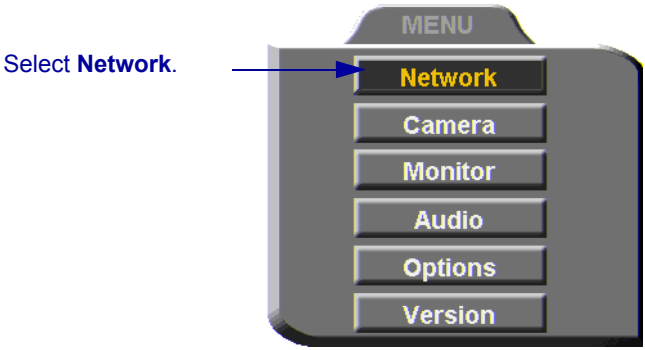
After you connect the HD2000 to the LAN (see "Connecting the LAN" on page 20 for connection details), set up the HD2000's network configuration.

Whenever the HD2000 is not in a call, you can edit the configuration in the Set Network dialog box. The communication and network configurations include:

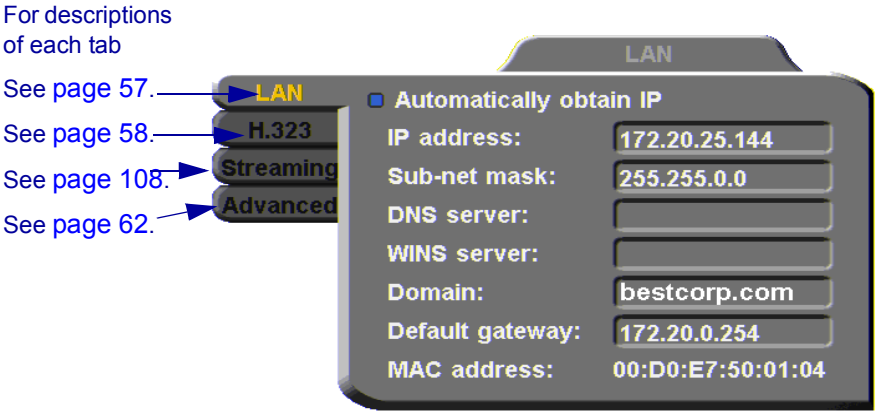
- LAN Connection and Registration
- H.323 Network registration and properties
- QoS priorities and NAT address

➤ **To set up network connections**

1. Press <Menu>. The main Menu appears. Select **Network**.



2. In the LAN dialog box, set up the communication, networking and streaming configurations, navigating among the tabs, properties and entering information appropriately.



3. Press <OK> to apply the changes and close the dialog box.

A message states that HD2000 will restart in a few seconds. After restarting, the changed properties are in effect.

-or-

Press the left arrow key to navigate to another tab.

LAN Connection

In the **LAN** tab, enter the HD2000's address and information about its connection to the LAN (Local Area Network).

Automatically Obtain IP	Select to enable HD2000 to receive its network configuration from the LAN's DHCP server and enter it automatically in the **LAN** tab. If this option is not selected, you have to enter the LAN properties manually. Consult with your system administrator.
IP Address	If your HD2000 receives an address automatically, it is a temporary address which is liable to be changed when the network's users' IP addresses are updated periodically. If you manually enter an IP address here, the address remains permanently.
Subnet Mask	Your company's subnet mask.
DNS Server & WINS Server	IP Addresses of the DNS server and the WINS server. Registering with these servers enables HD2000 to translate names to IP addresses.
Domain	DNS domain name of your company (for example, **bestcorp.com**).
Default Gateway	IP address of the network's Gateway router. The gateway helps HD2000 send and receive calls between subnets.
MAC Address	The unique Media Access Control (MAC) address of your HD2000 device.

H.323 Network Registration and Properties

H.323 is the standard for video, audio, and data streaming over IP networks. In the H.323 tab, define how the HD2000 handles these functions within its LAN environment. These properties include:

- ❑ H.323 Management - registration of the HD2000 with a remote H.323 management and service provider
- ❑ Automatic Video Transmission Adjustment - automatic preservation of optimum transmission, in response to changing network conditions

H.323 Management

Many H.323 networks include devices such as the Emblaze VCON Media Xchange Manager® (MXM) or a gatekeeper, which provide important management functions and provision of communication services to large numbers of users within defined zones on a LAN or WAN. HD2000 supports registration with the MXM and with third-party H.323 Gatekeepers.

The following table lists the services that HD2000 receives if it registers with an MXM

- ❑ Telephony exchange features, such as Call Transfer, Ad-hoc Conference, Call Forward and Call Pickup.
- ❑ Address translation and short-number dialing to registered users within the same zone and to other zones.
- ❑ Allocation of network resources, such as bandwidth management.
- ❑ Remote call initiation from the MXM Administrator.
- ❑ Remote configuration management by a system administrator.
- ❑ Presence in online directories (LDAP).
- ❑ HD2000 software version upgrade from the MXM Administrator.

In the **H.323** tab, choose to register the HD2000 in an Emblaze VCON MXM or in an H.323 Gatekeeper.

None; Gatekeeper; MXM	To register with the **MXM** or a **Gatekeeper** and receive services from them, select the appropriate option. Select **None** to operate HD2000 as a stand-alone system.
MXM Server IP	Enter the IP address of the MXM, if applicable.
Gatekeeper IP	Enter the IP address of the Gatekeeper, if applicable.

User Number

Videoconferencing contacts registered with the same MXM or other Gatekeepers will be able to dial using your User Number as well as your IP address.

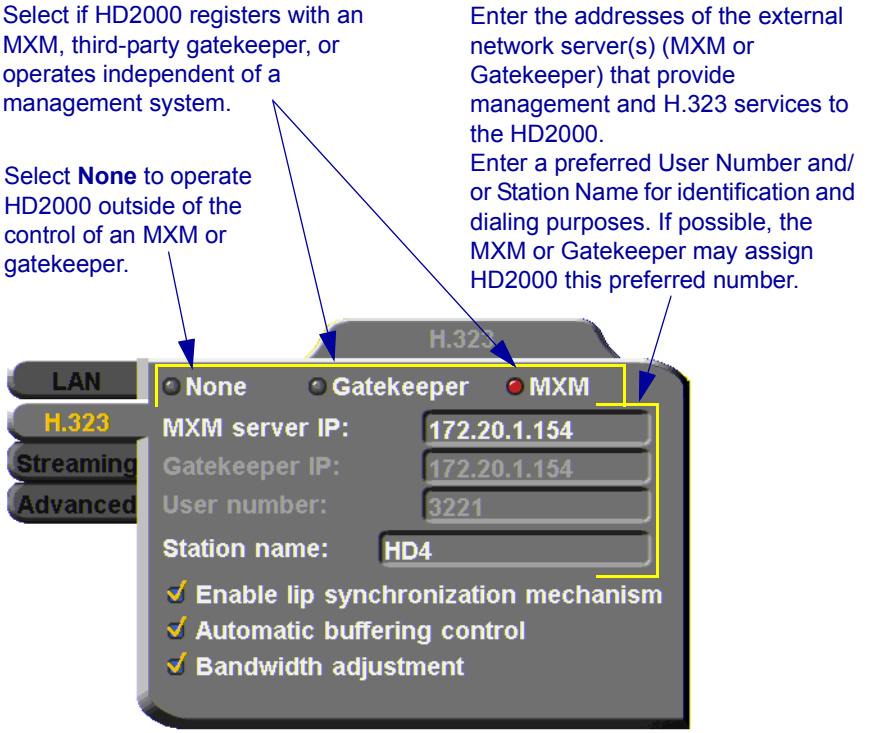
Enter a number to register HD2000 with the MXM or Gatekeeper. Some of these devices may register your device under this number, while others assign these numbers, regardless of your request.

Station Name

The Station Name is the identification of the HD2000 on the connected network. Consult with the system administrator before modifying this box.

If the system is registered with the WINS server or a Gatekeeper, HD2000 can use station names instead of IP addresses for starting and receiving calls. When you register with a Gatekeeper, the station name is entered as your User Name.

If the system has access to a Domain Name System (DNS) server, the Station Name is also the DNS Host Name of the system. Enter the Host Name, then a dot, then the Domain Name: **StationName.Domain.com** (see "Entering Data" on page 34 for instructions on entering alphanumerical data from the keyboard).



Automatic Video Transmission Adjustment

The **H.323** tab also includes options that enable HD2000 to preserve optimum transmission quality automatically, according to current network conditions (for example, available bandwidth).

Enable Lip Synchronization Mechanism — Select this option to synchronize the audio and video of a LAN conversation. You can adjust the lip synch during a call. See "Adjusting Quality of Video Calls" on page 78.

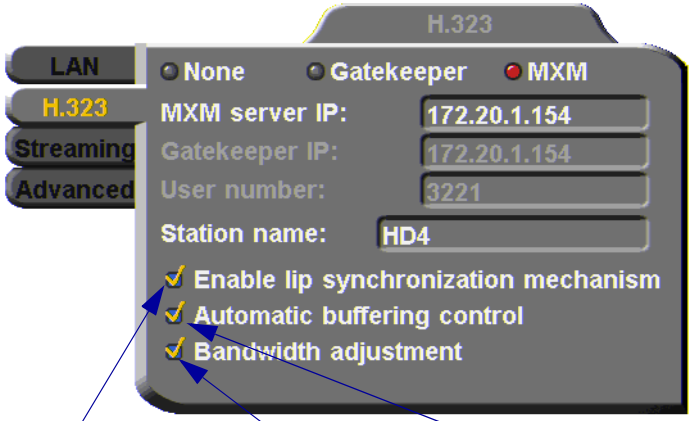
Automatic Buffering Control

Buffer Control optimizes the transmission of the video for the available dynamic bandwidth. If network conditions require, the system holds back frame transmission before transmitting, in order to attain smooth playback and avoid "jumping".

Select this option to make the buffer control automatic. Deselect it to make it adjustable during LAN conversations. See "Adjusting Quality of Video Calls" on page 78.

Bandwidth Adjustment

Enables videoconferences to precede at reduced bandwidth if the network is congested. Deselecting this option maintains a constant bandwidth during the session, but it may cause network problems.



Select to activate automatic Lip Synchronization, which synchronizes the audio and video by delaying either the audio or the video stream, so that both arrive at the same time.

Select to enable the system to automatically adjust video transmission in accordance with network conditions.

Select to enable videoconferences to precede at reduced bandwidth if the network is congested

Advanced Properties

In the Advanced dialog box, administrators can view or modify the following:

- Setting Quality of Service (QoS) Priority Levels - control of the Quality of Service that will be used for transmitting packets from the HD2000.
- Setting a Public NAT Address for the HD2000 - entering the public IP address of the HD2000 (if your organization's network is protected by NAT).

Setting Quality of Service (QoS) Priority Levels

Emblaze VCON's PacketAssist™ Architecture simplifies Video over IP bandwidth management and delivers true Quality of Service (QoS) for IP networks. PacketAssist automatically adapts video meeting transmissions to current network conditions, while ensuring optimal video and audio performance.

The **Advanced** tab contains properties for controlling the type of Quality of Service that will be used for transmitting packets from the HD2000.

CAUTION Emblaze VCON sets the Quality of Service default values. We recommend that only system administrators with knowledge of QoS make any changes, if required.

➤ **To set Quality of Service options**

1. Set QoS properties as follows (see tables on page 64):

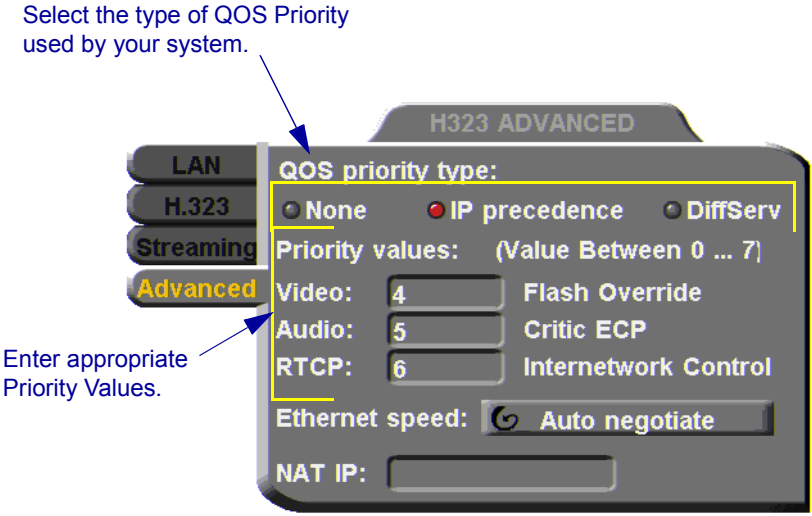
QoS Priority Type Select the type of QoS priority used for transmitting packets during heavy network congestion conditions.

- **None** - network transfers packets in a normal Best-Effort method (*First In, First Out*, or *FIFO*).
- **IP Precedence** - network gives priority to video, audio, control bits according to the eight levels of IP precedence.
- **Diffserv** - network transfers packets according to specific differentiated services priority levels.

Priority Values

For **Video**, **Audio**, and **RTCP** (Real Time Control Protocol) **Priority**, enter an appropriate priority level. According to their priority levels, bits are queued for forwarding by QoS-supporting routers.

The priority levels vary, depending on whether the selected Priority Type is **IP Precedence** or **Diffserv**.



2. To return to the default QoS values, press the blue **RESET** SoftKey.

3. Press <OK> to save the QoS settings and close the dialog box.

For best results, it is recommended that RTCP packets receive the highest priority, to ensure that QoS features continue to operate during the entire call.

Audio packets should receive a higher priority than video packets, as a meeting can continue without video, but not without audio.

IP Precedence Values

Value	Description
0	Routine
1	Priority
2	Immediate
3	Flash
4	Flash Override
5	Critic/ECP
6	Internetwork Control
7	Network Control

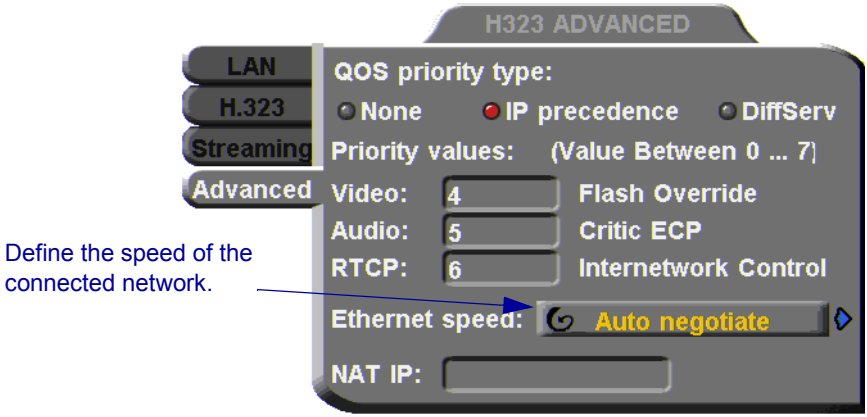
DiffServ Values

Value	Description
000000	Probability Timely Forwarding 0
001000	Probability Timely Forwarding 1
010000	Probability Timely Forwarding 2
011000	Probability Timely Forwarding 3
100000	Probability Timely Forwarding 4
101000	Probability Timely Forwarding 5
110000	Probability Timely Forwarding 6
111000	Probability Timely Forwarding 7
101110	Expedited Forwarding
001010	Forward Class 1 Low Drop
001100	Forward Class 1 Mid Drop
001110	Forward Class 1 High Drop
010010	Forward Class 2 Low Drop
010100	Forward Class 2 Mid Drop
010110	Forward Class 2 High Drop
011010	Forward Class 3 Low Drop
011100	Forward Class 3 Mid Drop
011110	Forward Class 3 High Drop
100010	Forward Class 4 Low Drop
100100	Forward Class 4 Mid Drop
100110	Forward Class 4 High Drop

Ethernet Speed

In the **Advanced** tab, define the speed of the network to which the HD2000 is connected. The HD2000 supports 10 MB and 100 MB half-duplex and full-duplex networks.

If the **Ethernet** (network) **speed** is defined to **Auto-Negotiate**, the HD2000 can determine the common set of networking options supported between it and the remote parties in a conference. For example, they can figure out the highest speed that they each support, or automatically set full-duplex operation if both parties support that mode.



Setting a Public NAT Address for the HD2000

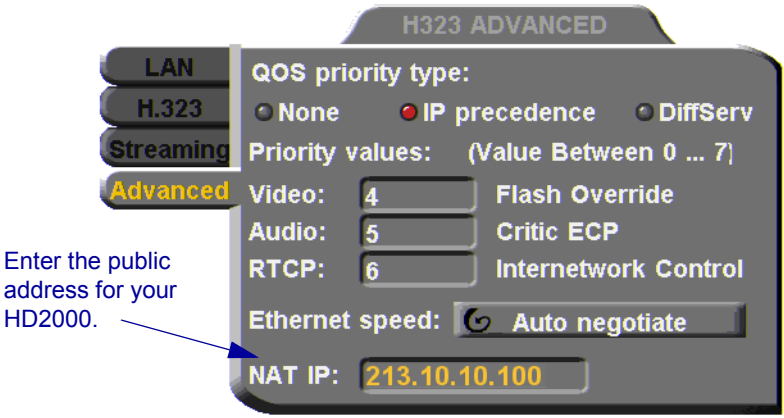
NAT (Network Address Translation) is a protocol in which a LAN uses one set of IP addresses for internal communication (within an organization's private LAN) and a different, single address for communication with a public network, such as the Internet. In this way, a NAT helps protect a LAN from exposure to unwanted traffic.

To hide a LAN's users from other networks, the NAT maps the private addresses to the public address. The public address is then used to identify the local users to remote contacts. Therefore, remote contacts use this public address to call the local users, without knowing their actual local addresses.

In the **Advanced** tab, you can enter the public address (if applicable) for your HD2000.

➤ **To define the public address for the HD2000**

❑ In the **NAT IP** box, enter the public address used for contacting your HD2000 device.



5.2 Testing Network Configuration

After you configure the Network properties and restart HD2000, you can check that the changes that you made were applied.

➤ **To check network configuration**

1. Press <Status>. The Status dialog box appears.

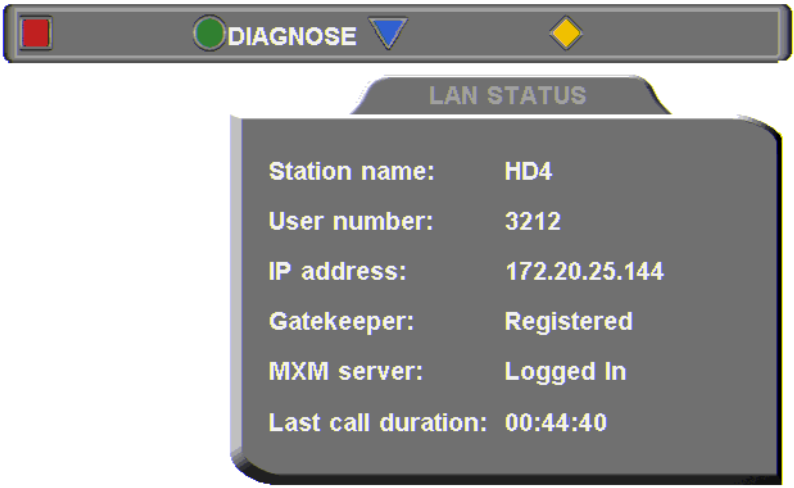
   The Status dialog box informs you if your HD2000 is connected with the local LAN and if the HD2000 is registered with a Gatekeeper and/or an MXM.

❑ Check that the IP Address displayed is the one that you set or received for the system.

❑ Check if the system is logged into an MXM or registered with a Gatekeeper, depending on the H.323 options that you chose.

If you selected **Gatekeeper** and entered the correct IP address in the Network dialog box's **H.323** tab, the HD2000 should be registered in the Gatekeeper. If it is not, change the **User Number** that you entered. You might have entered a number that is already occupied.

For more troubleshooting details, press the green **DIAGNOSE** SoftKey (see"System Diagnostics" on page 141).



6 VIDEO AND AUDIO ADJUSTMENTS

This chapter explains how to adjust the video and audio variables for optimizing quality. Some of these adjustments should be made before entering into a videoconference; others are available only during a call.

6.1 Adjusting the Video

To customize the HD2000's video transmission and display, you can control and adjust the following:

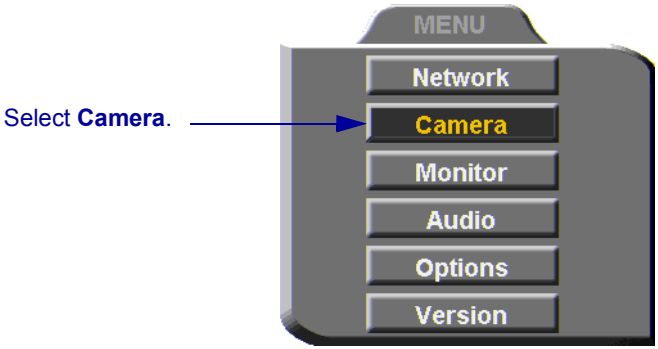
- ❑ Video Settings – adjust the brightness, color, contrast and hue.
- ❑ Camera Configuration – adjust, select and position the main camera and optional cameras.
- ❑ Display Configuration – customize the display and mute video.

Adjusting the Camera Settings

To save time during a videoconference, adjust the brightness, color, contrast and hue while you are not in a call. If necessary, you can adjust them again at any time.

➤ **To adjust camera settings**

1. Press <Menu>. The main Menu appears. Select **Camera**.



The Set Camera dialog box opens and the camera adjustment SoftKeys appear at the top of the screen.

2. To adjust Brightness, Color, Contrast, or Hue, press the appropriate SoftKey.

3. To increase the setting, press the right arrow key.
To decrease the setting, press the left arrow key.

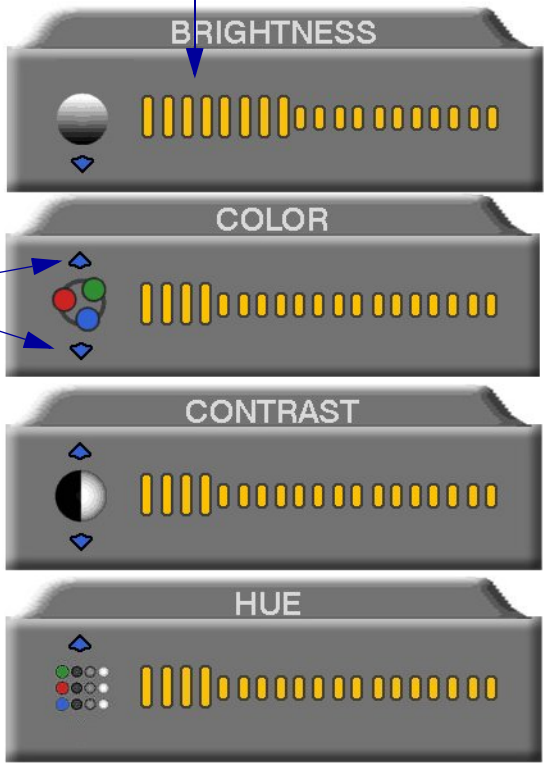
4. Press the up and down arrow keys to switch to other camera settings.

5. To return to the default camera settings, press the red **RESET** SoftKey.

6. Press <OK> to save the settings and close the dialog box.

To increase the setting, press the right arrow key.
To decrease the setting, press the left arrow key.

To navigate among the settings, press the up and down arrows.

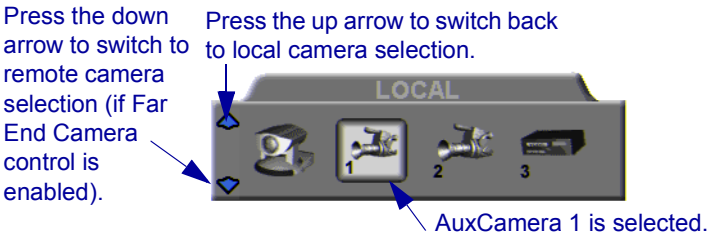


Selecting the Current Camera

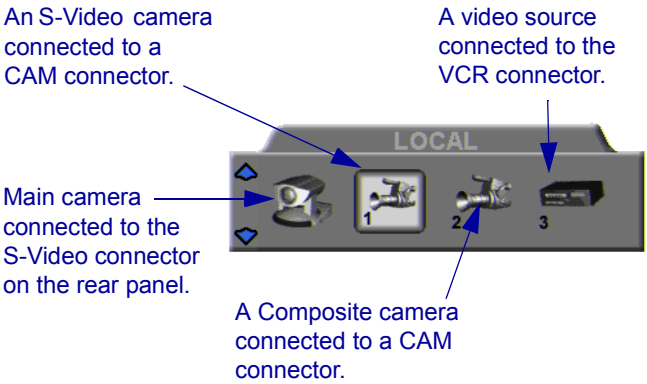
Current camera selection is always available. At any time, you can select different local video sources.

➤ **To select the current camera**

1. Press <camera>. The Local Camera Selection menu opens. The currently selected camera is highlighted.



2. Press the left or right arrow buttons to switch between the local video sources (up to six):



During a videoconference, you can also select the current remote video source if the remote party enabled *Far End Camera Control* (*FECC*). Using FECC, one party may select, position and control the other party's camera. To enable the remote party to control your camera, see "Far End Camera Control" on page 76.

3. During a conference with a party who enabled FECC, press the down arrow key to view the remote camera selection options.

4. Press the left or right arrow buttons to switch between the remote video sources.

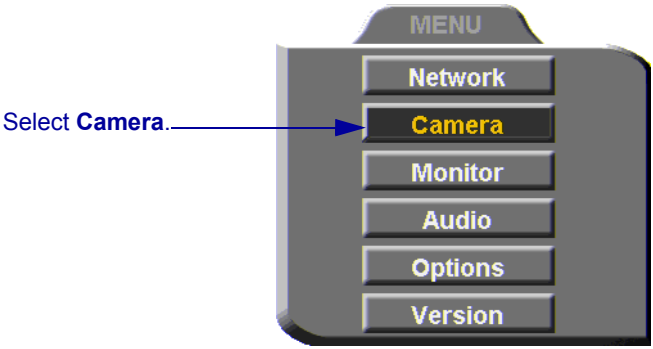
5. Press <OK> to select the highlighted camera (and the selected Local camera) and close the dialog box.

Selecting the PTZ Camera Type

If a Pan/Tllt/Zoom (PTZ) camera is connected to the HD2000, specify its type in the Select Camera dialog box.

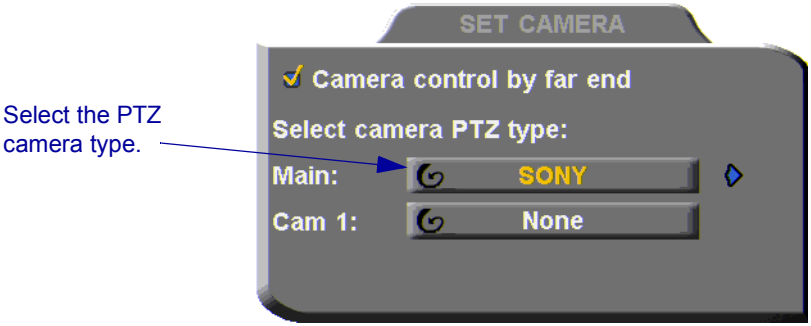
➤ **To select the PTZ camera type**

1. Press <Menu>. The main Menu appears. Select **Camera**.



2. In the Set Camera dialog box, navigate to **Main**. Press the right arrow button to switch between camera types. If you are not using a PTZ camera, select **None**.

   If a second PTZ camera is connected, select **Cam 1** and select its camera type.



Controlling the Camera

You can position cameras at any time, either prior to or during a call. You can pan, tilt, and zoom a camera every time you want to change the local display, or you can save preset positions.

Positioning the Camera

When the screen is clear of dialog boxes, either in or out of a videoconference, you can control the camera in various ways:

- ❑ Manual positioning - temporarily positioning the camera as required.
- ❑ Preset positioning - focusing the camera on a specific person or location, then saving the position and recalling it when needed.
- ❑ Far-end camera control.

➤ **To manually position the camera**

- ❑ To pan the camera left and right, press the left and right arrow keys. To tilt it up and down, press the up and down arrow keys.

- ❑ To zoom in and out, press the <+> and <-> of the Zoom button.

➤ **To preset a camera position**

1. Manually position the camera.
2. Press the green SoftKey.

3. Press a number on the number pad. Each of the numbers between 0 and 9 may represent a preset position.

➤ **To restore the camera to a preset position**

1. Press the red SoftKey.

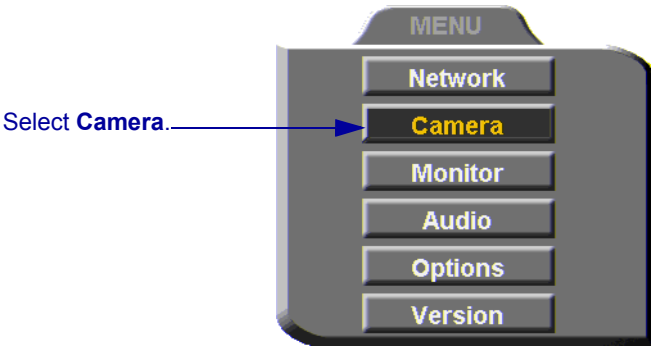
2. Press the number (0-9) in the number pad corresponding with the position you want. The camera positions itself accordingly.

Far End Camera Control

The *Far End Camera Control* (*FECC*) option permits the remote party to control your camera, so that they see views that are convenient for them. FECC provides control over the pan/tilt/zoom positioning and the adjustment of brightness, color, contrast and hue.

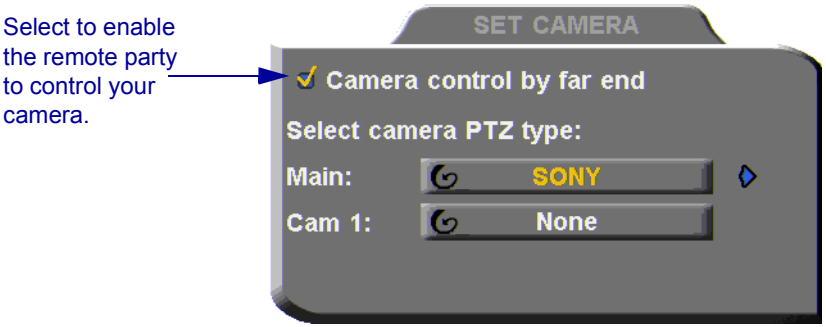
➤ **To enable the remote party to control your HD2000's camera**

1. Press <Menu>. The Main Menu opens. Select **Camera**.



2. In the Set Camera dialog box, select **Camera Control by Far End**.

3. Press <OK> to apply the change and close the dialog box.



Display Modes

Different display modes are available during a videoconference.

- **Local** - your party
- **Remote** - the other party
- **Data** - image of the screen display from the computer that opened a data connection to the HD2000.

➤ **To switch between viewing Local and Remote video**

- Press <Display> on the remote control.

Muting the Outgoing Video

You can mute the local outgoing video if you want to stop sending video temporarily. The remote party then sees a frozen video image until you unmute it.

Muting the video does not affect the video or audio from the remote party. If you want to mute the audio also, see "Adjusting the Volume" on page 81.

➤ **To mute the video**

- Press <Mute Video>. An animated icon at the bottom of the screen indicates that the outgoing video is frozen.

➤ **To unmute the video**

- Press <Mute Video> again.

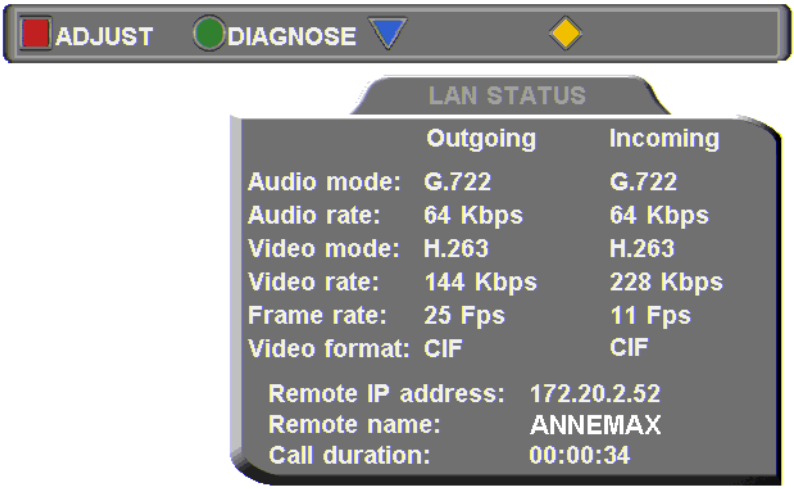
Adjusting Quality of Video Calls

HD2000 can automatically adjust its video and audio for dynamic IP bandwidth. However, you may want to adjust the quality-control mechanisms yourself if you experience the following problems:

- ❑ Parts of the video are covered with blocks (low motion control).
- ❑ The audio and video fall out of synchronization (low quality lip synch).
- ❑ The video freezes and then doubles up frames (inefficient buffering).

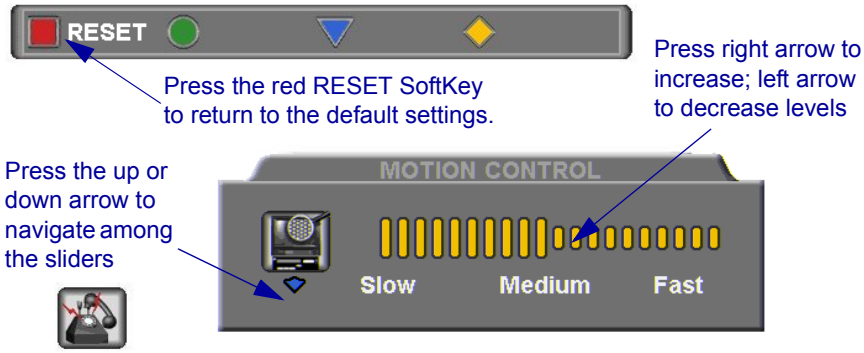
➤ **To adjust the quality of your video calls**

1. Press <Status>. The Status dialog box opens.



During a call, the red **ADJUST** SoftKey is available. You can access the Adjustment sliders only during a call.

2. Press the red **ADJUST** SoftKey. The first slider appears.



3. Press the up and down arrow keys to view and adjust the different sliders:

Motion Control

Press the left arrow key to clear up blocks in the video (**Slow** motion).

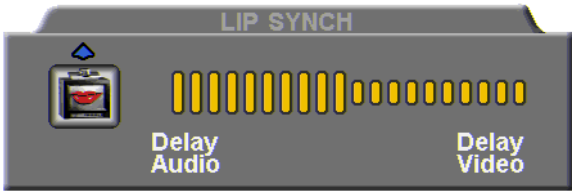
Press the right arrow key for smoother, more continuous motion (**Fast** motion).

Lip Synch

Press the left arrow key if sound comes before motion (**Delay Audio**).

Press the right arrow key if motion comes before sound (**Delay Video**).

The Lip Synch slider is only available if Lip Synchronization is enabled (see "Automatic Video Transmission Adjustment" on page 68).



Buffering

Press the left arrow key for a more realistic video (**Less Delay**).

Press the right arrow key to clear up video freezing and jumping **(Smoother Motion**).

— For best results, start the sliders at one end and gradually adjust them.

— To reset the default values, press the red **RESET** SoftKey.

4. Press <OK> to apply the changes and close the sliders.

6.2 Adjusting the Audio

HD2000 supports various and powerful audio features:

- ❑ Increasing, decreasing or muting the volume of incoming and outgoing audio
- ❑ Switching between different local microphones and other audio sources
- ❑ Setting VCR mixing options
- ❑ Setting audio options to support special environments

Adjusting the Volume

You can adjust the volume at any time, in or out of a videoconference, when a dialog box is open or when the screen is clear. The following volume controls are available:

- Increase or decrease the volume of the incoming audio
- Mute the incoming audio
- Mute the outgoing audio

➤ **To adjust the volume of incoming audio**

❑ Press the right volume button to increase the volume, or press the left volume button to decrease the volume.

Volume Level

➤ **To mute the speaker**

❑ Press Mute <Speaker>. An animated picture on the bottom of the screen indicates that the speakers are muted.

To restore the speaker, press Mute <Speaker> again.

➤ **To mute the microphone**

❑ Press Mute <Microphone>. An animated picture on the bottom of the screen indicates that the microphone is muted.

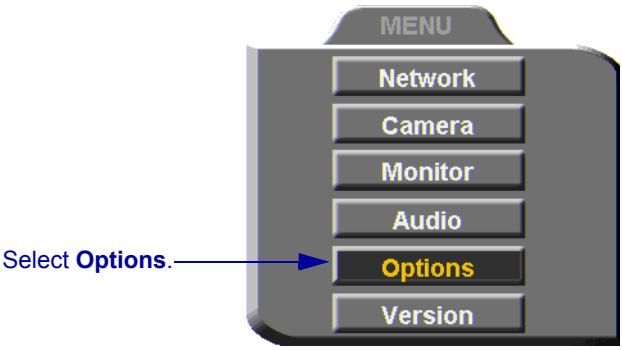
To restore the microphone, press Mute <Microphone> again.

Automatically Muting the Microphone During Incoming Calls

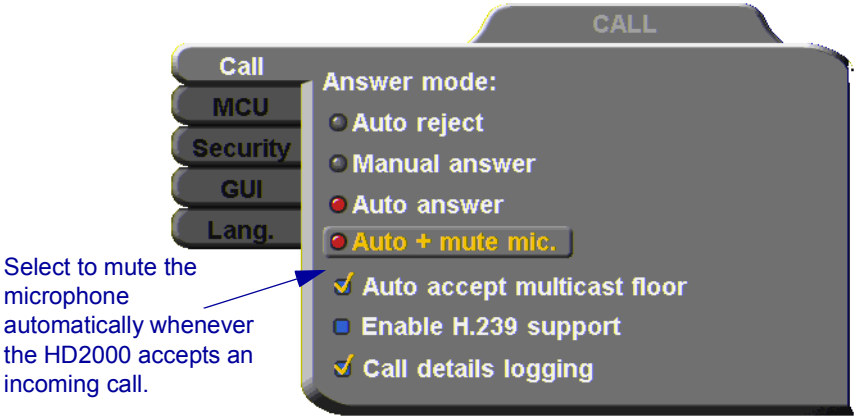
When Auto Answer is turned on, there is a possibility that the remote side will hear your audio before you're ready to interact with them. This carries the risk of broadcasting something you don't want the remote side to hear. To protect against this scenario, you can automatically mute your microphone (Audio Out) at the start of automatically answered incoming calls.

➤ **To automatically mute the microphone at the start of incoming calls**

1. Press <Menu>. The Main Menu opens. Select **Options**.



2. In the Options dialog box, navigate to the **Call** tab, select **Auto + Mute Mic.**

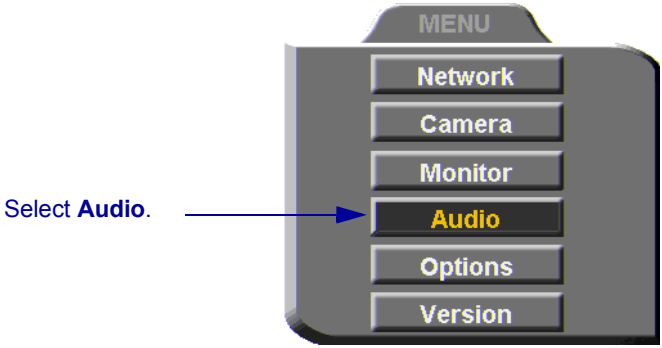


Selecting a Microphone

If you connected a mixer or a second microphone to the VCR AUD IN connector on the HD2000 (see "Connecting a DVD/VCR for Playing Back Videoconferences" on page 23), choose which audio source to use.

➤ **To choose an audio source**

1. Press <Menu>. The Main Menu opens. Select **Audio**.



2. In the Set Audio dialog box, select the appropriate **Audio Input** option.

TableTop To use a tabletop microphone or other audio source connected to the HD2000's **MIC** connector.

Line Level To use a microphone or other audio source (such as VCR, mixer, etc.) connected to the HD2000's VCR AUD connector.

3. Press <OK> to apply the changes and close the dialog box, or go on to the next procedure to select VCR mixing options.

Select the current audio source.

Setting Mixing Modes

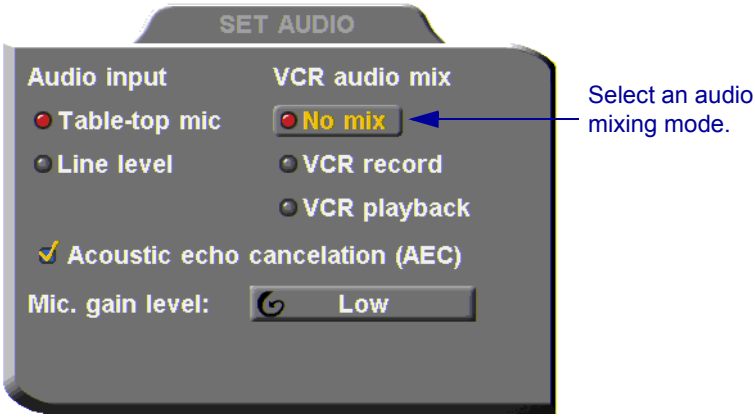
Mixing modes determine how the audio from a DVD or VCR connected to the HD2000 is mixed and sent to the remote party or recorded to a VCR cassette.

➤ **To set up a mixing mode**

1. In the Set Audio dialog box, select the **VCR Audio Mix** mode.

Audio Origin / Mixing Mode	Local Party	Remote Party	DVD/VCR
No Mix	Hears the remote party's audio.	Hears the local party's audio.	Not applicable.
VCR Record	Hears the remote party's audio.	Hears the local party's audio.	Records audio from the local and remote parties (connected to VCR's Audio In).
VCR Playback, Tabletop mic	Hears the remote party's audio and the VCR playback audio.	Hears the local party's audio and the VCR playback audio.	Records audio from the remote party (connected to VCR's Audio Out).

2. Press <OK> to apply the changes and close the dialog box, or go on to the next procedure to select audio options for special room environments.



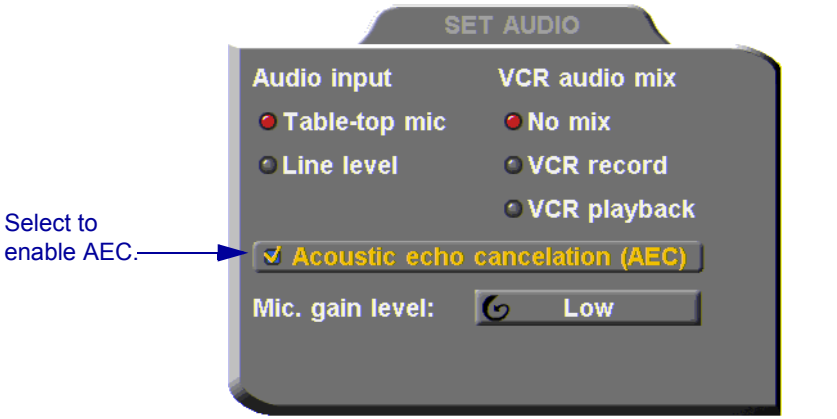
Enabling Echo Cancellation

When the microphone picks up audio from your speakers, an echo is created. Acoustic Echo Cancellation (AEC) suppresses this effect. By default, AEC is turned on.

You should disable AEC only if audio input comes through a Line Level connection from a playback device that does not capture sound from the conference room.

➤ **To turn on AEC**

1. In the Set Audio dialog box, select **Acoustic Echo Cancellation**.
2. Press <OK> to apply the changes and close the dialog box.

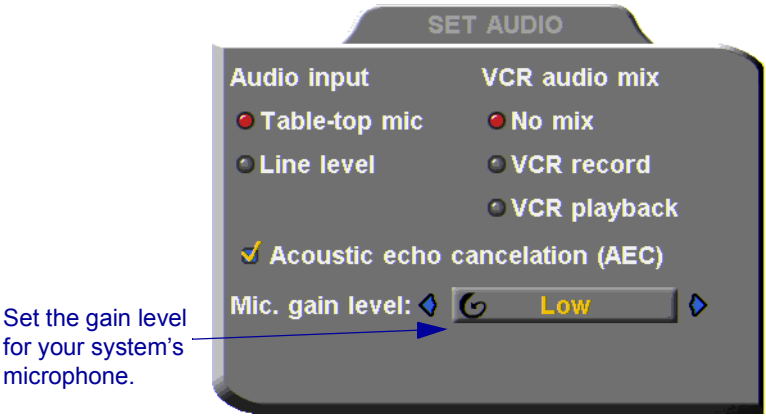


Setting the Microphone Gain Level

The gain level is the amplification of the microphone volume when transmitted to the conference. Depending on your microphone or other audio input, you may adjust the gain to a suitable level.

➤ **To adjust the gain level**

1. In the Set Audio dialog box, navigate to **Mic. Gain Level**.
2. Press the right or left arrow key to set the gain to **Low**, **Medium**, or **High**.



3. Press <OK> to apply the changes and close the dialog box.

7 MULTIPOINT CONFERENCING - HD2000'S EMBEDDED MCU

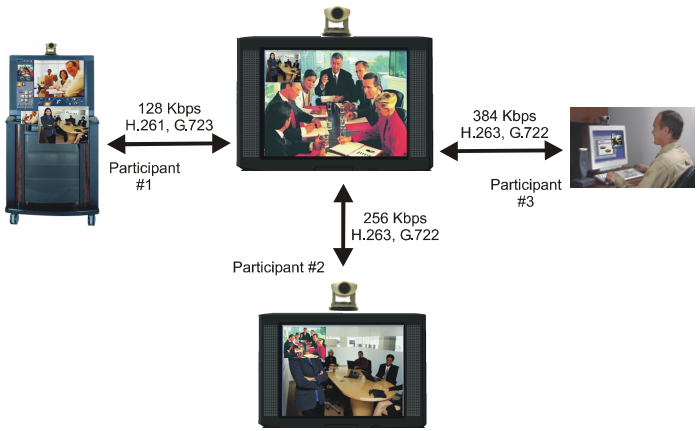
HD2000 includes an MCU (Multipoint Control Unit) embedded within itself. An MCU is a device which provides conferencing between more than two parties, or *sites*. The MCU joins up to up to 4 participants (Chair + 3 sites) at 384 Kbps, or 3 participants at 768 Kbps. When the Chair, or moderator, transmits, the HD2000's MCU multiplexes the audio and video, and then sends the resulting streams to all the others in the session.

The HD2000's MCU joins the sites and applies Voice-activated Switching to display the video, showing the dominant speaker, and hearing everyone's audio.

The HD2000 provides Chair and Site functionality. The Chair can join/disconnect sites, grant/take back the floor, and force a specific view to all the sites. A site can request/return the floor, and view the video of any other participant in the session.

For instructions on carrying out Chair and Site functions through the HD Web Management program, see the *HD Web Management User's Guide*.

HD2000's embedded MCU applies *Speed Matching* and *Transcoding*.



A single site may also be a *cascaded MCU*, which refers to another HD2000 that has joined two other sites, in addition to the Chair (see "Cascaded Multipoint Conferences" on page 102).

The *Speed Matching* feature allows conference participants to connect at different data rates, regardless of the data rate used by anyone else. In the previous illustration, three sites connected at varying rates.

The HD2000 can process and convert various video and audio codecs during a conference (*Transcoding*). If the HD2000 sends video and audio using the highest quality codec, the conference proceeds, regardless of the other codecs being used by the other sites.

At the same time that it broadcasts a video stream, an HD2000 may broadcast a data stream (such as a PowerPoint® presentation) to the other participants in a conference (using Emblaze VCON's HD DualStream™). Any conferencing system supporting HD DualStream can see both streams. Systems that do not support dual stream display only the data stream.

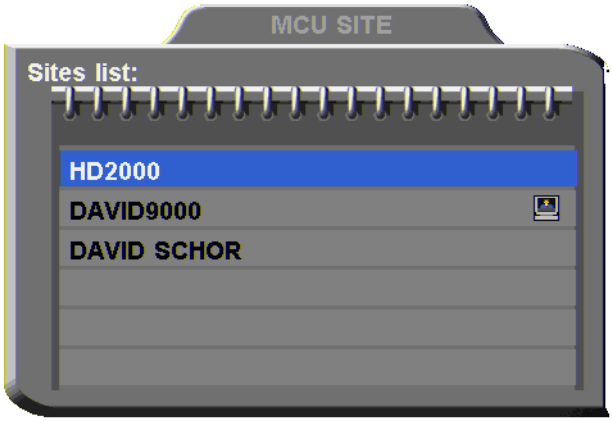
At the same time that an MCU call is taking place, the HD2000 can transmit multicast and unicast streaming media, using HD Simulcast™, to any end point running Emblaze VCON's Broadcast Viewer or the HD Remote Web Management's viewer.

7.1 Displaying and Hiding the MCU Screen

Whether your HD2000 is the Chair or a Site in the multipoint conference, the MCU Chair or Site screen, respectively, appears over the video upon connection. This screen contains a list of conference participants and a menu of available remote control SoftKeys. When you do not need those functions, you can exit this screen.

➤ **To enter and exit the MCU Site screen**

1. On the remote control, press the yellow <Multipoint> button.
2. To exit the screen, press the <Multipoint> button again.



7.2 HD2000 as Chair

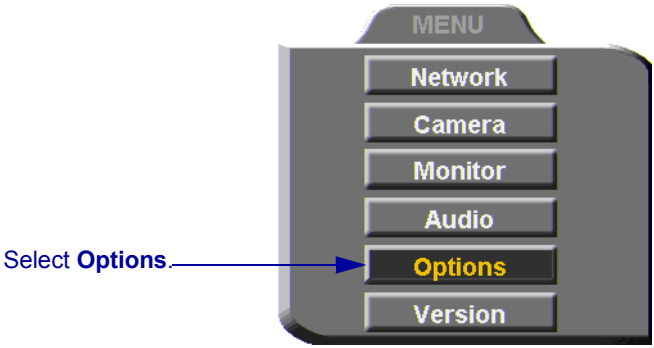
The Chair can join/disconnect sites, grant/take back the floor, and force a specific view to all the sites.

Enabling MCU Chair Control

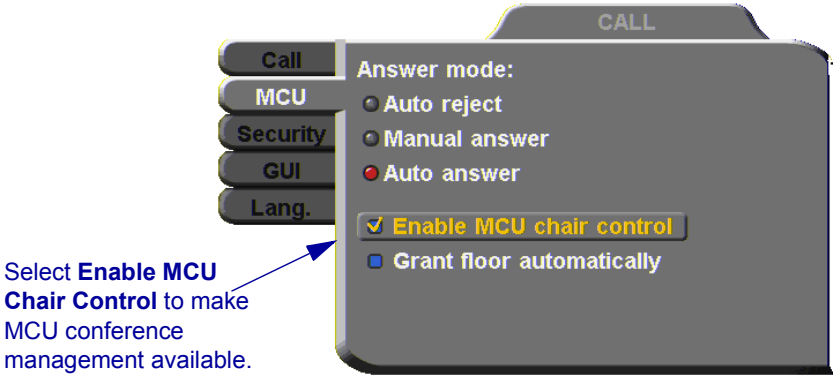
To control the Chair, turn this ability on in the HD2000's configuration.

➤ **To enable MCU chair control**

1. Press <Menu>. The main Menu opens. Select **Options**.



2. Navigate to the **MCU** tab.
3. Select **Enable MCU Chair Control**.



4. Press <OK> to apply the change and close the dialog.

Inviting Sites to a Multipoint Conference

Using the embedded MCU, you can join up to three additional sites by both dialing out or accepting incoming calls.

The multipoint conference appear on the screens of all participants in Voice-activated Switching.

➤ **To invite an additional site to a multipoint conference**

1. While you're in one call, dial another site through either the Manual Dialer or the Phone Book.

   -or-

   If someone calls the HD2000, accept the call.

Controlling the Floor

As the Chair, you control who has the floor. The multipoint conference begins in Voice-activated Switching mode. At any time, you can take the floor, grant the floor to any site, or release the floor.

Taking the Floor

When the Chair has the floor, its video is seen by all the sites in the conference.

➤ **To take the floor**

❑ Press the red **TAKE FLOOR** SoftKey.

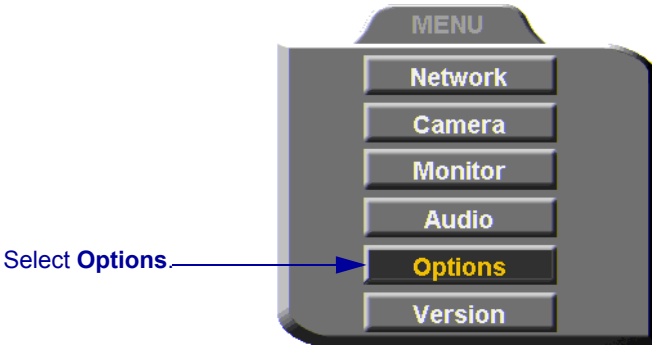
Granting the Floor to a Site

The video of the site receiving the floor is seen by all the other sites and the chair.

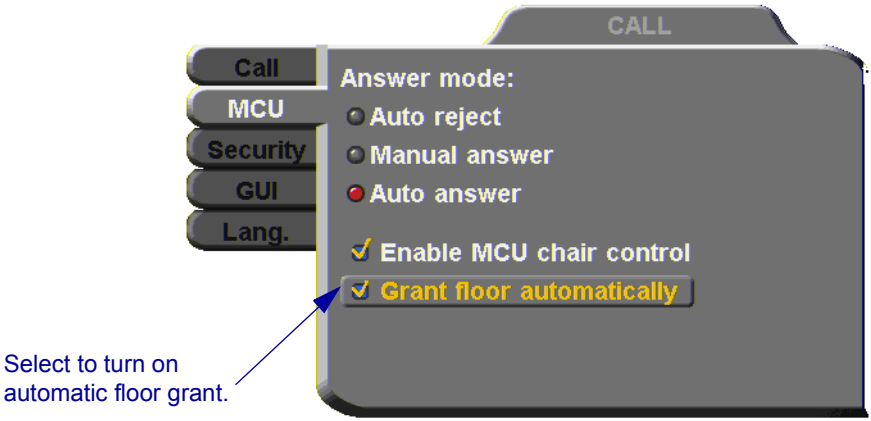
As the Chair, you can either grant every floor request automatically or accept or reject each request manually.

➤ **To turn on automatic floor grant**

1. Press <Menu>. The main Menu appears. Select **Options**.



2. In the Options dialog box, navigate to the **MCU** tab.



3. Select **Grant Floor Automatically**.

4. Press <OK> to save the settings and close the dialog box.

➤ **To grant the floor**

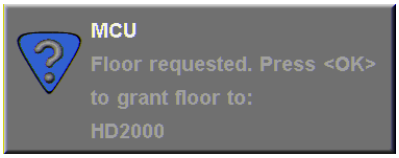
❑ Press the yellow **FLOOR TO SITE** SoftKey.

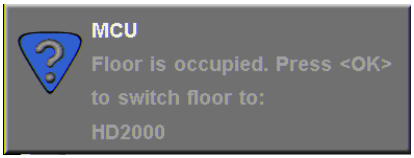
If **Grant Floor Automatically** is not selected in the Options>MCU dialog box, you have the choice of granting the floor manually or rejecting the request.

➤ **To grant the floor manually**

❑ When you receive a floor request message, press <OK> on the remote control. If the floor is already occupied, pressing <OK> takes the floor from the current holder.

❑ To reject the request, press <Cancel>





Releasing the Floor

Releasing the floor switches the conference into Voice-Activated Switching mode.

➤ **To release the floor**

❑ Press the red **RELEASE FLOOR** SoftKey.

Changing the Chair's View

The Chair can view the video of any site, no matter who has the floor. This selection does not affect the display at the sites, who see the possessor of the floor (unless another HD3000/2000 site also uses this function).

➤ **To view any site**

1. Select the name of the site whose video you want to see.
2. Press the green **VIEW SITE** SoftKey.

Press the green SoftKey to view the video of the selected site.

In a situation where the Chair is viewing a site that does not have the floor, the Chair can return to viewing the floor's video.

➤ **To view the video of the site who has the floor**

❑ Press the blue **VIEW FLOOR** SoftKey.

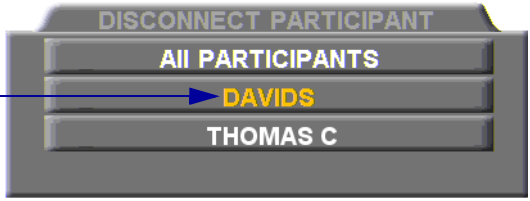
Press the blue SoftKey to view the floor video.

Disconnecting a Site

➤ **To disconnect a site from a multipoint conference**

1. Press <Hang up>. A list of sites appears.
2. Select the name of the site to disconnect and press <OK>.

Select the site to disconnect and press <OK>.

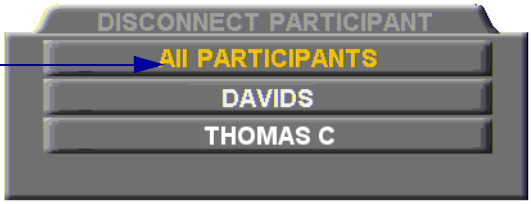


Ending the Multipoint Conference

➤ **To end the multipoint conference**

1. Press <Hang up>. A list of sites appears.
2. Select **All Participants** and press <OK>.

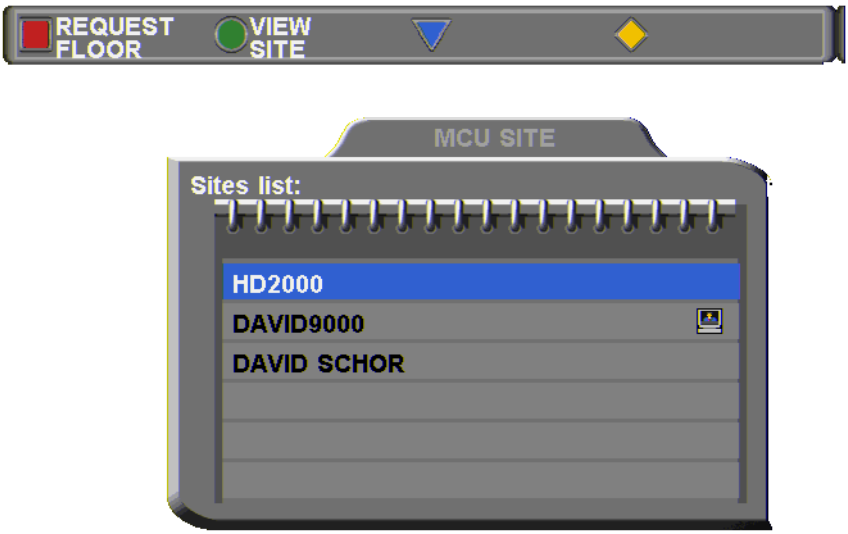
Select **ALL PARTICIPANTS** and press <OK>.



7.3 HD2000 as Site

When it enters a multipoint conference, a site views the video of the Chair. A site can request and receive the floor from the Chair, and also choose to view video other than the floor.

Also, upon connection to the conference, the MCU Site screen appears on top of the video. The MCU Site screen displays the participants in the conference and a menu with available SoftKey commands. The <Multipoint> button on the remote control is a toggle switch, turning this screen on and off (see "Displaying and Hiding the MCU Screen" on page 91).



Requesting the Floor

To display its video and speak to the other participants, request the floor.

➤ **To request the floor**

❑ Press the red **REQUEST FLOOR** SoftKey.

Press the red SoftKey to request the floor from the Chair.

Returning the Floor

After you finish your turn with the floor, return it to the Chair.

➤ **To return the floor**

❑ Press the red **RETURN FLOOR** SoftKey.

Press the red SoftKey to return the floor to the Chair.

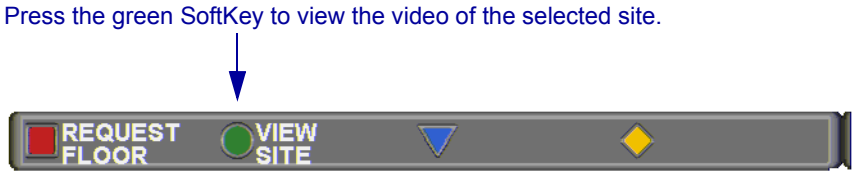
Changing the Site's View

A site can view the video of any other site or the Chair, no matter who has the floor. This selection does not affect the display at the sites, who see the possessor of the floor (unless another HD3000/2000 site also uses this function).

In this situation, a SoftKey is available for viewing the floor again.

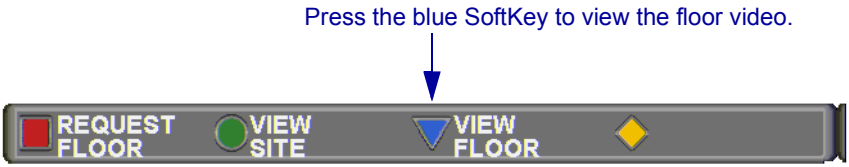
➤ **To view the video of any site in the conference**

1. Select the name of the site whose video you want to see.
2. Press the green **VIEW SITE** SoftKey.



➤ **To return to the video of the site who has the floor**

❑ Press the blue **VIEW FLOOR** SoftKey.



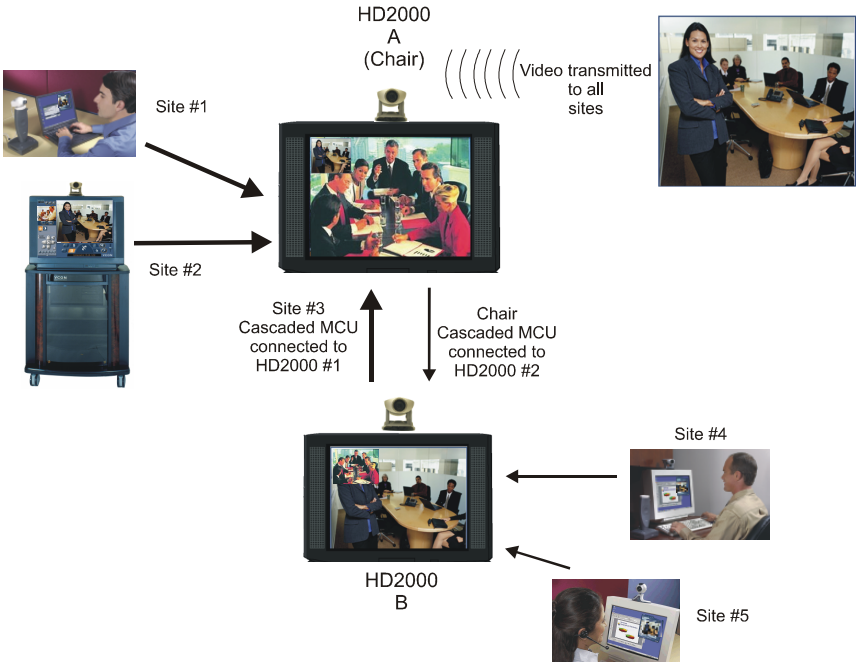
7.4 Cascaded Multipoint Conferences

Up to 4 participants (Chair + 3 sites) at 384 Kbps, or 3 participants at 768 Kbps, may be joined directly in a conference managed by the HD2000's MCU. However, the HD2000 may join up to 10 participants in a *Cascaded MCU* conference.

A *cascaded MCU* refers to another HD2000 that has joined two other sites, in addition to the Chair which called it. In a 10-site session, the Chair calls three other HD2000/3000 systems, each having joined two other sites.

The following figure shows a conference expanded to six sites by joining a cascaded MCU. HD2000 A (Chair) has opened a conference with Sites #1, #2 and #3. Site #3 is HD2000 B, which has joined two other sites - #4 and #5, as well as being connected to HD2000 A. Therefore, cascading HD2000 B's MCU expanded the conference to five sites + a Chair.

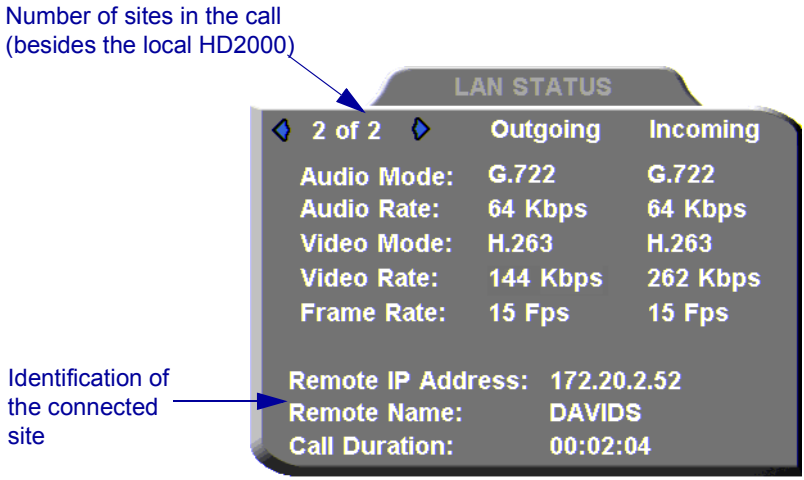
The video from HD2000 A is being transmitted to all the sites, and appears as the main video display on all the systems. The only exception is HD2000 A, whose own video appears in a PIP window on its monitor.



7.5 Multipoint Call Status

As for point-to-point calls, the Call Status dialog box displays the identification of the remote parties, the bandwidth of the calls, the current compression modes, etc.

However, each of the HD2000's connections are described in separate pages of the dialog box. For example, if the HD2000 is in a conference with Thomas and David, the status of the HD2000-Thomas connection is on the first page (indicated **1 of 2**) and the HD2000-David connection is on the second page (indicated **2 of 2**).

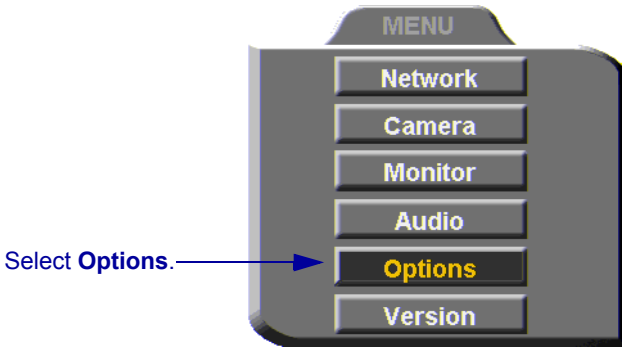


7.6 Answering a Multipoint Call

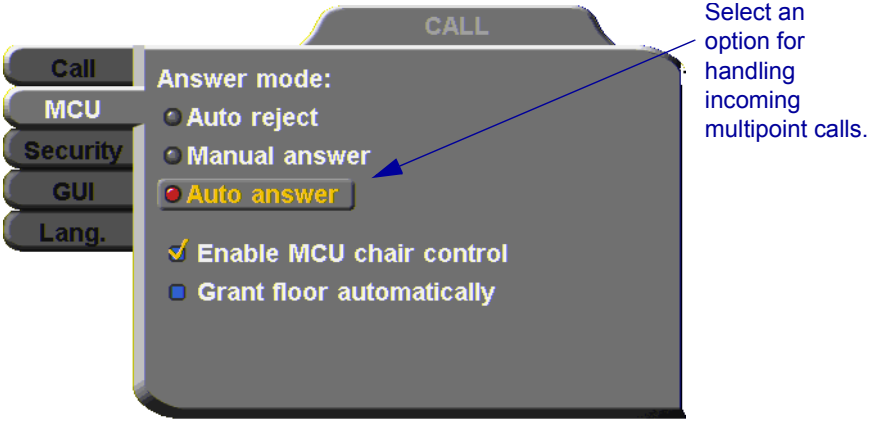
In the Options>Calls dialog box, define how the HD2000 handles incoming multipoint calls. Depending on the setting, the system can automatically answer or reject the calls, or prompt you to answer or reject them.

➤ **To define how HD2000 handles incoming multipoint calls**

1. Press <Menu>. The main Menu opens. Select **Options**.



2. Navigate to the **MCU** tab and select an option for handling incoming multipoint calls.



Multipoint

Auto Reject	Select to automatically reject all incoming multipoint calls, if the system is already engaged in another call.
Manual Answer	Select to answer multipoint calls by manually accepting an incoming call request.
Auto Answer	Select to answer multipoint calls automatically.

3. Press <OK> to apply changes and close the dialog box.

7.7 Joining an External MCU Videoconference

The HD2000 supports multipoint conferences through external MCUs. The MCU joins the parties and switches the video, depending on the dominant speaker.

You can join a multi-party videoconference through an MCU either by answering an incoming call from the MCU, or by calling the MCU session.

You and the other parties dial the IP address of the MCU. The MCU collects the calls and mixes them to create the multi-party conference.

➤ **To join a multi-party videoconference**

❑ Dial the MCU's IP address either from the Phone Book or manually.

8 STREAMING MEDIA

Streaming refers to the continuous transmission of media (video, audio and/or data) in one direction. Unlike videoconferencing, which requires realtime, two-way transmission with sufficient bandwidth, successful streaming has less stringent transmission requirements. Streaming may take place whether or not the HD2000 is engaged in a call.

Multicast and unicast streaming are available for HD2000 users:

- A *multicast* stream refers to the same stream simultaneously sent from one terminal to more than one client.
- A *unicast* stream refers to one stream being sent from one terminal to only one client.

The transmitted media is not stored on the client computer. Instead, the client's viewing application runs the stream as it collects and processes it, even if the client is still receiving the stream.

To view streams, Emblaze VCON's Broadcast Viewer or Apple's QuickTime Player must be installed on the client computer.

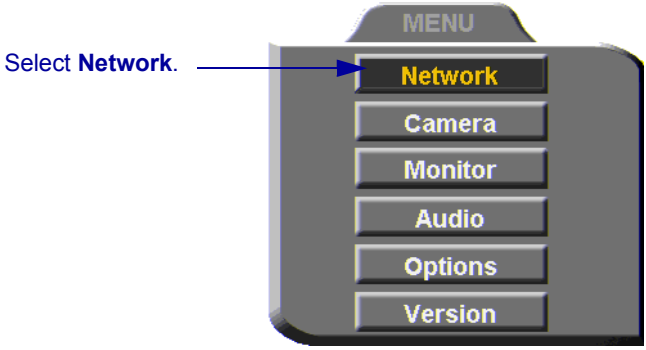
Using Emblaze VCON's HD DualStream™, the HD2000 can send a video and data stream simultaneously. HD DualStream enables video transmission using the H.263 codec in CIF, and data transmission (as video images) using H.263 at 4CIF resolution. If the viewing client's conferencing system or PC supports 4CIF, the data images appear in 4CIF. Otherwise, the data displays in CIF.

8.1 Setting Streaming Properties

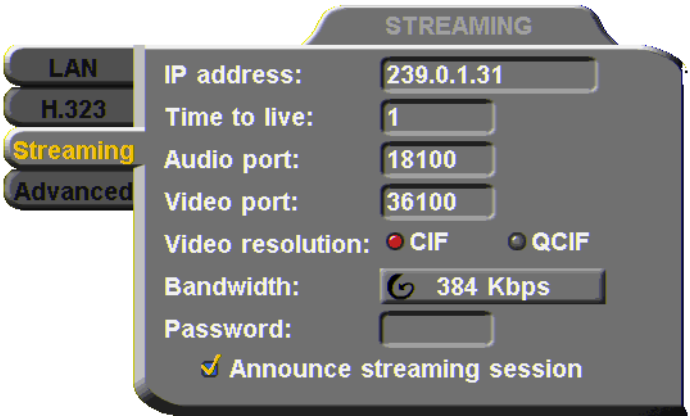
In the **Streaming** tab, define the configuration for transmitting streaming media from the HD2000.

➤ **To set the Streaming configuration**

1. Press <Menu>. The main Menu appears. Select **Network**.



2. Navigate to the **Streaming** tab.



3. Set Streaming properties as follows:

The default configuration is recommended for most streaming conditions. Change them ONLY if your system's or network's specifications differ from the default values.

IP Address The destination IP address for a multicast streaming broadcast. The HD2000 defines this address internally. This address must be a class D address in the range of **224.0.0.0** to **239.255.255.255**.

The sender transmits the streams to this address and viewers receive the stream from this address.

Time to Live The maximum number of routers that the stream may pass through.

Audio Port The ID of the port used for the audio connection.

Video Port The ID of the port used for the video connection.

Video Resolution

- ❑ Select **CIF** to transmit video at a higher resolution and lower frame rate, using Common Interchange Format (CIF). Usually, CIF provides better overall video quality, especially when a higher transmission bandwidth (at least 128 kbps) is available.
- ❑ Select **QCIF** to transmit video at a medium resolution and higher frame rate, using Quarter Size Common Interchange Format (QCIF). Use QCIF if the viewers' systems do not support CIF format, or if you transmit over low bandwidth.

Bandwidth Click the right arrow to select the maximum bandwidth for the streaming media.

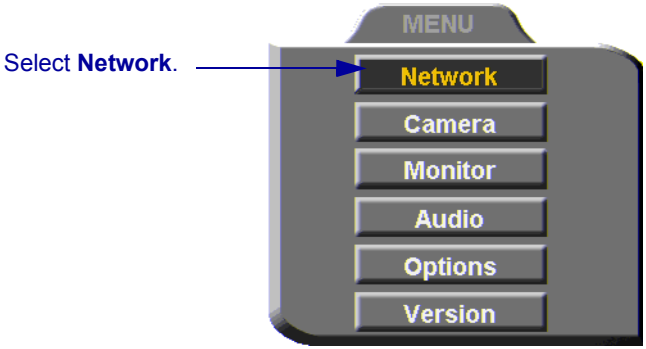
Password To restrict access to stream viewing, enter a password. When they attempt to view the stream, users will need to type this password.

Announce Streaming Session Select to send announcements of your streaming session over the network to client Viewer Programs other than HD2000 (such as Emblaze VCON's Broadcast Viewer).

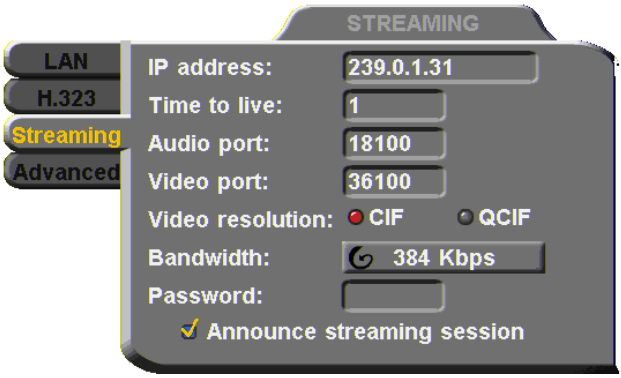
8.2 Starting a Streaming Session

➤ **To start a streaming session**

1. Press <Menu>. The main Menu appears. Select **Network**.



2. Navigate to the **Streaming** tab.



3. Press the red **START STREAM** SoftKey.

4. To stop streaming, press the red **STOP STREAM** SoftKey.

9 DATA AND APPLICATION SHARING

The ability to share data and applications is an important feature of enterprise conferencing. For example, you and the other parties can exchange files, view a business presentation together, or analyze the execution of another application.

To share data and applications, a personal computer must be connected to the same network as the HD2000.

This chapter explains how to set up your HD2000 for data sharing, to open a data connection, and start the data stream.

9.1 Minimum PC System Requirements

The HD Data Utility may be installed and operated on any computer that meets the following minimum requirements:

Operating System	Windows 2000/XP, Pentium III or higher
Minimum CPU Speed	500 MHz
Color Resolution	24 bpp, 32 bpp
Screen Display	640x480, 800x600, 1024x768

9.2 Installing the HD Data Utility

The HD Data Utility enables you to share data applications with the other contacts in your conferences.

➤ **To install the HD Data Utility**

1. Go to the Downloads page of the Emblaze VCON website (http://www.emblaze-vcon.com/support/downloads.shtml).
2. Find and click the **HD2000 Data Utility** link. The Download window opens in your browser.
3. Downloading from the Emblaze VCON site requires registration.

   If you've downloaded items from the site before, enter your e-mail address and password. If you forgot your password, click the Password Reminder link to request that Emblaze VCON send it to your e-mail address.

If you're downloading for the first time, click the **New Users** link. Fill out the registration form and Emblaze VCON will send you a password quickly. After receiving the password, enter your e-mail address and password to log in.

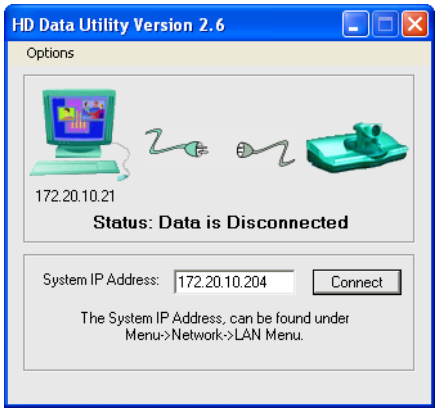
4. Click the **Download** link to start downloading the HD Data Utility.
5. After downloading the file, restart your computer.

9.3 Opening a Data Connection

To open a data connection and display the PC screen on the HD2000, run the HD Data Utility on the remote computer.

➤ **To start a data connection**

1. Run **Start>Programs>VCON>HD Utilities>Data Utility**.
2. Enter the IP address of the HD2000.



3. Click **Connect** to view what's displayed on the PC's screen.

To indicate the open data connection, an icon appears in the Windows taskbar near the bottom of the screen.

➤ **To disconnect the data connection**

1. If the Data Utility is minimized, double-click the data connection icon.

2. Click **Disconnect**.

9.4 Data Display on Participants' Monitors

This section describes what participants see in various types of data-sharing situations:

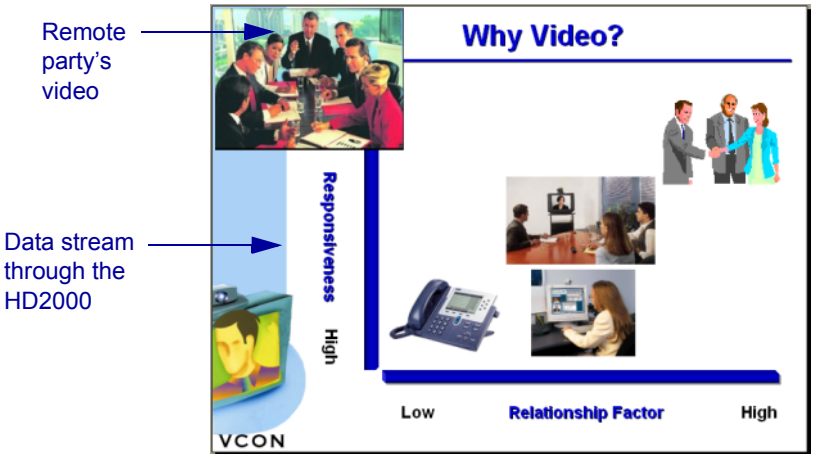
- Sharing with Emblaze VCON HD systems
- Sharing with non-HD systems
- Sharing during a multipoint conference
- Streaming

Data Sharing Between HD Systems

During a conference with other HD systems (HD100, HD3000, HD4000, HD5000, or vPoint HD), or with systems supporting HD DualStream™, the HD2000 can send two streams (video and data) at the same time.

❑ If the remote party operates in **Dual Monitor**, the shared application appears on one monitor and your HD2000's video appears on the second monitor.

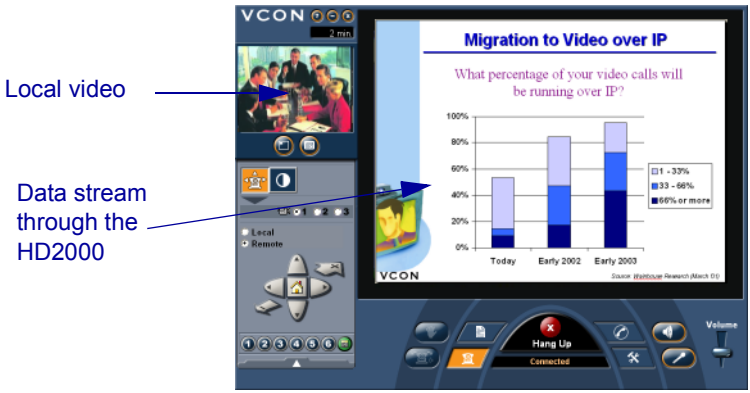
❑ If the remote party operates in **Single Monitor**, the shared application appears in full screen display and your HD2000's video appears in a Picture-in-Picture (PIP) display.



Data Sharing to a non-HD System

Non-HD systems refer to VCON's Falcon, MediaConnect products, ViGO, and other vendors' products.

In this situation, the remote party receives only the data, but may display its local video in addition to the data. The data is actually transmitted as a video stream.



Data Sharing During a Multipoint Conference

To send data to the other participants in a multipoint conference managed by the HD2000's embedded MCU, the HD2000 must also be the conference's Chair (initiating, dialing and disconnecting participants). The conference participants receive only the data being broadcast through the HD2000.

In addition to displaying the data, the remote participants may also see their own video.

Streaming Data

Data applications may also be shared by streaming the data to any person who connects to the HD2000. Anyone can see the data in one of the following viewers:

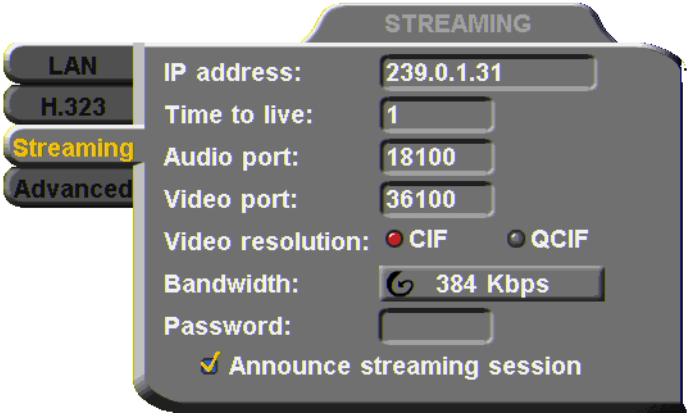
- ❑ Emblaze VCON's Broadcast Viewer.
- ❑ HD2000's Web Management's Viewer.. Connecting to the HD2000 through Internet Explorer, users see both the data and the video from the HD2000.

You can turn the streaming on from the HD2000 interface or the HD2000 Web Management. After several seconds, the data stream starts. The data appears in the appropriate viewer of any user connecting to the stream.

➤ **To turn on data streaming from the HD2000 interface**

1. Open a data connection to the HD2000 (see "Opening a Data Connection" on page 112).
2. Press <Menu>. The main Menu appears. Select **Network**.

3. In the Streaming dialog box, press the red **START STREAM** SoftKey.



The default configuration is recommended for most streaming conditions. Change them ONLY if your system's or network's specifications differ from the default values (see "Setting Streaming Properties" on page 108).

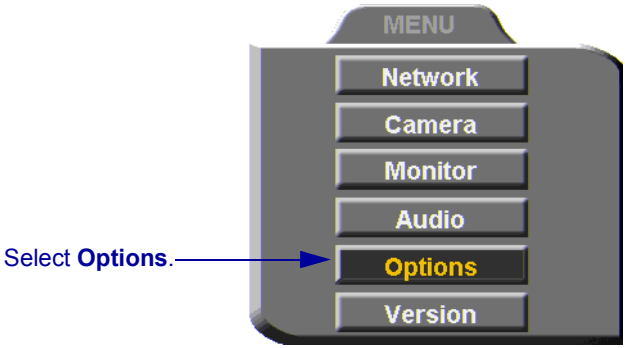
Turn streaming off by pressing the red **STOP STREAM** SoftKey.

Enabling H.239 Dual Streaming

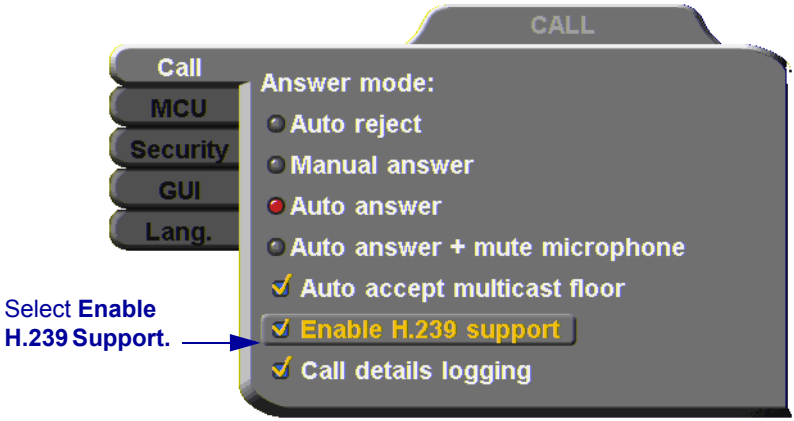
The H.239 standard enables the HD2000 to convert PC application graphics into a separate media stream and transmit it parallel to the video stream. Video systems supporting H.239 display shared data and remote video in separate windows. Systems not supporting H.239 display only the shared data in a single window.

➤ **To enable H.239 streaming**

1. Press <Menu>. The main Menu opens. Select **Options**.



2. Select **Enable H.239 Support**.



3. Press <OK> to apply changes and close the dialog box.

10 HD2000's Web Management

HD2000 contains an embedded web management program, which provides powerful operational and management capabilities from computers in remote locations. You can access the HD2000 Web Management from any PC through an Internet Explorer browser.

To access the Web Management program, the following prerequisites must be met:

- ❑ HD2000 must be set to enable remote web management.
- ❑ If a password is set, the user must enter a correct password.
- ❑ Internet Explorer 5 or higher must be installed on the remote PC.

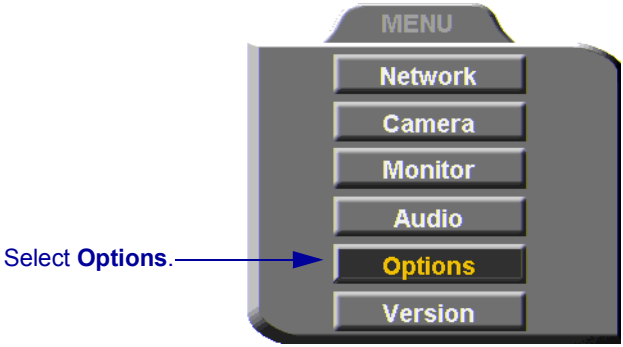
For details on working with the Web Management, see the *HD Web Management User's Guide*.

10.1 Enabling Remote Management of the HD2000

To manage and operate the HD2000 remotely, turn on the Web Management option in the HD2000's configuration.

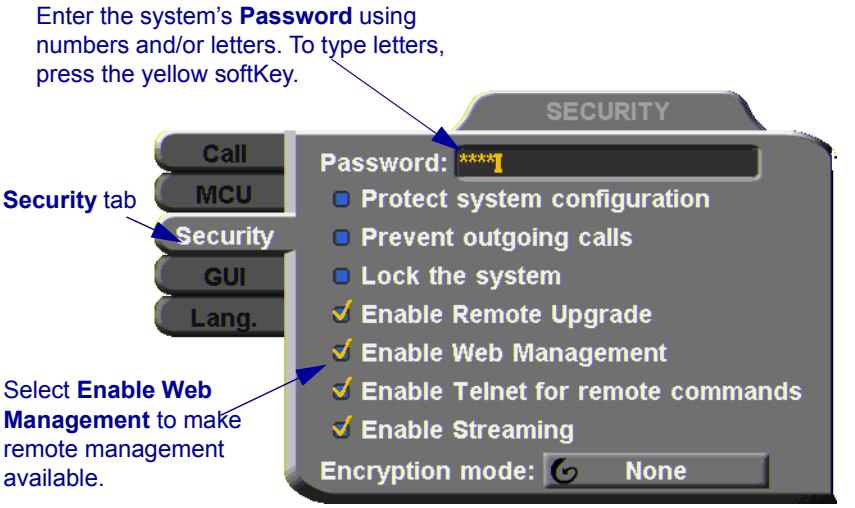
➤ **To enable remote management of your HD2000**

1. Press <Menu>. The main Menu opens. Select **Options**.



2. Navigate to the **Security** tab.
3. Select **Enable Web Management**.

4. To secure the Web Management program against unauthorized access, enter a password using numbers and/or letters. To type letters, press the yellow **KEYBOARD** SoftKey to open the online keyboard.

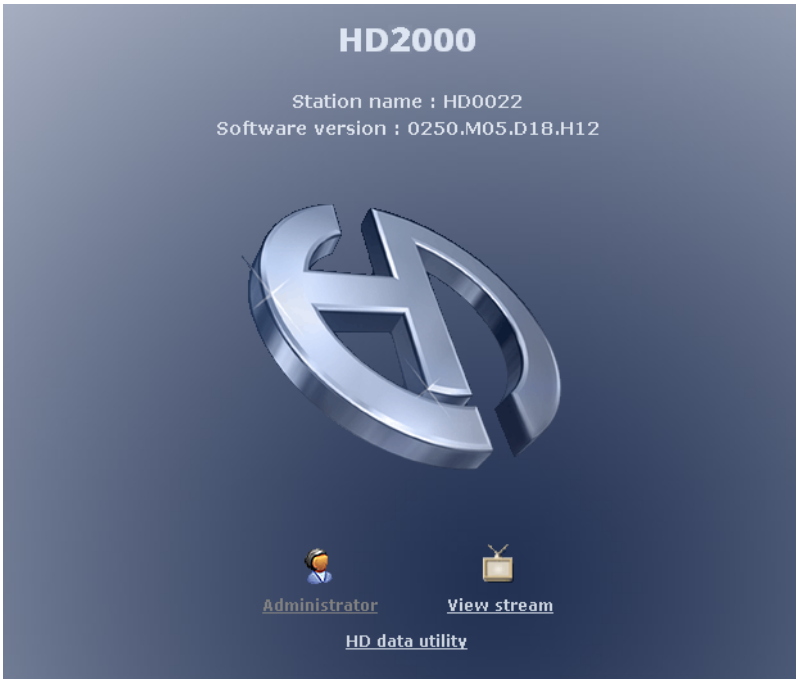


5. Press <OK> to apply the change and close the dialog.

10.2 Logging into the Web Management Program

➤ **To log into the Web Management Program**

❑ In your remote computer's browser, enter the IP address of your HD2000. For example, **x.y.z.a**, where [x.y.z.a] is the IP address.



11 MULTIPOINT CONFERENCING WITH INTERACTIVE MULTICAST

Interactive Multicast is an alternative to MCU sessions, allowing the broadcast of identical video streams, audio streams, and data application sharing packets from one party to multiple parties. Interactive Multicast uses bandwidth more efficiently than an MCU does, and it does not limit the number of users in a session or the number of sessions per license; most MCUs do.

During an Interactive Multicast, the initiating party (*Chair*) calls one or more parties (*Participants*) to start the conference and controls its progression. All parties receive identical transmissions.

Many Emblaze VCON products provide the capability to carry out Interactive Multicast video meetings over a Local Area Network (LAN), in which the Chair ***and*** all Participants may be seen and heard during the duration of the meeting. The HD2000 can join an Interactive Multicast as a Participant - only Participant functions are available.

As a Participant, you may receive the floor, in which its video and audio is seen and heard, respectively, by the other Participants and the Chair for a period of time.

Interactive Multicasts can proceed in the form of a lecture or demonstration, in which Participants' participation is restricted and controlled by the Chair, or as a free discussion, in which everyone has the right to be seen and heard without the need to receive permission from the Chair.

11.1 Entering an Interactive Multicast

➤ **To enter an Interactive Multicast**

❑ Answer an incoming call from the Chair of an Interactive Multicast.

-or-

Call the IP address of the session after the Interactive Multicast starts.

You will see and hear the same video and audio as everyone else in the conference.

11.2 Participating in an Interactive Multicast

After you join an Interactive Multicast, you will see and hear the same remote video and audio as everyone else in the meeting.

During the session, you may request the floor. When you have the floor, all the other participants see and hear you.

Requesting the Floor

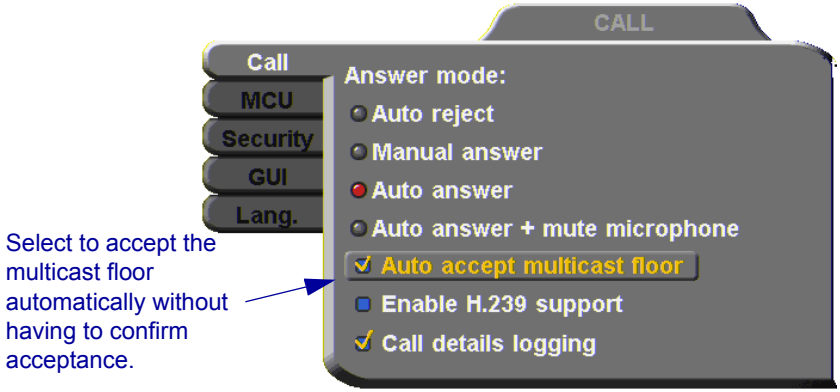
To speak and be seen, request the Floor from the Chair.

➤ **To request the Floor**

1. Press <Multipoint>. A message asks if you want to receive the floor.

2. Press <OK>.

To skip the message and automatically receive the Floor every time the Chair grants it to you, select **Auto Accept Multicast Floor** in the **Call** dialog box.



Returning the Floor

When you finish speaking to the floor, return the Floor to the Chair.

➤ **To return the Floor**

1. Press <Multipoint>. A message asks if you want to return the floor.

2. Press <OK>.

12 TELEPHONY EXCHANGE FUNCTIONS

Users that are registered with an Emblaze VCON Media Xchange Manager® (MXM) receive all the regular Gatekeeper services, plus call exchange services.

The MXM assigns every registered user a new User Number (directory number), to ensure that every user has a unique number. To dial other registered users, you can enter the User Number and then press <Dial>.

If your HD2000 is registered and managed by an MXM, call exchange functions are available:

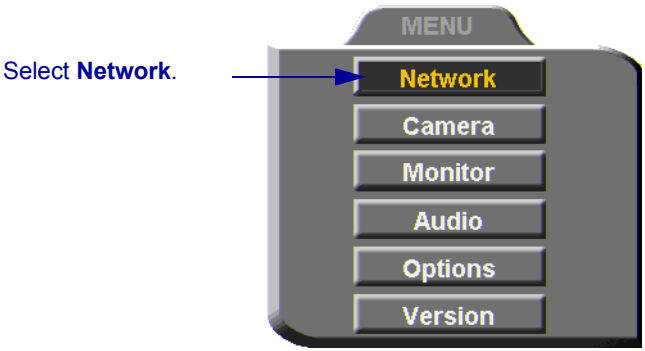
- Call Forward
- Call Transfer
- Inviting Additional Parties to an Ad-hoc Conference
- Simplified Gateway Dialing

12.1 Logging In to the MXM

To log in to an MXM, you must enter its address in the Network Configuration. Consult with your system administrator.

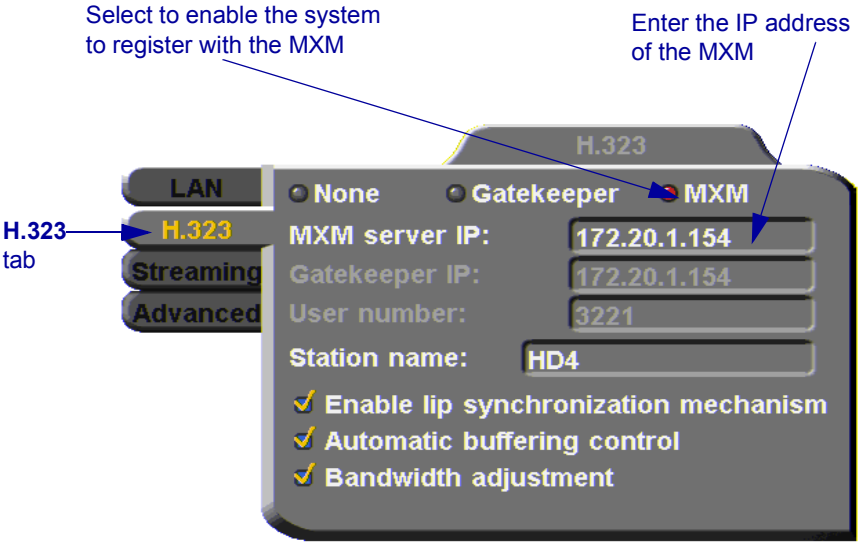
➤ **To log in to the MXM**

1. Press <Menu>. The Main Menu opens. Select **Network**.



2. Navigate to the **H.323** tab and press the right arrow button to access H.323 properties.

3. Select the **MXM** option.
4. In the **MXM Server IP** box, enter the IP address of the MXM.



5. Press <OK> twice. A message states that HD2000 will restart in a few seconds.

If the MXM is in Open mode, it automatically permits the HD2000 to register or log in.

If the login attempt is unsuccessful, consult with the system administrator. The administrator must then grant login permission before the HD2000 can log in.

12.2 Call Exchange Services

If HD2000 is registered with the MXM, telephony services are available for videoconferencing. The available services are:

- Call Forward
- Call Transfer
- Inviting Additional Parties to an Ad-hoc Conference
- Gateway Dialing for IP-to-ISDN

Call Forward

If Call Forward is activated for the HD2000, the MXM forwards calls to another specific user if you are unable to answer. The Call Forward settings for the HD2000 may be done by both the administrator (in the MXM Administrator application) or you. The last changes, regardless of who made them, are valid.

In HD2000, you can enable Call Forwarding by dialing a system function code. The code may be either the factory default value or a value set by the administrator.

➤ **To set Call Forwarding**

❑ In the Manual Dialer, dial one of the following (bold values are factory defaults):

1. To enter the "*", press the yellow **KEYBOARD** Softkey from the Manual Dialer screen, navigate to the "*" and select it, and then press <OK>.

2. After dialing, a "Call Rejected" message appears. However, the request is accepted by the MXM if the directory number is valid.

For this feature	Dial this number
Forward on no answer	***70** (or other code number), followed by [*other destination directory number*], and then press <Dial>. Activate if you want to forward calls intended for you to another specific user. The interval before transferring the call is set by the administrator. For example, ***70751**+<Dial> will forward calls to user 751.

For this feature	Dial this number
Forward on busy	***71** (or other code number), followed by [*other destination directory number*], and then press <Dial>. Activate if you want to forward calls to another specific user if you are engaged in another videoconference. For example, ***71751**+<Dial>will forward calls to user 751.
Unconditional forward	***72** (or other code number), followed by [*other destination directory number*], and then press <Dial>. Activate if you want to forward ALL calls intended for you to another specific user. For example, ***72751**+<Dial>will forward calls to user 751.

➤ **To disable Call Forwarding**

❑ In the LAN Manual Dialer, dial one of the following (bold values are factory defaults):

To disable this feature	Dial this number
Forward on no answer	***70*** (or other code number), and then press <Dial>.
Forward on busy	***71*** (or other code number), and then press <Dial>.
Unconditional forward	***72*** (or other code number), and then press <Dial>.

After dialing, a “Call Rejected” message appears. However, the request is accepted by the MXM if the directory number is valid.

Call Transfer

Using the Call Transfer feature, you can transfer an open videoconference from the HD2000 to another party. As a result, the videoconference will continue between your original remote party and the party to which you transferred the call. HD2000 will be disconnected from the call.

➤ **To transfer an open videoconference to another party**

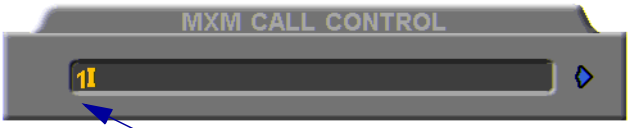
1. Press any of the number keys on the remote control. The Manual Dial dialog box and SoftKey menu open.

2. Press the red **MXM CALL CONTROL** Softkey.

3. In the MXM Call Control box, enter the directory number of the party to whom you want to transfer the call. To browse entries from the Phone Book, press the right and left arrow keys on the remote control.

4. Press the red **TRANSFER** SoftKey.

Press the red Softkey to transfer the videoconference to the entered address



Enter the address of the additional party for transferring the conference

The call gets transferred to the party that you requested. When that party accepts the call, the HD2000 is disconnected from the videoconference. The call continues between the original remote party and the newly-joined party.

Inviting Additional Parties to an Ad-hoc Conference

The Invite command lets you “invite and join” additional parties into an “ad-hoc multipoint videoconference.” During an open videoconference between two parties, HD2000 provides an Invite button for calling the additional parties.

You can invite another party by selecting its entry from the Phone Book or by entering its address directly.

Through the Invite function, you can join more participants than the capacity for a multipoint conference initiated through the Embedded MCU (3).

➤ **To invite other parties into an ad-hoc videoconference**

1. Press any of the number keys on the remote control. The Manual Dial dialog box and SoftKey menu open.

2. Press the red **MXM CALL CONTROL** Softkey.

3. In the MXM Call Control box, enter the directory number of the party that you want to invite. To browse entries from the Phone Book, press the right and left arrow keys on the remote control.

4. Press the green **INVITE** SoftKey.

5. HD2000 dials the number.

   After several seconds, the additional party is added to the session, which is now a multipoint conference with MCU management. The parties' video is displayed in Voice-Activated Switching.

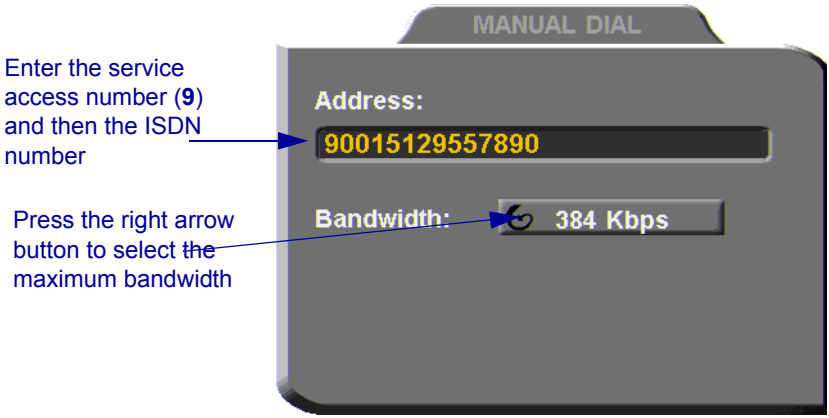
Simplified Gateway Dialing

If HD2000 is logged into an MXM, simplified gateway dialing is available for starting a videoconference through a LAN connection to an ISDN destination.

The default function code for starting a call through a gateway is **9**. The system administrator may change this code, if necessary (see the *Media Xchange Manager Administrator's Guide*).

➤ **To start a LAN-to-ISDN call through a gateway**

1. In the Manual Dialer, dial [*service access number*][*ISDN number*].
2. Set the required **Bandwidth** or use the default bandwidth.



Dialing a LAN-to-ISDN Call Through a Gateway

13 SYSTEM SECURITY

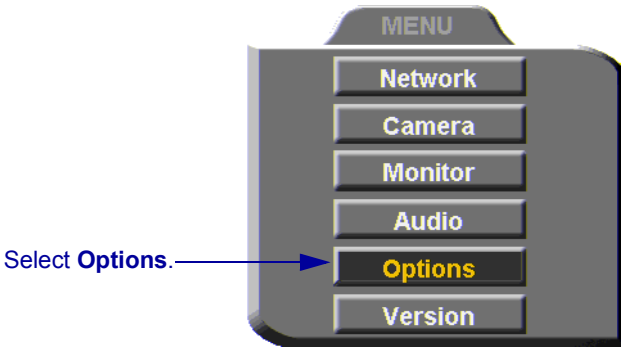
You can protect against unauthorized use of the HD2000 by defining restrictions on configuration changes and the initiation of videoconferences.

The Security dialog box in the Options contains the options and properties for setting up a security configuration:

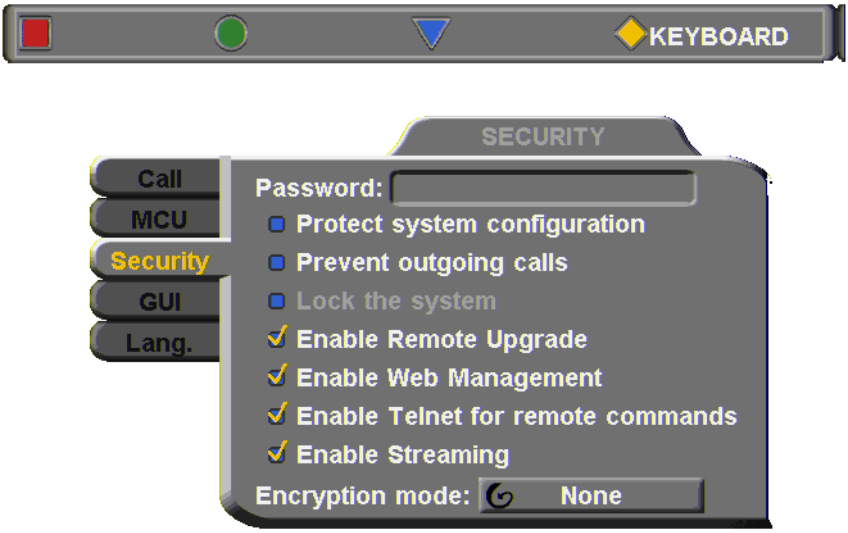
- ❑ Setting a Security Password
- ❑ Setting Security Properties
- ❑ Locking the System

➤ **To access the Security properties**

1. Press <Menu>. The main Menu opens. Select **Options**.



2. In the Options dialog box, navigate to the **Security** tab. If you previously set a security password (see "Setting a Security Password" on page 135), enter it in the Password dialog box.



3. After setting Security properties, press <OK> to save the settings and close the dialog box.

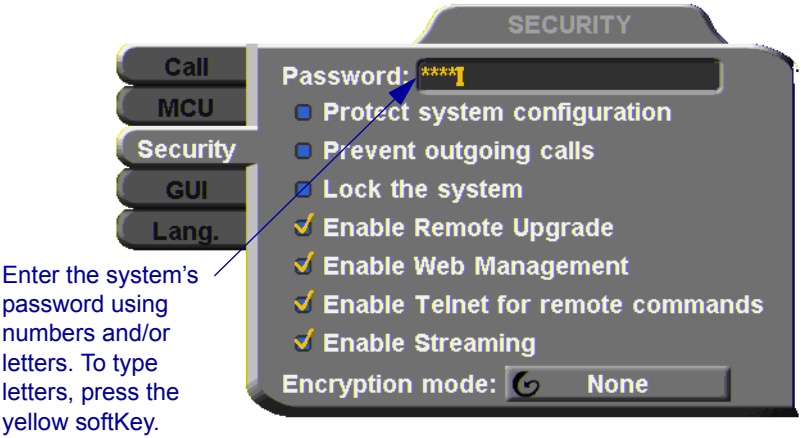
13.1 Setting a Security Password

A password prevents unauthorized users from changing the system configuration, initiating videoconferences, and/or accepting videoconference calls. The password is mandatory for locking the system completely from all of the actions stated above.

A password for accessing security should be unique and known only to the administrators. After a password is defined, any user must enter the password to gain access to the restricted functions. This password is also required for accessing remote configuration through the HD2000's Web-based Manager (see Chapter 10, "HD2000's Web Management"). If you forget your password, contact your local Emblaze VCON distributor's technical support.

➤ **To set a security password**

1. In the Security dialog box's **Password** box, enter numbers and/or letters. To type letters, press the yellow **KEYBOARD** SoftKey.



13.2 Security Properties

The Security dialog box contains the available security options for the HD2000.

Protect System Configuration — Select to prevent unauthorized changes to the system configuration. The system's configuration is then disabled to videoconferencing users.

Prevent Outgoing Calls — Select to prevent users from initiating calls.

Lock the System — See "Locking the HD2000" on page 138

Enable Remote Upgrade — Select this option to enable the transfer of upgrades and patches to the HD2000 unit.

1. For upgrading the HD2000 software through the HD Upgrade Utility.
2. For software integrators to send software patches, upgrades, and modifications to the HD2000.

Enable Web Management — Select this option to enable remote access to the HD2000 through the Web Management Utility (see "HD2000's Web Management" on page 119).

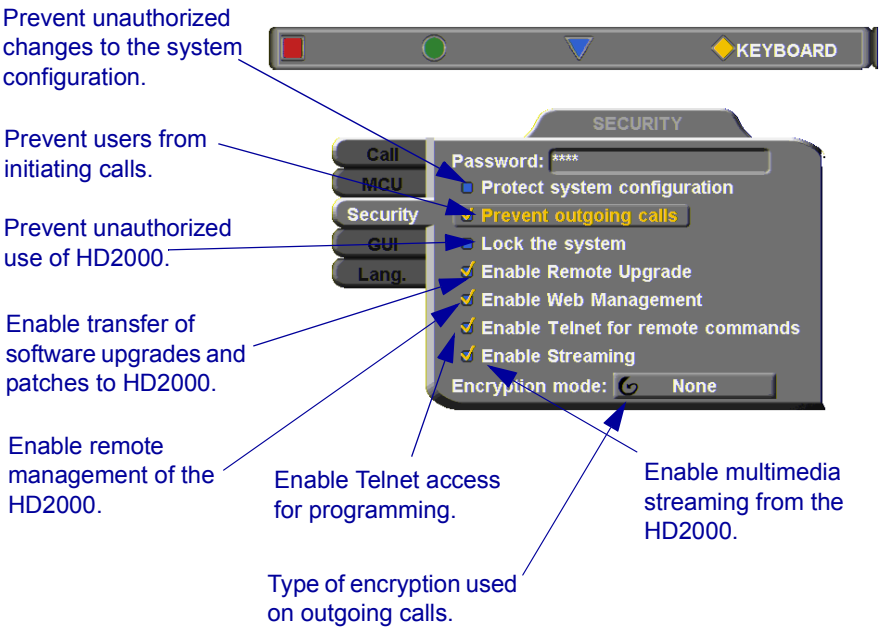
Enable Telnet for Remote Commands — Select this option to enable Telnet access for programming the HD2000 software, using the HD2000's ZAPI application. This access is intended for software integrators.

Enable Streaming — Select this option to enable the transmission of multimedia streaming from this HD2000.

Encryption Mode

Choose the mode of encryption for this HD2000's conferences.

- Choose **None** to allow unsecured calls.
- **AES** (Advanced Encryption Standard) is a standard encoding method for encrypting data transmissions in commercial and government sectors of the USA and its use is growing worldwide. Select this option to encrypt all of this HD2000's calls. If the remote side has not also enabled encryption, the call attempt will be unsuccessful.
- **Auto** enables the HD2000 to encrypt a call if the remote side has also enabled encryption. If the remote side has not enabled encryption, an outgoing call will be unsecured.



13.3 Locking the HD2000

Locking the HD2000 completely prevents unauthorized use, such as configuration changes and initiation and acceptance of videoconferences.

When the HD2000 is locked, a password is mandatory for accessing all of these functions. After a password is defined, any user must enter the password to unlock the system and gain access to the restricted functions. If you forget your password, contact your local Emblaze VCON distributor's technical support.

➤ **To lock the system**

1. Press <Menu>. The main Menu opens. Select **Options**.

2. In the Options dialog box, navigate to the **Security** tab.

3. In the **Password** box, enter a password using numbers and/or letters. To type letters, press the yellow **KEYBOARD** SoftKey to open the onscreen keyboard.

4. Select **Lock the System**.

5. Press <OK> to save the settings and close the dialog box.

Enter the system's password using numbers and/or letters. To type letters, press the yellow softKey.

Select to prevent unauthorized use.

14 CALL LOGGING

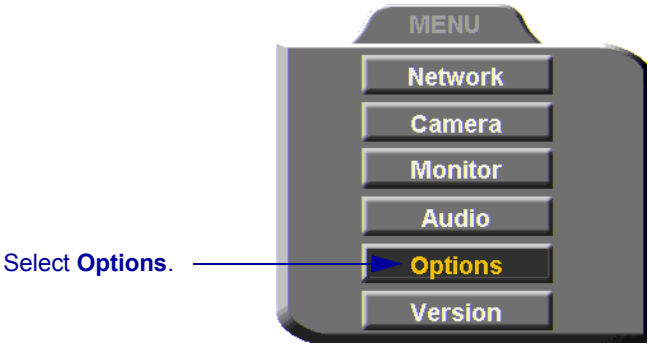
14.1 Enabling Call Log Recording

The Call Log enables your company or organization to keep a record of conferences that your HD2000 both dials and receives. The HD2000 generates a Call Details Report (CDR) which is accessible from the HD Web Management program. You can analyze this information in detail for departmental accounting or network planning purposes.

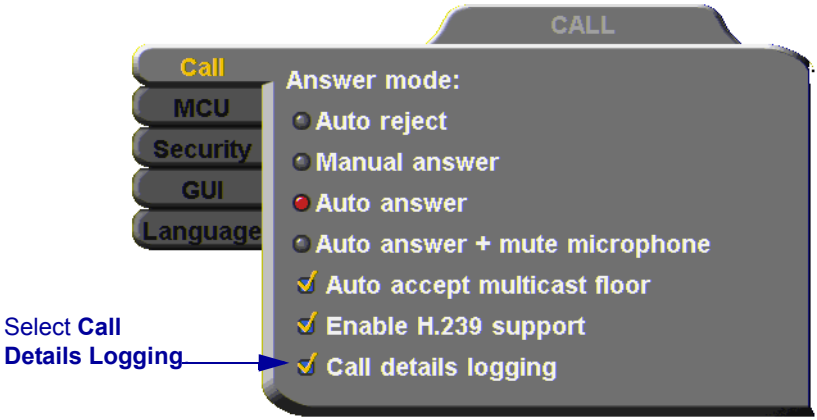
The CDR provides call duration, remote party identification, call direction, video and audio codecs and formats, and more.

➤ **Enabling Call Log Records**

1. Press <Menu>. The Main Menu opens. Select **Options**.



2. Select **Call Details Logging** to enable the creation of call logs.



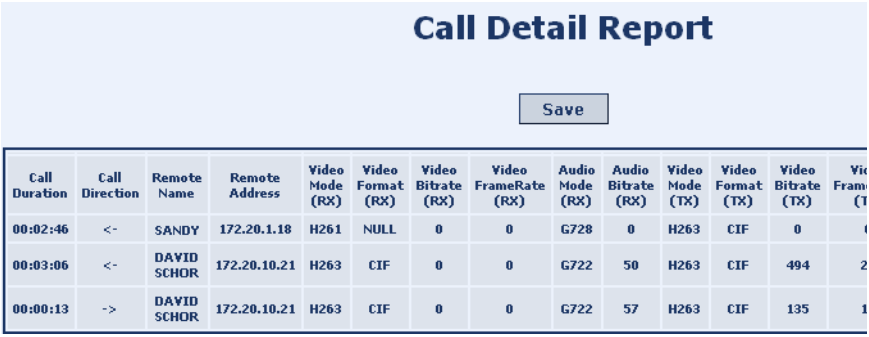
3. Press <OK> to apply changes and close the dialog box.

14.2 Viewing the Call Log

You may view the Call Log through the HD Web Management program.

➤ **To view the Call Log**

1. On the left side of the screen, click **Utilities** and then **Call Details Report**.
2. The CDR opens in another browser window.



Call Duration	Call Direction	Remote Name	Remote Address	Video Mode (RX)	Video Format (RX)	Video Bitrate (RX)	Video FrameRate (RX)	Audio Mode (RX)	Audio Bitrate (RX)	Video Mode (TX)	Video Format (TX)	Video Bitrate (TX)	Vi Fram (T
00:02:46	<-	SANDY	172.20.1.18	H261	NULL	0	0	G728	0	H263	CIF	0	
00:03:06	<-	DAVID SCHOR	172.20.10.21	H263	CIF	0	0	G722	50	H263	CIF	494	2
00:00:13	->	DAVID SCHOR	172.20.10.21	H263	CIF	0	0	G722	57	H263	CIF	135	1

15 TROUBLESHOOTING

This chapter provides simple solutions for common oversights and issues.

If a situation occurs that is not covered by the supplied documentation, contact your local Emblaze VCON distributor, and request assistance from their Emblaze VCON-trained technical support department. Please describe the problem, device, and PC operating system (if applicable), and any other relevant details.

The solutions in this chapter are grouped by the type of equipment affected by the oversight or failure.

System or Equipment	Issues concerning the HD2000 unit or connected accessories
Network or Communications	Issues concerning networks, interface lines, and network equipment. This section is further categorized into IP, Streaming and Data Transfer issues.

15.1 System Diagnostics

To begin searching for the source of a problem, check the Diagnostics dialog. It describes any network and server problems that may exist.

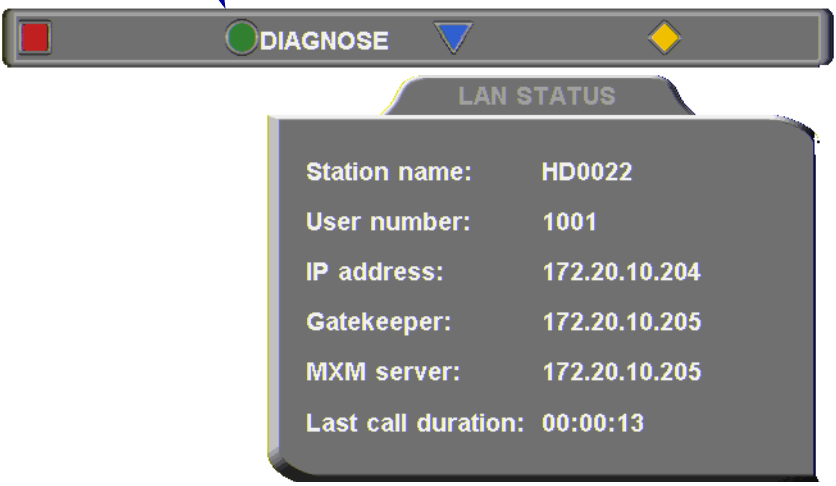
➤ **To open the Diagnostics Dialog**

1. Press <Status>. The Status dialog box opens.

2. Press the green **DIAGNOSE** SoftKey. The Diagnostics dialog opens.

   If there is a problem described in the Diagnostics dialog, consult with the system administrator to find a solution.

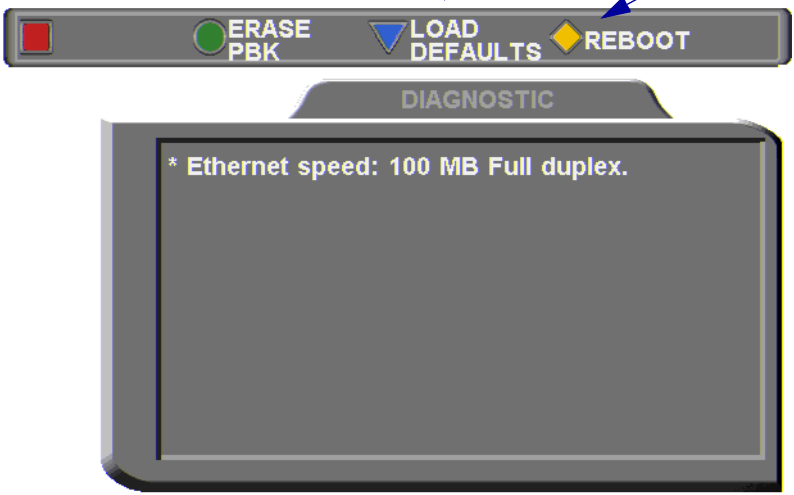
Select **DIAGNOSE** to view a diagnostic report.



Select **ERASE PBK** to delete the Phone Book. Use this if the Phone Book is not usuable and then recreate it or load a previously backed-up Phone Book.

Select **LOAD DEFAULTS** to restore the factory-set defaults for the system

Select **REBOOT** to restart the HD2000.



❑ If you have a problem with the Phone Book, you can erase it completely, by pressing the green **ERASE PBK** SoftKey.

A confirmation message appears. Click **OK** if you are sure you want to erase all Phone Book entries.

❑ You can restore the factory-set defaults for the system, by pressing the blue **LOAD DEFAULTS** SoftKey.

A confirmation message appears. Click **OK** if you are sure you want to cancel all changes made to the HD2000 options and settings and restore the original defaults.
HD2000 restarts.

❑ To restart the system, press the yellow **REBOOT** SoftKey.

If the problem you are trying to solve is not described in the Diagnostics dialog, try to find the solution in the following sections.

15.2 Starting HD2000 .

Condition	Solution
The HD2000 starts up slowly. 	❑ Verify that the LAN cable is connected by the following methods: — Check that the green LED underneath the LAN connector on the rear panel is on. — Press <Status> and then the green **DIAGNOSE** SoftKey to check the LAN speed.
After loading, video from the camera is visible but the menus and address books are not.	3. Make sure that the HD2000 is connected to your monitor's S-Video In connector. -or- If the TV only has a Composite Video In connector, connect it to the HD2000's VCR Video Out connector.

15.3 Video/Audio

Condition	Solution
After startup, the screen is black.	1. Verify that the TV monitor is on. 2. Verify that at least one camera is connected securely. 3. Switch to another camera. On the remote control, press <camera> and then the arrow buttons until a camera view is visible.
During a conference over the Internet, the video and audio quality are poor.	❑ The Internet connection is either limited or insufficient. Call at a lower bitrate.
The video display is shaking, shows flashing lines, or is black and white or discolored.	❑ ***If a PAL main camera is connected*** The main camera may have been turned on AFTER the HD2000 started up, causing it to display NTSC video. Turn the HD2000 off and on again (do not turn off the camera).
The remote party cannot hear you, but you can hear them.	1. Verify that the microphones and TV monitors on both the local and remote sides are connected properly and securely. 2. Press <Menu> and select **Audio**. Make sure that the tabletop microphone is the selected audio input.

15.4 Software Upgrade

Condition	Solution
The “Upgrade cannot start” message appears.	❑ Press <Menu> and access the Options>Security dialog box. Select **Enable Remote Upgrade**.
Following the upgrade, a configuration dialog box appears automatically.	❑ If the upgrade is unsuccessful, the HD2000 enters Installer Mode. Verify that the displayed LAN configuration is correct and run the Upgrade program again.

15.5 Unsuccessful Call .

Condition	Solution
A “Call rejected” message appears.	1. Press <Status> and check if the HD2000 is registered to an MXM or Gatekeeper. If no, but you want MXM or Gatekeeper management, access the Network<H.323 dialog box and enter the MXM/Gatekeeper’s correct address. 2. Verify that the remote party is registered with the same or a neighboring Gatekeeper. 3. If you use DNS names to dial, access the Network>LAN dialog box to verify the correct DNS server name.
You cannot receive calls dialed to the HD2000’s Station Name.	❑ Access the Network>LAN dialog box and verify the correct WINS server name.

15.6 Streaming Media

Condition	Solution
You cannot view streaming video.	❑ If a supported viewer is not installed on your PC, the Web Management redirects you to the viewer’s installation page. Install the viewer and then try again to view the stream.

A MULTI-LANGUAGE INTERFACE

The HD2000 application's interface (menus, dialog boxes, commands) may be viewed in several different languages. The default language after initial installation or upgrade is English. However, you may easily switch the interface language to:

- Français
- Deutsch
- Italiano
- Chinese
- Svenska
- Other
- Español (Spain or Mexico)
- Português (Portugal or Brazil)
- Japanese
- Suomi
- Russian

➤ **To change the interface's language**

1. Press <Menu>. The main Menu opens. Select **Options**.
2. Navigate to the **Lang.** tab.
3. Select the language you want and then click **OK**. The HD2000 application's interface then appears in the language you chose.

B SOFTWARE UPGRADE

This chapter explains how to upgrade to new software versions of your HD2000. Whenever Emblaze VCON notifies HD2000 customers that a version upgrade is available, you can download and install it in your system. Unless instructed otherwise, the latest software version is available from Emblaze VCON's website: (www.emblaze-vcon.com>Support>Downloads).

The methods for upgrading the HD2000 software are:

- ❑ Running the HD Upgrade Utility from a remote PC
- ❑ Upgrading directly from the HD2000

B.1 Upgrading From a Remote PC

The HD Upgrade Utility is a program that enables you to upgrade HD2000 software from a remote PC. You can download the utility from Emblaze VCON's website.

Before Downloading

Before you upgrade the HD2000 software, make sure that the following conditions are present:

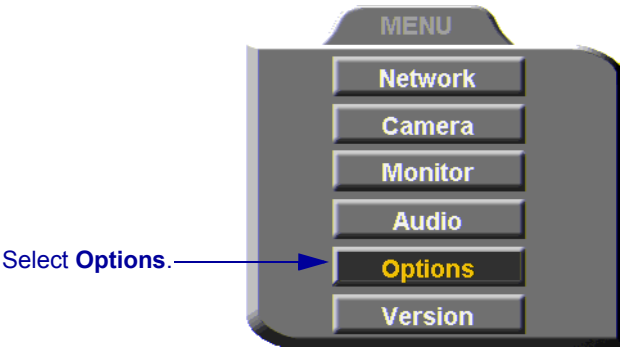
- ❑ A quiet period of the network. We recommend that you perform upgrading when activity on the network is low. Heavy network traffic may interfere with the procedure and cause upgrade failures.
- ❑ The possibility of electrical failure is at a minimum.
- ❑ The computer from which the upgrade will run (referred to throughout this document as **the remote PC**) fills the following requirements:
  - — Windows XP, 2000, or NT (with Service Pack 5.0).
  - — No other programs should run at the same time as the HD2000 upgrade program.

Enable Remote Upgrade

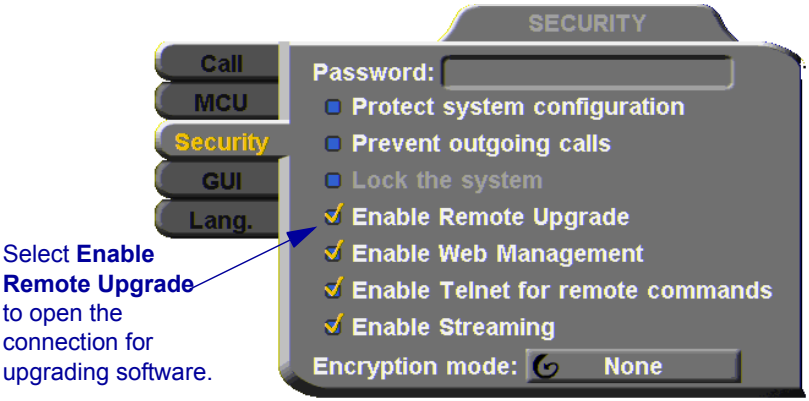
To enable upgrading through the HD utility, you must enable remote upgrading in the HD2000's Security dialog box.

➤ **To enable remote software upgrading of the HD2000**

1. Press <Menu>. The main Menu opens. Select **Options**.



2. Navigate to the **Security** tab. If you previously set a security password (see "Setting a Security Password" on page 135), enter it in the Password dialog box.
3. Select **Enable Remote Upgrade**.



4. Press <OK>.

Downloading the HD Upgrade Utility

The HD Upgrade Utility is available from the Downloads page of Emblaze VCON's website (www.emblaze-vcon.com).

➤ **To download the Upgrade utility**

1. On the www.emblaze-vcon.com>Support>Downloads page, click the link for downloading the HD Upgrade utility.
2. Download the setup file to your PC.
3. Run the setup file to install the utility on the remote PC. Perform the steps in the Upgrade utility's installation wizard. Click **Finish** when the process is complete.

Downloading the New Software Version

After downloading the Upgrade Utility, return to the Emblaze VCON website to download the new software version.

➤ **To download the new software version**

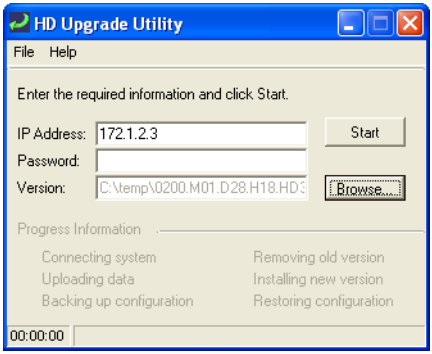
❑ On the www.emblaze-vcon.com>Support>Downloads page, click the link for downloading the new HD2000 software version.

Installing the New Upgrade in the HD2000

Run the Upgrade Utility to install the new version in the HD2000.

➤ **To install the upgrade in the HD2000**

1. Run **Start>Programs>VCON>HD Utilities>Upgrade Utility**.

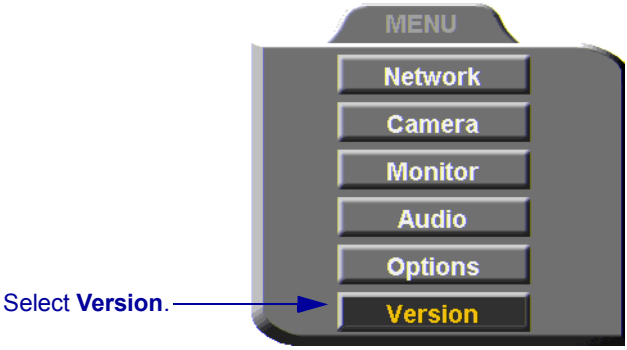


2. Type the **IP address** of the HD2000.

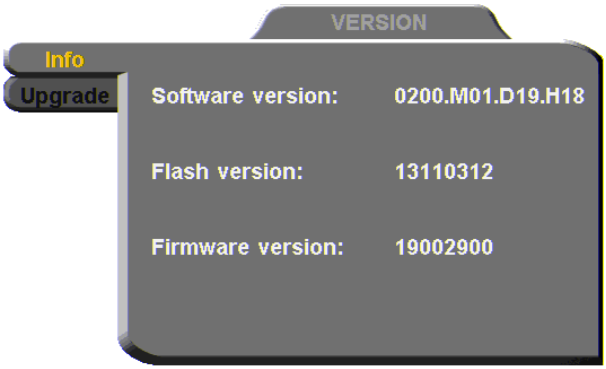
3. If applicable, enter the **Password** defined in the HD2000's Security settings (see "Setting a Security Password" on page 135).
4. Click **Browse** to select the upgrade file that you previously downloaded from the Emblaze VCON website.
5. Click **Start**.

CAUTION The entire procedure takes several minutes. Do **not** restart HD2000 until the upgrade process is complete!

6. When the upgrade installation finishes, the HD2000 restarts.
7. When the HD2000 is ready again, verify that the new version was installed correctly. Press <Menu>. The main Menu appears. Select **Versions**.



8. Check that the **Software Version** matches the downloaded filename.



B.2 Upgrading from the HD2000

Alternatively, you may upgrade the HD2000 software directly from the HD2000. Checking for upgrade can be done automatically or at your own initiative.

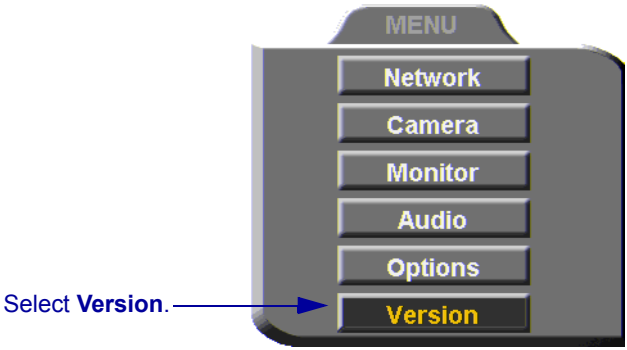
To upgrade through the HD2000, the system's LAN configuration must be set up completely - all parameters must be defined (see "LAN Connection" on page 57).

Automatically Checking for Upgrade

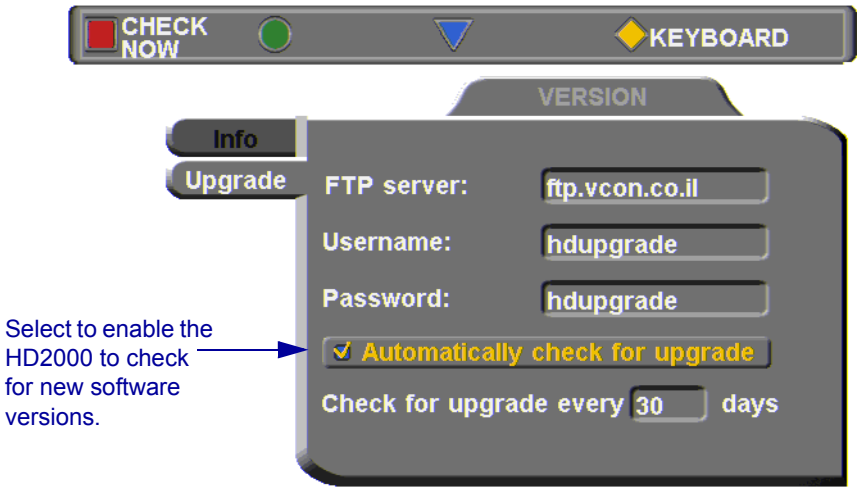
Automatic Checking for Upgrade enables the HD2000 to check the FTP site for a new software version whenever the system restarts.

➤ **To set up automatic upgrading**

1. Press <Menu>. The main Menu appears. Select **Versions**.



2. Navigate to the **Upgrade** dialog box.
3. Select **Automatically Check for Upgrade**. The HD2000 will check the FTP site for a new software version whenever the system restarts.
4. The **Check for Upgrade** box commands the HD2000 to check for the upgrade after a specific period, IF the system has not restarted during the interim. Enter the number of days in this period.



5. Press <OK>.

Manual Upgrade

Checking for new upgrade availability manually may be done at any time.

➤ **To upgrade manually**

1. In the Upgrade dialog box, press the red **CHECK NOW** SoftKey.

2. If a new version is available, a message appears, identifying the version and asking if you want to download it.

3. To proceed with the upgrade, press <OK>.

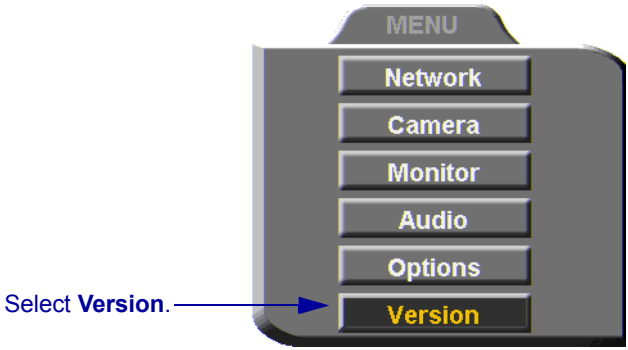
B.3 Confirming Successful Upgrade

The upgrade process has been completed. HD2000 then restarts itself and runs through the usual opening process. Wait until the Ready Screen (see "HD2000 Screens" on page 32) appears.

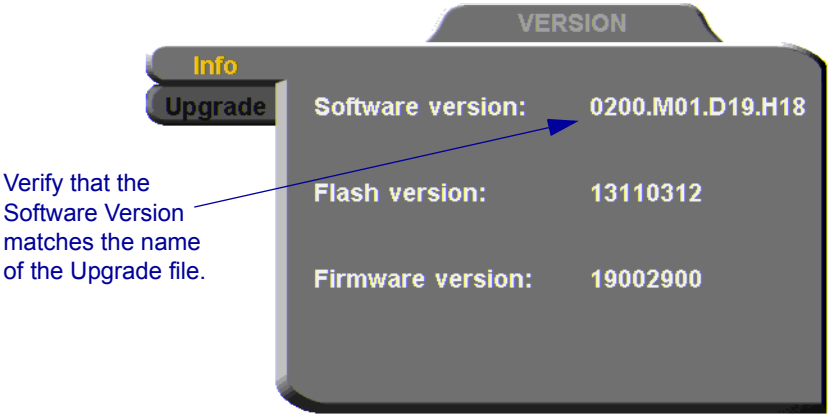
At this stage, confirm that the latest software is running on your system.

➤ **To check the version of the HD2000 software**

1. Press <Menu>. The main Menu appears. Select **Versions**.



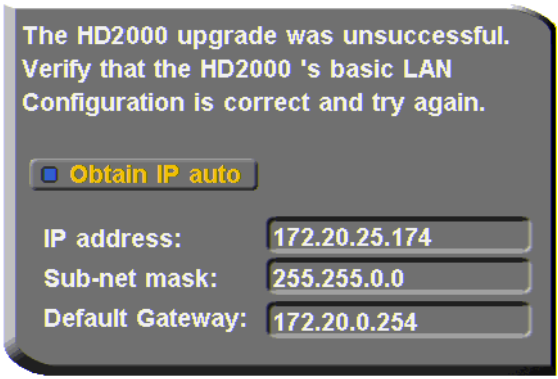
2. In the Info dialog box, verify that the **Software Version** matches the name of the downloaded upgrade file. If it does, HD2000 is ready for use!



B.4 Installer Mode

If for some reason the upgrade was not successfully completed, HD2000 enters Installer Mode after it restarts.

1. Verify that you've entered the correct Network information before running the upgrade program again.



2. Write down or copy the IP address of the HD2000. Press <OK>.

3. Rerun the upgrade process from the HD Upgrade Utility. Be sure to enter the correct IP address for the HD2000.

If this process is unsuccessful again, contact Emblaze VCON's Technical Support (see "Emblaze VCON Technical Support" on page viii).

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