EMBLAZE VCON

Conferencing Systems

Video Made Easy

VCB5

User's Guide

Version 5.0

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Limited Warranty

EMBLAZE VCON
Video Made Easy

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Declaration of Conformity for Terminal Equipment

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

Date: July 12, 2006

We hereby declare entirely on our own responsibility that the products:
Product (Models): VCB5
and all its associated peripherals manufactured by Emblaze-VCON Ltd., to which this declaration relates
is in conformity with:

European Community

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 products are compliant with the following standards and other normative documents:
EMC: EN 55022: 1998 +A1: 2000 +A2: 2003 Class B
EN 55024: 1998 +A1: 2001 +A2: 2003
               EN 61000-3-2: 2000 Class A
               EN 61000-3-3: 1995 +A1: 2001
               IEC 61000-4-2: 2001
               IEC 61000-4-3: 2002
               IEC 61000-4-4: 1995 +A1:2000 +A2: 2001
               IEC 61000-4-5: 2001
               IEC 61000-4-6: 2001
               IEC 61000-4-11: 2001
Safety / Low Voltage: EN 60950
               IEC 60950

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).

USA & Canada

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

The products are compliant with the following standards and other normative documents:
EMC: FCC Part 15, Class B

Safety / Low Voltage: CS 22.2 950
               UL 60950

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Federal Communications Commission Radio Frequency Interference Statement
Both products - Safe@Office and VPN-1 Edge - comply with the limits for a Class B 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 instruction manual, may cause harmful interference to radio communications. Shielded cables must be used with this equipment to maintain compliance with FCC regulations. Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

RoHS & WEEE Declaration and Certification

These systems have been verified to comply with the EU RoHS & WEEE Directives throughout the design, development and supply chain definition.

EU Directive on the Restriction of the use of certain Hazardous Substances in electrical and electronic equipment (RoHS – 2002/95/EC) of 27 January 2003, and Directive of the European Parliament and of the Council of 27 January 2003 on Waste Electrical and Electronic Equipment (WEEE – 2002/96/CE).

This document is informational only and reflects laboratory performance. Your product may perform differently, depending on components and peripherals you connect. Accordingly, the customer should not rely upon this information in making decisions about electrical tolerances or otherwise. No warranty as to accuracy or completeness is expressed or implied. The information in this document may change without notice.

Environmental Data – Product's Materials Information Restricted Substances
Emblaze-VCON's products does NOT contain any of the following substances (in concentrations exceeding legal threshold limits):
.   • Asbestos
.   • colorants in components that come into direct contact with human skin
.   • Cadmium and its compounds (except for use in applications exempted by the EU RoHS
             Directive)
.   • Class I and Class II CFCs (chlorofluorocarbons) and HCFCs (hydro fluorocarbons)
.   • Chloroparaffins, short chained (10-13 carbon chain)
.   • Chromium VI and its compounds (except for use in applications exempted by the EU RoHS
             Directive)
.   • Halogenated dioxins or furans (i.e. polychlorinated dibenzodioxins, polychlorinated
             dibenzofurans)
.   • Lead and its compounds (except for use in applications exempted by the EU RoHS Directive)
.   • Mercury (except for use in applications exempted by the EU RoHS Directive)
.   • Nickel and its compounds in components that are likely to result in prolonged skin exposure
.   • PCBs (polychlorobiphenyls) or PCTs (polychloroterphenyls)
.   • PBBs (polybromobiphenyls) or PBDEs (polybrominated diphenylethers)
.   • PVC (polyvinyl chloride) in plastic parts greater than 25 grams
.   • Polychlorinated naphthalenes (PCNs)
.   • Tributyl tin (TBT) and triphenyl tin (TPT) compounds

Additional Materials Information
.   • The cables may use PVC as an insulating material to ensure product safety
.   • The case material is sheet metal
.   • Product may contain post-industrial recycled content (plastics, metal, glass)

No CFCs (chlorofluorocarbons), HCFCs (hydrofluorocarbons) or other ozone depleting substances are used in packaging material. Chromium, lead, mercury, or cadmium are not intentionally added to packaging materials and are not present in a cumulative concentration greater than 100 ppm as incidental impurities. No halogenated plastics or polymers are used for packaging material. The System fully complies with the EU Directive 94/62/EEC.

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Emblaze-VCON Technical Support

This User's Guide was designed to help you set up and work with your VCB easily so that you can 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).

TABLE OF CONTENTS

1 WELCOME TO THE VCB

1.1 Introduction

The VCB, Emblaze-VCON's premier Multipoint Conferencing Unit (MCU), enables:

❑ Initiation and management of multipoint conferences, including both scheduled and ad-hoc conferences, which are multipoint sessions that were expanded from point-to-point calls.

❑ Wide range of rich, dynamic layouts for the simultaneous viewing of several participants. Up to 16 users may be displayed at the same time.

❑ Web-based management/configuration and videoconference scheduling/ moderating applications.

❑ Simultaneous multicast streaming of active conferences and multimedia to multiple passive participants.

The VCB includes advanced features, such as audio transcoding, speed matching and bandwidth management, as well as basic features such as continuous presence, voice-activated switching, and multiple audio and video algorithms.

1 Welcome to the VCB

The VCB includes the Conference Moderator, which provides administrators and users with the ability to schedule conferences in advance and to manage them remotely. At the appointed time, the Conference Moderator initiates the conference and connects the conference participants. Conference hosts can also control when participants join or exit sessions, and transmit video and data streams to the participants. For more details, see the *Conference Moderator Help*.

The VCB's robust Chair Control provides several options for displaying conference participants. A rich selection of predefined layouts expands on the tradtional methods of Continuous Presence and Voice-activated Switching. Additionally, conference organizers can choose among the following view switching modes for each session:

Dominant Speaker	Showing the most recent speakers in the conference or from within predefined groups.
Fixed Image	Showing specific views throughout the conference's duration.
Timer Image	Showing a rotation of Continuous Presence views, changing at timed intervals.

The VCB supports the following:

❏ **G.722.1, G.723.1, G.728 and AAC audio algorithms with audio transcoding, allowing users to participate in a multipoint conference using different audio standards.**

❏ **Up to 4 Mbps data rate per participant in Voice-activated Switching and in Continuous Presence (H.263 and H.264 only - for H.261, up to 1 Mbps).**

❏ **H.261/H.263/H.263+/H.263++/H.264 video codec support in Voice-activated Switching**
H.261/H.263/H.264 video codec support in Continuous Presence.

❏ **Dial-in conference initiation.**

❏ **Handles calls connecting up to 48 concurrent users.**

❏ **Support for sessions including H.323 end points/devices and SIP User Agents (through the MXM's embedded SIP proxy server).**

❏ **Multi-point sessions can be joined (cascaded) onto other sessions, contingent on similar data rates, display types, and audio/video algorithm.**
VCB to VCB
VCB to other IP MCU

❏ **Dynamic resource allocation pool – unallocated ports may be used as overflow for configured sessions.**

❏ Applies H.239 support with HD DualStream™, in which both video and data application-sharing may be transmitted to conference participants (whose end points support dual streams). End points that don't support dual streams will receive either the data or video stream, depending on the active VCB Service's configuration.

❏ The streams may be sent in CIF, QCIF, 4CIF, VGA, SVGA, or XGA.

❏ Speed matching, allowing participants in Continous Presence to connect using two different data rates (for example, 128 Kbps and 384 Kbps)

❏ Mode switching, allowing participants to choose the type of viewing mode (Dominant Speaker, Fixed Image or Timer Mode) during a conference.

❏ Symmetric bandwidth usage during Continuous Presence calls.

❏ Protection of calls using H.235 (AES) encryption.

❏ Optional deployment of Emblaze-VCON vPoint HD videoconferencing clients.

1.2 Package Contents

When you open the VCB shipping package for the first time, check that the following items are included. If any of the items (according to your Customer Order) are missing or damaged, contact your Emblaze-VCON representative immediately.

- VCB Server unit
- Power cables (2)
- Network cable
- Crossover cable
- User Guide and Utilities CD-ROM
- Getting Started Guide

2 DEFINING THE VCB IP CONFIGURATION

Before you can use the VCB for the first time, you have to define a unique IP configuration for it. This task is made up of the following procedures:

❑ Retrieving the VCB's initial IP configuration

❑ Changing the IP configuration to unique settings, such as a static IP address.

2.1 Assigning a Static IP Address to the VCB

Before you can use a VCB unit for the first time, you have to define one of its network cards (NIC) and interface's unique IP configuration so that you can connect to it for management. Use one of the following methods:

❑ Directly through the VCB unit's front panel

❑ Through interface GbEo.

❑ Through the **Console** (serial) port and Secure Shell (SSH), Microsoft® Hyperterminal, or similar connection program.

For standard operation, we recommend that you connect one NIC/one interface. If nevertheless, you require connection through more than one NIC, each NIC must belong to a different subnet.

Through the Front Panel

The following procedure describes how to get the IP address from the VCB unit's front panel.

➤ **To define a static IP address**

   1   Connect a network cable to any one of interfaces GbE1 to GbE3.

Connect to any one of these interfaces.

Interface GbE0 has a fixed static IP which cannot be changed.
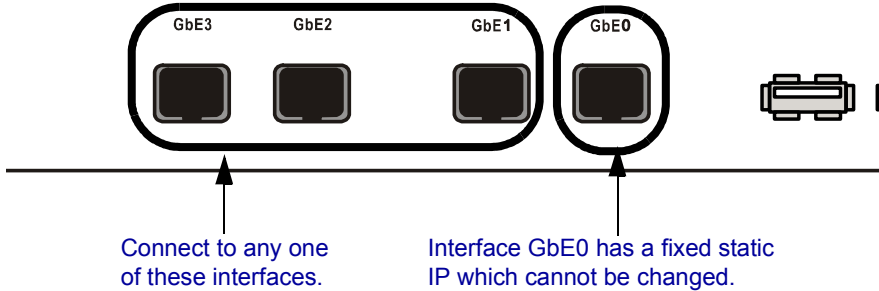
   2   Turn the VCB unit on. A welcome message appears in the LCD display.

   3   In the LCD display, press an arrow button until the GET IP command appears. Press the Enter button.

   4   Press an arrow button again until the connected network card and interface appears (NIC 1 to NIC 3 = GbE1 to GbE3) and press the Enter button. The VCB unit receives an IP address from the DHCP server.

```
Select NIC:
1
172.20.21.22
```

If a cable is not connected to the interface, **0.0.0.0** appears in the display.

   5   Leave the cable connected to the chosen interface.

Through Interface GbE0

The following procedure describes how to access the VCB's configuration directly through the factory-configured interface.

➤ **To define a static IP address**

1   Connect a communications cable between interface GbE0 and a computer. This interface's IP configuration is:

IP address   10.0.10.10

Subnet mask   255.255.0.0

Gateway IP   0.0.0.0
address

Connect to GbE0.
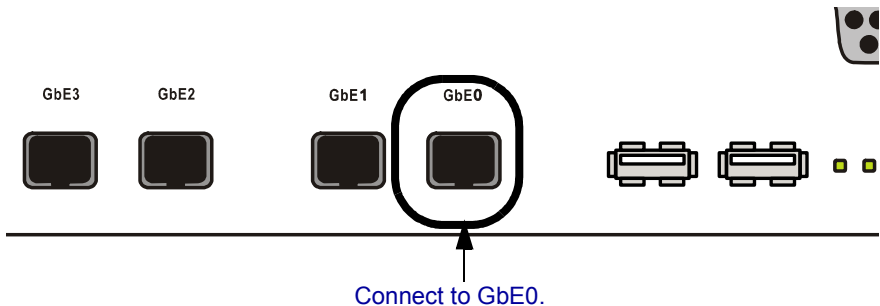
2   To access the VCB unit from another computer initially, the two systems must, at least temporarily, belong to the same network segment. That is, the first three fields of the address and the subnet mask must be identical.

Write down the computer's current IP address and subnet mask so that you can restore them later.

Change the remote computer's IP configuration temporarily to the same IP address segment(10.0.10.x) and subnet mask listed in step 1.

3   Connect a network cable to any one of interfaces GbE1 - GbE3.

4   Through the VCB Web Management program, define a static IP address for the connected NIC.

5   Restore your computer's original IP configuration.

Through the Console Port

The following procedure describes how to access the VCB's configuration directly through the **Console** (or serial) port.

➤ **To define a static IP address**

1   Connect a control cable between the VCB's **Console** port and the remote computer's COM port.

From any one of these interfaces to the network

From the CONSOLE port to your computer's COM port
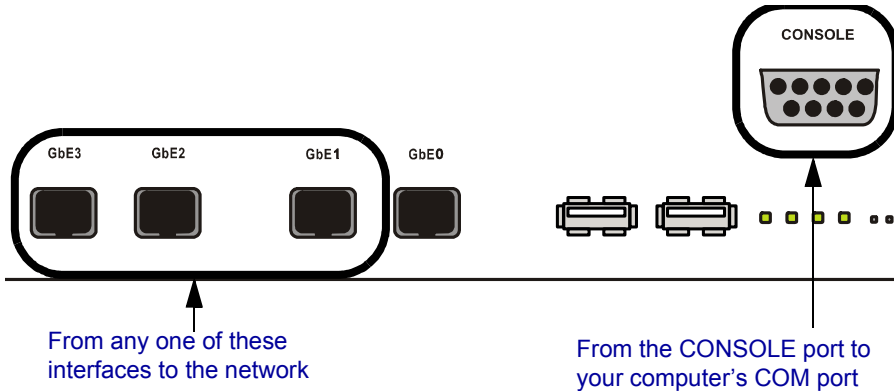
2   Connect a network cable to any one of interfaces **GbE1** - **GbE3**.

3   Using Microsoft® HyperTerminal or a serial connection program, open a connection between the computer and the VCB unit. Configure the connection settings as follows:

Connect using:	COM1 (or any other free COM port)
Bits per second	9600
Data bits	8
Parity	None
Stop bits	1
Flow Control	Xon/Xoff

4   Wait for the command prompt (>) to appear on the computer screen.

5   Type **listip** next to the command prompt.

6   After the command prompt (>), type the following syntax:

setparam ipstatic [0-3] [*IP address*][*netmask*][*default gateway address*]

Make sure that the static IP address is unique, in order to avoid collisions on the network.

7   To confirm the new IP configuration, type **listip** next to the command prompt and press <Enter>.

3 LOGGING INTO THE VCB

When you start the VCB program, you must first log in.

Emblaze-VCON's Media Xchange Manager® (MXM) provides gatekeeper functions for the VCB. The MXM manages the videoconferencing environment among end points registered in it, including multipoint conferencing managed by the VCB.

➤ **To log in to the VCB**

1 In your web browser, enter the URL of your VCB. The Login page appears.

Logging Into the VCB

2 Enter your login name and password. The factory-defined login configuration is:

User Name	**su**
Password	**1234**
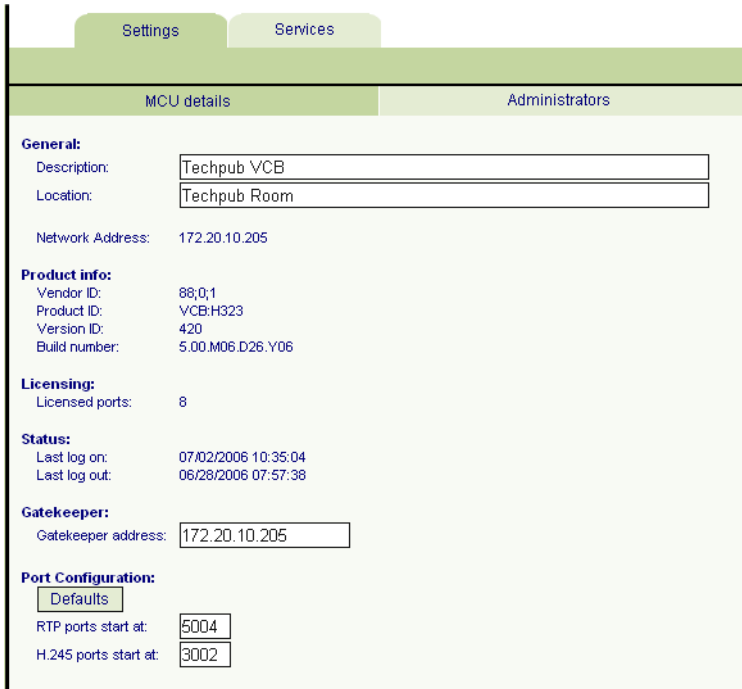
3 If necessary, define the following:

Remember Login Name and Password	Select to allow the system to use the same login values in the future.
Language	Language of the management program.
Force Login	If a user with the same Login Name is already connected from a different location, this login attempt will succeed, disconnecting the other user.

4 Click **Login**.

5 Click the VCB tab to enter the VCB Configuration pages.

VCB Configuration is divided into Settings and Services.

Settings	Services

MCU details	Administrators

General:
Description: Techpub VCB
Location: Techpub Room

Network Address: 172.20.10.205

Product info:
Vendor ID: 88;0;1
Product ID: VCB:H323
Version ID: 420
Build number: 5.00.M06.D26.Y06

Licensing:
Licensed ports: 8

Status:
Last log on: 07/02/2006 10:35:04
Last log out: 06/28/2006 07:57:38

Gatekeeper:
Gatekeeper address: 172.20.10.205

Port Configuration:
Defaults
RTP ports start at: 5004
H.245 ports start at: 3002

VCB Settings - MCU Details

4   SETTING UP THE VCB

This chapter provides instructions for setting the VCB configuration in the VCB Configuration program, and describes the properties so that you can set up the most suitable configuration for your installation.

4.1   VCB Settings

The **Settings** tab contains general device configuration. These appear under the MCU Settings and Administrators categories.

MCU Settings

➤ **To display MCU Settings**

1   After logging in, click the **Settings** tab and then MCU **Settings**.

2   On this page, you can edit the parameters listed below. The other parameters are read-only and cannot be edited in the VCB Configuration program (for descriptions, see page 14).

Description	Identity of the VCB. This name will appear in the MXM Administrator after the login process is finished.
Location	Physical location of the VCB.
Gatekeeper Address	IP address of the MXM or H.323 gatekeeper.
Defaults	Click to restore the default port configuration.
RTP Ports Start At	The lowest port number allocated for video and audio during videoconferences.
	This allocation meets the Real-Time Protocol (RTP) and Real-Time Control Protocol (RTCP) specifications, which enable applications to synchronize and spool audio and video information.
H.245 Port Range	The lowest port number allowed for end-to-end signalling of multimedia during videoconferences
	This allocation provides for H.245 functions, such as capability exchange, signalling of commands and indications, and messages to open and fully describe the content of logical channels.

3   To implement the changes, click **Apply**.

If an open conference is using the VCB when you make configuration changes, some of these changes may take effect immediately. Otherwise, changes will take effect in the next session.

In the MCU **Settings** tab, the following properties are read-only:

Network Address	IP address of the VCB.
Vendor ID	Identity of the manufacturer.
Product ID	Manufacturer's identity of the product.
Version ID	Manufacturer's version identification of the product.

Build Number Version information for the VCB.

Licensed Ports Maximum number of concurrent participants that may be serviced by in this VCB.

Last Log On Most recent date that the VCB logged in to the MXM or H.323 gatekeeper.

Last Log Out Most recent date that the VCB logged out of the MXM or H.323 gatekeeper.

If the **Last Log On** date is later than the **Last Log Out** date, the selected node is currently logged into the MXM.
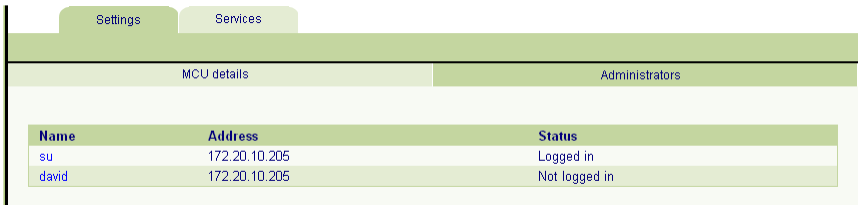
Administrators List

The **Administrator** tab lists administrators with permission to work with the VCB.

➤ **To display the list of Administrators**

❑ In the **Settings** tab, click **Administrators**.

List of Administrators

➤ **To change an Administrator password**

❑ In the **Name** column, click the name. The Edit Administrator dialog appears.

Changing Administrator Password

To keep the same password, leave the **Password** boxes blank.

New Password	Type a new password for the administrator.
Confirm the Password	Type the new password again.

4.2   VCB Services Configuration

VCB Services define the usage of resources used during a multipoint videoconference managed by the VCB.

After the VCB's installation, you can add or edit service entries. One directory number (E.164) is created for each service type.

To handle situations in which additional participants require additional resources, set up several VCB Services with incremental increases in bandwidth, number of ports, or multicast capabilities.

	Index	Description	Number	Status	Bandwidth	Mode	Participants	Add-hoc	Multicast
☐	01	1003	1003		320		8	☑	☑
☐	02	1000	1000		320		8	☑	☐

Settings   Services

List of VCB Services

➤ **To add a VCB Service**

❑   At the bottom of the list of services, click **Add**. A new VCB Service entry appears in the list with the default configuration.

➤ **To edit a VCB Service**

1   Click the name of the VCB Service in the **Description** column. The Service Configuration page opens. The Configuration includes the following categories (each in its own tab on the page).

— **General**
— **Layouts**
— **Media**
— **QoS**
— **Advanced**

2   Change properties according to your service specifications, or keep the default settings. When you finish each page, click **Apply** to implement the changes. For explanations about the various properties, see the following subsections.

3   When you finish editing the configuration, click **List** to return to the Services list.

➤ **To delete a VCB Service**

1   Click the checkbox to the left of the VCB Service entry.

2   Click **Delete**.

3   Click **OK** to confirm.

The following subsections describe the VCB Service properties.

General

In the **General** page, enter identity information of the VCB Service.

VCB Service - General

In the **General** tab, the following properties appear:

Number	Number to be dialed for using this service.
Description	Name of the service. This name identifies the service in the VCB Services List.
Limit Number of Participants to	The maximum number of concurrent calls allowed in this session, according to your VCB's license terms.

Reserve Ports	If selected, the VCB reserves an equal number of ports as the number of maximum users in this session, in accordance with your VCB license terms.
	For example, if the session is limited to a maximum of 8 participants, the VCB will reserve 8 ports. None of those ports will be available for other sessions.
Ad-hoc	Select to enable expansion to an ad-hoc conference.
Use this service exclusively for ad-hoc conferences	This service is only available for inviting additional users into ad-hoc videoconferences, but not available for initiating multipoint sessions.
Multicast	Select to enable streaming sessions.
Defaults	Click to restore the default multicast streaming configuration.
Session Name	Type a name to identify this service's multicast session.
Session Description	Type a name or description of the multicast session.
Broadcast to Address	The destination IP address for the multicast session. All participants in the session transmit and receive from this common IP address. This address must be a class D address in the range of **224.0.0.0** to **239.255.255.255**.
Video Refresh Rate	Define the interval at which the end point broadcasting the multicast synchronizes the video display at the receiving ends.
Media Packets TTL	The maximum number of routers (hops) that the multicast session's packets may pass through.
SDP Rate	Session Description Protocol Rate - The interval at which announcements and descriptions of the multicast session are sent out on the Internet Multicast backbone (Mbone), for Participants and passive third-party viewers.
SDP TTL	The maximum number of routers (hops) that the SDP announcement for this session may pass through.

Layouts

In the **Layouts** tab, define the layout for displaying multiple users on the screen at the same time.
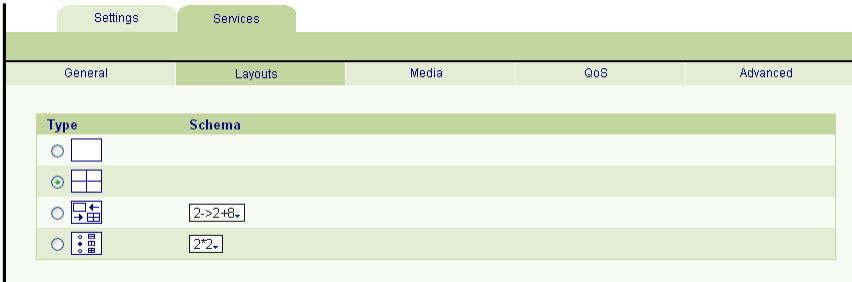
VCB Service - Layouts

Choose the type and if necessary, schema for the layout:

Display one user at a time.

Display up to four users at a time.

Display changes automatically depending on the number of users in the conference.

1->2->3->2*2->3*3->4*4
1 = 1 user
2 = 2 users
3 = 3 users
2*2 = 4 users in 2 rows
3*3 = 5-9 users in 3 rows
4*4 = 10-16 users in 4 rows.

2->2+8
When over 2 users participate, one row of 2 users and another row of 8 windows open; each additional user appears in a window and unused windows remain empty.

1->1+5->1+7
1=1 user
1+5=2-6 users
1+7=7-8 users.

Display users in the same layout schema regardless of the number of the users in the call.

In the **Schema** list, choose the layout.

Media

The **Media** tab contains the settings for audio formats, video formats and dual-video streaming.

VCB Service - Media

Audio

Only audio codecs that are specified in your VCB's license may be used during its calls. In the **Audio** list, select the codecs that are available for conferences using this specific VCB Service.

To reach the maximum active participants per session/server, enable no more than two codecs per session.

Video

Format The video codec (**H.261, H.263, H.264**) used in the multipoint conference.

Size In/ Size Out The size of the transmitted video images:

- **CIF (Common Interchange Format), or normal size**
- **QCIF (Quarter Size Common Interchange Format), or quarter size**

In Continuous Presense, the local side transmits QCIF video and receives CIF or 4CIF video.

Bandwidth The bandwidth available for each participant.

Dual Video

End points that support Emblaze-VCON's HD DualStream™ (vPoint HD, HD5000, HD4000, HD3000 and HD2000) or other dual-video capability can send video and data streams simultaneously to a multipoint conference through the VCB. During a conference, end points supporting HD DualStream can view documents, graphics, and presentations as the main image, while the video appears as a PIP inset on the screen.

Format	The video codec (**H.261**, **H.263**, **H.264**) used by the streaming source.
Video Format/ Size	The format and resolution of the transmitted video images.

The available formats are:

❑ **CIF (Common Interchange Format), or normal size - 352x288**

❑ **QCIF (Quarter Size Common Interchange Format), or quarter size - 176x144**

❑ **4CIF (4 x CIF) - 704x576**

❑ **XGA (Extended Graphics Array) - 1024x768**

❑ **VGA - (Video Graphics Array) 640x480**

❑ **SVGA (Super Video Graphics Array) - 800x600**

Method Define the permitted method for transmitting dual video streams during a conference managed through this service.

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

❑ **Choose None to block all dual video transmission.**

❑ **Choose H.239 to allow H.239 dual video transmission.**

Send second video channel to legacy devices	If a receiving end point does not support dual streams, it receives only the stream carrying the shared data application. However, the data appears in video format.
When streaming send second video channel	If data sharing takes place during a multicast conference, the multicast session's Participants receive the data stream only.

QoS

The QoS tab contains properties for controlling the type of Quality of Service that will be used for transmitting packets during a multipoint conference that's initiated using this VCB Service.

VCB Service - QoS

Priority Type (QoS)

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

No Priority   Network transfers packets using normal Best-effort (or Routine) packet transmission.

IP Precedence   Network gives priority to certain types of bits (video, audio, control) according to the eight levels of IP precedence.

Diffserv   Network transfers packets according to specific needs of the sending application.

Priority Values

Video, Audio and RTCP Priority	For each packet type, select an appropriate priority level. The item with the highest priority number will be sent first, the item with the next highest number will be sent second, and so on.
	The priority levels vary, depending on whether the selected Priority Type is IP Precedence or Diffserv.
Defaults	Click to restore the default QoS configuration.

Advanced

In the **Advanced** page, define additional parameters required by the VCB for managing multipoint conferences.

VCB Service - Advanced

Defaults	Click to restore the default configuration for the associated set of parameters.

Encryption Method	Choose the mode of encryption for conferences using this service.
	❏ Choose **None** to allow unsecured calls.
	❏ **Auto** enables the transmitting end point to encrypt a call if the remote sides have also enabled encryption. If they have not enabled encryption, an outgoing call will be unsecured.
	❏ **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 calls using this VCB Service. If the remote sides have not also enabled encryption, the call attempt will be unsuccessful.
Do Not Send Live Video Below This Rate	The minimum bandwidth required for sending video during a conference using this service.
Ask for Intra Every ___ Seconds	Select to enable displayed end points to send periodic intras in order to synchronize the video display at the receiving end. This setting affects conferences managed with this VCB Service.
	In this box, define the interval between the transmission of intras.
Video Delay Time	Delay between transmission of video packets. This parameter is intended for preventing video burst during transmission through various routers or servers.
Voice-activated Switching Delay	Delay period before changing the displayed video during a voice-activated switching multipoint conference. The displayed video changes only after the source of the new sound or voice is steady for the defined period. A delay period is necessary to prevent quick incoherent display changes that may be caused by sudden noises (such as a sneeze) rather than a steady speaker.
Enable FECC	Select to enable Far End Camera Control (FECC) to all participants in a conference using this service. Applicable only to Voice-activated Switching mode.
Enable Active Speaker Highlight	Select to display a frame surrounding the active speaker in Continuous Presence.

Enable Silence Suppression	Select to enable the VCB to lower bandwidth and CPU usage during periods of low audio and silence.
Enable On Screen Display	Select to display the names of the displayed users in Continuous Presence.
Maximum Packet Size	To allow Continuous Presence calls to proceed, set this parameter either equal to or lower than your network's MTU.
In CP, how to handle low bandwidth calls	If a Continuous Presence call tries to connect using a lower bandwidth than defined by this service, the VCB will handle the call's bandwidth according to the selected setting.

❑ **Do nothing** - This setting is not applied to calls.

❑ **Reject the call** - The VCB does not allow the call to continue.

❑ **Open only audio** - The VCB allows the audio stream to continue.

❑ **Use Speed Matching** - The call continues at [4x the VCB Service's defined bandwidth + 64 Kbps audio]. However, all end points **not** supporting this bandwidth receive the call at the lowest bandwidth used among all participants.

The table below shows the bandwidth used when a Continuous Presence call of [320 x4 Kbps + 64 Kbps audio] connects, resulting in the transfer of the full 1.5 Mbps bandwidth to those end points supporting it, but all end points supporting less (than 1.5 Mbps) bandwidth only receive 128 kbps.

Endpoint no.	Configured Bandwidth	Bandwidth During Call
1	1.5 Mbps	1.5 Mbps
2	1.5 Mbps	1.5 Mbps
3	768 Kbps	128 Kbps
4	384 Kbps	128 Kbps
5	128 Kbps	128 Kbps

In CP, how to handle low bandwidth calls (cont.)

❑ **Use Symmetric Video** - The call continues at [4x the VCB Service's defined bandwidth + 64 Kbps audio]. However, all end points that do not support the call's bandwidth receive the call at the bandwidth defined in their configuration.

The table below shows the bandwidth used when a Continuous Presence call of [320 x4 Kbps + 64 Kbps audio] connects, resulting in the transfer of the full 1.5 Mbps bandwidth to those end points supporting it, but all end points supporting less (than 1.5 Mbps) bandwidth only receive their configured bandwidth.

Endpoint no.	Configured Bandwidth	Bandwidth During Call
1	1.5 Mbps	1.5 Mbps
2	1.5 Mbps	1.5 Mbps
3	768 Kbps	768 Kbps
4	384 Kbps	384 Kbps
5	128 Kbps	128 Kbps

Apply to all types of devices, not only to gateways

To apply low bandwidth adjustment to all end points in a conference, select this option. Deselect this option to apply low bandwidth calling only through gateway connections.

Audio/Video/ Data Jitter Size

Smooth playback of transmitted media continues even if the packets arrive out of order at the receiving end, up to the number of packets defined here for each packet type.

5 SETTING UP A DEDICATED VCB SERVICE

The tasks described in this chapter are procedures which you perform in Emblaze-VCON's Media Xchange Manager® (MXM) Administrator application.

5.1 Dedicated Service for End Points

A dedicated VCB service is set up only for expansion to an ad-hoc conference that includes a specific end point. That is, the service is "dedicated" to that end point. That specific end point must be either one of the original two end points of a point-to-point conference or the invited end point.

➤ **To dedicate a service to a specific end point**

  1 In the MXM Administrator, double-click the VCB Service and then click the **Session** tab.

  2 Select **Use this service as an ad-hoc conference resource** and then click **OK** (in addition, you may also set the service to be exclusive for ad-hoc conferences only).

3 Double-click the end point, click **MXM**, and then click the MCU **Services tab.**

4 In the **Dedicated MCU Service** list, select the service. Click **OK**.
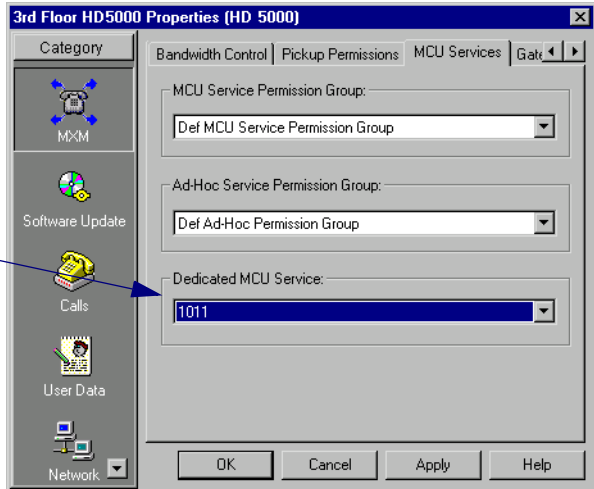
5.2 Dedicated Service for a Zone

A dedicated ad-hoc service for a neighboring zone may be used only if any of that zone's end points are in the resulting ad-hoc conference (either one of the original two end points of the conference or the invited end point).

➤ **To dedicate a service to a specific end point**

1 In the MXM Administrator, double-click the VCB Service and then click the **Session** tab.

2 Select **Use this service as an ad-hoc conference resource** and then click **OK** (in addition, you may also set the service to be exclusive for ad-hoc conferences only).

3 Double-click the neighboring zone and then click the MCU **Services** tab.

4 In the **Dedicated MCU Service** list, select the service. Click **OK**.
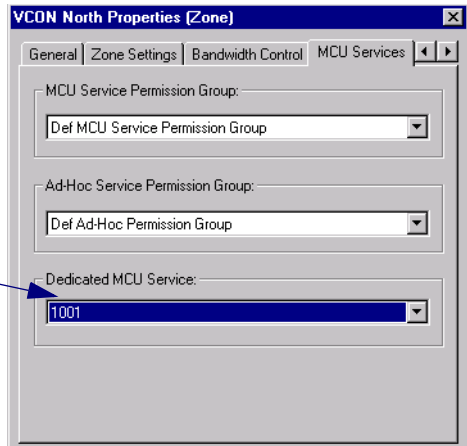
6   ADDING THE VCB TO AN AD-HOC PERMISSION GROUP
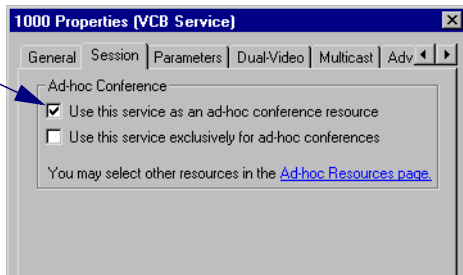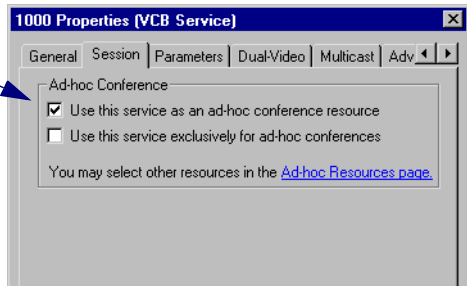
The tasks described in this chapter are procedures which you perform in Emblaze-VCON's Media Xchange Manager® (MXM) Administrator application.

An Ad-hoc Permission group is a set of VCB services that are defined for use in ad-hoc conferences. It helps you control the use of resources for expanding to ad-hoc conferences.

An Ad-hoc Permission group may consist of one service or multiple services. It may also include combinations of services from more than one registered VCB unit. The order in which services are requested is important and controllable by Super User-level administrators.

During expansion to an ad-hoc conference, the MXM only uses those services listed in the inviting end point's assigned permission group. After an invitiation is initiated, the MXM first tries to use the first service defined in the permission group. If the first service is not available, it tries to use the second defined service, and so on. If all enabled services are unavailable, the MXM does not complete the "invitation" to the additional end point.

By default, every registered end point is assigned to the default Ad-hoc Permission Group. This may be changed when manually adding a new end point, or by editing the end point's properties.

➤ To add an Ad-hoc Permission Group

1   In the MXM Administrator applications's toolbar, click the New Ad-hoc Permission Group button. The New Ad-hoc Permission Group dialog box appears.

2   Change properties according to your permission group requirements. To move to the next properties page, click Next. For explanations about the various properties, see pages 34 to 36.

3   Click Finish. In the Main View, the new group appears under the Ad-hoc Permission Group object.

6.1   Ad-hoc Permission Group Properties

In the Ad-hoc Permission Group dialog box, you can view and change the following configuration information:

- **General**
- **Permission Group**

General

In the **Description** box, type a name for the Ad-hoc Permission Group. This name will appear on the system tree and in the VCB's Properties dialog boxes' **Product Info tab.**
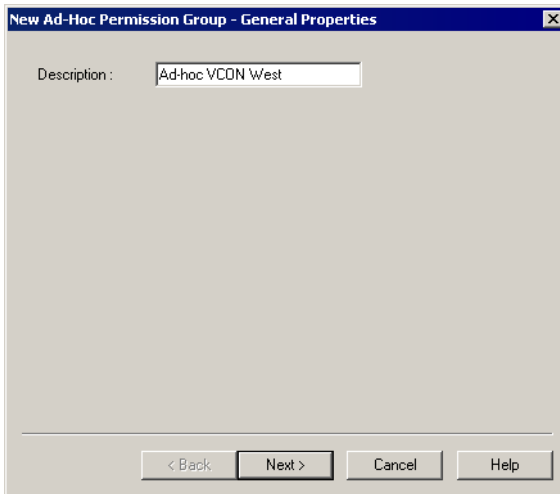
New Ad-hoc Permission Group - General Properties

Permission Group

The **Permission Group** Properties page includes all registered services that are
defined for use as an ad-hoc resource, which is a service which is set up to connect
ad-hoc conferences.

Select any number of VCB services from the list to be in the Ad-hoc Permission
Group. The group may also include combinations of services from more than one
registered VCB unit.

— To place all services in the permission group, click **Select All**.
— To clear all the selections, click **Clear All**.
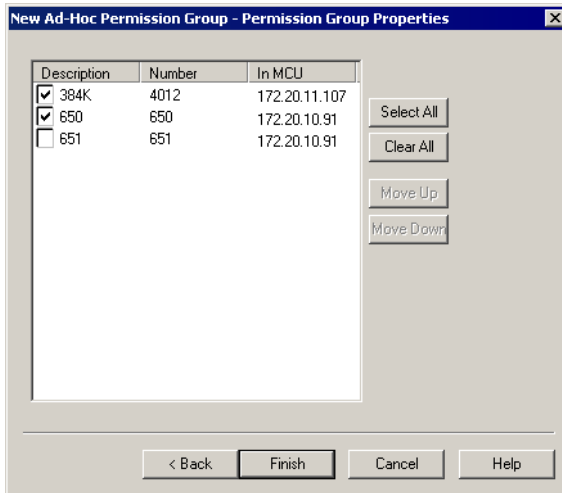
New Ad-hoc Permission Group - Permission Group Properties

Setting the Usage Order

The services' locations in the list determines the order in which the MXM tries to use them. After an end point invites another end point, the MXM first tries to use the first service defined in the permission group. If the first service is not available, it tries to use the second defined service, and so on. If all enabled services are unavailable, the MXM does not complete the "invitation" to the additional end point.

In the Permission Group page, you can move the services to different places in the usage order.

➤ **To set the usage order of the selected services**

❑ Click the name (*not* the checkbox) of a selected service. To move the service up and down the list to its designated place, click Move Up or Move Down as many times as necessary.

Repeat this step for as many services as necessary.

7 AD-HOC CONFERENCING

To "invite and join" additional parties into an ad-hoc videoconference, users must initiate the Invite function from their videoconferencing application during an open session.

This chapter instructs how to invite from the following Emblaze-VCON applications:

• **vPoint™**

• **vPoint HD**

• **HD5000/4000**

• **HD3000/2000/1000/600**

• **Other H.323 videoconferencing applications**

7.1 Inviting from vPoint™/vPoint HD

➤ **To invite and join other contacts into an ad-hoc conference**

1 Enter an additional contact's user number (E.164) or address into the Manual Dialer's address box.

2 Click Invite.

-or-

1 Open the Dialer and locate the contact that you want to invite.

2 Right-click the contact and then click **Invite**.

The session is now a multipoint conference. The parties' video is displayed in *Continuous Presence* (multiple users' video on screen at all times) or *Voice-Activated Switching* (speaker's video only on screen), in accordance with the MCU/VCB Service configuration.

7.2 Inviting from HD3000/2000/1000/600

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.

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

Enter the address of the additional party for transferring the conference

5   The HD device dials the number.

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

7.3   Inviting from HD5000/4000

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

1   Click the Telephony Services button to open the Telephony Services menu.

2   Click *Invite User*.

3   In the Dial Plan Number box, enter an additional party's user number.

-or-

Click the Online Directory button and choose a name from the Online Directory Dialer.

4   Click the Dial button.

After several seconds, the additional party is added to the session, which is now a multipoint conference. The parties' video is displayed in *Continuous Presence* (multiple users' video on screen at all times) or *Voice-Activated Switching* (speaker's video only on screen), in accordance with the MCU/VCB Service configuration.

7.4 Inviting from Other H.323 Videoconferencing Applications

In VCON's MediaConnect 6000 and other H.323 videoconferencing applications, you must enter a code in order to invite other users to an ad-hoc videoconference. If you do not know the code, ask the system administrator.

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

1 During an ongoing point-to-point videoconference, open your application's Dialing utility.

2 Dial *77 (or an administrator-defined value) followed by the [*additional user's directory number*]. For example, dial *77751 to invite end point 751 into the videoconference.

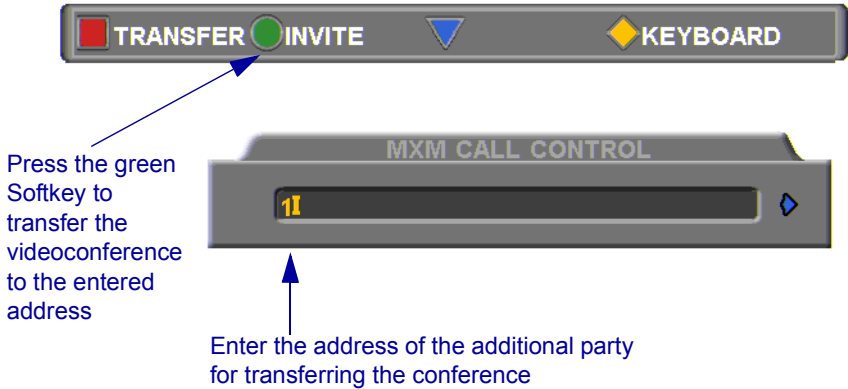3 After dialing, an Incoming Call message may appear. Accept the call.

The session is now a multipoint conference. The parties' video is displayed in *Continuous Presence* (multiple users' video on screen at all times) or *Voice-Activated Switching* (speaker's video only on screen), in accordance with the MCU/VCB Service configuration.

8 CHAIR CONTROL DURING CONFERENCES

As an option, organizations employing the VCB may utilize Emblaze-VCON's Conference Moderator, which allows users to schedule conferences in advance and control their progression, including Chair Control. Chair Control is the ability of one videoconferencing user to control what the other participants in a multipoint conference see and hear. The VCB provides many view layout schemes and bandwidth allocation for the Chair Control capabilities.

> As factory settings, Moderators, MXM Users and Power Users may control the Chair, although users with Administrator privileges may change the roles of the various types of users.

Chair Control is available during an open videoconference from the Conference Moderator's In Progress page.

➤ **To open the Conference Moderator**

1 In the VCB Configuration application, click the Select Application button near the top of the page and then click **Conferences**.

Opening Conference Moderator

2 If the Login screen appears, enter your **Login Name and Password**.

3 Click **Login**.

➤ **To control the Chair**

1 On the right side of the screen, click **Chair Control**.

Click either the **Chair Control** button or the hotspot.
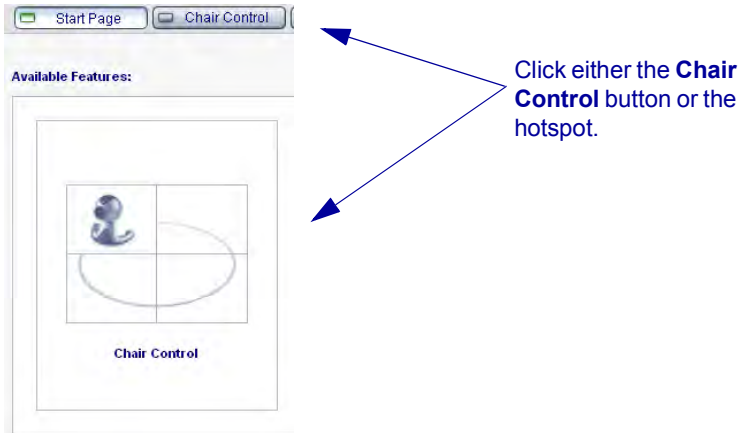
Opening the Chair Control

2 Set Chair Control parameters for the session:

Used By   Choose the participants who will view the conference according to the parameters you set now. In this version, the only available option is **All participants**.

Control   Choose the level of chair control. In this version, **Simple** control is the only available option.

Layout   Select a layout scheme. You may change this during a session.

Voice-Activated Switching

Continuous Presence

Automatic Layout Transitions

Predefined Layouts
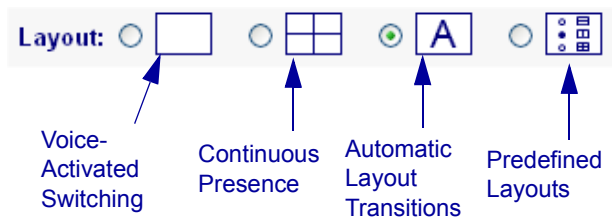
The available viewing methods are:

❏ **Voice-Activated Switching** - **The participants see the video of the participant whose audio signal is strongest. For example, the non-speaking participants see the person speaking.**

❏ **Continuous Presence** - **Several participants in a multipoint conference are viewed and heard simultaneously.**

❏ **Automatic Layout Transitions** - **Dynamic layout schemes, according to the selected scheme and the number of connected participants. As the number of connected participants changes, the display layout changes accordingly.**

> **Available schemes are:**
>
> — **1->2->3->2*2->3*3->4*4**
>
> — **2->2+8**
>
> — **1->1+5->1+7**

❏ **Predefined Layouts** - **A choice of layouts. Clicking the arrow buttons browses through all the display options.**

3 **If the viewing method is Voice-Activated Switching or Continuous Presence, choose the view switching mode:**

Dominant Speaker	**Showing the most recent speaker in the conference. In a Continuous Presence layout, the "dominant speaker" appears in one of the frames.**

Fixed   Showing specific views throughout the conference's
                         duration, selected by the conference's initiator.

                         From the **Participant** list box, choose the name of the
                         user whose video will be seen.
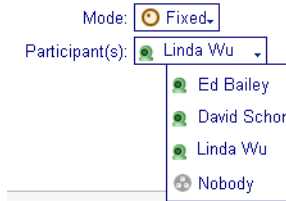
Timer   Showing a cycle of views at rotating, timed intervals.

                         From the **Interval** list box, choose the rate for changing
                         the display.
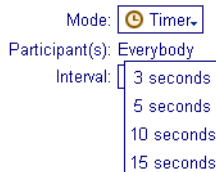
4   **Click Apply.**

9   UPGRADING THE VCB LICENSE KEY

Replacing your VCB license key is required if you need to change the number of permitted concurrent participants.

In the Web Management program, the **Upgrade** page contains your VCB's license key, number of licensed ports, and the expiration date. When you order an upgrade, please supply this information to your Emblaze-VCON representative according to the instructions below.

➤ **To upgrade your VCB license**

   1   After logging in, click the **Settings** tab and then **Upgrade**.

VCB Upgrade and License Information

   2   Select and copy the license key on the page.

   3   Contact your local Emblaze-VCON representative and send the license file according to the instructions you receive.

         After processing your order, the Emblaze-VCON representative will send you a new license key by e-mail.

   4   Copy the new key. In the Web Management's Upgrade page, select the previous key and paste the new one.

   5   Click **Apply**.

10 SSH COMMANDS

This chapter defines the commands available when you access the VCB unit through a Secure Shell (SSH), Hyperterminal, or similar application connected to the Console port.

A Secure Shell application, PuTTY, is included on the CD-ROM supplied in your VCB package.

➤ **To run the PuTTY program**

1 Insert the VCB compact disc to your computer's CD drive.

2 Browse to the Utilities folder's *putty.exe* program.

3 Copy the *putty.exe* file to your desktop or another location.

4 Double-click the file's icon to run the program.

➤ **To connect to the VCB**

1 In the Host Name box, type the VCB host computer's IP address.

2 Click **Open**.

3 Log in using the following parameters:

User Name	VCBAdmin
Password	evc123$

10.1 Descriptions of SSH Commands

Command	**appupgrade**
Syntax	**appupgrade** *<path>*
Description	**Upgrade to a new version of the VCB.**
	Path - location of the install file.
	For example:
	appupgrade vcb/install.exe

Command	**changeservicestartmode**
Syntax	**changeservicestartmode** *<Service Name><Mode>*
Description	**Change the specified service's starting mode.**
Parameters	❏ **Automatic**
	❏ **Manual**
	❏ **Disabled**
	For example:
	TermService, a service allowing remote desktop connection, is disabled by default. To enable it, set the service start mode to Manual, and then start the service using the "startservice" command.

```
changeservicestartmode TermService Manual
```

Command	**clearevents**
Syntax	
Description	**Delete all entries from the application, security, and system event log.**

Command	**exec**
Syntax	**exec <command>**
Description	**Execute the specified shell command. Only VCBSupport-level users are allowed to execute this command.**

Command	**getevents**
Syntax	**getevents** *<substring>*
Description	**Display application, security, and system event log. If a substring is specified, only events related to the substring will be listed.**

Command	**getparam**
Syntax	getparam *\<param\>*
Description	Retrieve the specified parameter.
Parameters	❏ **appver** - Display the VCB/MXM application version.
	❏ **dhcp** \<0-3\> - Display DHCP-defined IP configuration of the specified NIC, and if it's enabled or disabled.
	❏ **hwserial** - The first NIC's MAC address.
	❏ **machinename** - The name of the node.
	❏ **sshver** - Display the SSH Server version.
	❏ **time** - Display the current system date and time.

Command	**getvcbadminparam**
Syntax	getvcbadminparam *\<1\>* *\<param\>*.
Description	Retrieve the specified VCB Admin parameter.
Parameters	Name and password of the administrator.
	For example:
	getvcbadminparam 1 password 1234

Command	**getvcbridgeparam**
Syntax	getvcbridgeparam *\<param\>*
Description	Retrieve the specified VCB parameter.
	To display a list of parameters, type only the command and press \<Enter\>.

Command	**getvcbsessionparam**
Syntax	getvcbsessionparam *\<service number\>* *\<param\>*.
Description	Retrieve the specified VCB Session parameter.
	To display a list of parameters, type only the command and press \<Enter\>.

Command	**healthcheck**
Syntax	
Description	Displays system information about the VCB's host computer, such as CPU usage, virtual memory usage.

Command	**help**
Syntax	
Description	Lists all SSH commands and their possible syntaxes.

Command	**killprocess**
Syntax	**killprocess** *<process identity>*
Description	Aborts the specified process.

Command	**listip**
Syntax	**listip** <0-3>
Description	Displays the IP address of the specified NIC.

Command	**ping**
Syntax	**ping** *<hostname or IP address>*
Description	Check if a connection to the specified computer is online.

Command	**processes**
Syntax	**processes** <substring>
Description	Display a list of processes. If a substring is specified, only processes containing the substring will be listed.

Command	**restart**
Syntax	
Description	Restart the VCB unit.

Command	**restartservice**
Syntax	**restartservice** *<Service Name>*
Description	Restarts the specified service.

Command	**services**
Syntax	services *<service substring>*
Description	Lists the services that start with the substring and displays their status.
	services VCON will list only VCON services. For example,
	• VCON VCB AGENT_1

Command	**setgkaddress**
Syntax	setgkaddress *<IP address>*
Description	Define an IP address to the associated MXM.

Command	**setmcuaddress**
Syntax	setmcuaddress *<IP address>*
Description	Define an IP address to this VCB.

Command	**setparam**
Syntax	setparam *<param>*
Description	Define the specified parameter.
Parameters	❏ **dhcp** *<0-3>* - **Enable DHCP to define the IP configuration of the specified NIC.**
	❏ **ipstatic** *<0-3><IP address><Subnet><Gateway>* - **Define a static IP configuration of the specified NIC.**
	❏ **machinename** - **Define the name of the node.**
	❏ **time** - **Set the current system date and time.**

Command	**setpassword**
Syntax	setpassword *<user name>*
Description	Defines the user password. If a user name is specified, the password change applies to that user name only.

Command	**setvcbadminparam**
Syntax	setvcbadminparam *<number> <param>*.
Description	**Define the specified VCB Admin parameter.**
Parameters	**Name and password of the administrator.**

Command	**setvcbridgeparam**
Syntax	setvcbridgeparam *<param>*
Description	**Define the specified VCB parameter.**

Command	**setvcbsessionparam**
Syntax	setvcbsessionparam *<service number> <param> <value>*.
Description	**Define the specified VCB Session parameter.**

Command	**shutdown**
Syntax	
Description	**Shut down the VCB unit and turn its power off.**

Command	**startservice**
Syntax	startservice *<Service Name>*
Description	**Starts the specified service.**

Command	**stop service**
Syntax	stopservice *<Service Name>*
Description	**Stops the specified service.**

Command	**upgrade**
Syntax	
Description	**Upgrade to a new version of the SSH Server.**