

**EMBLAZE VCON**

# **Group Videoconferencing Systems**



## **HDK Integrator's Commands**

Version 2.1

**Programmer's  
Guide**

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## ***Emblaze VCON Technical Support***

This Programmer's Guide was designed to help you integrate HD systems with your hardware. It contains descriptions, syntaxes, parameters, and examples of the HDK commands and events.

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# 1 ACCESSING THE HD PROGRAMMING INTERFACE

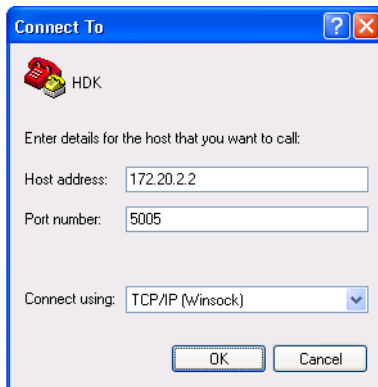
The HDK (High-definition Development Kit) is a set of APIs used by Emblaze Emblaze VCON's HD600 to build custom applications (such as distance learning, security, or kiosks).

## 1.1 Setting Up a Telnet Session

Use standard Telnet client configured with the HD device's IP address and **port 5005**.

### ► To start a Telnet session from Windows

1. Turn the HD device on.
2. From the Windows **Start** menu, open **Programs>Accessories>Communications>HyperTerminal**.
3. Enter a session.



4. From the **Connect Using** list, choose **TCP/IP (Winsock)**.
5. Enter the HD device's IP address.
6. As the **Port Number**, type **5005**.
7. Click **OK**.

You are now in an active Telnet session. Information from the HD device

appears on the screen.

```
Welcome to   : HD600 (172.20.1.67)
```

```
Version      : 0260.M11.D06.H17
```

```
Camera Input: PAL
```

```
HD>>
```

```
EVENT_SYSTEM_INIT_COMPLETED_SUCCESS
```

```
HD>>
```



To display the list of available API commands, type **help**.

## Hiding the HD User Interface

If you want to remove the entire user interface or only its dialog boxes from view, perform the procedures below.

### ► To hide the HD user interface

1. Connect to the HD device over Telnet (see [“Setting Up a Telnet Session” on page 10](#)).
2. In the Telnet session screen, type **IniWrite user.ini gui hideall 1**.

### ► To hide only dialog boxes (icons and popup messages remain visible):

1. Connect to the HD device over Telnet (see [“Setting Up a Telnet Session” on page 10](#)).
2. In the Telnet session screen, type **IniWrite user.ini gui hideditg 1**.

## 2 SYNTAX CONVENTIONS

The following conventions are used for the API command syntaxes:

- Parameters placed between `<>` are mandatory.
- Parameters placed between `[ ]` are optional.
- Only one of the parameters placed between `{ }` and separated by `|` may be used at a single time.
- Available values appear in **bold**.
- Default values appear in ***bold italics***.
- Words or characters appearing in *italics* represent variable values that you must supply.
- Examples of text that appear on the monitor (application console) appear in `Courier` font.
- The return string for all commands is structured as follows:
  - `<CommandName> <Status={OK|ERROR}> [Value]`
- Links to other events, commands, and parameters appear in [blue](#).



Commands are not case sensitive.

## 3 COMMANDS

This chapter contains description, syntaxes, parameters, and examples of the HDK commands.

### 3.1 Call Commands

#### Dial

**Description** Initiate a videoconference call to a remote user associated with the entered address.

**Format** Dial <*RemoteAddress*> [*Bitrate*=**384000**]

**Parameters** **RemoteAddress** – The address of the remote user (IP Address, DNS Name H.323-ID or E.164).

**Bitrate** – The bitrate of the call.

**Return** **OK** on success together with the created call ID.

**ERROR** – with an error code.

#### Example

```
Dial 10.0.11.25 128000
DIAL OK 0

Dial danny.vcon.co.il 128000
DIAL OK 1
```

#### Remarks

## Hangup

<b>Description</b>	Disconnect an active call.
<b>Format</b>	Hangup [ <i>CallID=0</i> ]
<b>Parameters</b>	<b>CallID</b> – The ID of the call to disconnect.
<b>Return</b>	<b>OK</b> on success. <b>ERROR</b> – with an error code.
<b>Example</b>	Hangup 0 HANGUP OK
<b>Remarks</b>	

## CallAnswer

<b>Description</b>	Answer an incoming call.
<b>Format</b>	CallAnswer [ <i>CallID=0</i> ]
<b>Parameters</b>	<b>CallID</b> – The ID of the incoming call.
<b>Return</b>	<b>OK</b> on success. <b>ERROR</b> – with an error code.
<b>Example</b>	CallAnswer 0 CALLANSWER OK
<b>Remarks</b>	When the system is set to auto-answer mode, this command is unnecessary.

## CallReject

<b>Description</b>	Reject an incoming call.
<b>Format</b>	CallReject [ <i>CallID=0</i> ]
<b>Parameters</b>	<b>CallID</b> – The ID of the incoming call.
<b>Return</b>	<b>OK</b> on success. <b>ERROR</b> – with an error code.
<b>Example</b>	CallReject 0 REJECTCALL OK
<b>Remarks</b>	When the system is set to auto-answer mode, this command is unnecessary.

## CallGetParam

<b>Description</b>	Retrieve a call parameter.
<b>Format</b>	CallGetParam [ <i>CallID=0</i> ] < <i>CallParameter</i> >
<b>Parameters</b>	<b>CallID</b> – The ID of the call. <b>CallParameter</b> – The specific call parameter.
<b>Return</b>	<b>OK</b> on success together with the parameter value. <b>ERROR</b> on error together with an error code.
<b>Example</b>	<pre>CallGetParam 0 REMOTE_NAME CALLGETPARAM OK DemoRoom</pre>
<b>Remarks</b>	To retrieve all the Call parameters, type <b>GetCallParam</b> . NULL string represents a null value. Supported call parameters list: STATE REMOTE_TERMINAL_TYPE DIRECTION BITRATE TX_VIDEO_CODEC RX_VIDEO_CODEC TX_VIDEO_SEC_CODEC RX_VIDEO_SEC_CODEC TX_AUDIO_CODEC RX_AUDIO_CODEC TX_VIDEO_BITRATE RX_VIDEO_BITRATE TX_VIDEO_SEC_BITRATE RX_VIDEO_SEC_BITRATE

**Remarks  
(cont.)**

TX\_AUDIO\_BITRATE  
RX\_AUDIO\_BITRATE  
TX\_VIDEO\_HANDLE  
RX\_VIDEO\_HANDLE  
TX\_VIDEO\_SEC\_HANDLE  
RX\_VIDEO\_SEC\_HANDLE  
TX\_AUDIO\_HANDLE  
RX\_AUDIO\_HANDLE  
TX\_VIDEO\_FRAMERATE  
RX\_VIDEO\_FRAMERATE  
TX\_VIDEO\_SEC\_FRAMERATE  
RX\_VIDEO\_SEC\_FRAMERATE  
DURATION  
REMOTE\_NAME  
REMOTE\_ADDRESS  
AUDIO\_TO\_VIDEO\_DELAY  
JITTER\_BUFFER\_SIZE  
TX\_VIDEO\_RESOLUTION  
RX\_VIDEO\_RESOLUTION  
TX\_VIDEO\_SEC\_RESOLUTION  
RX\_VIDEO\_SEC\_RESOLUTION

Descriptions for the parameters listed above appear on the following pages.

## STATE

<b>Description</b>	Start or stop sending call event to the console. Type of call event to the console. Current call state.
<b>Valid Value</b>	<b>DIALTONE</b> - A dialtone state followed dialing. <b>DISCONNECTED</b> - A call was disconnected. <b>RINGBACK</b> - An “Alerting” or “Proceeding” message was received from the remote side. <b>CONNECTED</b> - A call connected successfully. <b>IDLE</b> - A call was disconnected, and its resources are no longer valid. <b>OFFERING</b> - An incoming call indication was received.
<b>Access</b>	Read only.
<b>Remarks</b>	

## REMOTE TERMINAL TYPE

<b>Description</b>	Type of remote H.323 terminal.
<b>Valid Value</b>	<b>TERMINAL</b> <b>GATEWAY</b> <b>MCU</b> <b>GATEKEEPER</b>
<b>Access</b>	Read only.
<b>Remarks</b>	

## **DIRECTION**

<b>Description</b>	The direction of call.
<b>Valid Value</b>	<b>RX</b> - incoming. <b>TX</b> - outgoing.
<b>Access</b>	Read only.
<b>Remarks</b>	

## **BITRATE**

<b>Description</b>	Current call bit rate.
<b>Valid Value</b>	From <b>0</b> to <b>max</b> supported bit rate.
<b>Access</b>	Read only.
<b>Remarks</b>	

## TX\_VIDEO\_CODEC

<b>Description</b>	The call's main outgoing video codec.
<b>Valid Value</b>	<b>OFF</b> <b>H261</b> <b>H263</b>
<b>Access</b>	Read only.
<b>Remarks</b>	

## RX\_VIDEO\_CODEC

<b>Description</b>	The call's main incoming video codec.
<b>Valid Value</b>	<b>OFF</b> <b>H261</b> <b>H263</b>
<b>Access</b>	Read only.
<b>Remarks</b>	

## TX\_VIDEO\_SEC\_CODEC

**Description**            The call's secondary outgoing video codec.

**Valid Value**            **OFF**  
                              **H261**  
                              **H263**

**Access**                 Read only.

**Remarks**

## RX\_VIDEO\_SEC\_CODEC

**Description**            The call's secondary incoming video codec.

**Valid Value**            **OFF**

**H261**

**H263**

**Access**                 Read only.

**Remarks**

## **TX\_AUDIO\_CODEC**

**Description**            The call's outgoing audio codec.

**Valid Value**            **OFF**  
**G711A**  
**G711U**  
**G722**  
**G723**  
**G728**  
**G729**

**Access**                 Read only.

**Remarks**

## RX\_AUDIO\_CODEC

**Description**            The call's incoming audio codec.

**Valid Value**            **OFF**  
**G711A**  
**G711U**  
**G722**  
**G723**  
**G728**  
**G729**

**Access**                 Read only.

**Remarks**

## TX\_VIDEO\_BITRATE

<b>Description</b>	Actual main outgoing video bit rate.
<b>Valid Value</b>	From <b>0</b> to <b>max</b> supported bit rate.
<b>Access</b>	Read only.
<b>Remarks</b>	

## RX\_VIDEO\_BITRATE

<b>Description</b>	Actual main incoming video bit rate.
<b>Valid Value</b>	From <b>0</b> to <b>max</b> supported bit rate.
<b>Access</b>	Read only.
<b>Remarks</b>	

## **TX\_VIDEO\_SEC\_BITRATE**

<b>Description</b>	Actual secondary outgoing video bit rate.
<b>Valid Value</b>	From <b>0</b> to <b>max</b> supported bit rate.
<b>Access</b>	Read only.
<b>Remarks</b>	

## RX\_VIDEO\_SEC\_BITRATE

<b>Description</b>	Actual secondary incoming video bit rate.
<b>Valid Value</b>	From <b>0</b> to <b>max</b> supported bit rate.
<b>Access</b>	Read only.
<b>Remarks</b>	

## **TX\_AUDIO\_BITRATE**

<b>Description</b>	Actual outgoing audio bit rate.
<b>Valid Value</b>	From <b>0</b> to <b>64</b> Kb.
<b>Access</b>	Read only.
<b>Remarks</b>	

## **RX\_AUDIO\_BITRATE**

<b>Description</b>	Actual incoming audio bit rate.
<b>Valid Value</b>	From <b>0</b> to <b>64</b> Kb
<b>Access</b>	Read only.
<b>Remarks</b>	

## TX\_VIDEO\_HANDLE

<b>Description</b>	The main outgoing video codec handle.
<b>Valid Value</b>	Any value.
<b>Access</b>	Read only.
<b>Remarks</b>	

## **RX\_VIDEO\_HANDLE**

<b>Description</b>	The main incoming video codec handle.
<b>Valid Value</b>	Any value.
<b>Access</b>	Read only.
<b>Remarks</b>	

## **TX\_VIDEO\_SEC\_HANDLE**

<b>Description</b>	The secondary outgoing video codec handle.
<b>Valid Value</b>	Any value.
<b>Access</b>	Read only.
<b>Remarks</b>	

## **RX\_VIDEO\_SEC\_HANDLE**

<b>Description</b>	The secondary incoming video codec handle.
<b>Valid Value</b>	Any value.
<b>Access</b>	Read only.
<b>Remarks</b>	

## **TX\_AUDIO\_HANDLE**

<b>Description</b>	The outgoing audio codec handle.
<b>Valid Value</b>	Any value.
<b>Access</b>	Read only.
<b>Remarks</b>	

## **RX\_AUDIO\_HANDLE**

<b>Description</b>	The incoming audio codec handle.
<b>Valid Value</b>	Any value.
<b>Access</b>	Read only.
<b>Remarks</b>	

## TX\_VIDEO\_FRAMERATE

<b>Description</b>	The main outgoing video codec frame rate.
<b>Valid Value</b>	0 – 60 frames per second.
<b>Access</b>	Read only.
<b>Remarks</b>	

## **RX\_VIDEO\_FRAMERATE**

**Description**            The main incoming video codec frame rate.

**Valid Value**            0 – 60 frames per second.

**Access**                 Read only.

**Remarks**

## **TX\_VIDEO\_SEC\_FRAMERATE**

<b>Description</b>	The secondary outgoing video codec frame rate.
<b>Valid Value</b>	<b>0 – 60</b> frames per second.
<b>Access</b>	Read only.
<b>Remarks</b>	

## **RX\_VIDEO\_SEC\_FRAMERATE**

<b>Description</b>	The secondary incoming video codec frame rate.
<b>Valid Value</b>	<b>0 – 60</b> frames per second.
<b>Access</b>	Read only.
<b>Remarks</b>	

## **DURATION**

**Description** Call duration in seconds.

**Valid Value** value > 0.

**Access** Read only.

**Remarks**

**REMOTE\_NAME**

**Description** Name of remote endpoint.

**Valid Value** Any value.

**Access** Read only.

**Remarks**

## **REMOTE\_ADDRESS**

**Description** IP address of remote endpoint.

**Valid Value** A valid IP address.

**Access** Read only.

**Remarks**

## **AUDIO TO VIDEO DELAY**

<b>Description</b>	The delay between the incoming video and audio streams (in percent).
<b>Valid Value</b>	<b>0 - 100</b> percent
<b>Access</b>	Read/Write.
<b>Remarks</b>	

## **JITTER\_BUFFER\_SIZE**

<b>Description</b>	Returns the size of the used jitter buffer (in percent).
<b>Valid Value</b>	<b>0 - 100</b> percent
<b>Access</b>	Read / Write.
<b>Remarks</b>	Relevant only when <code>AUTO_JITTER_ENABLE = 0</code>

## TX\_VIDEO\_RESOLUTION

<b>Description</b>	The outgoing video resolution of the current codec.
<b>Valid Value</b>	QCIF - 176x144 CIF - 352x288 4CIF - 704x576 ICIF - 704x288 QSIF - 176x120 SIF - 352x240 ISIF - 704x240
<b>Access</b>	Read only.
<b>Remarks</b>	

## RX\_VIDEO\_RESOLUTION

<b>Description</b>	The incoming video resolution of the current codec.
<b>Valid Value</b>	QCIF - 176x144 CIF - 352x288 4CIF - 704x576 ICIF - 704x288 QSIF - 176x120 SIF - 352x240 ISIF - 704x240
<b>Access</b>	Read only.
<b>Remarks</b>	

## **TX\_VIDEO\_SEC\_RESOLUTION**

<b>Description</b>	The secondary outgoing video resolution of the current codec.
<b>Valid Value</b>	QCIF - 176x144 CIF - 352x288 4CIF - 704x576 ICIF - 704x288 QSIF - 176x120 SIF - 352x240 ISIF - 704x240
<b>Access</b>	Read only.
<b>Remarks</b>	

## **RX\_VIDEO\_SEC\_RESOLUTION**

<b>Description</b>	The secondary incoming video resolution of the current codec.
<b>Valid Value</b>	QCIF - 176x144 CIF - 352x288 4CIF - 704x576 ICIF - 704x288 QSIF - 176x120 SIF - 352x240 ISIF - 704x240
<b>Access</b>	Read only.
<b>Remarks</b>	

## CallSetBitrate

**Description** Set the video transmission rate for a specific call.

**Format** CallSetBitrate [*CallID=0*] <*Bitrate=384000*>

**Parameters** **CallID** – The ID of the call.  
**Bitrate** – The new call bit per seconds.

**Return** **OK** on success.  
**ERROR** on error together with an error code.

**Example**  
CallSetBitrate 0 192000  
CALLSETBITRATE OK

**Remarks**

## CallSendIntra

<b>Description</b>	Send an intra frame to the remote party during a specific call.
<b>Format</b>	CallSendIntra [ <i>CallID=0</i> ]
<b>Parameters</b>	<b>CallID</b> – The ID of the call.
<b>Return</b>	<b>OK</b> on success. <b>ERROR</b> on error together with an error code.
<b>Example</b>	CallSendIntra 0 CALLSENDINTRA OK
<b>Remarks</b>	

## CallRequestIntra

<b>Description</b>	Request an intra frame from the remote party during a specific call.
<b>Format</b>	CallRequestIntra [ <i>CallID=0</i> ]
<b>Parameters</b>	<b>CallID</b> – The ID of the call.
<b>Return</b>	<b>OK</b> on success. <b>ERROR</b> on error together with an error code.
<b>Example</b>	CallRequestIntra 0 CALLREQUESTINTRA OK
<b>Remarks</b>	

## CallSendDTMF

<b>Description</b>	Send a DTMF tone to the remote party for a specific call.
<b>Format</b>	CallSendDTMF <CallID= <b>0</b> > <DTMF>
<b>Parameters</b>	<b>CallID</b> – The ID of the call. <b>DTMF</b> – The DTMF tone to send { <b>0..9</b>   <b>#</b>   <b>*</b> }
<b>Return</b>	<b>OK</b> on success. <b>ERROR</b> on error together with an error code.
<b>Example</b>	CallSendDTMF 0 3 CALLSENDDTMF OK
<b>Remarks</b>	

## CallEvents

<b>Description</b>	Start or stop sending call event to the console.
<b>Format</b>	CallEvents [ <i>IsEnable=1</i> ]
<b>Parameters</b>	<b>IsEnable</b> – {0   1}  0 - Stop sending call event to the console. 1 - Start sending call event to the console.
<b>Return</b>	<b>OK</b> on success.  <b>ERROR</b> on error together with an error code.
<b>Example</b>	CallEvents 1  CALLEVENTS OK
<b>Remarks</b>	Supported call events:  EVENT_CALL_DIALTONE <CallID> EVENT_CALL_RINGBACK <CallID> EVENT_CALL_CONNECTED <CallID> EVENT_CALL_OFFERING <CallID> <RemoteAddress> <RemoteName> EVENT_CALL_DISCONNECTED <CallID> <DisconnectionReason> EVENT_CALL_IDLE <CallID> EVENT_CALL_CHANNEL_ON <CallID> <ChannelID> <Dir> <Type> EVENT_CALL_CHANNEL_OFF <CallID> < ChannelID> <Dir> <Type> EVENT_CALL_REMOTE_NOT_RESPONDING <CallID>

## 3.2 LAN Commands

### GetParam

<b>Description</b>	Retrieve the value of a specific LAN configuration parameter.
<b>Format</b>	GetParam <LANParameter>
<b>Parameters</b>	<b>LANParameter</b> – The name of the LAN parameter.
<b>Return</b>	<b>OK</b> on success together with the LAN parameter value. <b>ERROR</b> on error together with an error code.
<b>Example</b>	GetParam IP_ADDRESS GETPARAM OK 10.0.11.25
<b>Remarks</b>	To retrieve all the LAN parameters, type <b>GetParam</b> . NULL string represents a null value. Supported LAN parameters: <a href="#">GATEKEEPER_LOGIN_STATE</a> <a href="#">GATEKEEPER_ADDRESS</a> <a href="#">STATION_NUMBER</a> <a href="#">STATION_NAME</a> <a href="#">SERVER_LOGIN_STATE</a> <a href="#">SERVER_ADDRESS</a> <a href="#">AUTO_ADDRESS</a> <a href="#">MAC_ADDRESS</a> <a href="#">IP_ADDRESS</a> <a href="#">SUBNET_MASK</a> <a href="#">DEFAULT_GATEWAY</a>

**Remarks  
(cont.)**

DNS\_SERVER\_ADDRESS  
WINS\_SERVER\_ADDRESS  
DOMAIN\_NAME  
NAT\_ADDRESS  
AUTO\_ANSWER  
LIPSYNC\_ENABLE  
AUTO\_JITTER\_ENABLE  
ABA\_ENABLE  
MAX\_BITRATE  
MIN\_BITRATE  
DEF\_BITRATE  
USE\_GATEKEEPER  
USE\_SERVER  
MIN\_UDP\_PORT  
MAX\_UDP\_PORT  
MIN\_TCP\_PORT  
MAX\_TCP\_PORT  
AUDIO\_QOS  
VIDEO\_QOS  
RTCP\_QOS  
QOS\_TYPE  
AUTO\_ACCEPT\_MULTICAST\_FLOOR  
DHCP\_STATE  
WINS\_LOGIN\_STATE  
STREAMING\_ENABLE  
STREAMING\_ADDRESS  
STREAMING\_VIDEO\_PORT

**Remarks  
(cont.)**

STREAMING\_AUDIO\_PORT  
STREAMING\_BITRATE  
STREAMING\_TTL  
STREAMING\_TIMEOUT  
STREAMING\_ENABLE\_ANNOUNCEMENT  
ETHERNET\_NIC\_STATUS  
ETHERNET\_NIC\_SETTINGS  
MAX\_ACTIVE\_CALLS  
ACTIVE\_CALLS  
FECC\_ALLOWED  
ANSWER\_MODE\_P2P  
ANSWER\_MODE\_MULTIPPOINT  
BAN\_OUTGOING\_CALLS  
CRYPTO\_ALGORITHM

Descriptions for the parameters listed above appear on the following pages.

## GATEKEEPER\_LOGIN\_STATE

<b>Description</b>	Login state of the gatekeeper.
<b>Valid Value</b>	<b>LOGGED_IN</b> <b>LOGIN_FAILED_DUPLICATE_ALIAS</b> <b>LOGIN_FAILED_GENERAL_ERROR</b> <b>LOGGED_OFF</b>
<b>Default Value</b>	<i>LOGGED_OFF</i>
<b>Access</b>	Read only.
<b>Set Effect</b>	N/A.
<b>Remarks</b>	

## **GATEKEEPER\_ADDRESS**

<b>Description</b>	IP address of the gatekeeper.
<b>Valid Value</b>	Should match IP addressing conventions ( <i>x.x.x.x</i> where <i>x=0–255</i> ).
<b>Default Value</b>	NULL
<b>Access</b>	Read / Write.
<b>Set effect</b>	Reboot.
<b>Remarks</b>	

## **STATION\_NUMBER**

<b>Description</b>	E.164 alias of a H.323 station.
<b>Valid Value</b>	A string of digits.
<b>Default Value</b>	NULL
<b>Access</b>	Read / Write.
<b>Set effect</b>	Reboot.
<b>Remarks</b>	Dialing a STATION_NUMBER as a remote address is only relevant when endpoint is configured to work with a gatekeeper.

## **STATION\_NAME**

<b>Description</b>	Name of the endpoint.
<b>Valid Value</b>	String of characters, with a letter as the first character.
<b>Default Value</b>	NULL
<b>Access</b>	Read / Write.
<b>Set effect</b>	Reboot.
<b>Remarks</b>	Dialing a STATION_NAME as a remote address is only relevant when endpoint is configured to work with a gatekeeper.

## **SERVER\_LOGIN\_STATE**

<b>Description</b>	The endpoint's login state in the MXM server.
<b>Valid Value</b>	<b>LOGGED_IN</b> <b>LOGIN_FAILED_DUPLICATE_ALIAS</b> <b>LOGIN_FAILED_LICENSE_VIOLATION</b> <b>LOGIN_FAILED_UNSUPPORTED_VERSION</b> <b>LOGIN_FAILED_TIME_OUT</b> <b>LOGIN_FAILED_WAIT_FOR_GRANT</b> <b>LOGIN_FAILED_GENERAL_ERROR</b> <b>LOGGED_OFF</b>
<b>Default Value</b>	<b><i>LOGGED_OFF</i></b>
<b>Access</b>	Read only.
<b>Set effect</b>	N/A.
<b>Remarks</b>	

## **SERVER\_ADDRESS**

<b>Description</b>	The IP address of the MXM server.
<b>Valid Value</b>	Should match IP addressing conventions (x.x.x.x where x= <b>0–255</b> ).
<b>Default Value</b>	NULL
<b>Access</b>	Read / Write.
<b>Set effect</b>	Reboot.
<b>Remarks</b>	

## **AUTO\_ADDRESS**

<b>Description</b>	Enable or disable automatic get of IP address from DHCP server.
<b>Valid Value</b>	{0 1} 0 – Disable. 1 – Enable.
<b>Default Value</b>	0
<b>Access</b>	Read / Write.
<b>Set effect</b>	Reboot.
<b>Remarks</b>	

## **MAC ADDRESS**

<b>Description</b>	Returns the MAC address of the endpoint.
<b>Valid Value</b>	A string in the following format <i>XX:XX:XX:XX:XX</i> where <i>X</i> can be either a digit OR a letter in the following range <b>A-F</b> .
<b>Default Value</b>	N/A.
<b>Access</b>	Read only.
<b>Set effect</b>	N/A.
<b>Remarks</b>	

## **IP\_ADDRESS**

<b>Description</b>	Local endpoint IP address.
<b>Valid Value</b>	Should match IP addressing conventions ( <i>x.x.x.x</i> where <i>x=0–255</i> ).
<b>Default Value</b>	N/A.
<b>Access</b>	Read / Write.
<b>Set effect</b>	Reboot.
<b>Remarks</b>	

## **SUBNET MASK**

<b>Description</b>	Subnet mask of the local endpoint.
<b>Valid Value</b>	Should match IP addressing conventions ( $x.x.x.x$ where $x=0-255$ ).
<b>Default Value</b>	N/A.
<b>Access</b>	Read / Write.
<b>Set effect</b>	Reboot.
<b>Remarks</b>	

## **DEFAULT\_GATEWAY**

<b>Description</b>	The network's default gateway.
<b>Valid Value</b>	Should match IP addressing conventions (x.x.x.x where x= <b>0–255</b> ).
<b>Default Value</b>	N/A.
<b>Access</b>	Read / Write.
<b>Set effect</b>	Reboot.
<b>Remarks</b>	

## **DNS\_SERVER\_ADDRESS**

<b>Description</b>	IP Address of network's DNS Server.
<b>Valid Value</b>	Should match IP addressing conventions (x.x.x.x where x= <b>0-255</b> ).
<b>Default Value</b>	NULL.
<b>Access</b>	Read / Write.
<b>Set effect</b>	Reboot.
<b>Remarks</b>	

## WINS\_SERVER\_ADDRESS

<b>Description</b>	IP Address of network's WINS Server.
<b>Valid Value</b>	Should match IP addressing conventions (x.x.x.x where x= <b>0-255</b> ).
<b>Default Value</b>	NULL.
<b>Access</b>	Read / Write.
<b>Set effect</b>	Reboot.
<b>Remarks</b>	

## **DOMAIN\_NAME**

<b>Description</b>	The name of the domain in which the endpoint is located.
<b>Valid Value</b>	String of dot-separated name elements.
<b>Default Value</b>	NULL.
<b>Access</b>	Read / Write.
<b>Set effect</b>	Reboot.
<b>Remarks</b>	

## **NAT\_ADDRESS**

<b>Description</b>	The NAT IP address of the endpoint.
<b>Valid Value</b>	Should match IP addressing conventions ( <i>x.x.x.x</i> where <i>x=0–255</i> ).
<b>Default Value</b>	NULL.
<b>Access</b>	Read / Write.
<b>Set effect</b>	Next Call.
<b>Remarks</b>	

## **AUTO ANSWER**

<b>Description</b>	Enable/disable automatic answer of incoming call.
<b>Valid Value</b>	{0 1} 0 –Disable 1 - Enable
<b>Default Value</b>	1
<b>Access</b>	Read / Write.
<b>Set effect</b>	Next Call.
<b>Remarks</b>	

## **LIPSYNC\_ENABLE**

<b>Description</b>	Enable/disable lip synchronization mechanism.
<b>Valid Value</b>	{0 1} 0 –Disable 1 - Enable
<b>Default Value</b>	1
<b>Access</b>	Read / Write.
<b>Set effect</b>	Next Call.
<b>Remarks</b>	

## **AUTO\_JITTER\_ENABLE**

<b>Description</b>	Enable/disable automatic buffering control, which allows manual or automatic control over delay and picture smoothness.
<b>Valid Value</b>	{0 1} 0 –Disable 1 - Enable
<b>Default Value</b>	1
<b>Access</b>	Read / Write.
<b>Set effect</b>	Next Call.
<b>Remarks</b>	

## **ABA\_ENABLE**

<b>Description</b>	Enable/disable Adaptive Bandwidth Adjustment mechanism for overcoming network congestion problems.
<b>Valid Value</b>	{0 1} 0 –Disable 1 - Enable
<b>Default Value</b>	1
<b>Access</b>	Read / Write.
<b>Set effect</b>	Next Call.
<b>Remarks</b>	

## **MAX\_BITRATE**

<b>Description</b>	Maximum bandwidth the system can allocate to initiate a call, according to its capabilities and/or license permissions.
<b>Valid Value</b>	<b>0 – 2048000</b>
<b>Default Value</b>	<b>2048000</b>
<b>Access</b>	Read / Write.
<b>Set effect</b>	Next Call.
<b>Remarks</b>	

## **MIN\_BITRATE**

<b>Description</b>	Minimum bandwidth the system can allocate to initiate a call, according to its capabilities and/or license permissions.
<b>Valid Value</b>	<b>0 - 2048000</b>
<b>Default Value</b>	<b>64000</b>
<b>Access</b>	Read / Write.
<b>Set effect</b>	Next Call.
<b>Remarks</b>	

## **DEF\_BITRATE**

<b>Description</b>	Default bandwidth the system can allocate to initiate a call, according to its capabilities and/or license permissions.
<b>Valid Value</b>	<b>0 - 2048000</b>
<b>Default Value</b>	<b>768000</b>
<b>Access</b>	Read / Write.
<b>Set effect</b>	Next Call.
<b>Remarks</b>	

## USE\_GATEKEEPER

<b>Description</b>	Enable or disable usage of gatekeeper management and services.
<b>Valid Value</b>	{0 1} 0 –Disable 1 - Enable
<b>Default Value</b>	0
<b>Access</b>	Read / Write.
<b>Set effect</b>	Next Reboot.
<b>Remarks</b>	

## **USE\_SERVER**

<b>Description</b>	Enable/disable usage of VCON Server management and services.
<b>Valid Value</b>	{0 1} 0 –Disable 1 - Enable
<b>Default Value</b>	0
<b>Access</b>	Read / Write.
<b>Set effect</b>	Next Reboot.
<b>Remarks</b>	

## **MIN\_UDP\_PORT**

<b>Description</b>	Lowest UDP port allowed.
<b>Valid Value</b>	<b>1024 - 65536</b>
<b>Default Value</b>	<b>5004</b>
<b>Access</b>	Read / Write.
<b>Set effect</b>	Next Call.
<b>Remarks</b>	

## **MAX\_UDP\_PORT**

<b>Description</b>	Highest UDP port allowed.
<b>Valid Value</b>	<b>1024 - 65536</b>
<b>Default Value</b>	<b>6004</b>
<b>Access</b>	Read / Write.
<b>Set effect</b>	Next Call.
<b>Remarks</b>	

## **MIN\_TCP\_PORT**

<b>Description</b>	Lowest TCP port allowed.
<b>Valid Value</b>	<b>1024 - 65536</b>
<b>Default Value</b>	<b>5004</b>
<b>Access</b>	Read / Write.
<b>Set effect</b>	Next Call.
<b>Remarks</b>	

## **MAX\_TCP\_PORT**

<b>Description</b>	Highest TCP port allowed.
<b>Valid Value</b>	<b>1024 - 65536</b>
<b>Default Value</b>	<b>6004</b>
<b>Access</b>	Read / Write.
<b>Set effect</b>	Next Call.
<b>Remarks</b>	

## **AUDIO\_QOS**

<b>Description</b>	The QOS value appended to each audio packet.
<b>Valid Value</b>	<b>0 - 255</b>
<b>Default Value</b>	<b>160</b>
<b>Access</b>	Read / Write.
<b>Set effect</b>	Next Call.
<b>Remarks</b>	

## **VIDEO\_QOS**

<b>Description</b>	The QOS value appended to each video packet.
<b>Valid Value</b>	<b>0 - 255</b>
<b>Default Value</b>	<b>128</b>
<b>Access</b>	Read / Write.
<b>Set effect</b>	Next Call.
<b>Remarks</b>	

## **RTCP QOS**

<b>Description</b>	The QOS value appended to each RTCP packet.
<b>Valid Value</b>	<b>0 - 255</b>
<b>Default Value</b>	<b>192</b>
<b>Access</b>	Read / Write.
<b>Set effect</b>	Next Call.
<b>Remarks</b>	

## QOS\_TYPE

<b>Description</b>	Type of QOS which is currently used during the endpoint's calls.
<b>Valid Value</b>	<b>NONE</b> <b>IPPRECEDENCE</b> <b>DIFFSERV</b>
<b>Default Value</b>	<b><i>IPPRECEDENCE</i></b>
<b>Access</b>	Read / Write.
<b>Set effect</b>	Next Call.
<b>Remarks</b>	

## **AUTO ACCEPT MULTICAST FLOOR**

<b>Description</b>	Automatically accept a multicast floor grant from the chair.
<b>Valid Value</b>	{0 1} 0 –Disable 1 - Enable
<b>Default Value</b>	1
<b>Access</b>	Read / Write.
<b>Set effect</b>	Next Call.
<b>Remarks</b>	

## **DHCP\_STATE**

<b>Description</b>	The endpoint received or did not receive IP address from the DHCP server.
<b>Valid Value</b>	<b>NOT_IN_USE</b> <b>RECEIVED_ADDRESS</b> <b>FAILED_RECEIVING_ADDRESS</b>
<b>Default Value</b>	<b>NOT_IN_USE</b>
<b>Access</b>	Read only.
<b>Set effect</b>	N/A.
<b>Remarks</b>	

## WINS\_LOGIN\_STATE

<b>Description</b>	The endpoint's login state in the WINS server.
<b>Valid Value</b>	<b>LOGGED_OFF</b> <b>LOGIN_IN</b> <b>LOGIN_FAILED_NAME_FORMAT_ERROR</b> <b>LOGIN_FAILED_GENERAL_ERROR</b> <b>LOGIN_FAILED_NAME_ALREADY_USED</b> <b>LOGIN_FAILED_SERVER_NOT_RESPONDING</b>
<b>Default Value</b>	<i>LOGGED_OFF</i>
<b>Access</b>	Read only.
<b>Set effect</b>	N/A.
<b>Remarks</b>	

## **STREAMING\_ENABLE**

<b>Description</b>	The streaming option is enabled or disabled.
<b>Valid Value</b>	{0 1} 0 –Disable 1 - Enable
<b>Default Value</b>	1
<b>Access</b>	Read \ Write.
<b>Set effect</b>	Next Call.
<b>Remarks</b>	

## **STREAMING\_ADDRESS**

<b>Description</b>	The destination multicast address for streaming video and audio.
<b>Valid Value</b>	Should match IP addressing conventions ( <i>x.x.x.x</i> where <i>x=0–255</i> ).
<b>Default Value</b>	<b>239.XXX.YYY.ZZZ</b>
<b>Access</b>	Read \ Write.
<b>Set effect</b>	Next Call.
<b>Remarks</b>	

## STREAMING\_VIDEO\_PORT

<b>Description</b>	The destination port for the streaming video.
<b>Valid Value</b>	<b>1024 – 65536</b>
<b>Default Value</b>	<b>36100</b>
<b>Access</b>	Read \ Write.
<b>Set effect</b>	Next Call.
<b>Remarks</b>	

## **STREAMING\_AUDIO\_PORT**

<b>Description</b>	The destination port for the streaming audio.
<b>Valid Value</b>	<b>1024 – 65536</b>
<b>Default Value</b>	<b>18100</b>
<b>Access</b>	Read \ Write.
<b>Set effect</b>	Next Call.
<b>Remarks</b>	

## **STREAMING\_BITRATE**

<b>Description</b>	The bit rate of the streaming session.
<b>Valid Value</b>	<b>0 - 2048000</b>
<b>Default Value</b>	<b>384000</b>
<b>Access</b>	Read \ Write.
<b>Set effect</b>	Next Call.
<b>Remarks</b>	

## **STREAMING\_TTL**

<b>Description</b>	The time-to-live value appended to each multicast streaming packet.
<b>Valid Value</b>	<b>0 - 255</b>
<b>Default Value</b>	<b>1</b>
<b>Access</b>	Read \ Write.
<b>Set effect</b>	Next Call.d
<b>Remarks</b>	

## **STREAMING\_TIMEOUT**

<b>Description</b>	Unicast streaming stops automatically if the remote viewer has not requested resume-streaming within this time value.
<b>Valid Value</b>	<i>value</i> > 0 (in milliseconds)
<b>Default Value</b>	<b>1800000</b>
<b>Access</b>	Read \ Write.
<b>Set effect</b>	Next Call.
<b>Remarks</b>	Relevant to unicast streaming sessions only.

## **STREAMING\_ENABLE\_ANNOUNCEMENT**

<b>Description</b>	Send SDP announcement for a multicast streaming session.
<b>Valid Value</b>	{0 1} 0 –Disable 1 - Enable
<b>Default Value</b>	1
<b>Access</b>	Read \ Write.
<b>Set effect</b>	Next Call.
<b>Remarks</b>	

## ETHERNET NIC STATUS

<b>Description</b>	The resulting link speed
<b>Valid Value</b>	10HD 10FD 100HD 100FD
<b>Default Value</b>	N/A
<b>Access</b>	Read only.
<b>Set effect</b>	
<b>Remarks</b>	HD = Half Duplex FD = Full Duplex

## **ETHERNET NIC SETTINGS**

<b>Description</b>	Get the current speed at which the HD is configured to work.
<b>Valid Value</b>	10HD 10FD 100HD 100FD AUTO - Auto negotiation
<b>Default Value</b>	N/A
<b>Access</b>	Read/write.
<b>Set effect</b>	Reboot
<b>Remarks</b>	HD = Half Duplex FD = Full Duplex

## **MAX\_ACTIVE\_CALLS**

<b>Description</b>	Get the maximum number of concurrent calls supported.
<b>Valid Value</b>	<i>value</i> > 0
<b>Default Value</b>	3
<b>Access</b>	Read only.
<b>Set effect</b>	N/A.
<b>Remarks</b>	

## **ACTIVE\_CALLS**

<b>Description</b>	Get the set of active CallIDs.
<b>Valid Value</b>	See Remarks section.
<b>Default Value</b>	NULL
<b>Access</b>	Read only.
<b>Set effect</b>	N/A.
<b>Remarks</b>	<p>For example:</p> <p>If the endpoint is running two active calls with IDs 1 &amp; 2, the result is:</p> <pre>SetParam ACTIVE_CALLS SETPARAM OK 1 2</pre>

## FECC\_ALLOWED

<b>Description</b>	Enable remote party to control the local camera.
<b>Valid Value</b>	{0 1} 0 –Disable 1 - Enable
<b>Default Value</b>	1
<b>Access</b>	Read \ Write.
<b>Set effect</b>	Next Call.
<b>Remarks</b>	SetParam FECC_ALLOWED 1 SETPARAM OK

## **ANSWER\_MODE\_P2P**

<b>Description</b>	Set the point-to-point answer mode
<b>Valid Value</b>	MANUAL_ANSWER AUTO_ANSWER AUTO_ANSWER_MUTE_MIC AUTO_REJECT
<b>Default Value</b>	N/A
<b>Access</b>	Read \ Write.
<b>Set effect</b>	Next Call.
<b>Remarks</b>	

## **ANSWER\_MODE\_MULTIPPOINT**

<b>Description</b>	Set the multipoint answer mode
<b>Valid Value</b>	MANUAL_ANSWER AUTO_ANSWER AUTO_REJECT
<b>Default Value</b>	N/A
<b>Access</b>	Read \ Write.
<b>Set effect</b>	Next Call.
<b>Remarks</b>	

## **BAN OUTGOING CALLS**

<b>Description</b>	Prevent the user from making outgoing calls.
<b>Valid Value</b>	{0 1} 0 - Disable 1 - Enable
<b>Default Value</b>	N/A
<b>Access</b>	Read/write.
<b>Set effect</b>	Next call.
<b>Remarks</b>	

## CRYPTO\_ALGORITHM

<b>Description</b>	Set the crypto algorithm for the next call.
<b>Valid Value</b>	{ <b>NONE</b>   <b>AUTO</b>   <b>AES</b> } <b>NONE</b> - HD will operate in clear mode. <b>AUTO</b> - HD will try to establish an encrypted call using AES. If unsuccessful, the call will not be encrypted. <b>AES</b> - HD will try to establish an encrypted call using AES. If unsuccessful, the call connection will disconnect.
<b>Default Value</b>	N/A
<b>Access</b>	Read/write.
<b>Set effect</b>	Next call.
<b>Remarks</b>	

## SetParam

<b>Description</b>	Edit the value of a LAN configuration parameter.
<b>Format</b>	GetParam <LANParameter> <Value>
<b>Parameters</b>	<b>LANParameter</b> – The name of the LAN parameter to edit. <b>Value</b> – The new value
<b>Return</b>	<b>OK</b> on success together with the expected result and an indication of when the effect occurs. <b>ERROR</b> on error together with an error code.
<b>Example</b>	<pre>SetParam IP_ADDRESS 10.0.11.25 SETPARAM OK EFFECT_REBOOT</pre>
<b>Remarks</b>	To retrieve all the LAN parameters, type <b>SetParam</b> . For a list of LAN parameters, see <a href="#">“GetParam” on page 59</a> . NULL string represents a null value. Supported Effects: EFFECT_NONE — No change was made. EFFECT_IMMEDIATE — Effect occurs immediately. EFFECT_NEXT_CALL — Effect occurs during the next call. EFFECT_REBOOT — Effect occurs after the computer restarts.

## ServerEvents

<b>Description</b>	Start or stop sending server event to the console.
<b>Format</b>	ServerEvents [ <i>IsEnable=1</i> ]
<b>Parameters</b>	<b>IsEnable</b> – {0 1} <b>0</b> - Stop sending server events to the console. <b>1</b> - Start sending server events to the console.
<b>Return</b>	<b>OK</b> on success. <b>ERROR</b> on error together with an error code.
<b>Example</b>	ServerEvents 1 SERVEREVENTS OK
<b>Remarks</b>	Supported server events: <a href="#">EVENT_SERVER_DATA_CHANGED</a> <Action> <a href="#">EVENT_SERVER_COMMAND</a> <Command> <a href="#">EVENT_SERVER_STATE_CHANGED</a> <NewState>

## GatekeeperEvents

<b>Description</b>	Start or stop sending gatekeeper event to the console.
<b>Format</b>	GatekeeperEvents [ <i>IsEnable=1</i> ]
<b>Parameters</b>	<b>IsEnable</b> – {0 1}  <b>0</b> - Stop sending gatekeeper events to the console. <b>1</b> - Start sending gatekeeper events to the console.
<b>Return</b>	<b>OK</b> on success.  <b>ERROR</b> on error together with an error code.
<b>Example</b>	GatekeeperEvents 1 GATEKEEPEREVENTS OK
<b>Remarks</b>	Gatekeeper supported events:  <a href="#">EVENT_GATEKEEPER_STATE_CHANGED</a> < <i>NewState</i> >

### 3.3 Streaming Commands

#### StreamingStart

<b>Description</b>	Start a new streaming session.
<b>Format</b>	StreamingStart [ <i>RemoteAddress</i> =" ""]
<b>Parameters</b>	<b>RemoteAddress</b> – The IP address to where to send the media.
<b>Return</b>	<b>OK</b> on success together with a SessionID. <b>ERROR</b> on error together with an error code.
<b>Example</b>	<pre>StreamingStart STREAMINGSTART OK 0</pre>
<b>Remarks</b>	<ol style="list-style-type: none"><li>1. When the RemoteAddress is NULL a multicast session will be created.</li><li>2. If the value is a valid IP a unicast streaming session will be created.</li><li>3. There may be only one Multicast session. For the maximum number of permitted unicast sessions, see the applicable HD device data sheet.</li></ol>

## StreamingStop

<b>Description</b>	End an active streaming session.
<b>Format</b>	StreamingStop < <i>SessionID</i> >
<b>Parameters</b>	<b>SessionID</b> – The ID of the session to stop.
<b>Return</b>	<b>OK</b> on success. <b>ERROR</b> on error together with an error code.
<b>Example</b>	StreamingStop 1 STREAMINGSTOP OK
<b>Remarks</b>	

## StreamingResume

<b>Description</b>	Resume an active streaming session.
<b>Format</b>	StreamingResume <SessionID>
<b>Parameters</b>	<b>SessionID</b> – The ID of the streaming session.
<b>Return</b>	<b>OK</b> on success together with a new resume timeout. <b>ERROR</b> on error together with an error code.
<b>Example</b>	<pre>StreamingResume 1 STREAMINGRESUME OK 180000</pre>
<b>Remarks</b>	Unicast streaming session has a watchdog mechanism. Users must call this function periodically at intervals smaller than the interval returned by this command; otherwise, the unicast session shall be terminated by the HD.

## StreamingEvents

<b>Description</b>	Start or stop sending streaming event to the console.
<b>Format</b>	StreamingEvents [ <i>IsEnable=1</i> ]
<b>Parameters</b>	<b>IsEnable</b> – {0 1} <b>0</b> - Stop sending streaming event to the console. <b>1</b> - Start sending streaming event to the console.
<b>Return</b>	<b>OK</b> on success. <b>ERROR</b> on error together with an error code.
<b>Example</b>	<pre>StreamingEvents 1 STREAMINGEVENTS OK</pre>
<b>Remarks</b>	Streaming supported events: <a href="#">EVENT_STREAMING_STARTED</a> <SessionID> <IsFirstSession> <a href="#">EVENT_STREAMING_STOPPED</a> <SessionID> <IsLastSession>

### 3.4 *Interactive Multicast Commands*

#### **MulticastSendPassword**

<b>Description</b>	Send the multicast password to the multicast chair.
<b>Format</b>	MulticastSendPassword [ <i>CallID=0</i> ] < <i>Password</i> >
<b>Parameters</b>	<b>CallID</b> – The ID of the call. <b>Password</b> – The session’s password.
<b>Return</b>	<b>OK</b> on success. <b>ERROR</b> on error together with an error code.
<b>Example</b>	<pre>MulticastSendPassword 0 1234 MULTICASTSENDPASSWORD OK</pre>
<b>Remarks</b>	This function is the required response to the <a href="#">EVENT_MULTICAST_PASSWORD_REQUESTED</a> event received from the multicast chair.

## MulticastSendText

<b>Description</b>	Send a text message to the multicast chair.
<b>Format</b>	MulticastSendText [ <i>CallID=0</i> ] < <i>Text</i> >
<b>Parameters</b>	<b>CallID</b> – The ID of the call. <b>Text</b> – The text message.
<b>Return</b>	<b>OK</b> on success. <b>ERROR</b> on error together with an error code.
<b>Example</b>	MulticastSendText 0 "Hello Chair" MULTICASTSENDEXT OK
<b>Remarks</b>	

## MulticastRequestFloor

<b>Description</b>	Request the multicast floor from the chair.
<b>Format</b>	MulticastRequestFloor [ <i>CallID=0</i> ]
<b>Parameters</b>	<b>CallID</b> – The ID of the call.
<b>Return</b>	<b>OK</b> on success. <b>ERROR</b> on error together with an error code.
<b>Example</b>	MulticastRequestFloor 0 MULTICASTREQUESTFLOOR OK
<b>Remarks</b>	

## MulticastRejectFloor

<b>Description</b>	Reject a floor grant from the chair.
<b>Format</b>	MulticastRejectFloor [CallID=0]
<b>Parameters</b>	<b>CallID</b> – The ID of the call.
<b>Return</b>	<b>OK</b> on success. <b>ERROR</b> on error together with an error code.
<b>Example</b>	MulticastRejectFloor 0 MULTICASTREJECTFLOOR OK
<b>Remarks</b>	

## MulticastAcceptFloor

<b>Description</b>	Accept a floor grant from the chair.
<b>Format</b>	MulticastAcceptFloor [ <i>CallID=0</i> ]
<b>Parameters</b>	<b>CallID</b> – The ID of the call.
<b>Return</b>	<b>OK</b> on success. <b>ERROR</b> on error together with an error code.
<b>Example</b>	MulticastAcceptFloor 0 MULTICASTACCEPTFLOOR OK
<b>Remarks</b>	

## MulticastEvents

<b>Description</b>	Start or stop sending multicast event to the console.
<b>Format</b>	MulticastEvents [ <i>IsEnable=1</i> ]
<b>Parameters</b>	<b>IsEnable</b> – {0 1}  <b>0</b> - Stop sending multicast event to the console. <b>1</b> - Start sending multicast event to the console.
<b>Return</b>	<b>OK</b> on success.  <b>ERROR</b> on error together with an error code.
<b>Example</b>	<pre>MulticastEvents 1 MULTICASTEVENTS OK</pre>
<b>Remarks</b>	Supported multicast events:  EVENT_MULTICAST_CONNECTED <CallID> EVENT_MULTICAST_FLOOR_OFFERING <CallID> EVENT_MULTICAST_FLOOR_REQUEST_REJECTED <CallID> EVENT_MULTICAST_FLOOR_CHANGED <CallID> <Type> <Name> EVENT_MULTICAST_FLOOR_GRANTED <CallID> EVENT_MULTICAST_PASSWORD_REJECTED <CallID> EVENT_MULTICAST_PASSWORD_REQUESTED <CallID>

### 3.5 Camera Commands

#### CameraGetSelected

<b>Description</b>	Get the selected local or remote camera.
<b>Format</b>	CameraGetSelected <Location={l   r}>
<b>Parameters</b>	<b>Location</b> – {l   r} <b>l</b> - local camera. <b>r</b> - remote camera.
<b>Return</b>	<b>OK</b> on success together with the selected camera number. <b>ERROR</b> on error together with an error code.
<b>Example</b>	CameraGetSelected l CAMERAGETSELECTED OK 1
<b>Remarks</b>	

## CameraSetSelected

<b>Description</b>	Switch the selected camera to either the local or remote camera.
<b>Format</b>	CameraSetSelected <Location={l   r}> <CameraNumber={1..4}>
<b>Parameters</b>	<b>Location</b> – {l   r} l - local camera. r - remote camera. <b>CameraNumber</b> 1..4 - The selected camera number
<b>Return</b>	<b>OK</b> on success. <b>ERROR</b> on error together with an error code.
<b>Example</b>	CameraSetSelected l 3 CAMERASETSELECTED OK
<b>Remarks</b>	The “Main” camera’s number is 1.

## CameraPresetSet

**Description** Set the selected local or remote camera's preset position.

**Format** CameraPresetSet <Location={l | r}>  
<PresetNumber={0..9}>

**Parameters** **Location** – {l | r}  
l - local camera.  
r - remote camera.  
**PresetNumber** – {0..9}  
0..9 - The preset position number

**Return** **OK** on success.  
**ERROR** on error together with an error code.

**Example** CameraPresetSet l 9  
CAMERAPRESETSET OK

**Remarks**

## CameraPresetRecall

<b>Description</b>	Move the selected local or remote camera to one of the preset positions.
<b>Format</b>	CameraPresetRecall <Location={l   r}> <PresetNumber={0..9}>
<b>Parameters</b>	<b>Location</b> – {l   r} l - local camera. r - remote camera. <b>PresetNumber</b> – {0..9} 0..9 - The preset position number
<b>Return</b>	<b>OK</b> on success. <b>ERROR</b> on error together with an error code.
<b>Example</b>	CameraPresetRecall l 3 CAMERAPRESETRECALL OK
<b>Remarks</b>	

## CameraMove

<b>Description</b>	Move the camera's position.
<b>Format</b>	CameraMove <Location={l   r}> <Dir={u   d   r   l   i   o   s}>
<b>Parameters</b>	<b>Location</b> – {l   r} l - local camera. r - remote camera. <b>Dir</b> – The direction in which to move the camera <b>u   d   r   l   i   o   s</b> u - up d - down r - right l left i - in o - out s - stop
<b>Return</b>	<b>OK</b> on success. <b>ERROR</b> on error together with an error code.
<b>Example</b>	CameraMove l u CAMERAMOVE OK
<b>Remarks</b>	

## 3.6 Video Commands

### MuteVideo

<b>Description</b>	Mute the video sent to the remote side, which sees a predefined bitmap instead of your local video.
<b>Format</b>	MuteVideo [ <i>Enable</i> ={0 1}]
<b>Parameters</b>	<b>Enable</b> - start/stop sending video to the remote side. <b>1</b> = Mute the local video. <b>0</b> = Stop muting and resume sending local video to the remote side.
<b>Return</b>	<b>OK</b> <b>ERROR</b> on error together with an error code.
<b>Example</b>	MuteVideo 1 MUTEVIDEO OK

## DisplaySet

<b>Description</b>	Control the display layout of the HD
<b>Format</b>	DisplaySet <Dest={ <b>window1</b>   <b>pip1</b> }> <Source={ <b>local1</b>   <b>remote1</b>   <b>openpicture</b>   <b>data</b> }>
<b>Parameters</b>	<b>Dest</b> - defines the area of the video display to change. <b>window1</b> = main display area of the TV <b>pip1</b> = default PIP <b>Source</b> - defines what to display in the “Dest” area. <b>local1</b> : your local video <b>remote1</b> : remote side’s video <b>openpicture</b> : HD startup bitmap <b>data</b> : display of the remote PC desktop being broadcast through the HD Data Utility.
<b>Return</b>	<b>OK</b> <b>ERROR</b> on error together with an error code.
<b>Example</b>	DisplaySet window1 local1 OK

## 3.7 Audio Commands

### AudioSetMicInput

<b>Description</b>	Select the audio input device.
<b>Format</b>	AudioSetMicInput <Mic= <b>TABLETOP</b>   <b>LINELEVEL</b> >
<b>Parameters</b>	<b>TABLETOP</b> - tabletop microphone <b>LINELEVEL</b> - auxiliary audio source, such as DVD, VCR.
<b>Return</b>	<b>OK</b> on success. <b>ERROR</b> on error together with an error code.
<b>Example</b>	AudioSetMicInput TABLETOP AUDIOSETMICINPUT OK
<b>Remarks</b>	

## AudioGetMicInput

<b>Description</b>	Get the selected audio input device.
<b>Format</b>	AudioGetMicInput
<b>Parameters</b>	
<b>Return</b>	<b>OK</b> on success together with the selected input device. <b>ERROR</b> on error together with an error code.
<b>Example</b>	AudioGetMicInput AUDIOGETMICINPUT OK TABLETOP
<b>Remarks</b>	

## AudioSetMicGainLevel

**Description**      Increase amplification from the audio input device.

**Format**              `AudioSetMicGainLevel <Level>`

**Parameters**        **Level** - the amplification level {**0-7**}

**Return**              **OK** on success.  
**ERROR** on error together with an error code.

**Example**            `AudioSetMicGainLevel 3`  
`AUDIOSETMICGAINLEVEL OK`

**Remarks**

## AudioGetMicGainLevel

**Description** Get the amplification level of the selected audio input device.

**Format** AudioGetMicGainLevel

**Parameters**

**Return** **OK** on success with the amplification level  
**ERROR** on error together with an error code.

**Example** AudioGetMicGainLevel  
AUDIOGETMICGAINLEVEL OK 3

**Remarks**

## AudioFilePlay

<b>Description</b>	Play a sound file.
<b>Format</b>	AudioFilePlay <FileName> <Location>
<b>Parameters</b>	<p><b>FileName</b> - the name of the audio file to play. The audio file must reside in the [TONES] directory in the compact flash. The file should contain raw 16-bit PCM audio samples.</p> <p><b>Location = LOCAL REMOTE LOCAL_AND_REMOTE</b> The end point that will play the audio. The audio file may be played either to the local side, sent to the remote side, or to all sides.</p>
<b>Return</b>	<p><b>OK</b> on success.</p> <p><b>ERROR</b> on error together with an error code.</p>
<b>Example</b>	<pre>AudioFilePlay dial.pcm LOCAL AUDIOFILEPLAY OK</pre>

## AudioFileStop

<b>Description</b>	Stop playing an audio file.
<b>Format</b>	AudioFileStop
<b>Parameters</b>	
<b>Return</b>	<b>OK</b> on success. <b>ERROR</b> on error together with an error code.
<b>Example</b>	AudioFileStop AUDIOFILESTOP OK
<b>Remarks</b>	

## MuteMic

<b>Description</b>	Mute or unmute the microphone.
<b>Format</b>	MuteMic [ <i>Enable</i> =1]
<b>Parameters</b>	<b>Enable:</b> {0 1} <b>0</b> – Unmute <b>1</b> – Mute
<b>Return</b>	<b>OK</b> on success. <b>ERROR</b> on error together with an error code.
<b>Example</b>	MuteMic 1 MUTEMIC OK
<b>Remarks</b>	

## MuteSpeaker

<b>Description</b>	Mute or unmute the speaker.
<b>Format</b>	MuteSpeaker [ <i>Enable=1</i> ]
<b>Parameters</b>	<b>Enable</b> – {0 1} <b>0</b> – Unmute <b>1</b> – Mute
<b>Return</b>	<b>OK</b> on success. <b>ERROR</b> on error together with an error code.
<b>Example</b>	MuteSpeaker 1 MUTESPEAKER OK
<b>Remarks</b>	

## VolumeGet

<b>Description</b>	Get the current volume level.
<b>Format</b>	VolumeGet
<b>Parameters</b>	N/A
<b>Return</b>	<b>OK</b> on success together with the current volume level. <b>ERROR</b> on error together with an error code.
<b>Example</b>	VolumeGet VOLUMEGET OK 60
<b>Remarks</b>	

## VolumeSet

<b>Description</b>	Change the current volume level.
<b>Format</b>	VolumeSet < <i>Level</i> >
<b>Parameters</b>	<b>Level</b> - The volume level { <b>0-99</b> }. <b>0</b> - Lowest. <b>99</b> - Highest.
<b>Return</b>	<b>OK</b> on success. <b>ERROR</b> on error together with an error code.
<b>Example</b>	VolumeSet 50 VOLUMESET OK
<b>Remarks</b>	

## 3.8 Phonebook Commands

### PhonebookGetEntry

**Description** Get the phonebook entry that matches the specified number.

**Format** PhonebookGetEntry <EntryNum>

**Parameters** **EntryNum** - The number of the entry to get.

**Return** **OK** on success together with the entry details.

**ERROR** on error together with an error code.

**Example** PhonebookGetEntry 1

```
PHONEBOOKGETENTRY OK JohnY 10.0.11.24
768000
```

**Remarks**

## PhonebookGetNumOfEntries

<b>Description</b>	Get the number of entries in the phonebook.
<b>Format</b>	PhonebookGetNumOfEntries
<b>Parameters</b>	N/A
<b>Return</b>	<b>OK</b> on success together with the number of entries in the phonebook. <b>ERROR</b> on error together with an error code.
<b>Example</b>	PhonebookGetNumOfEntries PHONEBOOKGETNUMOFENTRIES OK 100
<b>Remarks</b>	

## PhonebookAddEntry

<b>Description</b>	Add a new entry to the phonebook.
<b>Format</b>	PhonebookAddEntry <Name> <Address> [Bitrate= <b>768000</b> ]
<b>Parameters</b>	<b>Name</b> - The name of the entry. <b>Address</b> - The remote party address (IP , DNS name , E164 , H323-ID). <b>Bitrate</b> - The bit rate of the call.
<b>Return</b>	<b>OK</b> on success. <b>ERROR</b> on error together with an error code.
<b>Example</b>	PhonebookAddEntry PHONEBOOKADDEENTRY OK
<b>Remarks</b>	

## PhonebookDeleteEntry

<b>Description</b>	Delete the specified entry.
<b>Format</b>	PhonebookDeleteEntry < <i>Name</i> >
<b>Parameters</b>	<b>Name</b> - The name of the entry.
<b>Return</b>	<b>OK</b> on success. <b>ERROR</b> on error together with an error code.
<b>Example</b>	PhonebookDeleteEntry JohnY PHONEBOOKDELETEENTRY OK
<b>Remarks</b>	

## PhonebookShow

<b>Description</b>	Show the content of the phonebook.
<b>Format</b>	PhonebookShow
<b>Parameters</b>	N/A
<b>Return</b>	<b>OK</b> on success. <b>ERROR</b> on error together with an error code.

<b>Example</b>	PhonebookShow												
	<table><thead><tr><th>##</th><th>Name</th><th>Address</th><th>Bitrate</th></tr></thead><tbody><tr><td>0.</td><td>JohnY</td><td>10.0.11.24</td><td>768000</td></tr><tr><td>1.</td><td>DavidS</td><td>10.0.11.25</td><td>384000</td></tr></tbody></table>	##	Name	Address	Bitrate	0.	JohnY	10.0.11.24	768000	1.	DavidS	10.0.11.25	384000
##	Name	Address	Bitrate										
0.	JohnY	10.0.11.24	768000										
1.	DavidS	10.0.11.25	384000										

### Remarks

## PhonebookDial

<b>Description</b>	Dial to the address of the specified entry.
<b>Format</b>	PhonebookDial <EntryName>
<b>Parameters</b>	EntryName - The name of the specific entry.
<b>Return</b>	<b>OK</b> on success together with the CallID. <b>ERROR</b> on error together with an error code.
<b>Example</b>	PhonebookDial JohnY PHONEBOOKDIAL OK 0
<b>Remarks</b>	

## 3.9 System Commands

### IniRead

**Description** Read a configuration entry value from an INI file. The INI is in the HD non-volatile memory.

**Format** IniRead <FileName> <Section> <Entry>

**Parameters** **FileName** – The INI file name.

**Section** – The section name.

**Entry** – The entry name.

**Return** **OK** on success together with the entry value.

**ERROR** on error together with an error code.

**Example** IniRead H323.ini Configuration AutoIP  
INIREAD OK 1

**Remarks**

## IniWrite

<b>Description</b>	Write a configuration entry value to an INI file.
<b>Format</b>	IniWrite <FileName> <Section> <Entry> <Value>
<b>Parameters</b>	<b>FileName</b> – The INI file name. <b>Section</b> – The section name. <b>Entry</b> – The entry name. <b>Value</b> – The new value to be written.
<b>Return</b>	<b>OK</b> on success. <b>ERROR</b> on error together with an error code.
<b>Example</b>	<pre>IniWrite H323.ini Configuration AutoIP 0 INIWRITE OK</pre>
<b>Remarks</b>	

## Reboot

<b>Description</b>	Reboot the system.
<b>Format</b>	Reboot
<b>Parameters</b>	None.
<b>Return</b>	<b>OK</b> on success. <b>ERROR</b> on error together with an error code.
<b>Example</b>	Reboot REBOOT OK
<b>Remarks</b>	

## KeyPressed

<b>Description</b>	Simulate the pressing of a remote control key.
<b>Format</b>	<code>KeyPressed &lt;KeyName&gt;</code>
<b>Parameters</b>	<b>KeyName</b> - The name of the key that was pressed.
<b>Return</b>	<b>OK</b> on success. <b>ERROR</b> on error together with an error code.
<b>Example</b>	<pre>KeyPressed Dial KEYPRESSED OK</pre>
<b>Remarks</b>	To get all the supported key names, type <b>KeyPressed</b> . The supported key names are: Zero One Two Three Four Five Six Seven Eight Nine Asterisk Pound Clear Display PIP Dial

**Remarks  
(cont.)**

Hangup  
Menu  
Multipoint  
Status  
Help  
OK  
Cancel  
Select  
Pound  
Up  
Left  
Down  
Right  
ZoomIn  
ZoomOut  
MuteMic  
MuteSpeaker  
VolumePlus  
VolumeMinus  
Red  
Green  
Blue  
Yellow

## ConsoleGetParam

<b>Description</b>	Retrieve a console parameter.
<b>Format</b>	ConsoleGetParam < <i>ConsoleParam</i> >
<b>Parameters</b>	<b>ConsoleParam</b> - The specific console parameter.
<b>Return</b>	<b>OK</b> on success together with the parameter value. <b>ERROR</b> on error together with an error code.
<b>Example</b>	ConsoleGetParam BAUD_RATE CONSOLEGETPARAM OK 9600
<b>Remarks</b>	To get a list of supported commands, type <b>ConsoleGetParam</b> . Supported call parameters: COM_NUMBER BAUD_RATE

## ConsoleSetParam

<b>Description</b>	Edit a console parameter.
<b>Format</b>	ConsoleSetParam <ConsoleParam> <Value>
<b>Parameters</b>	<b>ConsoleParam</b> - The specific console parameter. <b>Value</b> - The value that will replace the current value.
<b>Return</b>	<b>OK</b> on success together with the parameter value. <b>ERROR</b> on error together with an error code.
<b>Example</b>	<pre>ConsoleSetParam BAUD_RATE 115200 CONSOLESETPARAM OK</pre>
<b>Remarks</b>	To get a list of supported commands, type <b>ConsoleSetParam</b> . Supported call parameters: COM_NUMBER BAUD_RATE

## DiskInfo

**Description** Print the amount of free space on the HD compact flash non-volatile storage device.

**Format** DiskInfo

**Return** **OK** with the amount of free disk space.  
**ERROR** on error together with an error code.

**Example** DiskInfo  
There are 25690112 bytes free in device  
cf0:

## Ping

**Description** Emulate Windows's "ping" command, which checks if the remote device is "alive."

**Format** Ping <*IP Address*>

**Parameters** **IP Address** - IP address of the remote device that we want to test.

**Return** **OK**  
**ERROR** on error together with an error code.

**Example** Ping 172.20.1.1  
Replay from 172.20.1.1 ,bytes=64 ,times=0

## ShowDbgMsg

<b>Description</b>	Start/stop sending the debug log from the HD to the HDK device (for example, Hyper Terminal).
<b>Format</b>	ShowDbgMsg [ <i>Enable=1</i> ]
<b>Parameters</b>	<b>Enable</b> - {0 1} <b>1</b> = Start getting log messages from the HD device. <b>0</b> = Stop getting log messages.
<b>Return</b>	<b>OK</b> on success. <b>ERROR</b> on error together with an error code.
<b>Example</b>	ShowDbgMsg 1 Start Sending log messages to the ZConsole application.

## 4 EVENTS

This chapter contains description, syntaxes, parameters, and examples of the HDK events.

### 4.1 Call Events

#### EVENT\_CALL\_DIALTONE

<b>Description</b>	A dialtone state followed dialing.
<b>Format</b>	EVENT_CALL_DIALTONE <CallID>
<b>Parameters</b>	<b>CallID</b> – The ID of the call.
<b>Example</b>	EVENT_CALL_DIALTONE 0
<b>Remarks</b>	<ol style="list-style-type: none"><li>1. Relevant for outgoing calls only.</li><li>2. This is the first event for outgoing calls.</li></ol>

## EVENT\_CALL\_RINGBACK

<b>Description</b>	An “Alerting” or “Proceeding” message was received from the remote side.
<b>Format</b>	EVENT_CALL_RINGBACK <CallID>
<b>Parameters</b>	<b>CallID</b> – The ID of the call.
<b>Example</b>	EVENT_CALL_RINGBACK 0
<b>Remarks</b>	Relevant for outgoing calls only.

## EVENT\_CALL\_CONNECTED

<b>Description</b>	A call connects successfully.
<b>Format</b>	EVENT_CALL_CONNECTED <CallID>
<b>Parameters</b>	<b>CallID</b> – The ID of the call.
<b>Example</b>	EVENT_CALL_CONNECTED 0
<b>Remarks</b>	Relevant for both outgoing and incoming calls.

## EVENT\_CALL\_OFFERING

<b>Description</b>	An incoming call indication was received.
<b>Format</b>	EVENT_CALL_OFFERING <CallID> <RemoteAddress> <RemoteName>
<b>Parameters</b>	<b>CallID</b> – The ID of the call <b>RemoteAddress</b> – The remote party IP address <b>RemoteName</b> – The remote party name
<b>Example</b>	EVENT_CALL_OFFERING 0 10.0.11.25 DemoRoom
<b>Remarks</b>	<ol style="list-style-type: none"><li>1. Relevant for incoming calls.</li><li>2. When working in manual answer the user will need to call either <a href="#">CallAnswer</a> or <a href="#">CallReject</a> commands.</li></ol>

## EVENT\_CALL\_DISCONNECTED

<b>Description</b>	A call was disconnected.
<b>Format</b>	EVENT_CALL_DISCONNECTED <CallID> <DisconnectionReason>
<b>Parameters</b>	<b>CallID</b> – The ID of the call <b>DisconnectionReason</b> – The disconnection reason
<b>Example</b>	EVENT_CALL_ DISCONNECTED 0 REMOTE
<b>Remarks</b>	<ol style="list-style-type: none"><li>1. Relevant for incoming and outgoing calls.</li><li>2. Disconnection reason<ul style="list-style-type: none"><li>— LOCAL – Call disconnected by local party</li><li>— REMOTE – Call disconnected by remote party</li><li>— BUSY – Remote party is busy</li><li>— REJECT - Remote party rejected the call</li><li>— UNREACHABLE – Remote party is unreachable</li><li>— NO_ANSWER – Remote party hasn't answered the calls</li><li>— UNKNOWN – Call disconnected due to unknown reason.</li></ul></li></ol>

## EVENT\_CALL\_IDLE

<b>Description</b>	Fired after a call is disconnected. The disconnected call's resources are no longer valid.
<b>Format</b>	EVENT_CALL_IDLE <CallID>
<b>Parameters</b>	<b>CallID</b> – The ID of the call
<b>Example</b>	EVENT_CALL_IDLE 0
<b>Remarks</b>	Relevant for incoming and outgoing calls.

## EVENT\_CALL\_CHANNEL\_ON

<b>Description</b>	A new channel has been established on a call.
<b>Format</b>	EVENT_CALL_CHANNEL_ON <CallID> <ChannelID> <Dir> <Type>
<b>Parameters</b>	<b>CallID</b> – The ID of the call <b>ChannelID</b> – The ID of the Channel <b>Dir</b> – The Channel Direction { <b>RX</b>   <b>TX</b> } <b>Type</b> – The Channel media type { <b>AUDIO</b>   <b>VIDEO</b>   <b>DATA</b> }
<b>Example</b>	EVENT_CALL_CHANNEL_ON 0 0 TX AUDIO EVENT_CALL_CHANNEL_ON 0 1 TX VIDEO EVENT_CALL_CHANNEL_ON 0 2 TX DATA EVENT_CALL_CHANNEL_ON 0 3 RX AUDIO EVENT_CALL_CHANNEL_ON 0 4 RX VIDEO EVENT_CALL_CHANNEL_ON 0 5 RX DATA
<b>Remarks</b>	Relevant for incoming and outgoing calls.

## EVENT\_CALL\_CHANNEL\_OFF

<b>Description</b>	An active channel was disconnected on a call.
<b>Format</b>	EVENT_CALL_CHANNEL_OFF <CallID> <ChannelID> <Dir> <Type>
<b>Parameters</b>	<b>CallID</b> – The ID of the call <b>ChannelID</b> – The ID of the Channel <b>Dir</b> – The Channel Direction (RX   TX) <b>Type</b> – The Channel media type (AUDIO   VIDEO   DATA)
<b>Example</b>	EVENT_CALL_CHANNEL_OFF 0 0 TX AUDIO EVENT_CALL_CHANNEL_OFF 0 1 TX VIDEO EVENT_CALL_CHANNEL_OFF 0 2 TX DATA EVENT_CALL_CHANNEL_OFF 0 3 RX AUDIO EVENT_CALL_CHANNEL_OFF 0 4 RX VIDEO EVENT_CALL_CHANNEL_OFF 0 5 RX DATA
<b>Remarks</b>	Relevant for incoming and outgoing calls.

## EVENT\_CALL\_REMOTE\_NOT\_RESPONDING

<b>Description</b>	During an active call, no signal is received from the remote side.
<b>Format</b>	EVENT_CALL_REMOTE_NOT_RESPONDING <CallID>
<b>Parameters</b>	CallID – The ID of the call
<b>Example</b>	EVENT_CALL_REMOTE_NOT_RESPONDING 0
<b>Remarks</b>	<ol style="list-style-type: none"><li>1. Relevant for outgoing and incoming calls only.</li><li>2. The application may disconnect the call or display a message to the user.</li></ol>

## 4.2 Server Events

### EVENT\_SERVER\_DATA\_CHANGED

**Description** Configuration data was changed by the MXM server.

**Format** EVENT\_SERVER\_DATA\_CHANGED <Action>

**Parameters** **Action** –The current action the application should perform.

**REBOOT** the system.

**REFRESH** the application dialog.

**Example**

```
EVENT_SERVER_DATA_CHANGED REBOOT  
EVENT_SERVER_DATA_CHANGED REFRESH
```

**Remarks**

## EVENT\_SERVER\_COMMAND

**Description** A server command was received and must be addressed by the application.

**Format** EVENT\_SERVER\_COMMAND <*Command*>

**Parameters** **Command** – The command the application should perform.

**REBOOT** the system.

**Example** EVENT\_SERVER\_COMMAND REBOOT

**Remarks**

## EVENT\_SERVER\_STATE\_CHANGED

<b>Description</b>	The endpoint's login state with the MXM server has changed.
<b>Format</b>	EVENT_SERVER_STATE_CHANGED <NewState>
<b>Parameters</b>	<b>NewState</b> – The current state with the MXM server.
<b>Example</b>	EVENT_SERVER_STATE_CHANGED LOGGED_IN
<b>Remarks</b>	<p>Possible states with the MXM:</p> <ol style="list-style-type: none"><li>1. <b>LOGGED_IN:</b> Endpoint is logged in the the MXM server.</li><li>2. <b>LOGIN_FAILED_DUPLICATE_ALIAS:</b> Another end point with the same H.323-ID   E.164 is already logged in to the MXM.</li><li>3. <b>LOGIN_FAILED_UNSUPPORTED_VERSION:</b> The MXM version doesn't support the endpoint.</li><li>4. <b>LOGIN_FAILED_LICENSE_VIOLATION:</b> Failed to login due to license violation.</li><li>5. <b>LOGIN_FAILED_TIME_OUT:</b> The login timeout has expired.</li><li>6. <b>LOGIN_FAILED_WAIT_FOR_GRANT:</b> The endpoint is waiting for administrator to grant login.</li><li>7. <b>LOGIN_FAILED_GENERAL_ERROR:</b> Failed to login due to unspecified reason.</li><li>8. <b>LOGGED_OFF:</b> The endpoint isn't configured to work with MXM server.</li></ol>

## 4.3 Gatekeeper Events

### EVENT\_GATEKEEPER\_STATE\_CHANGED

<b>Description</b>	The endpoint's login state with the gatekeeper has changed.
<b>Format</b>	EVENT_GATEKEEPER_STATE_CHANGED <NewState>
<b>Parameters</b>	<b>NewState</b> – The current state with the gatekeeper
<b>Example</b>	EVENT_GATEKEEPER_STATE_CHANGED LOGGED_IN
<b>Remarks</b>	Possible states with the gatekeeper: <ol style="list-style-type: none"><li>1. LOGGED_IN: Endpoint is logged in to the Gatekeeper.</li><li>2. LOGIN_FAILED_DUPLICATE_ALIAS: Another end point with the same H.323-ID   E.164 is already logged in to the gatekeeper.</li><li>3. LOGIN_FAILED_GENERAL_ERROR: Failed to login due to an unspecified reason.</li><li>4. LOGGED_OFF: The endpoint isn't configured to work with this gatekeeper.</li></ol>

## 4.4 Multicast Events

Emblaze VCON developed a type of H.323 session called Interactive Multicast, in which one end point (*Chair*) transmits the same video and audio at a single time to all the other end points (*Participants*) in the session.

The Chair manages one “floor” token. An end point must have the token in order to speak. End points may request the token and wait for the Chair to accept its request. In addition, the Chair may give the token to any end point without a specific end point request.

### EVENT\_MULTICAST\_CONNECTED

<b>Description</b>	Fired after a multicast session is connected.
<b>Format</b>	EVENT_MULTICAST_CONNECTED <CallID>
<b>Parameters</b>	CallID – The ID of the call.
<b>Example</b>	EVENT_MULTICAST_CONNECTED 0
<b>Remarks</b>	

## EVENT\_MULTICAST\_FLOOR\_OFFERING

<b>Description</b>	Fired when the multicast chair offers the floor to this endpoint. Only the endpoint who has the multicast floor can broadcast video and audio to all the other endpoints in the session.
<b>Format</b>	EVENT_MULTICAST_FLOOR_OFFERING <CallID>
<b>Parameters</b>	<b>CallID</b> – The ID of the call.
<b>Example</b>	EVENT_MULTICAST_FLOOR_OFFERING 0
<b>Remarks</b>	Application may call <a href="#">MulticastAcceptFloor</a> to accept the floor or <a href="#">MulticastRejectFloor</a> to reject it.

## EVENT\_MULTICAST\_FLOOR\_REQUEST\_REJECTED

<b>Description</b>	Fired when the multicast chair rejected this endpoint's floor request.
<b>Format</b>	EVENT_MULTICAST_FLOOR_REQUEST_REJECTED <CallID>
<b>Parameters</b>	<b>CallID</b> – The ID of the call
<b>Example</b>	EVENT_MULTICAST_FLOOR_REQUEST_REJECTED 0
<b>Remarks</b>	

## EVENT\_MULTICAST\_FLOOR\_CHANGED

<b>Description</b>	Fired when the floor is given to another endpoint.
<b>Format</b>	EVENT_MULTICAST_FLOOR_CHANGED <CallID> <Type> <Name>
<b>Parameters</b>	<b>CallID</b> – The ID of the call. <b>Type</b> – The type of floor that has been changed { <b>VIDEO</b>   <b>AUDIO</b> }. <b>Name</b> – The name of the participant who now owns the floor.
<b>Example</b>	EVENT_MULTICAST_FLOOR_CHANGED 0 VIDEO DemoRoom
<b>Remarks</b>	

## EVENT\_MULTICAST\_FLOOR\_GRANTED

<b>Description</b>	Fired when the multicast chair has granted the floor to this endpoint.
<b>Format</b>	EVENT_MULTICAST_FLOOR_GRANTED <CallID> <Type>
<b>Parameters</b>	<b>CallID</b> – The ID of the call <b>Type</b> – The type of floor that has been granted ( <b>VIDEO</b>   <b>AUDIO</b> )
<b>Example</b>	EVENT_MULTICAST_FLOOR_GRANTED 0 VIDEO
<b>Remarks</b>	

## EVENT\_MULTICAST\_PASSWORD\_REJECTED

<b>Description</b>	Fired when this endpoint enters an incorrect password while attempting to join a multicast session.
<b>Format</b>	EVENT_MULTICAST_PASSWORD_REJECTED <CallID>
<b>Parameters</b>	<b>CallID</b> – The ID of the call.
<b>Example</b>	EVENT_MULTICAST_PASSWORD_REJECTED 0
<b>Remarks</b>	Fired as a result of a call to <a href="#">MulticastSendPassword</a> .

## EVENT\_MULTICAST\_PASSWORD\_REQUESTED

<b>Description</b>	Fired when the endpoint must enter a password in order to join a multicast session.
<b>Format</b>	EVENT_MULTICAST_PASSWORD_REQUESTED <CallID>
<b>Parameters</b>	<b>CallID</b> – The ID of the call
<b>Example</b>	EVENT_MULTICAST_PASSWORD_REQUESTED 0
<b>Remarks</b>	Call <a href="#">MulticastSendPassword</a> to provide the password

## 4.5 Streaming Events

### EVENT\_STREAMING\_STARTED

<b>Description</b>	Fired when a streaming session starts.
<b>Format</b>	EVENT_STREAMING_STARTED <SessionID> <IsFirstSession>
<b>Parameters</b>	<b>SessionID</b> – The streaming session ID. <b>IsFirstSession</b> – {0   1} Set to <b>1</b> if this is the first active streaming session.
<b>Example</b>	EVENT_STREAMING_STARTED 0 1
<b>Remarks</b>	

## EVENT\_STREAMING\_STOPPED

<b>Description</b>	Fired after the streaming session ends.
<b>Format</b>	EVENT_STREAMING_STOPPED <SessionID> <IsLastSession>
<b>Parameters</b>	<b>SessionID</b> – The ID of the streaming session. <b>IsLastSession</b> – {0   1} Set to <b>1</b> if this is the last active streaming session.
<b>Example</b>	EVENT_STREAMING_STOPPED 0 1
<b>Remarks</b>	

## 4.6 System Events

### EVENT\_SYSTEM\_INIT\_COMPLETED\_SUCCESS

<b>Description</b>	Fired when the system initializes successfully.
<b>Format</b>	EVENT_SYSTEM_INIT_COMPLETED_SUCCESS
<b>Parameters</b>	None.
<b>Example</b>	EVENT_SYSTEM_INIT_COMPLETED_SUCCESS
<b>Remarks</b>	Calling some of the commands prior to receiving this event may result in an error.

## EVENT\_SYSTEM\_INIT\_COMPLETED\_FAILURE

<b>Description</b>	Fired when the system fails to initialize.
<b>Format</b>	EVENT_SYSTEM_INIT_COMPLETED_FAILURE
<b>Parameters</b>	None.
<b>Example</b>	EVENT_SYSTEM_INIT_COMPLETED_FAILURE
<b>Remarks</b>	User may try to <a href="#">Reboot</a> the system to recover.

## **EVENT\_SYSTEM\_DHCP\_STATE\_RECEIVED\_ADDRESS**

<b>Description</b>	Fired when the system received a valid IP address from the DHCP server.
<b>Format</b>	EVENT_SYSTEM_DHCP_STATE_RECEIVED_ADDRESS
<b>Parameters</b>	None.
<b>Example</b>	EVENT_SYSTEM_DHCP_STATE_RECEIVED_ADDRESS
<b>Remarks</b>	Relevant only when the endpoint is configured to work with a DHCP.

## EVENT\_DHCP\_STATE\_FAILED\_RECEIVING\_ADDRESS

<b>Description</b>	Fired when system failed to receive an IP address from the DHCP server.
<b>Format</b>	EVENT_DHCP_STATE_FAILED_RECEIVING_ADDRESS
<b>Parameters</b>	None.
<b>Example</b>	EVENT_DHCP_STATE_FAILED_RECEIVING_ADDRESS
<b>Remarks</b>	<ol style="list-style-type: none"><li>1. Relevant only when the endpoint is configured to work with a DHCP.</li><li>2. Notify the user, check that the HD is connected to the network, and the DHCP server is working properly.</li></ol>

## 4.7 FECC Events

### CAMERA\_REMOTE\_MOVE

<b>Description</b>	Notification about remote camera's movement.
<b>Format</b>	CAMERA_REMOTE_MOVE <Direction>
<b>Parameters</b>	<b>Direction</b> – {STOP   IN   OUT   UP   DOWN   LEFT   RIGHT   UP_LEFT   UP_RIGHT   DOWN_LEFT   DOWN_RIGHT   HOME}
<b>Example</b>	CAMERA_REMOTE_MOVE LEFT
<b>Remarks</b>	To enable this notification, set the CameraEvents entry to <b>1</b> in the <i>user.ini</i> file.

## CAMERA\_LOCAL\_MOVE

<b>Description</b>	Notification about local camera's movement.
<b>Format</b>	CAMERA_LOCAL_MOVE <Direction> <Source>
<b>Parameters</b>	<b>Direction</b> – {STOP   IN   OUT   UP   DOWN   LEFT   RIGHT   UP_LEFT   UP_RIGHT   DOWN_LEFT   DOWN_RIGHT   HOME}
<b>Example</b>	CAMERA_LOCAL_MOVE LEFT REMOTE
<b>Remarks</b>	To enable this notification, set the CameraEvents entry to <b>1</b> in the <i>user.ini</i> file.

## 5 THE USER.INI FILE

**Description** The *user.ini* file contains several configuration parameters that you may edit. The file is located in the HD system's */ver/ini* folder.

**Parameters**

- Configuration parameters:
  - CallEvents
  - MulticastEvents
  - StreamingEvents
  - GatekeeperEvents
  - ServerEvents
- GUI parameters:
  - HideAll
  - HideDlg

## 5.1 Configuration Parameters

### CallEvents

<b>Description</b>	System sends all Call Events automatically. User does not need to manually call the CallEvents command.
<b>Valid Value</b>	{0 1} 0 –Disable 1 - Enable
<b>Default Value</b>	0

## MulticastEvents

<b>Description</b>	System sends all Multicast Events automatically. User does not need to manually call the MulticastEvents command.
<b>Valid Value</b>	{0 1} 0 –Disable 1 - Enable
<b>Default Value</b>	0

## StreamingEvents

<b>Description</b>	System sends all Streaming Events automatically. User does not need to manually call the StreamingEvents command.
<b>Valid Value</b>	{0 1} 0 –Disable 1 - Enable
<b>Default Value</b>	0

## GatekeeperEvents

<b>Description</b>	System sends all Gatekeeper Events automatically. User does not need to manually call the GatekeeperEvents command.
<b>Valid Value</b>	{0 1} 0 –Disable 1 - Enable
<b>Default Value</b>	0

## ServerEvents

<b>Description</b>	System sends all Server Events automatically. User does not need to manually call the ServerEvents command.
<b>Valid Value</b>	{0 1} 0 –Disable 1 - Enable
<b>Default Value</b>	0

## 5.2 GUI Parameters

### HideAll

<b>Description</b>	Hides the HD device's user interface. Only video is displayed on the screen.
<b>Valid Value</b>	{0 1} 0 –Disable 1 - Enable
<b>Default Value</b>	0

## HideDlg

<b>Description</b>	Hides the HD device's dialog boxes. Only video, messages and icons are displayed on the screen.
<b>Valid Value</b>	{0 1} 0 –Disable 1 - Enable
<b>Default Value</b>	0

## 6 WORKFLOW EXAMPLES

This section provides examples of the workflow of a typical HD system during basic operations. By following the numbered order of the commands, screen text, and actions presented in the tables, you can understand the action/effect relationship among the application interface, the screen console, and the HD device.

In the following examples:

- Commands listed in the Application column are entered into the end-user application.
- Text that appears on the screen, resulting either from the entry of command or an action by the HD device, appears in the Console column.
- Actions that occur in the HD device are described in the HD column.

### 6.1 Incoming Call Flow

The following table presents the flow of events and actions that result in a successful incoming videoconference call:

APPLICATION	CONSOLE	HD
1. <b>Connect to console</b>	2. Welcome to HD <model number>Version Board Type Camera Input	3. System completes the initialization phase.
	4. EVENT_SYSTEM_INIT_COMPLETED_SUCCESS	
5. <b>CallEvents 1</b>	6. CALLEVENTS OK	7. Incoming call.
	8. EVENT_CALL_OFFERING 0 10.11.24 Demo	
9. <b>CallAnswer 1</b>	10. CALLANSWER OK	11. Call is connected successfully.
	12. EVENT_CALL_CONNECTED 0	13. Outgoing video channel opened.

	14. EVENT_CALL_CHANNEL_ON 0 0 TX VIDEO	15. Outgoing audio channel opened.
	16. EVENT_CALL_CHANNEL_ON 0 1 TX AUDIO	17. Outgoing data channel opened.
	18. EVENT_CALL_CHANNEL_ON 0 2 TX DATA	19. Incoming Video channel opened.
	20. EVENT_CALL_CHANNEL_ON 0 3 RX VIDEO	21. Incoming Audio channel opened.
	22. EVENT_CALL_CHANNEL_ON 0 4 RX AUDIO	23. Incoming Data channel opened.
	24. EVENT_CALL_CHANNEL_ON 0 5 RX DATA	
<b>25. Hangup 0</b>	26. HANGUP OK	27. Outgoing video channel closed.
	28. EVENT_CALL_CHANNEL_OF F 0 0 TX VIDEO	29. Outgoing audio channel closed.
	30. EVENT_CALL_CHANNEL_OF F 0 1 TX AUDIO	31. Outgoing data channel closed.
	32. EVENT_CALL_CHANNEL_OF F 0 2 TX DATA	33. Incoming Video channel closed.
	34. EVENT_CALL_CHANNEL_OF F 0 3 RX VIDEO	35. Incoming Audio channel closed.
	36. EVENT_CALL_CHANNEL_OF F 0 4 RX AUDIO	37. Incoming Data channel closed.
	38. EVENT_CALL_CHANNEL_OF F 0 5 RX DATA	39. Call is disconnected.
	40. EVENT_CALL_DISCONNECT ED 0 LOCAL	41. System becomes idle.
	42. EVENT_CALL_IDLE 0	

## 6.2 Outgoing Call Flow

The following table presents the flow of events and actions that result in a successful outgoing videoconference call:

APPLICATION	CONSOLE	HD
1. Connect to console	2. Welcome to HD <model number>Version Board Type Camera Input	3. System completes the initialization phase.
	4. EVENT_SYSTEM_INIT_COMPLETED_SUCCESS	
<b>5. CallEvents 1</b>	6. CALLEVENTS OK	
<b>7. Dial 10.0.11.12</b>	8. DIAL OK	9. Call state dialtone arrived
	10. EVENT_CALL_DIALTONE 0	11. Call state ringback arrived
	12. EVENT_CALL_RINGBACK 0	13. Call become connected
	14. EVENT_CALL_CONNECTED 0	15. Outgoing video channel opened
	16. EVENT_CALL_CHANNEL_ON 0 0 TX VIDEO	17. Outgoing audio channel opened.
	18. EVENT_CALL_CHANNEL_ON 0 1 TX AUDIO	19. Outgoing data channel opened.
	20. EVENT_CALL_CHANNEL_ON 0 2 TX DATA	21. Incoming Video channel opened.

	22. EVENT_CALL_CHANNEL_ON 0 3 RX VIDEO	23. Incoming Audio channel opened.
	24. EVENT_CALL_CHANNEL_ON 0 4 RX AUDIO	25. Incoming Data channel opened.
	26. EVENT_CALL_CHANNEL_ON 0 5 RX DATA	27. Remote party disconnects the call
	28.	29. Outgoing video channel closed.
	30. EVENT_CALL_CHANNEL_OFF 0 0 TX VIDEO	31. Outgoing audio channel closed.
	32. EVENT_CALL_CHANNEL_OFF 0 1 TX AUDIO	33. Outgoing data channel closed.
	34. EVENT_CALL_CHANNEL_OFF 0 2 TX DATA	35. Incoming Video channel closed.
	36. EVENT_CALL_CHANNEL_OFF 0 3 RX VIDEO	37. Incoming Audio channel closed.
	38. EVENT_CALL_CHANNEL_OFF 0 4 RX AUDIO	39. Incoming Data channel closed.
	40. EVENT_CALL_CHANNEL_OFF 0 5 RX DATA	41. Call is disconnected.
	42. EVENT_CALL_DISCONNECTE D 0 REMOTE	43. Call become idle
	44. EVENT_CALL_IDLE 0	