TANDBERG Codec C90
System Integrator Guide

www.tandberg.com
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Thank you for choosing TANDBERG!
Your TANDBERG Codec C90 has been designed to give you many years of safe, reliable operation.

How to read this document
You will find that some places information has been copied from other chapters (but adapted, when needed) to let you have all the relevant information there and then. This helps eliminating the need to read through long sections before you can even think of getting started.
Our main objective with this user guide is to address your goals and needs. Please let us know how well we succeeded!

We recommend you visit the TANDBERG web site regularly for updated versions of the manual.
Go to: http://www.tandberg.com/docs
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Every effort has been made to supply complete and accurate information in this System Integrator Guide, however, TANDBERG assumes no responsibility or liability for any errors or inaccuracies that may appear in this document.

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IMPORTANT: USE OF THIS PRODUCT IS SUBJECT TO THE COPYRIGHT RIGHTS AND THE TERMS AND CONDITIONS OF USE REFERRED TO ABOVE. USE OF THIS PRODUCT CONSTITUTES AGREEMENT TO SUCH TERMS AND CONDITIONS.
Safety Instructions
For your protection please read these safety instructions completely before you connect the equipment to the power source. Carefully observe all warnings, precautions and instructions both on the apparatus and in these operating instructions. Retain this manual for future reference.

Water and Moisture
Do not operate the apparatus under or near water – for example near a bathtub, kitchen sink, or laundry tub, in a wet basement, near a swimming pool or in other areas with high humidity.
- Never install jacks for communication cables in wet locations unless the jack is specifically designed for wet locations.
- Do not touch the product with wet hands.

Cleaning
Unplug the apparatus from communication lines, mains power-outlet or any power source before cleaning or polishing. Do not use liquid cleaners or aerosol cleaners. Use a lint-free cloth lightly moistened with water for cleaning the exterior of the apparatus.

Ventilation
Do not block any of the ventilation openings of the apparatus. Never cover the slots and openings with a cloth or other material. Never install the apparatus near heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

Lightning
Never use this apparatus, or connect/disconnect communication cables or power cables during lightning storms.

Dust
Do not operate the apparatus in areas with high concentration of dust.

Vibration
Do not operate the apparatus in areas with vibration or place it on an unstable surface.

Power Connection and Hazardous Voltage
The product may have hazardous voltage inside.
- Never attempt to open this product, or any peripherals connected to the product, where this action requires a tool.
- This product should always be powered from an earthed power outlet.
- Never connect attached power supply cord to other products.
- In case any parts of the product has visual damage never attempt to connect main power, or any other power source, before consulting service personnel.
- The plug connecting the power cord to the product/power supply serves as the main disconnect device for this equipment. The power cord must always be easily accessible.
- Route the power cord so as to avoid it being walked on or pinched by items placed upon or against it. Pay particular attention to the plugs, receptacles and the point where the cord exits from the apparatus.
- Do not tug the power cord.
- If the provided plug does not fit into your outlet, consult an electrician.
- Never install cables, or any peripherals, without first unplugging the device from its power source.

Servicing
- Do not attempt to service the apparatus yourself as opening or removing covers may expose you to dangerous voltages or other hazards, and will void the warranty. Refer all servicing to qualified service personnel.
- Unplug the apparatus from its power source and refer servicing to qualified personnel under the following conditions:
  - If the power cord or plug is damaged or frayed.
  - If liquid has been spilled into the apparatus.
  - If objects have fallen into the apparatus.
  - If the apparatus has been exposed to rain or moisture.
  - If the apparatus has been subjected to excessive shock by being dropped.

- If the cabinet has been damaged.
- If the apparatus seems to be overheated.
- If the apparatus emits smoke or abnormal odor.
- If the apparatus fails to operate in accordance with the operating instructions.

Accessories
Use only accessories specified by the manufacturer, or sold with the apparatus.

Communication Lines
Do not use communication equipment to report a gas leak in the vicinity of the leak.

IMPORTANT!
There should always be a distance of minimum 10 cm (0.33 ft) free space in the front of the codec.

WARNING!
Make sure the Codec C90 never rest on the front panel.
Environmental Issues

Thank you for buying a product which contributes to a reduction in pollution, and thereby helps save the environment. Our products reduce the need for travel and transport and thereby reduce pollution. Our products have either none or few consumable parts (chemicals, toner, gas, paper).

TANDBERG’s Environmental Policy

Environmental stewardship is important to TANDBERG’s culture. As a global company with strong corporate values, TANDBERG is committed to following international environmental legislation and designing technologies that help companies, individuals and communities creatively address environmental challenges.

TANDBERG’s environmental objectives are to:

- Develop products that reduce energy consumption, CO2 emissions, and traffic congestion
- Provide products and services that improve quality of life for our customers
- Produce products that can be recycled or disposed of safely at the end of product life
- Comply with all relevant environmental legislation.

Digital User Guides

TANDBERG is pleased to announce that we have replaced the printed versions of our user guides with digital versions available on the TANDBERG website. A digital user guide can be accessed via http://www.tandberg.com/docs. The environmental benefits of this are significant. The user guides can still be printed locally, whenever needed.

European Environmental Directives

As a manufacturer of electrical and electronic equipment TANDBERG is responsible for compliance with the requirements in the European Directives 2002/96/EC (WEEE - Waste Electrical and Electronic Equipment) and 2002/95/EC (RoHS).

The primary aim of the WEEE Directive and RoHS Directive is to reduce the impact of disposal of electrical and electronic equipment at end-of-life. The WEEE Directive aims to reduce the amount of waste electrical and electronic equipment sent for disposal to landfill or incineration by requiring producers to arrange for collection and recycling. The RoHS Directive bans the use of certain heavy metals and brominated flame retardants to reduce the environmental impact of WEEE which is in landfill or incinerated.

TANDBERG has implemented necessary process changes to comply with the European WEEE Directive (2002/96/EC) and the European RoHS Directive (2002/95/EC).

Waste Handling

In order to avoid the dissemination of hazardous substances in our environment and to diminish the pressure on natural resources, we encourage you to use the appropriate recycling systems in your area. Those systems will reuse or recycle most of the materials of your end of life equipment in a sound way.

TANDBERG products put on the market after August 2005 are marked with a crossed-out wheelie bin symbol that invites you to use those take-back systems.

Information for Recyclers

As part of compliance with the European WEEE Directive, TANDBERG provides recycling information on request for all types of new equipment put on the market in Europe after August 13th 2005.

Please contact TANDBERG and provide the following details for the product for which you would like to receive recycling information:

- Model number of TANDBERG product
- Your company’s name
- Contact name
- Address
- Telephone number
- E-mail.

Please contact your local supplier, the regional waste administration or visit our web page http://www.tandberg.com/recycling if you need more information on the collection and recycling system in your area.
Chapter 2
Getting started

This chapter introduces you to the codec and gets you up and going.
This guide has been divided into several chapters, all of which provide different information. You can access the chapters directly by clicking on the menu bar at the top of this page.

In this chapter...
- Assemble your system
- Using the remote control
- Initial configurations
  - Waking up the system
  - Verify IP address settings
  - Setting a static IP address
  - Add the system to the network
  - Verify your settings
  - Date and time settings
  - Menu password
- About monitors
  - The main monitor
  - Dual monitors
1 Assemble your system

The illustration shows you the basic setup when connecting your monitor, PC, camera, microphone, loudspeakers (if applicable), LAN and line voltage to your codec.

- **Monitor** (Audio from HDMI 1 or Line Out 1–2)
- **Main camera**: Video from PrecisionHD 1080p
- **Microphone**: Audio from PC
- **LAN/Ethernet**
- **Mains Power Cable**
- **OPTIONAL**: Loudspeakers
- **OPTIONAL**: Main camera: Camera Control to PrecisionHD 1080p
- **OPTIONAL**: Video from PC
- **OPTIONAL**: You may connect additional microphones
- **OPTIONAL**: You may connect a second camera. (extra camera not included). Extra camera will require separate power supply and control cabling. Consult the documentation supplied with the extra camera for details.

Make sure the codec has been switched off and disconnected from the line voltage whenever connecting or disconnecting other equipment.
Using the Remote Control

The functions keys in the upper part of the remote control reflects the soft keys on screen.

... and the middle part of the remote control is used to handle the video part of the call.

... while the lower part of the remote control resembles very much the keypad of a mobile phone.

Batteries

Make sure the remote control has working batteries (4 x AAA batteries).

FUNCTION KEYS: Each key reflects a soft key on screen and represents shortcuts and advanced functions.

HOME: Press the Home key to go back to the main menu.

PHONE BOOK: Press the Phone Book key to display the local phone book.

LAYOUT: Press the Layout key to display the layout menu, then select a view in the menu.

ARROW UP/DOWN: Use the up ▲ and down ▼ arrow keys to navigate in the menu.

ARROW LEFT: Press the left ◄ arrow key to go one step back in the menu or to move to the left in a text field.

ARROW RIGHT: Press the right ► arrow key to expand the selected menu item or to move to the right in a text field.

OK/SELECT: Press the OK/Select key to confirm your choice or selection.

Batteries

Make sure the remote control has working batteries (4 x AAA batteries).

MICROPHONE: Press the Microphone key to toggle the microphones on/off.

PRESENTATION: Press the Presentation key to show/hide a presentation.

PHONE BOOK: Press the Phone Book key to display the local phone book.

LAYOUT: Press the Layout key to display the layout menu, then select a view in the menu.

MICROPHONE: Press the Microphone key to toggle the microphones on/off.

VOLUME: Press the + or – on the Volume key to adjust the codec volume.

MUTE: Press the – to mute an incoming call.

ZOOM: Press the + or – on the Zoom key to zoom the camera in and out.

OK/SELECT: Press the OK/Select key to confirm your choice or selection.

FUNCTION KEYS: Each key reflects a soft key on screen and represents shortcuts and advanced functions.

HOME: Press the Home key to go back to the main menu.

PHONE BOOK: Press the Phone Book key to display the local phone book.

LAYOUT: Press the Layout key to display the layout menu, then select a view in the menu.

MICROPHONE: Press the Microphone key to toggle the microphones on/off.

VOLUME: Press the + or – on the Volume key to adjust the codec volume.

MUTE: Press the – to mute an incoming call.

ZOOM: Press the + or – on the Zoom key to zoom the camera in and out.

OK/SELECT: Press the OK/Select key to confirm your choice or selection.
Using the Remote Control, cont...

The functions keys in the upper part of the remote control reflects the soft keys on screen.

... and the middle part of the remote control is used to handle the video part of the call.

... while the lower part of the remote control resembles very much the keypad of a mobile phone.

Waking up the system
Press any key on the remote control to wake up the system.

CALL KEY
INITIATE CALL: Select a name from the Phone book or enter the name, number or URI and press the Call key to initiate the call.
SHORTCUT TO RECENT CALLS: Use the Call button as a shortcut to Recent Calls when the Call menu is not visible.

CLEAR: Press the Cancel key to remove characters in a text field.

END CALL: STANDBY: Press the End Call key to end a call, or when idle, press and hold the key to go into standby mode.

ALPHANUMERIC KEYPAD
Use the keypad in the same way as you would use a cellular phone.

0-9, a-z, period (.), @, space, *:
Press a key repeatedly to toggle between the options displayed on each key.

abc/123 #:
Press the # key to toggle between lower case characters and numbers.

IR sensor range (DIP switch setting)
The IR sensor has a short and long range. Open the battery cover and remove the batteries to set the DIP switch.
- Short range (1 m): Move the DIP switch down
- Long range: Move the DIP switch up.
Initial configurations

Before you can start making calls with the system you will need to set the IP address, add the system to the network and check if the date and time settings needs to be adjusted. When starting up the system the first time the menu password is not set. But, when done it is recommended to set a menu password to get access to the Advanced configuration menu.

Waking up the system

If no menu on screen, press **Home** (.callsign) on the remote control to show the menu on screen.

If the system does not show any menu on screen:

1. Make sure the monitor has been turned on
2. Make sure the remote control has the batteries installed
3. Make sure the codec has been turned on
4. If the system has just been turned on, wait a few minutes to allow the system to startup

If you need to set a static IP address

How to set the static IP address:

1. Navigate to **Settings > Advanced > IP settings**.
2. Set **IP Assignment** to **Static**. Press **OK** (✓) to save the change.
3. Enter the **IP Address**, **Subnet Mask** and **Gateway address** in the address fields. The sequence is shown below.
4. Navigate to **OK** to save the changes, or **Cancel** to leave without saving.
5. Press **Home** (callsign) to exit.

Verify IP address settings

How to go to the System Information page to verify the IP address:

1. Navigate to **Settings > System Information** to open the System information page.
2. When the IP address is automatically assigned from a DHCP server, the network IP address of the codec is shown on the System Information page.
3. Press **Home** (callsign) to exit.
Adding the system to the network

Your service provider should have provided you with the information you need to get online.

- For H.323 type of communication, this will include such things as system name, H.323 alias, gatekeeper address, etc.
- For SIP type of communication, similar type of information will be supplied.
- For networks administrated through TMS (TANDBERG Management Suite), your TMS administrator will be able to assist you when configuring.

The H.323 and SIP profiles are configured from the Advanced configurations menu:

Navigate to Settings > Advanced > Advanced configuration and make a search for H323 or SIP, or select H323 > Profile 1 or SIP > Profile 1 from the menu

- Expand the items in need of modification and enter the information supplied by your service provider.

Verify your settings

We strongly recommend that you verify the settings by inspecting the System Information list.

You do this by accessing the System Information in the same way as you did when you verified your IP address setting.

1. Navigate to Settings > System Information
2. Verify the previous configurations.
   - If you successfully registered to a Gatekeeper the Status will show Registered. If the registration failed the Status will show Not registered.
   - If you successfully registered to a SIP server the Status will show Registered. If the registration failed the Status will show Not registered.
3. Press Home (تقدم) to exit.

Adjusting the date and time settings

Verify the date and time to see if the date and time settings need to be adjusted. The date and time is located in the upper right corner on screen.

How to adjust the date and time settings:

1. Navigate to Settings > Date and time
2. When Set date and time is set to Auto there will be an automatic update of the date and time settings. If you want to manually adjust the date and time settings, select Manual and enter the Day, Month, Year and Time. After having adjusted the settings manually you can set the Set date and time back to Auto for automatic update.
3. Select the appropriate Time zone from the list of GMT time zones.
4. Select the appropriate Date format from the list.
5. Select the appropriate Time format from the list.
6. Press Home (تقدم) to exit.
Setting a menu password

It is highly recommended to define a password to access the Advanced menus. Changing these settings may affect the behavior of the system and should be done by the system administrator.

NOTE! When you define or change a password make sure you save a copy of the password in a safe place.

How to set the menu password

Navigate to **Settings > Advanced > Change password**

1. On the remote control, press the # key to toggle between lower or upper case characters and numbers: abc/ABC/123
2. Enter the password. The password you enter is hidden, as each character is replaced with a star (*).
3. Navigate to **Save** to save the changes, or **Cancel** to leave without saving.
4. Press **Home** (🏠) to exit.
About monitors

The main monitor
The main monitor can be connected to the default video output HDMI 1 or one of the other outputs which are HDMI 3, DVI-I 2 or DVI-I 4.

When connecting to HDMI 1
When you connect the main monitor to the default video output on Codec C90 the menu, icons and other information on screen (OSD - on screen display) will show on this monitor.

When connecting to DVI-I 2, DVI-I 4, HDMI 3
When connecting the main monitor to another video output, and no menu shows on screen, you must run a shortcut on the remote control to reset the resolution and move the OSD to this output.

The resolution will be set to the default value, which is 1280x720@60Hz for HDMI and 1024x768@60Hz for DVI.
The menu on screen, icons and other information (OSD - on screen display) will be moved to the selected output.

Key sequence
If connected to DVI-I 2, DVI-I 4 or HDMI 3 you must run the following shortcut or key sequence on the remote control.

- Disconnect * # * # 0 x # (where x is output 2, 3 or 4)

Example: Set DVI-I 2 as the OSD output:

- Disconnect * # * # 0 2 #

You can also set the resolution and the OSD output by setting up a serial port connection and run API commands. See the Codec C90 System Integrator Guide for information about API commands.

Dual monitors
When you want to run a dual monitor setup, connect the second monitor to video output HDMI 3 on Codec C90.

Dual monitor configuration
Go to Administrator settings to set the monitor to dual:

1. Navigate to Settings > Administrator Settings > Video > Output > Monitor
2. Set the Monitor to Dual.
3. Press Home ( ) to exit.
Chapter 3
Interfaces and sockets

In this chapter you will find an in-depth presentation of the rear panel sockets and interface of the TANDBERG Codec C90, including audio signal levels and formats supported.

In this chapter...
- The front panel
- Rear panel overview
- The video input matrix
- Video inputs
- Video outputs
- Audio inputs
- Audio outputs
- Audio signal level tables
- Audio hardware information
- Volume control table
- Network connectors
- COM ports
- Camera control port
- Power
- Other connectors
The front panel

There are four LED’s in the front of the Codec:

- **Power** – The POWER LED turns ON when power is connected, otherwise OFF
- **Call** – The CALL LED turns ON when there are active calls on the codec, otherwise OFF
- **Infrared** – The IR LED flashes when infrared signals are received
- **Alarm** – The ALARM LED turns ON when there is no connection to the network, otherwise OFF
Rear panel sockets overview
The TANDBERG Codec C90 offers a great flexibility in connecting audio and video equipment to the system.

The illustration below shows the rear panel of the TANDBERG Codec C90.

Video sockets
The video input sockets are:
- 4xHDMI
- 4xHD-SDI
- 2xDVI-I
- 2xAnalog Component (Y-Pr-Pb)
- 1xComposite or 1xS-Video (YC)

The video output sockets are:
- 2xHDMI
- 2xDVI-I
- 1 Composite

Audio sockets
The audio input sockets are:
- 8xXLR Female - Microphone/Line In
- 4xRCA - Line In (1 Left, 2 Right, 3 Left, 4 Right)
- 2xHDMI

The audio output sockets are:
- 2xXLR Male - Line Out
- 4xRCA - 1 Left (SPDIF), 2 Right, 3 Left (SPDIF), 4 Right
- 2xHDMI

Other sockets
The other sockets are:
- Ethernet 1 and Ethernet 2*
- COM - Serial data port
- Camera control - Serial port for camera control
- Power socket
- Grounding - Chassis grounding
- Power On/Off switch
- GPIO*, USB Host*, USB Device*, T Link*

* For future use

The following pages gives a detailed description of the rear panel sockets and connectors.
The Video Input Matrix

The video input matrix is found at the rear side of the codec and illustrates the combinations in which the video inputs can be connected.

About the matrix

Only one video input source from each row can be active at any time. The numbers in the left column represents the Video Input Sources 1–5. The main connectors, which are used in basic setup, are marked in orange color.

The Comp. 5 and S-Video (YC) 5 inputs uses the same physical connectors and can not be connected at the same time.

Configure the video inputs

You can configure the video input settings from the Administrator Settings menu or by running API commands.

The default configurations are shown below:

- Video Input Source 1 Connector: HDMI
- Video Input Source 2 Connector: HDMI
- Video Input Source 3 Connector: DVI
- Video Input Source 4 Connector: HDMI
- Video Input Source 5 Connector: DVI

The video name of the connector inputs should be set:

- Video Input Source 1 Name: "Main Camera"
- Video Input Source 2 Name: "Secondary Camera"
- Video Input Source 3 Name: "PC"
- Video Input Source 4 Name: "DVD"
- Video Input Source 5 Name: "Document Camera"

The video quality of the connector inputs should be set:

- Video Input Source 1 Quality: Motion
- Video Input Source 2 Quality: Motion
- Video Input Source 3 Quality: Sharpness
- Video Input Source 4 Quality: Motion
- Video Input Source 5 Quality: Sharpness

To determine the main video source and the default presentation source for the system the following setting must be configured:

- Video MainVideoSource: 1
- Video DefaultPresentationSource: 3

Administrator settings

Open the menu on screen to configure the video input sources and which of the sources should be the main video source and the default presentation source.

If the system is in standby mode, press any key on the remote control to wake up the system.

1. Select: Settings > Administrator Settings > Advanced Configurations
2. From this point you can:
   - Search for the words “source” or “video” to see a list of the available Video Input Source [1–5] Connector settings
   - or, you can navigate down in the list to Video > Input > Source 1 > Connector
3. On the remote control, press the right arrow to edit the values
   - Select a value and press Save, or press Cancel to leave without saving.
4. Proceed and configure the:
   - Video Input Source Name, for the current input
   - Video Input Source Quality, for the current input
   - Video Main Video Source, for the system
   - Video Default Presentation Source, for the system

API commands

Open a telnet or ssh session to the codec to issue an API command to configure the video input sources and which of the sources should be the main video source and the default presentation source.

The following commands determines which connector to be active:

- xconfiguration video input source 1 connector: hdmi
- xconfiguration video input source 2 connector: hdmi
- xconfiguration video input source 3 connector: dvi
- xconfiguration video input source 4 connector: hdmi
- xconfiguration video input source 5 connector: dvi

Set the video quality and a name of the video inputs 1 to 5:

- xconfiguration video input source 1 quality: motion
- xconfiguration video input source 1 name: "Main Camera"

Configure the video inputs 2 to 5

- xconfiguration video mainvideosource: 1
- xconfiguration video defaultpresentationsource: 3

The main video source is the camera, connected to video input source 1:

- xconfiguration video mainvideosource: 1

The default presentation source is a PC, connected to video input source 3:

- xconfiguration video defaultpresentationsource: 3
Video inputs (I)
All video inputs can not be active at the same time. Please refer to the Video Input Matrix on the previous page to see an overview.

Component 1–2 (Y-Pr-Pb)
2x3 BNC sockets, analog video input 1, 2. There are three BNC connectors for each Component interface; Y (luma), Pr (red), Pb (blue). **Typical use.** Camera, DVD and Content player.

HD-SDI 1–4
4 BNC sockets, digital video input 1, 2, 3, 4. **Typical use.** Cameras.

Composite 5 / S-Video (YC) 5
2 BNC sockets, analog video input 5. The S-Video (YC) and the composite inputs uses the same physical connectors, and will not be able to be connected at the same time.
- S-Video 5 - Connect to the Y/Comp 5 (luma) and C 5 (chroma) connectors
- Composite 5 - Connect to Comp 5 connector **Typical use.** Camera and DVD.

Video input formats
See the Technical specification section for a complete overview of the video input formats. Go to: [Technical specification](#)

**Levels**

**HD-SDI**
- 0.8 Vpp, 75 Ω
- SMPTE 259M (270 Mbps)
- SMPTE 292M (1.485, 1.485/1.001 Gbps)

**Y-Pb-Pr**
- Y: 1V Vpp, 75 Ω
- Pb: 0.7 Vpp, 75 Ω
- Pr: 0.7 Vpp, 75 Ω

**Composite.**
- 1 Vpp, 75 Ω

**S-Video (YC)**
- Y: 1Vpp, 75 Ω
- C (PAL): 0.3 Vpp, 75 Ω
- C (NTSC): 0.28 Vpp, 75 Ω
Video inputs (II)

All video inputs can not be active at the same time. Please refer to the Video Input Matrix (two pages back) to see an overview.

HDMI 1–4

4xHDMI sockets, digital video input 1–4. Audio input on 3 and 4.

**HDMI** - High Definition Multimedia Interface (digital, sound & picture)

**Typical use.** Camera, DVD, PC.

**Main connector.** The HDMI 1 input is the main connector to the PrecisionHD 1080p camera.

DVI-I 3 and 5

2xDVI-I sockets, digital/analog video input 3, 5.

- **DVI-D**
- **DVI-A (Analog RGB/VGA)**
- **DVI-A Analog component/YPbPr**

**DVI-I** - Digital Video Interface - Integrated (digital DVI-D and analog DVI-A)

**Typical use.** Two digital video inputs for PC presentations or used for the TANDBERG PrecisionHD Camera.

**Main connector.** The DVI-I 3 is the main connector for PC input.

---

### HDMI Pin-out

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<td>2</td>
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<td>10</td>
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</table>

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### Video input formats

See the Technical specification section for a complete overview of the video input formats.

Go to: ► Technical specification
Video outputs

HDMI 1 and 3
2xHDMI sockets, digital video and audio output 1, 3.

HDMI - High Definition Multimedia Interface (digital, sound & picture)

Typical use: Monitor, recording device

Main connector. The HDMI output 1 is the main connector to the monitor.

Dual monitor. Dual output is provided on HDMI output 3.

DVI-I 2 and 4
2xDVI-I sockets, digital/analog video output 2, 4.

• DVI-D
• DVI-A (Analog RGB / VGA)

DVI-I - Digital Video Interface - Integrated (digital DVI-D and analog DVI-A)

Typical use: Monitors.

Composite 5
1xBNC sockets, analog video output 5.

Typical use: Monitor.

Video output formats
See the Technical specification section for a complete overview of the video output formats.

Go to: Technical specification

Levels
Composite. 1 Vpp, 75 Ω

Please refer to previous page for pin-out scheme.
Audio inputs (I)

Unused, but connected audio inputs should be set to Off to avoid unwanted audio/noise.

Microphone/Line In 1–8 (XLR)

8xBalanced XLR sockets, audio input 1–8.

Main connector. The Microphone/Line In 1 is the main connector for the microphone.

All eight microphone inputs are for balanced electret microphones, 48V phantom powered via XLR connectors.

The phantom powering of all eight XLR sockets can be individually switched off. The input will then be a balanced line level input.

All Microphone/Line In 1–8 are equipped with acoustic echo canceller.

Use Microphone/Line In 1–8 to connect to an external microphone amplifier or an external mixer.

Default configuration. In default configuration, all Microphone/Line In inputs are enabled and configured as microphones.

HDMI In 3, 4

2xHDMI connectors, audio input 3, 4

Typical use. Use HDMI In 3 or 4 (2–8 channels) to connect to external playback devices as DVD players. Each input support up to two channels at 48kHz sampling rate.
Audio inputs (II)

Unused, but connected audio inputs should be set to Off to avoid unwanted audio/noise.

Line In 1–4 (RCA)
4xRCA sockets, audio input 1–4
Audio Line In 1–4 are used when connecting to PC and to external playback devices, such as VCR’s or DVD players.

Main connectors. The Line In 1 (left) and Line In 2 (right) are the main connectors to a PC.
Stereo. For systems with stereo I/O the audio inputs can be configured in stereo pairs:
- Connect the left channel to Line In 1 or 3
- Connect the right channel to Line In 2 or 4

Default configuration for Line In 1–2. In the default configuration Line In 1 and 2 are configured as stereo inputs for external playback devices, such as a PC.

Default configuration for Line In 3–4. In the default configuration Line In 3 and 4 are configured as stereo input pairs. The two inputs are paired with Line Out 3 and 4 respectively.
This pairing will avoid feedback situations that can arise when playback/recording devices are in standby mode (Loop suppression).
Line In 3 and 4 are used with external playback devices as VCR’s and DVD players.
Audio outputs (I)

Line Out 5–6 (XLR)
2x Balanced XLR sockets, audio output 5–6. Audio Line Out 5–6 are balanced outputs, for connection to balanced speakers.

**Default configuration.** In default configuration Line Out 5 is configured as Left speaker, and Line Out 6 is configured as right speaker.

HDMI Out 1, 3
2x HDMI connectors, audio out 1, 3
Use HDMI Out 1 to connect to a flatscreen with speakers. HDMI 1 will provide stereo audio speaker signals at 48kHz.
Use HDMI Out 3 to connect to a DVD recorder. HDMI will provide stereo line output signals at 48kHz. Includes local microphones.

**Main connector.** The HDMI output 1 is the main connector to the monitor.

**HDMI 1.** Audio from far end and PC.
**HDMI 3.** All audio mixed together for recordings.

---

**XLR pin-out**
External view of socket

- 1: Gnd
- 2: Hot
- 3: Cold/neutral

**What is a Line output**
A Line output consists of all signals from local side and all signals from far end side.

**Left channel**
The Left channel consists of all Left channel and Mono signals.

**What is a Speaker output**
A Speaker output consists of all signals from local side, except microphones, and all signals from far end side.

**Right channel**
The Right channel consists of all Right channel and Mono signals.
Audio outputs (II)

Line Out 1–4 (RCA)
4xRCA sockets, audio output 1-4
Can be configured as two stereo pairs.

Main connectors. Line Out 1 (left) and Line Out 2 (right) are the main connectors to the local loudspeaker system.

The local loudspeaker system may or may not include the TANDBERG DNAM (Digital Natural Audio Module).

Default configuration Line Out 1-2. In default configuration, Line Out 1 and 2 are configured as stereo speakers.

if a DNAM is present or SPDIF is active on Line Out 1, then Line Out 1 provides a digital stereo speaker signal and Line Out 2 is not active.

Default configuration Line Out 3-4. In default configuration, Line Out 3 and 4 are configured as stereo line out for external recording devices as VCR’s or DVD recorders.

if a DNAM is present or SPDIF is active on Line Out 3, then Line Out 3 provides a digital stereo speaker signal and Line Out 4 is not active.

SPDIF - Sony/Philips Digital Interface, used by the Digital Natural Audio Module.

What is a Line output
A Line output consists of all signals from local side and all signals from far end side.

What is a Speaker output
A Speaker output consists of all signals from local side, except microphones, and all signals from far end side.

Left channel
The Left channel consists of all Left channel and Mono signals.

Right channel
The Right channel consists of all Right channel and Mono signals.

RCA pin-out
External view of socket

RCA - Phono Plug (the Radio Corporation of America)
## Audio signal levels tables

### Microphone Inputs 1 to 8 XLR female

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<thead>
<tr>
<th>Signal levels [dB]</th>
<th>Clipping level [mVpp]</th>
<th>Nominal level [dBu]</th>
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This specification is valid for Mic 1–8 inputs if Microphone Level setting is selected.

### Line Inputs 1 to 8 XLR female

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This specification is valid for Line 1–8 inputs if Line Level setting is selected.

### Line outputs 5 to 6 XLR male

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### Line Inputs 1 to 4 Female RCA/phone

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<tr>
<td>19.0</td>
<td>2.0</td>
<td>-1.0</td>
</tr>
<tr>
<td>20.0</td>
<td>1.7</td>
<td>-2.0</td>
</tr>
<tr>
<td>21.0</td>
<td>1.6</td>
<td>-3.0</td>
</tr>
<tr>
<td>22.0</td>
<td>1.4</td>
<td>-4.0</td>
</tr>
<tr>
<td>23.0</td>
<td>1.2</td>
<td>-5.0</td>
</tr>
<tr>
<td>24.0</td>
<td>1.1</td>
<td>-6.0</td>
</tr>
</tbody>
</table>

### Notes:
1. Default levels are marked with white text on black.
2. For the dBu value for input clipping level and absolute max output level, a sine waveform is assumed.
3. If numbers in dBV are required, dBV value is 2.2 dB lower than the dBu value.
   Example: -10 dBu equals -12.2 dBV.
Audio signal levels, cont...

<table>
<thead>
<tr>
<th>Line outputs 1 to 4</th>
<th>Female RCA/phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Signal levels</td>
<td>Absolute max output level</td>
</tr>
<tr>
<td>[dB]</td>
<td>[Vpp]</td>
</tr>
<tr>
<td>-24.0</td>
<td>-6.0</td>
</tr>
<tr>
<td>-23.0</td>
<td>-5.0</td>
</tr>
<tr>
<td>-22.0</td>
<td>-4.0</td>
</tr>
<tr>
<td>-21.0</td>
<td>-3.0</td>
</tr>
<tr>
<td>-20.0</td>
<td>-2.0</td>
</tr>
<tr>
<td>-19.0</td>
<td>-1.0</td>
</tr>
<tr>
<td>-18.0</td>
<td>0.0</td>
</tr>
<tr>
<td>-17.0</td>
<td>1.0</td>
</tr>
<tr>
<td>-16.0</td>
<td>2.0</td>
</tr>
<tr>
<td>-15.0</td>
<td>3.0</td>
</tr>
<tr>
<td>-14.0</td>
<td>4.0</td>
</tr>
<tr>
<td>-13.0</td>
<td>5.0</td>
</tr>
<tr>
<td>-12.0</td>
<td>6.0</td>
</tr>
<tr>
<td>-11.0</td>
<td>7.0</td>
</tr>
<tr>
<td>-10.0</td>
<td>8.0</td>
</tr>
<tr>
<td>-9.0</td>
<td>9.0</td>
</tr>
<tr>
<td>-8.0</td>
<td>10.0</td>
</tr>
<tr>
<td>-7.0</td>
<td>11.0</td>
</tr>
<tr>
<td>-6.0</td>
<td>12.0</td>
</tr>
<tr>
<td>-5.0</td>
<td>13.0</td>
</tr>
<tr>
<td>-4.0</td>
<td>14.0</td>
</tr>
<tr>
<td>-3.0</td>
<td>15.0</td>
</tr>
<tr>
<td>-2.0</td>
<td>16.0</td>
</tr>
<tr>
<td>-1.0</td>
<td>17.0</td>
</tr>
<tr>
<td>0.0</td>
<td>18.0</td>
</tr>
</tbody>
</table>

Notes:
1. Default levels are marked with white text on black
2. For dBu value for input clipping level and absolute max output level, a sine waveform is assumed.
3. If numbers in dBV are required, dBV value is 2.2 dB lower than the dBu value.
   Example: -10 dBu equals -12.2 dBV

Audio hardware information table

<table>
<thead>
<tr>
<th>Hardware Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mic 1–8 *</td>
</tr>
<tr>
<td>Signal type</td>
</tr>
<tr>
<td>Connector (codec)</td>
</tr>
<tr>
<td>Input impedance</td>
</tr>
<tr>
<td>Output impedance</td>
</tr>
<tr>
<td>Max input level when set to Min input level</td>
</tr>
<tr>
<td>Max input level when set to Max input level</td>
</tr>
<tr>
<td>Max output level when set to Min output level</td>
</tr>
<tr>
<td>Max output level when set to Max output level</td>
</tr>
<tr>
<td>Gain range</td>
</tr>
<tr>
<td>Phantom power</td>
</tr>
<tr>
<td>Phantom power resistor pin 1</td>
</tr>
<tr>
<td>Phantom power resistor pin 2</td>
</tr>
<tr>
<td>Max phantom power current (per mic)</td>
</tr>
</tbody>
</table>

* This specification is valid for Mic 1–8 inputs if Microphone Level setting is selected
** This specification is valid for Line 1–8 inputs if Line Level setting is selected

Volume control table

<table>
<thead>
<tr>
<th>Volume control</th>
<th>Audio gain value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ring tone volume*</td>
<td>Audio gain value</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1</td>
<td>-34.5 dB</td>
</tr>
<tr>
<td>70</td>
<td>0.0 dB</td>
</tr>
<tr>
<td>100</td>
<td>15.0 dB</td>
</tr>
</tbody>
</table>

* The ring tone volume which is displayed on screen, when using the TRCS remote control, goes from 0 to 20.
Network connectors

Ethernet interface

2 x Gigabit Ethernet LAN (RJ-45 Jack) interface (GbE).

Ethernet 1: Main connector for network connection

Ethernet 2: For future use.

RJ-45 Connector pin-out

Wiring diagram standard cable

1 --------- 1
2 --------- 2
3 --------- 3
6 --------- 6
COM port and Camera Control port

COM port
1xCOM (RS-232) data port for codec control and configuration through API commands.

Camera Control port
1xCamera Control (RS-232) port for power and camera control (pan, tilt, zoom) using the VISCA™ protocol.

Main connector. The main camera is connected to the Camera Control port.

Power. Pin No. 4 on the Camera Control port provides 12 V DC / 1 A to the main camera.

If more than one camera is connected, only the first camera is powered from the codec. The additional cameras must be daisy chained by using a serial cable and external power.

Additional cameras. For information about additional cameras, go to the Cameras section later in this guide.

**VISCA™** is a trademark of Sony Corporation

---

**Pin-out—COM Port**

<table>
<thead>
<tr>
<th>Pin</th>
<th>Signal name</th>
<th>Direction</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Carrier detect, CD</td>
<td>From DCE</td>
</tr>
<tr>
<td>2</td>
<td>Receive data, RXD</td>
<td>From DCE</td>
</tr>
<tr>
<td>3</td>
<td>Transmit data, TXD</td>
<td>To DCE</td>
</tr>
<tr>
<td>4</td>
<td>12 V / 1 A</td>
<td>To the main camera</td>
</tr>
<tr>
<td>5</td>
<td>Signal GND</td>
<td>From DCE</td>
</tr>
<tr>
<td>6</td>
<td>Data set ready, DSR</td>
<td>From DCE</td>
</tr>
<tr>
<td>7</td>
<td>Ready to send, RTS</td>
<td>To DCE</td>
</tr>
<tr>
<td>8</td>
<td>Clear to send, CTS</td>
<td>From DCE</td>
</tr>
<tr>
<td>9</td>
<td>Ring indicator, RI</td>
<td>From DCE</td>
</tr>
</tbody>
</table>

**Pin-out—VISCA™ camera control RJ11, 8 pins shielded modular jack**

<table>
<thead>
<tr>
<th>Pin</th>
<th>Signal name</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>+12 V (presence 2.8mA current source when connected in daisy chain)</td>
</tr>
<tr>
<td>7</td>
<td>GND</td>
</tr>
<tr>
<td>6</td>
<td>TXD (out)</td>
</tr>
<tr>
<td>5</td>
<td>NC (no connect)</td>
</tr>
<tr>
<td>4</td>
<td>NC (no connect)</td>
</tr>
<tr>
<td>3</td>
<td>RXD (in)</td>
</tr>
<tr>
<td>2</td>
<td>GND</td>
</tr>
<tr>
<td>1</td>
<td>+12 V</td>
</tr>
</tbody>
</table>

**Pin-out—TANDBERG camera cable**

<table>
<thead>
<tr>
<th>Signal name</th>
<th>RJ-45 pin</th>
<th>D-SUB pin</th>
</tr>
</thead>
<tbody>
<tr>
<td>+12V DC</td>
<td>1</td>
<td>Twisted pair 4</td>
</tr>
<tr>
<td>GND</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>RX</td>
<td>3</td>
<td>Twisted pair 2</td>
</tr>
<tr>
<td>TX</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>NC</td>
<td>4</td>
<td>Twisted pair 1</td>
</tr>
<tr>
<td>NC</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>GND</td>
<td>7</td>
<td>Twisted pair 5</td>
</tr>
<tr>
<td>+12V DC</td>
<td>8</td>
<td>4</td>
</tr>
</tbody>
</table>

---

*RS232 9 pin D-SUB pin-out*

External view of socket

---

D14128.03—JULY 2009
Power

Power socket
Power Cord Socket.
Accepts 100-240V, 50/60Hz, 2.8A max.
**CAUTION** This equipment must be grounded.

Power switch
Power Switch (On/Off)

Chassis grounding
For grounding of the chassis
Other connectors

USB
1 × USB Host
1 × USB Device
For future use.

GPIO
1 × GPIO (General Purpose I/O)
6 pins Phoenix plug, having 4 ports for On/Off control, GND and +12V
For future use.

T Link
2 × T Link, RJ45 connector.
The cable for T Link out must be shielded.
For future use.
The heart of the API is the TANDBERG API-Engine. This is where all information is stored and processed.

The API engine can be accessed by an easy-to-use Command Line Interface called XACLI using RS-232/Telnet/SSH, or by the TANDBERG XML API Service (TXAS) over HTTP/HTTPS.

Both alternatives are described in detail in this section of the System Integrator Guide.
**TANDBERG API**

**Basic Principles**

The heart of the API is the TANDBERG API-Engine. This is where all information is stored and processed.

The API-engine can be accessed by an easy-to-use Command Line Interface called XACLI using RS-232, Telnet or SSH, or by the TANDBERG XML API Service (TXAS) over HTTP/HTTPS.

Working with the API-engine is very similar to working with catalogues and files on a computer. All information is stored in a hierarchic tree structure which is accessible from different interfaces.

- When accessing the API-engine using XACLI (RS-232, Telnet or SSH), the information is formatted in a proprietary Command Line style or in XML formatting.
- When accessing the API-engine using the TXAS interface (HTTP/HTTPS), XML formatting is supported. This is similar to viewing files on a computer. Accessing catalogues on a Windows computer using the Command Prompt gives a different view than using Windows Explorer, but the information is the same.

**About Telnet**

Telnet is disabled by default. Before connecting to the codec using Telnet you will need to enable the interface via either RS-232 or SSH.

The following command can be set from the Administrator settings menu or from the API command interface:

- xConfiguration NetworkServices
  - Telnet Mode: On

**The TANDBERG API-Engine**

The TANDBERG API-Engine is optimized for easy, yet advanced, machine-machine interaction between a TANDBERG system and an external control application.

The main features can be summarized to:

- Structuring of information
- Addressing using XPath (XML Path Language) or TANDBERG SimplePath
- Feedback

**Structuring of Information**

An application programming interface (API) can be seen as a gate where information is exchanged between two systems – a control application and a target system.

The control application transmits instructions to the target system, while the target system supplies information about how these instructions are executed, in addition to other system related information.

Consequently, the exchange of information can be divided into:

1. Information flowing from target. This we call READ information \((R)\). The \((R)\) should not be confused with the \((r)\) used to indicate required parameters in the Commands tables.
2. Information flowing to target. This we call WRITE information \((W)\).
Addressing Using XPath or TANDBERG SimplePath

To address information in the hierarchic structure of Status and Configuration information, the TANDBERG systems support abbreviated XML Path Language (XPath) and a proprietary notation called TANDBERG SimplePath (only available using XACLI). This allows the user/control application to address everything from a single element of data (for example the call rate of a specific call) to larger parts of the hierarchy (for example all information available for a given call).

Using XPath

Addressing the 1st DNS Server Address of the 1st Network:
Each level is separated with a slash ("/"). Item numbers are added in brackets after the element name:

- Network[1]/DNS Server[1]/Address

Example:
```
xConfiguration Network[1]/DNS Server[1]/Address
*c xConfiguration Network 1 DNS Server 1 Address:
"test"
OK
```

Using TANDBERG SimplePath

Addressing the 1st DNS Server Address of the 1st Network:
Both levels and item numbers are separated with white spaces:

- Network 1 DNS Server 1 Address

Example:
```
xConfiguration Network 1 DNS Server 1 Address
*c xConfiguration Network 1 DNS Server 1 Address:
"test"
OK
```

Feedback

Feedback is an extremely powerful feature where the TANDBERG system actively returns updated status and configuration information to the user/control application whenever changes occur. The user/control application can specify what parts of the status and configuration hierarchies it wants to monitor by using XPath. The user/control application can thereby limit the amount of information it receives from the target system to only those parts being of interest for the given application. This will also reduce the load on the link connecting the systems.

Feedback is supported on both XACLI (RS-232/Telnet/SSH) and TXAS (HTTP/HTTPS) simultaneously.

The system uses TANDBERG SimplePath when presenting configurations.

XPath and TANDBERG SimplePath are described thoroughly later in this section of the manual.

The structuring of information together with XPath and TANDBERG SimplePath for addressing, makes up powerful features as the ability to search and setting of multiple instances of a configuration.
Connecting to the codec

Accessing XACLI

XACLI can be accessed through Telnet and SSH via the LAN interface or through the COM port by connecting a serial cable to the serial interface connector, referred to as the COM port.

The COM port (RS-232) is a 9-pin, female, D-sub connector located on the back of the TANDBERG Codec C90. See the illustration to the right.

The port is configured as a DCE (Data Communications Equipment). The COM port (RS-232) is default set to 38400 baud, 8 data bits, none parity and 1 stop bit from factory. The port may also be referred to as the Data port.

Telnet/SSH login

Telnet is by default disabled. This can be changed with a configuration command: xConfiguration NetworkServices Telnet Mode: On/Off

• xConfiguration NetworkServices Telnet Mode: On

Telnet/SSH login

• User name is: admin
• Default password is: TANDBERG

Serial port login

The serial port is password protected by default. The password protection may be configured.

• User name is: admin
• Default password is: TANDBERG

Serial port configurations

On the serial port the baud rate and password protection may be configured.

The configuration command for the baud rate is:

xConfiguration SerialPort BaudRate: <9600/19200/38400/115200>

• xConfiguration SerialPort BaudRate: 38400

The configuration command for login required is:

xConfiguration SerialPort LoginRequired: <On/Off>

• xConfiguration SerialPort LoginRequired: On

Reboot. The system requires a reboot for the changes to baud rate and password protection to take effect.

NOTE: When system boots up the baud rate of the boot messages is 38400 regardless of the baud rate set in the codec application.
Connecting to the codec, cont...

Hardware & Cabling (RS-232)

The pin outs for the RS-232 are defined in the tables to the right. Observe that the DTE (Data Terminal Equipment), could be a PC or any other device capable of serial communication.

Cable. A straight-through cable should be used between the TANDBERG RS-232 port and the DTE. The lower table shows the recommended cable-wiring scheme when connecting the TANDBERG Codec C90 to a PC through RS-232. DTR and RTS are ignored. DSR, CD, and CTS are always asserted, while RI is not used.

Troubleshooting (RS-232)

If communication cannot be established between the PC/terminal and the TANDBERG Codec data port, the following should be checked:

1. Verify that the serial cable is a straight-through 9-pin to 9-pin cable.
2. Confirm that the configuration of the PC/terminal’s serial RS-232 port is identical to the configuration of the TANDBERG RS-232 port.
3. Verify that the PC/terminal’s serial RS-232 port is working properly by connecting it back-to-back to another PC/terminal and send characters in both directions.

<table>
<thead>
<tr>
<th>COM port (RS-232)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pin</strong></td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>4</td>
</tr>
<tr>
<td>5</td>
</tr>
<tr>
<td>6</td>
</tr>
<tr>
<td>7</td>
</tr>
<tr>
<td>8</td>
</tr>
<tr>
<td>9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cable wiring (RS-232) TANDBERG DCE &lt;-&gt; PC</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TANDBERG DCE 9 pin</strong></td>
</tr>
<tr>
<td>1 CD</td>
</tr>
<tr>
<td>2 RD</td>
</tr>
<tr>
<td>3 TD</td>
</tr>
<tr>
<td>4 DTR</td>
</tr>
<tr>
<td>5 GND</td>
</tr>
<tr>
<td>6 DSR</td>
</tr>
<tr>
<td>7 RTS</td>
</tr>
<tr>
<td>8 CTS</td>
</tr>
<tr>
<td>9 RI</td>
</tr>
</tbody>
</table>
### Value types and formats

The system supports the following value types:

- Integer values
- Literal values
- String values
- E164 string values (strings only containing digits, ‘#’ and ‘*’)
- IPv4 Address values
- IPv6 Address values
- IPv4 or IPv6 Address values

<table>
<thead>
<tr>
<th>Formats for values types</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Integer values</strong>: <code>&lt;x..y&gt;</code></td>
<td>Defines the valid range for an integer input. <code>x = min value, y = max value.</code></td>
</tr>
<tr>
<td><code>&lt;1..100&gt;</code></td>
<td></td>
</tr>
<tr>
<td><strong>Literal values</strong>: <code>&lt;X/Y/..Z&gt;</code></td>
<td>Defines the possible values for a given configuration.</td>
</tr>
<tr>
<td><code>&lt;On/Off/Auto&gt;</code></td>
<td></td>
</tr>
<tr>
<td><strong>String values</strong>: <code>&lt;S: x, y&gt;</code></td>
<td>Defines that the valid input for this configuration is a String with minimum length <code>x</code> and maximum length of <code>y</code> characters.</td>
</tr>
<tr>
<td><code>&lt;S: 0, 49&gt;</code></td>
<td></td>
</tr>
<tr>
<td><strong>IPv4 Address values</strong>: <code>&lt;IPAddr&gt;</code></td>
<td>Defines that the input must be an IPv4 address.</td>
</tr>
<tr>
<td><code>&lt;IPAddr&gt;</code></td>
<td></td>
</tr>
<tr>
<td><strong>IPv6 Address values</strong>: <code>&lt;IPv6Addr: x, y&gt;</code></td>
<td>Defines that the input must be an IPv6 address with minimum length <code>x</code> and maximum length <code>y</code>.</td>
</tr>
<tr>
<td><code>&lt;IPv6Addr: 0, 43&gt;</code></td>
<td></td>
</tr>
<tr>
<td><strong>IPv4 or IPv6 Address values</strong>: <code>&lt;IPv4v6Addr: x, y&gt;</code></td>
<td>Defines that the input must be an IPv4 or IPv6 address with minimum length <code>x</code> and maximum length <code>y</code>.</td>
</tr>
<tr>
<td><code>&lt;IPv4v6Addr: 0, 43&gt;</code></td>
<td></td>
</tr>
</tbody>
</table>

* Not supported in this version
Root commands

By typing `?` or `help` after connecting to the TANDBERG Codec C90 using RS-232/Telnet/SSH, the system will list all supported root commands.

```
?  
- User Commands -
help   xconfiguration   xfeedback   xgetxml   xhistory
xstatus   xpreferences   xcommand   log

OK
```
Main type of commands

The XACLI is divided into three main types of commands, reflecting the information types supported by the TANDBERG API Engine. The main types are:

- Configuration type commands
- Status type commands
- Command type commands

Configuration type commands

Configuration type commands defines the system settings. Configuration type commands are either supplied or read by the user.

Example: Set default call rate, baud rate of a serial port and enabling/disabling of various features etc. The configuration commands are structured in a hierarchy, making up a database of system settings.

Supported Configuration-type commands:

- xConfiguration

Command type commands

Command type commands instructs the system to perform an action. Command type commands are supplied by the user.

Example: Instructing the system to place a call, assign floor to a specific site, disconnect a call etc. A Command type command is usually followed by a set of parameters to specify how the given action is to be executed.

Supported Command-type commands:

- xCommand

Status type commands

Status type commands returns information about the system and system processes. Status type commands are read by the user.

Example: Information generated by the system about ongoing calls, network status, conference status etc. All status information is structured in a hierarchy, making up a database constantly being updated by the system to reflect system and process changes.

Supported Status-type commands:

- xStatus
- xHistory

Special commands

In addition to the above sets of commands, XACLI supports the following set of special commands:

Feedback type command

The xFeedback command is used to specify what parts of the configuration and status hierarchies to monitor. Feedback will only be issued on the RS-232/Telnet/SSH session for which it is specified. If connecting to the TANDBERG codec with multiple RS-232/Telnet/SSH sessions, each session can define feedback individually.

More on this can be found in xfeedback.

- xFeedback

Preferences type command

The xPreferences command is used to set various preferences for the RS-232/Telnet/SSH sessions. Each session can define preferences individually. IMPORTANT! This command has various settings to define the formatting of the XACLI output. It is therefore important to define settings to match the parser used on the control system. XACLI is designed to make parsing of data from the TANDBERG Codec C90 very simple.

More on this can be found in xpreferences.

- xPreferences
About xConfiguration
The xConfiguration type commands defines the system settings and are either supplied or read by the user. The xConfigurations commands are organized in a hierarchic tree structure.

To get an overview of accessible top-level configuration elements within the xConfiguration commands, enter ? or help after the xConfiguration command:
• xConfiguration ?
• xConfiguration help

To get an overview of all supported xConfiguration commands with the corresponding value space, enter ?? after the xConfiguration command:
• xConfiguration ??

When issuing a xConfiguration command, the command consists of three parts:
1. The type of command: xConfiguration
2. The path: An address expression, terminated by a colon
3. The value: A value type

Example:
xConfiguration Audio Input HDMI 1 Mode: On

The type The path The value

---
xConfiguration ?

- User Configurations -

Audio H323 Provisioning SystemUnit
Cameras Network SerialPort Time
Conference NetworkServices SIP Video
Experimental Phonebook Standby

OK

xConfiguration ??

*h xConfiguration Audio Volume: <0..100>
Sets the volume level [0-100] on the loudspeaker output in steps of 0.5dB from -34.5dB to 15dB. Volume 0 = Off. The volume level bar which is displayed on screen, when using the remote control, goes from 0 to 20. Range: The volume level goes from 0 to 100. Volume level equals Audio gain value 0 equals 0 1 equals -34.5 dB 70 equals 0.0 dB 100 equals 15.0 dB

*h xConfiguration Audio Input Microphone [1..8] Type: <Microphone/Line>
The microphone inputs are intended for electret type microphones. The microphone inputs are balanced with 48 V phantom power. The microphone input can be set to line or microphone mode. Addresses the specific microphone. Microphone: Phantom voltage and pre-amplification is On. Line: Select Line when you have a standard balanced line input. The phantom voltage and pre-amplification is Off.

*h xConfiguration Audio Input Microphone [1..8] Mode: <On/Off>
By default, all inputs are enabled. Just plug in an audio source and it is active. Audio inputs that are On will automatically be mixed. Unconnected inputs will automatically be muted. Addresses the specific microphone. On: Turns the microphone On. Off: Connected but unused inputs should be set to Off to prevent audio/noise from the inputs.

. .
. OK
xConfiguration operations
Configuration type commands define system settings and are either supplied or read by the user.

Return result parameters
Three operations can be performed on xConfiguration:

Configuration Help
- Help text for this configuration is returned.

Configuration Read
- *c is used when returning the result of a read query.

Configuration Write
- No return result parameter for configuration set (write).
- Writes this value to the setting defined by the path.

Example with xConfiguration Help:
To get help on a system setting you can use a help query. Enter the path followed by ? or help.

- xConfiguration H323 Profile 1 Gatekeeper Discovery ?
- *h xConfiguration H323 Profile 1 Gatekeeper Discovery: <Manual/Auto>

Example with xConfiguration Read:
To read configurations from the system just type the root command (xConfiguration) followed by the path (address expression):

- xConfiguration <address expression>

Example with xConfiguration Write:
To issue a command type a root command (xConfiguration) followed by a valid path (address expression).
The path must be terminated with a colon before the value is added:

- xConfiguration <address expression>: <value>
About xCommand

xCommand type commands instruct the system to perform an action. xCommand type commands are supplied by the user.

To get an overview of the supported xCommand type commands, type ? or help after the xCommand:

- xCommand ?
- xCommand help

To get an overview of all supported xCommand commands with the corresponding value space, enter ?? after the xCommand:

- xCommand ??

When you type a command and ? or help a list of the available parameters will show. Required parameters are identified by an (r) behind the parameter name.

Example:
xCommand Camera Ramp

- the result may look like this:

* h xCommand Camera Ramp
CameraId(r): <1..7>
Pan: <Left/Right/Stop>
PanSpeed: <1..15>
Tilt: <Down/Stop/Up>
TiltSpeed: <1..15>
Zoom: <In/Out/Stop>
ZoomSpeed: <1..15>
Focus: <Far/Near/Stop>

A return result parameter

The command type

The path

A list of returned parameters

Required (r) parameter

xCommand ?

- User Commands -

Audio Camera HTTPFeedback SStringSend
Boot Dial Key Standby
Call DTMFSend Phonebook SystemUnit
CallLog Experimental Presentation TStringSend
CamCtrlPip FarEndControl Preset Video

OK

xCommand ??

* h xCommand Audio Microphones Mute
* h xCommand Audio Microphones Unmute
* h xCommand Audio LocalInput Update
  InputId(r): <0..65534>
  MixerMode: <Auto/Fixed>
  AGC: <On/Off>
  Mute: <On/Off>
  Channels: <1..2>

* h xCommand Audio RemoteInput Update
  InputId(r): <0..65534>
  AGC(r): <On/Off>

* h xCommand Audio Sound Play
  Sound(r): <Busy/CallWaiting/KeyTone/Ringing/SpecialInfo/TelephoneCall/VideoCall>
  Loop: <On/Off>

* h xCommand Audio Sound Stop

* h xCommand Boot

. . . .

OK
xCommand operations

Command type commands are used to instruct the system to perform a given action.

Return result parameters

The following operations can be performed on xCommand:

Command Help
- `*h` is used when returning the result of a help query

Command Write
- `*r` is used when returning the result of a write command

xCommand Help

To get help on a setting you can use a help query. Enter the path followed by `?` or `help`.

- `xCommand dial ?`
  Returns a set of return values. See the example to the right.
- `xCommand dial help`
  As above.

Example with xCommand Help

To get help on xCommand, type `?` or `help` after the command path (address expression):

```
xCommand <address expression> ?
```

```
xCommand Dial ?
*h xCommand Dial:
  Number(r): <S: 0, 255>
  Protocol: <H323/SIP>
  CallRate: <64..6000>
  OnlyAudio: <False/True>
OK
```

Example with xCommand Write

Dial a number with only the required parameter:

```
xCommand Dial Number: 12345
```

```
OK
*r DialResult (status=OK):
  CallId: 2
  ConferenceId: 1
*r/end
OK
```
About xStatus commands

Status type commands returns information about the system and system processes. Status type commands are read by the user. All status information is structured in a hierarchy, making up a database constantly being updated by the system to reflect system and process changes.

To get an overview of the supported xStatus type commands, type `?` or `help` after the xStatus:

- `xStatus ?`
- `xStatus help`

Return result parameters

The following operation can be performed on xStatus commands:

**xStatus Read**

- `*s` is used when returning the result of xStatus read query
Query status information

Status type commands returns information about the system and system processes. You can query all information or just some of it.

To address status information enter the xStatus command followed by an address expression (XPath or TANDBERG SimplePath).

You can set up the xStatus read command to address all information or just some of it, see the examples to the right for illustrations.

**Address status information with xStatus**

To read status from the system just type the root command (xStatus) followed by the path (address expression):

- `xStatus <address expression>`

**Example 1: Query all ongoing Call information:**

```
xstatus call
*s Call 8 Status: Connected
*s Call 8 Direction: Outgoing
*s Call 8 Protocol: "h323"
*s Call 8 RemoteNumber: "558458"
*s Call 8 CallbackNumber: "h323:alice.wonderland.office@tandberg.com"
*s Call 8 DisplayName: "alice.wonderland.office@tandberg.com"
*s Call 8 CallRate: 768
*s Call 8 Encryption Type: "Aes-128"
```

OK

**Example 2: Query the protocol for a call:**

```
xstatus call protocol
*s Call 8 Protocol: "h323"
```

OK
About xHistory command

History type commands returns information about what has happened on the system. History type commands are read by the user.

All history information is structured in a hierarchy, making up a database constantly being updated by the system to reflect system and process changes.

To get an overview of the supported xHistory type commands, type `?` or `help` after the xHistory:

- `xHistory ?`
- `xHistory help`

Status operations and the return result parameters

**xHistory Log**

- `^h` is used when returning the result of xHistory log query
About xFeedback

The xFeedback command is used to specify what parts of the configuration and status hierarchies to monitor.

The xFeedback command will only be issued on the RS-232/Telnet/SSH for which it is specified.

If connecting to the TANDBERG codec with multiple RS-232/Telnet/SSH sessions, each session can define feedback individually.

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>xFeedback ?</td>
<td>Display help text</td>
</tr>
<tr>
<td>xFeedback help:</td>
<td>- Registers feedback on expression XPathExpression</td>
</tr>
<tr>
<td>xFeedback Register XPathExpression</td>
<td>- Deregisters feedback if registered on XPathExpression</td>
</tr>
<tr>
<td>xFeedback Deregister XPathExpression</td>
<td>- Generate list of currently registered XPathExpressions</td>
</tr>
<tr>
<td>xFeedback List</td>
<td>- Display this help text</td>
</tr>
<tr>
<td>xFeedback Help</td>
<td></td>
</tr>
</tbody>
</table>
About xPreferences

The xPreferences command is used to set various preferences for the RS-232/Telnet/SSH sessions.

Each session can define preferences individually.

IMPORTANT! This command has various settings to define the formatting of the XACLI output. It is therefore important to define settings to match the parser used on the control system. XACLI is designed to make parsing of data from the TANDBERG Codec C90 very simple.

xPreferences output mode:

- Terminal: Line based XACLI output for use with line based control systems
- XML: Pure XML output for use with control systems that understand XML. NOTE! This mode is to be considered experimental in version 1 of the software. Its format WILL change in next version.

To get an overview of the supported xPreferences commands and their value space, type ? or help after the xPreferences:

- xPreferences ?
- xpreferences usage:
  - xpreferences outputmode <terminal/xml>
  - OK
TANDBERG XML API service

TXAS is a service provided by TANDBERG units for transmitting and receiving (transceiving) information encoded in XML format. The API uses HTTP(S) as the transport mechanism and connects to the normal web port (80). TXAS can be accessed by bare-bone HTTP requests where URL's uniquely identifies the request.

Bare-bone HTTP/HTTPS Access

The bare-bone HTTP mode uses a unique URL to identify the specific request. The contents of the HTTP body will be a XML document (or part of it).

Bare-bone HTTP(S) access is accomplished by passing arguments in the query string (after '?' in URL) in a GET request, or using the "application/x-www-form-urlencoded" content-type method of POSTing form data (Each argument starts with a name '=' and a value, and every parameter separated with '&’ (and opt NL).)

getxml

/getxml request returns an XML document based on the location parameter passed to the request. The elements (or complete document) matching the expression will be returned.

On IncorrectXPath expression, a <Fault> element with a <XPathError> element will be returned.

/getxml

REQUEST:

/putxml

PARAM:

location = XPath expression

formputxml

This is most useful in a POST (to extend character limit of 255 of GET urls). It posts a Configuration or Command document to set the configurations or issue a command.

Like getxml, it has the data URL form-data encoded with one single parameter. The Content-Type of the document must be of type "application/x-www-form-urlencoded" and the body must be encoded accordingly (e.g. first line will be xmldoc=<then the document>).

/formputxml

REQUEST:

/xmldoc   = "an XML document of Configuration, Directory or Command"

putxml

Putxml is like formputxml+, put uses the complete BODY as argument (i.e. the content of the xmldoc parameter). The Content-type should be "text/xml" or "application/xml" (or "text/plain"), though no check at the moment. (Except for application/x-www-form-urlencoded which will cause a failure).

/putxml

PARAM:

HTTP BODY as argument
This chapter gives a detailed description of the xConfiguration commands. Configuration type commands define system settings and are either supplied or read by the user. The Configurations type commands are structured in a hierarchy, making up a database of system settings.

**NOTE:** The description of the xConfiguration commands are preliminary, and subject to change.
Description of the xConfiguration commands

In the following pages you will find a complete list of the xConfiguration commands. The examples shows either the default value or an example of a value.

We recommend you visit the TANDBERG web site regularly for updated versions of the manual.
Go to: http://www.tandberg.com/docs

The Audio settings

**xConfiguration Audio Input HDMI [3, 4] Level: <24..0>**
Defines the input level of HDMI input 3 or 4 in steps of 1 dB from -24 dB to 0 dB. Addresses the specific HDMI input.
See the Audio Level tables in the Codec C90 System Integrators Guide for a complete overview of the menu values represented in dB.
Range: -24 to 0 dB
Example: xConfiguration Audio Input HDMI 3 Level: 0

**xConfiguration Audio Input HDMI [3, 4] Mode: <On/Off>**
Determines whether or not the audio channels on the HDMI input should be enabled. The HDMI 3 and HDMI 4 has two audio channels. Addresses the specific HDMI input.
On: Set to On to enable the audio channels on HDMI input 3 or 4.
Off: Set to Off to disable the audio channels on HDMI input 3 or 4.
Example: xConfiguration Audio Input HDMI 3 Mode: On

**xConfiguration Audio Input Line [1..4] Channel: <Left/Right/Mono>**
Defines whether the Audio Line input is a mono signal or part of a multichannel signal.
Left: The Audio Line input signal is the left channel of a stereo signal.
Right: The Audio Line input signal is the right channel of a stereo signal.
Mono: The Audio Line input signal is a mono signal.
Example: xConfiguration Audio Input 1 Channel: Left

**xConfiguration Audio Input Line [1..4] Level: <0..24>**
Defines the input level of each Line input in steps of 1 dB from 0 dB to 24 dB. Addresses the specific Audio Line input.
Please see the Audio Level tables in the Codec C90 System Integrators Guide for a complete overview of the menu values represented in dB.
Range: 0 to 24 dB
Example: xConfiguration Audio Input Line 1 Level: 10

**xConfiguration Audio Input Line [1..4] LoopSuppression: <On/Off>**
Loop suppression detects whether a delayed signal loop is present from an audio Line output to an audio Line input on the codec. If a loop is detected this unwanted feedback is suppressed.
On: Set to On to activate Loop Suppression.
Off: Set to Off to deactivate Loop Suppression.
NOTE! Only loops between line output 3 and line input 3, and between line output 4 and line input 4 are suppressible.
Example: xConfiguration Audio Input Line 3 Loop Suppression: On

**xConfiguration Audio Input Line [1..4] Mode: <On/Off>**
Determines whether or not an Audio Line input is enabled. Addresses the specific Audio Line input.
On: Set to On to enable the Audio Line input.
Off: Set to Off to disable the Audio Line input.
Example: xConfiguration Audio Input Line 1 Mode: On

**xConfiguration Audio Input Microphone [1..8] EchoControl Mode: <On/Off>**
The echo canceller continuously adjusts itself to the audio characteristics of the room and compensate for any changes it detects in the audio environment. If the changes in the audio conditions are very significant the echo canceller may take a second or two to re-adjust. Addresses the specific microphone.
On: Echo Control is normally set to On to prevent the far end from hearing their own audio. Once selected, echo cancellation is active at all times.
Off: Echo Control should be switched Off if external echo cancellation or playback equipment is used.
Example: xConfiguration Audio Input Microphone 1 EchoControl Mode: On

**xConfiguration Audio Input Microphone [1..8] EchoControl NoiseReduction: <On/Off>**
The system has a built-in noise reduction which reduces constant background noise (e.g. noise from air-conditioning systems, cooling fans etc.). In addition, a high pass filter (Humfilter) reduces very low frequency noise. Requires the Echo Control Mode to be enabled for the specified microphone. Addresses the specific microphone.
On: The Noise Reduction should be set to On in the presence of low frequency noise.
Off: Turns Noise Reduction Off for the specified microphone input.
Example: xConfiguration Audio Input Microphone 1 EchoControl NoiseReduction: On

**xConfiguration Audio Input Microphone [1..8] Level: <0..24>**
Defines the input level of each microphone in steps of 1 dB from 0 dB to 24 dB. Addresses the specific microphone connector.
Please see the Audio Level tables in the Codec C90 System Integrators Guide for a complete overview of the menu values represented in dB.
Range: 0 to 24 dB
Example: xConfiguration Audio Input Microphone 1 Level: 15
**xConfiguration Audio Input Microphone [1..8] Mode: <On/Off>**

Determine whether or not a microphone input is enabled. Addresses the specific microphone input.
- **On**: Set to On to enable the microphone input.
- **Off**: Set to Off to disable the microphone input.

**Example:** `xConfiguration Audio Input Microphone 1 Mode: On`

**xConfiguration Audio Input Microphone [1..8] Type: <Microphone/Line>**

The microphone inputs are intended for electret type microphones. The microphone input can be set to line or microphone mode. Addresses the specific microphone.
- **Microphone**: 48 V Phantom voltage and pre-amplification is On.
- **Line**: Select Line when you have a standard balanced line input. The phantom voltage and pre-amplification is Off.

**Example:** `xConfiguration Audio Input Microphone 1 Type: Line`

**xConfiguration Audio Output HDMI [1, 3] Level: <-24..0>**

Defines the output level of HDMI output 1 or 3 in steps of 1 dB from -24 dB to 0 dB. Addresses the specific HDMI output.

**Example:** `xConfiguration Audio Output HDMI 1 Level: 0`

**xConfiguration Audio Output HDMI [1, 3] Mode: <On/Off>**

Determines whether or not the audio channel on the HDMI output should be enabled. Addresses the specific Audio HDMI output.
- **On**: Set to On to enable the audio channel on the HDMI output 1 or 3.
- **Off**: Set to Off to disable the audio channel on the HDMI output 1 or 3.

**Example:** `xConfiguration Audio Output HDMI 1 Mode: On`

**xConfiguration Audio Output Line [1..6] Channel: <Left/Right/Mono>**

Defines whether the Audio Line output is a mono signal or part of a multichannel signal.
- **Left**: The Audio Line output signal is the left channel of a stereo signal.
- **Right**: The Audio Line output signal is the right channel of a stereo signal.
- **Mono**: The Audio Line output signal is a mono signal.

**Example:** `xConfiguration Audio Output Line 1 Channel: left`

**xConfiguration Audio Output Line [1..6] Level: <-24..0>**

Defines the output level of the specified Audio Output Line in steps of 1 dB from -24 dB to 0 dB. Addresses the specific Audio Line output connector.

**Example:** `xConfiguration Audio Output Line 1 Level: -10`

**xConfiguration Audio Output Line [1..6] Mode: <On/Off>**

Determines whether or not an Audio Line output is enabled. Addresses the specific Audio Line output.
- **On**: Set to On to enable the Audio Line output.
- **Off**: Set to Off to disable the Audio Line output.

**Example:** `xConfiguration Audio Output Line 1 Mode: On`

**xConfiguration Audio SoundsAndAlerts KeyTones Mode: <On/Off>**

The system can produce a sound every time a key on the remote control is pressed.
- **On**: There will be a sound indicator when pressing keys on the remote control.
- **Off**: The remote control Key Tones is switched off.

**Example:** `xConfiguration Audio SoundsAndAlerts KeyTones Mode: Off`

**xConfiguration Audio SoundsAndAlerts RingTone: <Marbles/IceCrystals/Polaris/Alert/Discrete/Fantasy/Jazz/Nordic/Echo/Rhythmic>**

Selects the ring tone for incoming calls.

**Example:** `xConfiguration Audio SoundsAndAlerts RingTone: Jazz`
**xConfiguration Audio SoundsAndAlerts RingVolume: <0..100>**
Sets the ring tone volume [0-100] for an incoming call in steps of 0.5dB from -34.5dB to 15dB. Volume 0 = Off.

Example: `xConfiguration Audio SoundsAndAlerts RingVolume: 50`

**xConfiguration Audio Volume: <0..100>**
Sets the volume level [0-100] on the loudspeaker output in steps of 0.5dB from -34.5dB to 15dB. Volume 0 = Off.

Example: `xConfiguration Audio Volume: 70`

---

**The Camera settings**

**xConfiguration Cameras Camera [1..7] Flip: <On/Off>**
Applies to cameras which supports Flip mode. Enables the video on screen to be flipped upside down. Addresses the specific camera. TANDBERG PrecisionHD 1080p camera auto detects if the camera is mounted upside down, hence flip mode is not necessary.

On: When set to On the video on screen is flipped. This setting is used with cameras that can be mounted upside down, but cannot auto detect that the camera is mounted upside down.

Off: Set to Off to display the video on screen the normal way.

Example: `xConfiguration Cameras Camera 1 Flip: Off`

**xConfiguration Cameras Camera [1..7] Focus Mode: <Auto/Manual>**
Determines whether the camera should be in auto focus or manual focus mode. Addresses the specific camera.

Auto: When set to Auto the focus will be updated throughout the call. When moving the camera, the system will use auto focus for a few seconds to set the right focus of the new camera position. After a few seconds auto focus is turned off to prevent continuous focus adjustments of the camera.

Manual: If set to Manual the focus is adjusted manually.

Example: `xConfiguration Cameras Camera 1 Focus Mode: Auto`

**xConfiguration Cameras Camera [1..7] Gamma Level: <0..7>**
By setting the Gamma Level you can select which gamma correction table to use. This setting may be useful in difficult lighting conditions, where changes to the brightness setting does not provide satisfactory results. Requires the Gamma Mode to be set to Manual. Addresses the specific camera.

Range: 0-7

Example: `xConfiguration Cameras Camera 1 Gamma Level: 0`

**xConfiguration Cameras Camera [1..7] Gamma Mode: <Auto/Manual>**
Applies to cameras which supports Gamma mode. The Gamma Mode setting enables gamma corrections. Gamma describes the nonlinear relationship between image pixels and monitor brightness. Addresses the specific camera. The TANDBERG PrecisionHD 1080p camera do not need Gamma Mode. The TANDBERG PrecisionHD camera do support Gamma Mode.

Auto: Auto is the default and the recommended setting.

Manual: In severe light conditions, you may switch mode to manual and specify explicitly which gamma table to use by setting the Gamma Level.

Example: `xConfiguration Cameras Camera 1 Gamma Mode: Auto`

**xConfiguration Cameras Camera [1..7] IrSensor: <On/Off>**
The Camera IR setting determines whether the infrared receiver at the camera should be enabled or not. The IR sensor LED is located in the front of the camera and flickers when the IR sensor is activated from the remote control. Addresses the specific camera.

On: Set to On to enable the IR sensor on the camera.

Off: Set to Off to disable the IR sensor on the camera.

Example: `xConfiguration Cameras Camera 1 IrSensor: On`
xConfiguration Cameras Camera [1..7] Mirror: <On/Off>
The Mirror mode makes it possible to reverse the video on screen. Normally you will see yourself in the same view as other people see you. With mirror enabled the experience will be like looking at yourself in a mirror. Addresses the specific camera.
On: Set to On to see the selfview in mirror mode, e.g. the selfview is reversed and the experience of selfview is as seeing yourself in a mirror.
Off: Set to Off to see the selfview in normal mode, e.g. the experience of selfview is as seeing yourself as other people see you.
Example: xConfiguration Cameras Camera 1 Mirror: Off

xConfiguration Cameras Camera [1..7] Whitebalance Level: <1..16>
Specify which camera to control. Define the Whitebalance Level for the camera. Requires the Whitebalance Mode to be set to manual. Addresses the specific camera.
Range: 1-16
Example: xConfiguration Cameras Camera 1 Whitebalance Level: 1

Define whether to control the camera whitebalance manually or to have it automatically adjusted by the system. Addresses the specific camera.
Auto: When set to Auto, the camera will continuously adjust the whitebalance depending on the camera view.
Manual: Set to Manual to enable manual control of the camera whitebalance, e.g. the level of the whitebalance level setting will be used for the camera.
Example: xConfiguration Cameras Camera 1 Whitebalance Mode: auto

xConfiguration Conference [1..1] AutoAnswer Delay: <0..50>
Defines how long (in seconds) an incoming call has to wait before it is answered automatically by the system. Requires the Autoanswer Mode to be enabled.
Range: 0-50 seconds
Example: xConfiguration Conference 1 AutoAnswer Delay: 0

xConfiguration Conference [1..1] AutoAnswer Mode: <On/Off>
The Autoanswer setting determines whether an incoming call is put through automatically or manually.
On: The system will automatically answer all incoming calls.
Off: All incoming call must be answered manually by pressing the OK key or the green Call key on the remote control.
Example: xConfiguration Conference 1 AutoAnswer Mode: Off

xConfiguration Conference [1..1] AutoAnswer Mute: <On/Off>
The Autoanswer Mute setting determines whether the microphone is muted when an incoming call is automatically answered.
On: The incoming call will be muted when automatically answered.
Off: The incoming call will not be muted.
Example: xConfiguration Conference 1 AutoAnswer Mute: Off

xConfiguration Conference [1..1] DefaultCall Protocol: <H323/SIP>
Specify the Default Call Protocol to be used when placing calls from the system. The call protocol can also be defined directly for each call when setting up a call.
H.323: Select H.323 to ensure that calls are set up as a H.323 calls.
SIP: Select SIP to ensure that calls are set up as a SIP calls.
Example: xConfiguration Conference 1 DefaultCall Protocol: H323

xConfiguration Conference [1..1] DefaultCall Rate: <64..6000>
Specify the Default Call Rate to be used when placing calls from the system. The call rate can also be defined directly for each call when setting up a call.
Range: 64-6000 kbps
Example: xConfiguration Conference 1 DefaultCall Rate: 768

xConfiguration Conference [1..1] DoNotDisturb Mode: <On/Off>
The Do Not Disturb setting determines whether or not there should be an alert on incoming calls.
On: Set to On when you want no alert to incoming calls. The calling side will receive a busy signal when trying to call the codec.
Off: This is the default setting. The DoNotDisturb is automatically turned Off if the codec receives any IR signal from the handheld remote control.
Example: xConfiguration DoNotDisturb Mode: Off
xConfiguration Conference [1..1] Encryption Mode: <Off/BestEffort>

BestEffort: The system will use encryption whenever possible.

In Point to point calls: If the far end system supports encryption (AES-128), the call will be encrypted. If not, the call will proceed without encryption.

In MultiSite calls: In order to have encrypted MultiSite conferences, all sites must support encryption. If not, the conference will be unencrypted.

Icons on screen: A padlock with the text “Encryption On” displays on screen, for a few seconds, when the conference starts.

Off: The system will not use encryption.

Example: xConfiguration Conference 1 Encryption Mode: BestEffort

xConfiguration Conference [1..1] FarEndControl Mode: <On/Off>

Lets you decide if the remote side (far end) should be allowed to select your video sources and control your local camera (pan, tilt, zoom).

On: Set to On when you want the the far end to be able to select your video sources and control your local camera (pan, tilt, zoom). You will still be able to control your camera and select your video sources as normal.

Off: When set to Off the far end can not access any of the features above on your system.

Example: xConfiguration Conference 1 FarEndControl Mode: On

xConfiguration Conference [1..1] IncomingMultisiteCall Mode: <Allow/Deny>

The Incoming MultiSite Call setting determines whether or not the system should accept incoming calls to an already active conference.

Allow: When set to Allow, and with an ongoing MCU call/conference, the user can accept another incoming call. This will result in the incoming call being added to the MCU conference.

Deny: The system will not accept incoming calls when you are in a call. The calling side will receive a busy signal.

Example: xConfiguration Conference 1 IncomingMultisiteCall Mode: Allow

The H323 Profile settings

xConfiguration H323 Profile [1..1] Authentication LoginName: <S: 0, 50>

The system sends the Authentication Login Name and the Authentication Password to a H.323 Gatekeeper for authentication. The authentication is a one way authentication from the codec to the H.323 Gatekeeper, i.e. the system is authenticated to the gatekeeper. If the H.323 Gatekeeper indicates that no authentication is required, the system will still try to register. Requires the H.323 Gatekeeper Authentication Mode to be enabled.

Format: String with a maximum of 50 characters.

Example: xConfiguration H323 Profile 1 Authentication LoginName: "" 

xConfiguration H323 Profile [1..1] Authentication Password: <S: 0, 50>

The system sends the Authentication Login Name and the Authentication Password to a H.323 Gatekeeper for authentication. The authentication is a one way authentication from the codec to the H.323 Gatekeeper, i.e. the system is authenticated to the gatekeeper. If the H.323 Gatekeeper indicates that no authentication is required, the system will still try to register. Requires the H.323 Gatekeeper Authentication Mode to be enabled.

Format: String with a maximum of 50 characters.

Example: xConfiguration H323 Profile 1 Authentication Password:

xConfiguration H323 Profile [1..1] Authentication Mode: <On/Off>

On: If the H.323 Gatekeeper Authentication Mode is set to On and a H.323 Gatekeeper indicates that it requires authentication, the system will try to authenticate itself to the gatekeeper. Requires the Authentication ID and Authentication Password to be defined on both the codec and the Gatekeeper.

Off: If the H.323 Gatekeeper Authentication Mode is set to Off the system will not try to authenticate itself to a H.323 Gatekeeper, but will still try a normal registration.

Example: xConfiguration H323 Profile 1 Authentication Mode: Off

xConfiguration H323 Profile [1..1] CallSetup Mode: <Direct/Gatekeeper>

The H.323 Call Setup Mode defines whether to use a Gatekeeper or Direct calling when establishing H323 calls.

Direct: An IP-address must be used when dialling in order to make the H323 call.

Gatekeeper: The system will use a Gatekeeper to make a H.323 call. When selecting this option the H323 Profile Gatekeeper Address and H323 Profile Gatekeeper Discovery settings must also be configured.

NOTE! Direct H.323 calls can be made even though the H.323 Call Setup Mode is set to Gatekeeper.

Example: xConfiguration H323 Profile 1 CallSetup Mode: Gatekeeper

xConfiguration H323 Profile [1..1] Gatekeeper Address: <S: 0, 64>

Specifies the IP address of the Gatekeeper. Requires the H.323 Call Setup Mode to be set to Gatekeeper and the Gatekeeper Discovery to be set to Manual.

Format: String with a maximum of 64 characters.

Example: xConfiguration H323 Profile 1 Gatekeeper Address: "10.47.1.58"
**xConfiguration H323 Profile [1..1] Gatekeeper Discovery: <Manual/Auto>**

Determine how the system shall register to a H.323 Gatekeeper.

- **Manual:** The system will use a specific Gatekeeper identified by the Gatekeeper’s IP-address.
- **Auto:** The system will automatically try to register to any available Gatekeeper. If a Gatekeeper responds to the request sent from the codec within 30 seconds this specific Gatekeeper will be used. This requires that the Gatekeeper is in auto discovery mode as well. If no Gatekeeper responds, the system will not use a Gatekeeper for making H.323 calls and hence an IP-address must be specified manually.

*Example:* xConfiguration H323 Profile 1 Gatekeeper Discovery: Manual

**xConfiguration H323 Profile [1..1] H323Alias E164: <S: 0, 30>**

The H.323 Alias E.164 defines the address of the system, according to the numbering plan implemented in the H.323 Gatekeeper. The E.164 alias is equivalent to a telephone number, sometimes combined with access codes.

Format: Compact string with a maximum of 30 characters. Valid characters are 0–9, * and #.

*Example:* xConfiguration H323 Profile 1 H323Alias E164: “90550092”

**xConfiguration H323 Profile [1..1] H323Alias ID: <S: 0, 49>**

Lets you specify the H.323 Alias ID which is used to address the system on a H.323 Gatekeeper and will be displayed in the call lists. Example: “firstname.surname@company.com”, “My H.323 Alias ID”

Format: String with a maximum of 49 characters

*Example:* xConfiguration H323 Profile 1 H323Alias ID: “firstname.surname@company.com”

**xConfiguration H323 Profile [1..1] PortAllocation: <Dynamic/Static>**

The H.323 Port Allocation setting affects the H.245 port numbers used for H.323 call signalling.

- **Dynamic:** The system will allocate which ports to use when opening a TCP connection. The reason for doing this is to avoid using the same ports for subsequent calls, as some firewalls consider this as a sign of attack.
  - When Dynamic is selected, the H.323 ports used are from 11000 to 20999. Once 20999 is reached they restart again at 11000. For RTP and RTCP media data, the system is using UDP ports in the range 2326 to 2487. Each media channel is using two adjacent ports, i.e. 2330 and 2331 for RTP and RTCP respectively. The ports are automatically selected by the system within the given range. Firewall administrators should not try to deduce which ports are used when, as the allocation schema within the mentioned range may change without any further notice.
  - Static: When set to Static the ports are given within a static predefined range [5555–6555].

*Example:* xConfiguration H323 Profile 1 PortAllocation: Dynamic

The **Network settings**

**xConfiguration Network [1..1] Assignment: <Static/DHCP>**

Defines whether to use DHCP or Static IP assignment.

- **Static:** The IP Address, Subnet Mask and Default Gateway for the system must be specified in the respective address fields.
- **DHCP:** The system addresses are automatically assigned by the DHCP server. Changes to this setting requires a restart of the codec.

*Example:* xConfiguration Network 1 Assignment: DHCP

**xConfiguration Network [1..1] DNS Domain Name: <S: 0, 64>**

DNS Domain Name is the default domain name suffix which is added to unqualified names.

*Example:* If the DNS Domain Name is “company.com” and the name to lookup is “MyVideoSystem”, this will result in the DNS lookup “MyVideoSystem.company.com”.

Format: String with a maximum of 64 characters.

*Example:* xConfiguration Network 1 DNS Domain Name: “company.com”

**xConfiguration Network [1..1] DNS Server [1..5] Address: <S: 0, 64>**

Defines the network addresses for DNS servers. Up to 5 addresses may be specified. If the network addresses are unknown, please contact your administrator or Internet Service Provider.

Format: String with a maximum of 64 characters.

*Example:* xConfiguration Network 1 DNS Server 1 Address: “

**xConfiguration Network [1..1] IEEE8021X AnonymousIdentity: <S: 0, 64>**

The 802.1X Anonymous ID string is to be used as unencrypted identity with EAP types that support different tunnelled identity, like EAP-PEAP and EAP-TTLS. If set, the anonymous ID will be used for the initial (unencrypted) EAP Identity Request.

Format: String with a maximum of 64 characters.

*Example:* xConfiguration Network 1 IEEE8021X AnonymousIdentity: “

**xConfiguration Network [1..1] IEEE8021X Eap Md5: <On/Off>**

Message-Digest algorithm 5. Is a Challenge Handshake Authentication Protocol that relies on a shared secret. MD5 is a Weak security. EAP - Extensible Authentication Protocol. MD5 - Message Digest Algorithm 5.

*Example:* xConfiguration Network 1 IEEE8021X Eap Md5: On
xConfiguration Network [1..1] IEEE8021X Eap Peap: <On/Off>
On: The EAP-PEAP protocol is enabled. Default mode is On.
Off: The EAP-PEAP protocol is disabled.
Example: xConfiguration Network 1 IEEE8021X Eap Peap: On

xConfiguration Network [1..1] IEEE8021X Eap TTLS: <On/Off>
On: The EAP-TTLS protocol is enabled. Default mode is On.
Off: The EAP-TTLS protocol is disabled.
Example: xConfiguration Network 1 IEEE8021X Eap TTLS: On

xConfiguration Network [1..1] IEEE8021X Identity: <S: 0, 64>
The 802.1X Identity is the user name needed for 802.1X authentication.
Format: String with a maximum of 64 characters.
Example: xConfiguration Network 1 IEEE8021X Identity: ""

xConfiguration Network [1..1] IEEE8021X Mode: <On/Off>
The system may be connected to an IEEE 802.1X LAN network with a port-based network access control that is used to provide authenticated network access for Ethernet networks.
On: The 802.1X authentication is enabled.
Off: The 802.1X authentication is disabled. Default mode is Off.
Example: xConfiguration Network 1 IEEE8021X Mode: Off

xConfiguration Network [1..1] IEEE8021X Password: <S: 0, 32>
The 802.1X Password is the password needed for 802.1X authentication.
Format: String with a maximum of 32 characters.
Example: xConfiguration Network 1 IEEE8021X Password: "****"

xConfiguration Network [1..1] IPv4 Address: <S: 0, 64>
Defines the Static IP address for the system. Only applicable if Static IP assignment is chosen.
Format: Compact string with a maximum of 64 characters.
Example: xConfiguration Network 1 IPv4 Address: "10.47.5.100"

xConfiguration Network [1..1] IPv4 Gateway: <S: 0, 64>
Defines the IP default gateway. Only applicable if Static IP assignment is chosen.
Format: Compact string with a maximum of 64 characters.
Example: xConfiguration Network 1 IPv4 Gateway: "10.47.5.100"

xConfiguration Network [1..1] IPv4 SubnetMask: <S: 0, 64>
Defines the IP subnet mask. Only applicable if Static IP assignment is chosen.
Format: Compact string with a maximum of 64 characters.
Example: xConfiguration Network 1 IPv4 SubnetMask: "255.255.255.0"

xConfiguration Network [1..1] IPv4 QoS Mode: <Off/Diffserv>
Defines whether IP Diffserv QoS should be used. The QoS (Quality of Service) is a method which handles the priority of audio, video and data in the network. The QoS settings must be supported by the infrastructure. DiffServ (Differentiated Services) is a computer networking architecture that specifies a simple, scalable and coarse-grained mechanism for classifying, managing network traffic and providing QoS priorities on modern IP networks.
Off: When set to Off no QoS method is used.
Diffserv: Select Diffserv and then go to the Diffserv sub-menus (Audio, Data, Signalling and Video) to configure these settings.
Example: xConfiguration Network 1 IPv4 QoS Mode: diffserv

xConfiguration Network [1..1] IPv4 QoS Diffserv Audio: <0..63>
The DiffServ Audio setting is used to define which priority Audio packets should have in an IP network. Enter a priority, which ranges from 0 to 63 for the packets. The higher the number, the higher the priority. These priorities might be overridden when packets are leaving the network controlled by the local network administrator.
Audio: A recommended value is DiffServ Code Point (DSCP) is AF41, which equals the value 34. If in doubt, contact your network administrator.
Range: 0-63
Example: xConfiguration Network 1 IPv4 QoS Diffserv Audio: 0

xConfiguration Network [1..1] IPv4 QoS Diffserv Data: <0..63>
The DiffServ Data setting is used to define which priority Data packets should have in an IP network. Enter a priority, which ranges from 0 to 63 for the packets. The higher the number, the higher the priority. These priorities might be overridden when packets are leaving the network controlled by the local network administrator.
Data: A recommended value is DiffServ Code Point (DSCP) AF23, which equals the value 22. If in doubt, contact your network administrator.
Range: 0-63
Example: xConfiguration Network 1 IPv4 QoS Diffserv Data: 0
The DiffServ Signalling setting is used to define which priority Signalling packets should have in an IP network. Enter a priority, which ranges from 0 to 63 for the packets. The higher the number, the higher the priority. These priorities might be overridden when packets are leaving the network controlled by the local network administrator.

Example: xConfiguration Network 1 IPv4 QoS Diffserv Signalling: 0

The DiffServ Video setting is used to define which priority Video packets should have in an IP network. Enter a priority, which ranges from 0 to 63 for the packets. The higher the number, the higher the priority. These priorities might be overridden when packets are leaving the network controlled by the local network administrator.

Video: A recommended value is DiffServ Code Point (DSCP) AF41, which equals the value 34. If in doubt, contact your network administrator.

Example: xConfiguration Network 1 IPv4 QoS Diffserv Video: 0

Set the ethernet MTU (Maximum Transmission Unit).

Example: xConfiguration Network 1 MTU: 1500

Set the ethernet link speed.

Example: xConfiguration Network 1 Speed: Auto

Configure how video packets transmission speed shall be controlled.

Example: xConfiguration Network 1 TrafficControl Mode: On

The Network Services settings

xConfiguration NetworkServices H323 Mode: <On/Off>
Determines whether the system should be able to place and receive H.323 calls.
On: Set to On to enable the possibility to place and receive H.323 calls. This is the default setting.
Off: Set to Off to disable the possibility to place and receive H.323 calls.

NOTE! Changes in this setting requires the codec to be restarted.

Example: xConfiguration NetworkServices H323 Mode: On

xConfiguration NetworkServices HTTP Mode: <On/Off>
HTTP is a web-interface for system management, call management such as call transfer, diagnostics and software uploads.
On: The HTTP protocol is enabled.
Off: The HTTP protocol is disabled.

Example: xConfiguration NetworkServices HTTP Mode: On

xConfiguration NetworkServices HTTPS Mode: <On/Off>
HTTPS is a Web protocol that encrypts and decrypts user page requests as well as the pages that are returned by the Web server.
On: The HTTPS protocol is enabled.
Off: The HTTPS protocol is disabled.

Example: xConfiguration NetworkServices HTTPS Mode: On

xConfiguration NetworkServices NTP Address: <S: 0, 64>
Enter the NTP Address to define the network time protocol server address. This address will be used if NTP Mode is set to Manual, or if set to Auto and no address is supplied by a DHCP server.

Example: xConfiguration NetworkServices NTP Address: "1.tandberg.pool.ntp.org"

xConfiguration NetworkServices NTP Mode: <Auto/Manual>
The Network Time Protocol (NTP) is used to synchronize the time of the system to a reference time server. The time server will subsequently be queried every 24th hour for time updates. The time will be displayed on the top of the screen. The system will use the time to timestamp messages transmitted to Gatekeepers or Border Controllers that requires H.235 authentication. It is also used for timestamping Placed Calls, Missed Calls and Received Calls.
Auto: The system will use the NTP server, by which address is supplied from the DHCP server in the network. If no DHCP server is used, or the DHCP server does not provide the system with a NTP server address, the system will use the static defined NTP server address specified by the user.
Manual: The system will always use the static defined NTP server address specified by the user.

Example: xConfiguration NetworkServices NTP Mode: Manual
**xConfiguration NetworkServices SIP Mode: <On/Off>**

Determines whether the system should be able to place and receive SIP calls.
- On: Set to On to enable the possibility to place and receive SIP calls. This is the default setting.
- Off: Set to Off to disable the possibility to place and receive SIP calls.

**NOTE!** Changes in this setting requires the codec to be restarted.

Example: xConfiguration NetworkServices SIP Mode: On

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**xConfiguration NetworkServices SNMP CommunityName: <S: 0, 50>**

Enter the name of the Network Services SNMP Community. SNMP Community names are used to authenticate SNMP requests. SNMP requests must have a ‘password’ (case sensitive) in order to receive a response from the SNMP Agent in the codec. The default password is “public”. If you have the TANDBERG Management Suite (TMS) you must make sure the same SNMP Community is configured there too. Note! The SNMP Community password is case sensitive.

Format: String with a maximum of 50 characters.

Example: xConfiguration NetworkServices SNMP CommunityName: "public"

---

**xConfiguration NetworkServices SNMP Host [1..3] Address: <S: 0, 64>**

Enter the address of up to three SNMP Managers. All traps will then be sent to the hosts listed.

The system’s SNMP Agent (in the codec) responds to requests from SNMP Managers (a PC program etc.). SNMP Traps are generated by the SNMP Agent to inform the SNMP Manager about important events. Can be used to send event created messages to the SNMP agent about different events like: system reboot, system dialing, system disconnecting, MCU call, packet loss etc. Traps can be sent to multiple SNMP Trap Hosts.

Format: String with a maximum of 64 characters.

Example: xConfiguration NetworkServices SNMP Host 1 Address: ""

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**xConfiguration NetworkServices SNMP Mode: <Off/ReadOnly/ReadWrite>**

SNMP (Simple Network Management Protocol) is used in network management systems to monitor network-attached devices (routers, servers, switches, projectors, etc) for conditions that warrant administrative attention. SNMP exposes management data in the form of variables on the managed systems, which describe the system configuration. These variables can then be queried (set to ReadOnly) and sometimes set (set to ReadWrite) by managing applications.

- Off: Set to Off when you want to disable the SNMP network service.
- ReadOnly: Set to ReadOnly when you want to disable the SNMP network service for queries only.
- ReadWrite: Set to ReadWrite when you want to enable the SNMP network service for both queries and commands.

Example: xConfiguration NetworkServices SNMP Mode: ReadWrite

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**xConfiguration NetworkServices SNMP SystemContact: <S: 0, 50>**

Enter the name of the Network Services SNMP System Contact.

Format: String with a maximum of 50 characters.

Example: xConfiguration NetworkServices SNMP SystemContact: ""

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**xConfiguration NetworkServices SNMP SystemLocation: <S: 0, 50>**

Enter the name of the Network Services SNMP System Location.

Format: String with a maximum of 50 characters.

Example: xConfiguration NetworkServices SNMP SystemLocation: ""

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**xConfiguration NetworkServices Telnet Mode: <On/Off>**

Telnet is a network protocol used on the Internet or local area network (LAN) connections.

- On: The Telnet protocol is enabled.
- Off: The Telnet protocol is disabled. This is the default factory setting.

Example: xConfiguration NetworkServices Telnet Mode: Off

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The **Phonebook settings**

**xConfiguration Phonebook Server [1..5] ID: <S: 0, 64>**

Enter a name for the external phonebook. Addresses the specific phonebook server.

Format: String with a maximum of 64 characters.

Example: xConfiguration Phonebook Server 1 ID: ""

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**xConfiguration Phonebook Server [1..5] URL: <S: 0, 255>**

Enter the address (URL) to the external phonebook server. Addresses the specific phonebook server.

Format: String with a maximum of 255 characters.

The Provisioning settings

**xConfiguration Provisioning ExternalManager Address**: `<S: 0, 64>`
Specifies the IP Address to the External Manager/Management system. If an External Manager address and a path is configured, the system will post an HTTP message to this address when starting up. When receiving this HTTP posting the External Manager (typically a management system) can return configurations/commands to the unit as a result. If the DHCP Option 242 is returned in the DHCP response from the DHCP server the system will interpret this as the External Manager address to use.
Format: String with a maximum of 64 characters.
*Example:* `xConfiguration Provisioning ExternalManager Address: ""`

**xConfiguration Provisioning ExternalManager Path**: `<S: 0, 255>`
Specifies the path to the External Manager/Management system. If an External Manager address and a path is configured, the system will post an HTTP message to this address when starting up. When receiving this HTTP posting the External Manager (typically a management system) can return configurations/commands to the unit as a result. If the DHCP Option 242 is returned in the DHCP response from the DHCP server the system will interpret this as the External Manager address to use.
Format: String with a maximum of 255 characters.
*Example:* `xConfiguration Provisioning ExternalManager Path: "tms/public/external/management/SystemManagementService.asmx"

**xConfiguration Provisioning ExternalManager Protocol**: `<HTTP/HTTPS>`
Determines whether or not to use secure management.
HTTP: Set to HTTP to disable secure management. Requires HTTP to be enabled in the Network Services HTTP Mode setting.
HTTPS: Set to HTTPS to enable secure management. Requires HTTPS to be enabled in the Network Services HTTPS Mode setting.
*Example:* `xConfiguration Provisioning ExternalManager Protocol: http`

**xConfiguration Provisioning Mode**: `<Off/TMS>`
Provides the possibility of managing the codec (endpoint) by using an external manager/management system.
Off: The system will not try to register to any management system.
TMS: If set to TMS the system will try to register with a TMS server as described in Provisioning ExternalManager settings. TMS is short for TANDBERG Management System. Please contact your TANDBERG representative for more information.
*Example:* `xConfiguration Provisioning Mode: TMS`

The Serial Port settings

**xConfiguration SerialPort BaudRate**: `<9600/19200/38400/115200>`
Specify the baud rate (bps) on the COM port (data port). The default value is 38400.
Other default parameters for the COM port are: Parity: None Databits: 8 Stopbits: 1 Flow control: None.
Valid inputs for baud rate: 9600, 19200, 38400, 115200
*Example:* `xConfiguration SerialPort BaudRate: 38400`

**xConfiguration SerialPort LoginRequired**: `<On/Off>`
The Serial Login setting determines whether or not there should be a login when connecting to the COM port (data port).
On: Login is required when connecting to the COM port (data port).
Off: The user can access the COM port (data port) without any login.
*Example:* `xConfiguration SerialPort LoginRequired: On`

The SIP Profile settings

**xConfiguration SIP Profile [1..1] Authentication [1..1] LoginName**: `<S: 0, 50>`
This is the user name part of the credentials used to authenticate towards the SIP proxy.
Format: String with a maximum of 50 characters.
*Example:* `xConfiguration SIP Profile 1 Authentication 1 LoginName: ""`

**xConfiguration SIP Profile [1..1] Authentication [1..1] Password**: `<S: 0, 50>`
This is the password part of the credentials used to authenticate towards the SIP proxy.
Format: String with a maximum of 50 characters.
*Example:* `xConfiguration SIP Profile 1 Authentication 1 Password: ""`

**xConfiguration SIP Profile [1..1] DefaultTransport**: `<UDP/TCP/TLS/Auto>`
Select the transport protocol to be used over the LAN.
UDP: The system will always use UDP as the default transport method.
TCP: The system will always use TCP as the default transport method.
TLS: The system will always use TLS as the default transport method. For TLS connections a SIP CA-list can be uploaded using the web interface. If no such CA-list is available on the system then anonymous Diffie-Hellman will be used.
Auto: The system will try to connect using transport protocols in the following order: TLS, TCP, UDP.
*Example:* `xConfiguration SIP Profile 1 DefaultTransport: Auto`
The Standby settings

**xConfiguration Standby BootAction:** <None/Preset1/Preset2/Preset3/Preset4/Preset5/Preset6/Preset7/Preset8/Preset9/Preset10/Preset11/Preset12/Preset13/Preset14/Preset15/RestoreCameraPosition/DefaultCameraPosition>

Decide what the system is going to do on boot.

None: No action.

Preset 1..15: Activate the selected preset.

RestoreCameraPosition: Set the camera to the position it had before the last boot.

DefaultCameraPosition: Set the camera to the factory default position.

Example: `xConfiguration Standby BootAction: DefaultCameraPosition`

**xConfiguration Standby Control:** <On/Off>

Determine whether the system should go into standby mode or not.

On: Enter standby mode when the Standby Delay has timed out. Requires the Standby Delay to be set to an appropriate value.

Off: Not entering standby mode.

Example: `xConfiguration Standby Control: On`

**xConfiguration Standby Delay:** <1..480>

Define how long (in minutes) the system shall be in idle mode before it goes into standby mode. Requires the Standby Control to be enabled.

Range: 1-480 minutes

Example: `xConfiguration Standby Delay: 10`

**xConfiguration Standby WakeupAction:** <None/Preset1/Preset2/Preset3/Preset4/Preset5/Preset6/Preset7/Preset8/Preset9/Preset10/Preset11/Preset12/Preset13/Preset14/Preset15/RestoreCameraPosition/DefaultCameraPosition>

Decide what the system is going to do when leaving standby mode.

None: No action.

Preset 1..15: Activate the selected preset.

RestoreCameraPosition: Set the camera to the position it had before entering standby.

DefaultCameraPosition: Set the camera to the factory default position.

Example: `xConfiguration Standby WakeupAction: RestoreCameraPosition`
The System Unit settings

**xConfiguration SystemUnit CallLogging Mode:** `{#On/Off}`
Enables/disables logging of calls received or placed by the system. The call logs may then be viewed via the GUI or using the xHistory command.

**On:** Enable logging.

**Off:** Disable logging.

Example: `xConfiguration SystemUnit CallLogging Mode: On`

**xConfiguration SystemUnit IrSensor Mode:** `<On/Off/Auto>`
The System Unit IR Sensor setting determines whether the infrared receiver on the codec should be enabled or not. The IR sensor LED is located in the front of the codec and flickers when an IR signal is received from the remote control.

**On:** Set to On to enable the IR sensor on the codec.

**Off:** Set to Off to disable the IR sensor on the codec.

**Auto:** The system will automatically disable the IR sensor on the codec if the IR sensor at camera is enabled. Otherwise the IR sensor on the codec will be enabled.

Example: `xConfiguration SystemUnit IrSensor Mode: On`

**xConfiguration SystemUnit MenuLanguage:** `<English/Norwegian/Swedish/German/French/Italian/Japanese/Chinese/Russian/Spanish/Korean/Turkish>`
The setting is used to select the language for the GUI (Graphical User Interface).

Example: `xConfiguration SystemUnit MenuLanguage: English`

**xConfiguration SystemUnit Name:** `<S: 0, 50>`
Enter a System Name to define a name of the system unit. If the H.323 Alias ID is configured on the system then this ID will be used instead of the system name. The system name will be displayed:

* When the codec is acting as an SNMP Agent
* Towards a DHCP server

Format: String with a maximum of 50 characters.

Example: `xConfiguration SystemUnit Name: "Meeting Room Name"`

The Time settings

**xConfiguration Time DateFormat:** `<DD_MM_YY/MM_DD_YY/YY_MM_DD>`
Specifies the date format.

- **DD_MM_YY:** The date January 30th 2009 will be displayed: 30.01.09
- **MM_DD_YY:** The date January 30th 2009 will be displayed: 01.30.09
- **YY_MM_DD:** The date January 30th 2009 will be displayed: 09.01.30

Example: `xConfiguration Time DateFormat: DD_MM_YY`

**xConfiguration Time TimeFormat:** `<24H/12H>`
Specifies the time format.

- **24H:** Set the time format to 24 hours.
- **12H:** Set the time format to 12 hours (AM/PM).

Example: `xConfiguration Time TimeFormat: 24H`
The Video settings

xConfiguration Video DefaultPresentationSource: <1..5>
Define which video input source shall be used as the default presentation source (e.g. when you press the Presentation key on the remote control). The input source is configured to a video input connector. See the Video Input Matrix table at the back of the codec and the description of the Video Input Matrix in the Interfaces section.
Range: 1-5 presentation sources
Example: xConfiguration Video DefaultPresentationSource: 3

xConfiguration Video Encoder Threshold60fps: <0..6000>
If the bandwidth used for transmitting video is above or equal to this threshold, the system will select the highest video resolution possible while maintaining 60 fps. If below this threshold, the system will select the highest video resolution possible while maintaining 30fps.
NOTE: This setting will only apply when the video input source to be transmitted is a 60fps source, and the selected video input is configured for motion.
Range: 0-6000 kbps
Example: xConfiguration Video Encoder Threshold60fps: 2000

xConfiguration Video Input DVI [3, 5] Type: <AutoDetect/Digital/AnalogRGB/AnalogYPbPr>
The official DVI standard supports both digital and analog signals. In most cases the default AutoDetect setting can detect whether the signal is analog RGB or digital. However, in some rare cases when DVI-I cables are used (these cables can carry both the analog and digital signals) this detection might fail. This setting makes it possible to override the AutoDetect and select the correct DVI video input. This setting should also be used if the video input is an analog component (YPbPr) type signal. This is used by some cameras (Sony EVI-HD1) and DVD/Blu-ray players. Since it is not possible to auto detect the difference between AnalogRGB and AnalogYPbPr, the Analog YPbPr setting has to be selected.
AutoDetect: Set to AutoDetect to automatically detect if the signal is analog RGB or digital.
Digital: Set to Digital to force the DVI video input to Digital when using DVI-I cables with both analog and digital pins and AutoDetect fails.
AnalogRGB: Set to AnalogRGB to force the DVI video input to AnalogRGB when using DVI-I cables with both analog and digital pins and AutoDetect fails.
AnalogYPbPr: Set to AnalogYPbPr to force the DVI video input to AnalogYPbPr, as the component (YPbPr) signal cannot be auto detected.
Example: xConfiguration Video Input DVI 3 Type: AutoDetect

xConfiguration Video Input Source [1..5] CameraControl Camerad: <1..5>
Select the ID of the camera in the Visca chain that is connected to this camera source. The Camerad setting represents the camera's position in the Visca chain. Addresses the specific video input source. Cascaded cameras and Visca commands are described in the PrecisionHD 1080p User Guide. The user guide is found at www.tandberg.com/docs
Example: xConfiguration Video Input Source 1 CameraControl CameraId: 1
**xConfiguration Video Input Source [1..5] CameraControl Mode: <On/Off>**
Determines whether or not the camera control should be enabled for the specific video input source. Addresses the specific video input source.

On: Set to On to enable camera control for the camera connected to the selected video input connector.
Off: Set to Off to disable camera control for the camera connected to the selected video input connector.

**Example:** xConfiguration Video Input Source 1 CameraControl Mode: On

**xConfiguration Video Input Source [1] Connector: <HDMI/HDSDI/YPbPr>**
Select which video input connector to be active on connector group 1. The available options for Source 1 are listed below.

HDMI: Select HDMI when you want to use the HDMI 1 connector as input.
HDSDI: Select HD-SDI when you want to use the HD-SDI 1 connector as input.
YPbPr: Select YPbPr when you want to use the Y-Pb-Pr (Component) 1 connectors as input.

**Example:** xConfiguration Video Input Source 1 Connector: HDMI

**xConfiguration Video Input Source [2] Connector: <HDMI/HDSDI/YPbPr>**
Select which video input connector to be active on connector group 2. The available options for Source 2 are listed below.

HDMI: Select HDMI when you want to use the HDMI 2 connector as input.
HDSDI: Select HD-SDI when you want to use the HD-SDI 2 connector as input.
YPbPr: Select YPbPr when you want to use the Y-Pb-Pr (Component) 2 connectors as input.

**Example:** xConfiguration Video Input Source 2 Connector: HDMI

**xConfiguration Video Input Source [3] Connector: <HDMI/HDSDI/DVI>**
Select which video input connector to be active on connector group 3. The available options for Source 3 are listed below.

DVI: Select DVI-I when you want to use the DVI-I 3 connector as input.
HDMI: Select HDMI when you want to use the HDMI 3 connector as input.
HDSDI: Select HD-SDI when you want to use the HD-SDI 3 connector as input.

**Example:** xConfiguration Video Input Source 3 Connector: DVI

**xConfiguration Video Input Source [4] Connector: <HDMI/HDSDI>**
Select which video input connector to be active on connector group 4. The available options for Source 4 are listed below.

HDMI: Select HDMI when you want to use the HDMI 4 connector as input.
HDSDI: Select HD-SDI when you want to use the HD-SDI 4 connector as input.

**Example:** xConfiguration Video Input Source 4 Connector: HDMI

Select which video input connector to be active on connector group 5. The available options for Source 5 are listed below.

DVI: Select DVI-I when you want to use the DVI-I 5 connector as input.
YC: Select YC when you want to use the S-Video (YC) input. Connect the S-Video input to the connector marked as Y/Comp and C. NOTE! This configuration is not supported in version 1.
Composite: Select Comp when you want to use the Composite input. Connect the Composite input to the connector marked as Y/Comp NOTE! This configuration is not supported in version 1.

**Example:** xConfiguration Video Input Source 5 Connector: DVI

**xConfiguration Video Input Source [1..5] Name: <S: 0, 50>**
Customizable name of the connector group. Enter the name of the video input source 1-5.

Format: String with a maximum of 50 characters.

**Example:** xConfiguration Video Input Source 1 Name: ""

**xConfiguration Video Input Source [1..5] Quality: <Motion/Sharpness>**
When encoding and transmitting video there will be a tradeoff between high resolution and high framerate. For some video sources it is more important to transmit high framerate than high resolution and vice versa. The Quality setting specifies whether to give priority to high frame rate or to high resolution for a given source. Addresses the selected video input connector.

Motion: Gives the highest possible framerate. Used when there is a need for higher frame rates, typically when a large number of participants are present or when there is a lot of motion in the picture.
Sharpness: Gives the highest possible resolution. Used when you want the highest quality of detailed images and graphics.

**Example:** xConfiguration Video Input Source 1 Quality: Motion

**xConfiguration Video Input Source [1..5] Connector: <HDMI/HDSDI/YPbPr>**
Select which video input connector to be active on connector group 1. The available options for Source 1 are listed below.

HDMI: Select HDMI when you want to use the HDMI 1 connector as input.
HDSDI: Select HD-SDI when you want to use the HD-SDI 1 connector as input.
YPbPr: Select YPbPr when you want to use the Y-Pb-Pr (Component) 1 connectors as input.

**Example:** xConfiguration Video Input Source 1 Connector: HDMI

**xConfiguration Video Layout ScaleToFrame: <Manual/MaintainAspectRatio/StretchToFit>**
Defines what to do if the aspect ratio of a video input source doesn’t match the aspect ratio of the corresponding image frame in a composition. For example if you have a 4:3 input source (like XGA) to be displayed on a 16:9 output (like HD720).

Manual: If the difference in aspect ratio between the video input source and the target image frame is less than the ScaleToFitThreshold configuration (in percent), the image is stretched to fit. Unless the system will maintain the original aspect ratio.
MaintainAspectRatio: Will maintain the aspect ratio of the input source, and fill in black in the rest of the frame (letter boxing or pillar boxing).
StretchToFit: Will stretch (horizontally or vertically) the input source to fit into the image frame.

**Example:** xConfiguration Video Layout ScaleToFrame: MaintainAspectRatio

---

*Codec C90 System Integrator Guide*

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xConfiguration Video Layout ScaleToFrameTreshold: <0..100>
Only applicable if the ScaleToFrame configuration is set to manual. If the difference in aspect ratio between
the video input source and the target image frame is less than the ScaleToFrameThreshold configuration (in
percent), the image is stretched to fit. Unless the system will maintain the original aspect ratio.
Example: xConfiguration Video Layout ScaleToFrameTreshold: 5

xConfiguration Video Layout Scaling: <On/Off>
Defines whether the system should automatically adjust aspect ratio for images or frames when it differs
between the image and the frame it is to be placed in.
On: Let the system automatically adjust aspect ratio.
Off: Do not do any aspect ratio changes automatically.
Example: xConfiguration Video Layout Scaling: On

xConfiguration Video MainVideoSource: <1..5>
Define which video input source shall be used as the main video source. The input source is configured to a
video input connector. See the Video Input Matrix table at the back of the codec and the description of the
Video Input Matrix in the Interfaces section.
Range: 1-5 video sources
Example: xConfiguration Video MainVideoSource: 1

xConfiguration Video Monitors: <Single/Dual/Quadruple>
The codec can be used with more than one monitor and this setting lets you set the codec’s monitor layout
mode to Single, Dual or Quadruple.
Single: The same layout is shown on all monitors.
Dual: The layout is distributed on two monitors.
Quadruple: The layout is distributed on four monitors, so that each remote participant and the presentation
will be shown on separate monitors
Example: xConfiguration Video Monitors: Single

xConfiguration Video OSD Mode: <On/Off>
The Video OSD (On Screen Display) Mode lets you define whether or not information and icons on screen
should be displayed.
On: Set to On to display the on screen menus, icons and indicators (microphone on/off, encryption on/off).
Off: Set to Off to hide the on screen menus, icons and indicators (microphone on/off, encryption on/off).
Example: xConfiguration Video OSD Mode: On

xConfiguration Video OSD Output: <1..4>
The Video OSD (On Screen Display) Output lets you define which monitor should display the on screen
menus, information and icons. By default the OSD output is displayed on the first monitor.
If you have a single monitor and you cannot see any OSD on the monitor: If the OSD output has been set to
the second monitor and the second monitor is not connected, then you cannot see any menus, information
or icons on the screen. To move the OSD output to the first monitor press the following shortcut sequence
on the remote control. Press the Disconnect key followed by: * # * # 0 x # (where x is output 1 or 2).
Example: xConfiguration Video OSD Output: 1

xConfiguration Video Output HDMI [1, 3] MonitorRole: <First/Second/PresentationOnly/
Third/Fourth>
The monitor role describes what video stream will be shown on the monitor connected to the output
connector. Applicable only if the monitor configuration is set to dual or quadruple.
First: Show main video stream.
Second: Show presentation video stream if active, or other participants.
PresentationOnly: Show presentation video stream if active, and nothing else.
Third: Use for remote participants (only for quadruple monitor setup).
Fourth: Use for remote participants (only for quadruple monitor setup).
Example: xConfiguration Video Output HDMI 1 MonitorRole: First

xConfiguration Video Output HDMI [1, 3] Resolution: <Auto/640_480_60/800_600_60/10
24_768_60/1280_1024_60/1280_720_60/1920_1080_60/1360_768_60/1280_768_60/1366_768_60/
1600_1200_60/1920_1200_60>
Select the preferred resolution for the monitor connected to HDMI video output. This will force the selected
resolution on the monitor.
Auto: The system will automatically try to set the optimal resolution based on negotiation with the connected
monitor.
Range: 640x480@60p, 800x600@60p, 1024x768@60p, 1280x1024@60p, 1280x720@60p, 1920x1080@60p, 1280x768@60p, 1366x768@60p, 1600x1200@60p, 1920x1200@60p
Example: xConfiguration Video Output HDMI 1 Resolution: 1920_1080_60

xConfiguration Video Output DVI [2, 4] MonitorRole: <First/Second/PresentationOnly/
Third/Fourth>
The monitor role describes what video stream will be shown on the monitor connected to the output
connector. Applicable only if the monitor configuration is set to dual or quadruple.
First: Show main video stream.
Second: Show presentation video stream if active, or other participants.
PresentationOnly: Show presentation video stream if active, and nothing else.
Third: Use for remote participants (only for quadruple monitor setup).
Fourth: Use for remote participants (only for quadruple monitor setup).
Example: xConfiguration Video Output DVI 4 MonitorRole: First
**xConfiguration Video Output DVI [2, 4] Resolution: <Auto/640_480/800_600/1024_768/1280_1024/1280_720/1280_768/1920_1080/1280_768/1360_768/1366_768/1600_1200/1920_1200>**

Select the preferred resolution for the monitor connected to video output DVI-I 2 or 4. This will force the selected resolution on the monitor.

- **Auto:** The system will automatically try to set the optimal resolution based on negotiation with the connected monitor.
- **Range:** 640x480@60p, 800x600@60p, 1024x768@60p, 1280x1024@60p, 1280x720@60p, 1280x768@60p, 1360x768@60p, 1600x1200@60p, 1920x1200@60p

Example: xConfiguration Video Output DVI 2 Resolution: 1920_1080_60

---

**xConfiguration Video Output Composite [5] MonitorRole: <First/Second/PresentationOnly/Third/Fourth>**

The monitor role describes what video stream will be shown on the monitor connected to the output connector. Applicable only if the monitor configuration is set to dual or quadruple.

- **First:** Show main video stream.
- **Second:** Show presentation video stream if active, or other participants.
- **PresentationOnly:** Show presentation video stream if active, and nothing else.
- **Third:** Use for remote participants (only for quadruple monitor setup).
- **Fourth:** Use for remote participants (only for quadruple monitor setup).

Example: xConfiguration Video Output Composite 5 MonitorRole: First

---

**xConfiguration Video Output Composite [5] Resolution: <PAL/NTSC>**

Select the preferred resolution for the monitor connected to video output composite 1. This will force the selected resolution on the monitor.

- **Range:** PAL, NTSC

Example: xConfiguration Video Output Composite 5 Resolution: NTSC

---

**xConfiguration Video Selfview: <On/Off>**

The Video Selfview setting determines whether or not the main video source (selfview) should be displayed on screen.

- **On:** Set to On when you want selfview to be displayed on screen.
- **Off:** Set to Off when you do not want selfview to be displayed on screen.

Example: xConfiguration Video Selfview: On

---

**xConfiguration Video Wallpaper: <None/Growing/Summersky/Custom>**

The Video Wallpaper setting determines whether or not a background picture should be displayed on screen when idle.

- **None:** Set to None if you do not want a wallpaper to be displayed on screen.
- **Summersky, Growing:** Select the wallpaper to be displayed on screen.
- **Custom:** The custom wallpaper is uploaded from the web interface. Open a web browser and enter the IP address of the codec. Select "Wallpaper" from the menu on top of the screen. Browse for the file and press the "Upload" button. Toggle once between “None” and “Custom” wallpaper to make the change take effect. See the Appendices section for further details about the web interface.

Example: xConfiguration Video Wallpaper: Summersky
The Experimental menu
The Advanced configurations menu has an option called Experimental. The settings within this menu can be used ‘as is’ and will not be documented.

NOTE! The Experimental menu WILL change.

**xConfiguration Experimental Audio Equalizer [1..8] Section [1..6] a1:** \(<S: 0, 32>\)
Sets the a1 coefficient for the given equalizer ID and section number.
The system has 8 user defined equalizers, each made up of 6 second order IIR sections. See the Appendix, Equalizer section.

Example: xConfiguration Experimental Audio Equalizer 1 Section 1 a1: "0.0"

**xConfiguration Experimental Audio Equalizer [1..8] Section [1..6] a2:** \(<S: 0, 32>\)
Sets the a2 coefficient for the given equalizer ID and section number.
The system has 8 user defined equalizers, each made up of 6 second order IIR sections. See the Appendix, Equalizer section.

Example: xConfiguration Experimental Audio Equalizer 1 Section 1 a2: "0.0"

**xConfiguration Experimental Audio Equalizer [1..8] Section [1..6] b0:** \(<S: 0, 32>\)
Sets the b0 coefficient for the given equalizer ID and section number.
The system has 8 user defined equalizers, each made up of 6 second order IIR sections. See the Appendix, Equalizer section.

Example: xConfiguration Experimental Audio Equalizer 1 Section 1 b0: "0.0"

**xConfiguration Experimental Audio Equalizer [1..8] Section [1..6] b1:** \(<S: 0, 32>\)
Sets the b1 coefficient for the given equalizer ID and section number.
The system has 8 user defined equalizers, each made up of 6 second order IIR sections. See the Appendix, Equalizer section.

Example: xConfiguration Experimental Audio Equalizer 1 Section 1 b1: "0.0"

**xConfiguration Experimental Audio Equalizer [1..8] Section [1..6] b2:** \(<S: 0, 32>\)
Sets the b2 coefficient for the given equalizer ID and section number.
The system has 8 user defined equalizers, each made up of 6 second order IIR sections. See the Appendix, Equalizer section.

Example: xConfiguration Experimental Audio Equalizer 1 Section 1 b2: "0.0"

**xConfiguration Experimental Audio Input Line [1..4] Equalizer ID:** \(<1..8>\)
Select equalizer ID[1...8]

Example: xConfiguration Experimental Audio Input Line 1 Equalizer ID: 1

**xConfiguration Experimental Audio Input Line [1..4] Equalizer Mode:** \(<On/Off>\)
Determines whether or not the selected equalizer is enabled.
On: Use the selected equalizer
Off: No equalizer

Example: xConfiguration Experimental Audio Input Line 1 Equalizer Mode: Off

**xConfiguration Experimental Audio Input Microphone [1..8] Channel:** \(<Left/Right/Mono>\)
Defines whether the microphone input is a mono signal or part of a multichannel signal.
Left: The microphone input signal is the left channel of a stereo signal.
Right: The microphone input signal is the right channel of a stereo signal.
Mono: The microphone input signal is a mono signal.

Example: xConfiguration Experimental Audio Input Microphone 1 Channel: Mono

**xConfiguration Experimental Audio Input Microphone [1..8] Equalizer ID:** \(<1..8>\)
Select equalizer ID[1...8]

Example: xConfiguration Experimental Audio Input Microphone 1 Equalizer ID: 1

**xConfiguration Experimental Audio Input Microphone [1..8] Equalizer Mode:** \(<On/Off>\)
Determines whether or not the selected equalizer is enabled.
On: Use the selected equalizer
Off: No equalizer

Example: xConfiguration Experimental Audio Input Microphone 1 Equalizer Mode: Off

**xConfiguration Experimental Audio Output Line [1..6] Equalizer ID:** \(<1..8>\)
Select equalizer ID[1...8]

Example: xConfiguration Experimental Audio Output Line 1 Equalizer ID: 1

We recommend you visit the TANDBERG web site regularly for updated versions of the manual.
Go to: [http://www.tandberg.com/docs](http://www.tandberg.com/docs)
The Experimental menu, cont...

The Advanced configurations menu has an option called Experimental. The settings within this menu can be used 'as is' and will not be documented.

**NOTE!** The Experimental menu WILL change.

**xConfiguration Experimental Audio Output Line [1..6] Equalizer Mode: <On/Off>**
Determines whether or not the selected equalizer is enabled.
On: Use the selected equalizer
Off: No equalizer

**Example:** xConfiguration Experimental Audio Output Line 1 Equalizer Mode: Off

**xConfiguration Experimental CapsetFilter: <S: 0, 32>**
To be described.

**Example:** xConfiguration Experimental CapsetFilter: ""

**xConfiguration Experimental CustomSoftbuttons State [1..2] Softbutton [1..5] Type: <NotSet/MainSource/PresentationSource/CameraPreset/Actions/SpeedDial>**
To be described.

**Example:** xConfiguration Experimental CustomSoftbuttons State 1 Softbutton 1 Type: NotSet

**xConfiguration Experimental CustomSoftbuttons State [1..2] Softbutton [1..5] Value: <S: 0, 255>**
To be described.

**Example:** xConfiguration Experimental CustomSoftbuttons State 1 Softbutton 1 Value: ""

**xConfiguration Experimental SoftwareUpgrade Mode: <Auto/Manual>**
To be described.

**Example:** xConfiguration Experimental SoftwareUpgrade Mode: Manual

**xConfiguration Experimental SoftwareUpgrade ServerAddress: <S: 0, 255>**
To be described.

**Example:** xConfiguration Experimental SoftwareUpgrade ServerAddress: "http://csupdate.tandberg.com/getswlist.py"
Command type commands are used to instruct the system to perform a given action. Examples: place a call, mute microphones, disconnect a call and more. The command type is followed by a set of parameters to specify how the given action is to be executed.

**NOTE**: The description of the xCommand commands are preliminary, and subject to change.
The Audio commands, cont...

**xCommand Audio Sound Stop**

Stop playing audio sound.

Example:

```
xCommand Audio Sound Stop
*r AudioSoundStopResult (status=OK):
** end
```

**xCommand Audio Vumeter Start**

Start collecting VU meter information for connector given by type and ID.

Parameters: Required parameters are marked with (r):

- **ConnectorType(r):** <HDMI/Line/Microphone>
- **ConnectorId( r):** <1..8>

Example:

```
xCommand Audio Vumeter Start ConnectorType: Microphone ConnectorId: 1
*r AudioVumeterStartResult (status=OK):
** end
```

**xCommand Audio Vumeter Stop**

Stop collecting VU meter information for connector given by type and ID.

Parameters: Required parameters are marked with (r):

- **ConnectorType(r):** <HDMI/Line/Microphone>
- **ConnectorId( r):** <1..8>

Example:

```
xCommand Audio Vumeter Stop ConnectorType: Microphone ConnectorId: 1
*r AudioVumeterStopResult (status=OK):
** end
```

**xCommand Audio Setup Clear**

Removes all local inputs and local outputs. See the Appendix > Dynamic audio API section.

Example:

```
xCommand Audio Setup Clear
*r AudioSetupClearResult (status=OK):
** end
```
**The Audio commands, cont...**

**xCommand Audio LocalInput Add**

Creates a local input and generates the local input id. A local input is a mix of input connectors with the following settings: Name, MixerMode, AGC, Mute and Channels. See the Appendix > Dynamic audio API section.

- **Name:** Choose a name that describes the mix of input connectors.
- **MixerMode:** Auto: The microphone with the strongest speaker is active and the others are strongly attenuated. Fixed: The input connector signals are mixed together with equal gains. GainShared: The microphones are given a normalized gain factor relative to the strongest speaker before being mixed together.
- **AGC:** Automatic Gain Control.
- **Mute:** Mutes the mix of input connectors.
- **Channels:** Set channels to 1 to mix the input connectors into a mono signal. To mix the input connectors into a stereo signal, set channels to 2.

Parameters: Required parameters are marked with (r):
- **InputId:** <0..65534>
- **Name:** <S: 0, 255>
- **MixerMode:** <Auto/Fixed/GainShared>
- **AGC:** <On/Off>
- **Mute:** <On/Off>
- **Channels:** <1..2>

Example:
```
xCommand Audio LocalInput Add
OK
* r AudioInputGroupAddResult (status=OK):
   InputId: 2
** end
```

**xCommand Audio LocalInput Remove**

Removes the local input given by the input ID. See the Appendix > Dynamic audio API section.

Parameters: Required parameters are marked with (r):
- **InputId:** <0..65534>

Example:
```
xCommand Audio LocalInput Remove InputId: 2
OK
* r AudioInputGroupRemoveResult (status=OK):
** end
```

**xCommand Audio LocalInput Update**

Updates the settings of the local input given by the input ID. See the Appendix > Dynamic audio API section.
- **Name:** Choose a name that describes the mix of input connectors.
- **MixerMode Auto:** The microphone with the strongest speaker is active and the others are strongly attenuated.
- **MixerMode Fixed:** The input connector signals are mixed together with equal gains.
- **MixerMode GainShared:** The microphones are given a normalized gain factor relative to the strongest speaker before being mixed together.
- **AGC:** Automatic Gain Control.
- **Mute:** Mutes the mix of input connectors.
- **Channels:** Set channels to 1 to mix the input connectors into a mono signal. To mix the input connectors into a stereo signal, set channels to 2.

Parameters: Required parameters are marked with (r):
- **InputId(r):** <0..65534>
- **Name(r):** <S: 0, 255>
- **MixerMode(r):** <Auto/Fixed/GainShared>
- **AGC(r):** <On/Off>
- **Mute(r):** <On/Off>
- **Channels(r):** <1..2>

Example:
```
xCommand Audio LocalInput Update InputId: 2 Name: "Microphone" MixerMode: GainShared AGC: Off Mute: Off Channels: 1
OK
* r AudioInputGroupUpdateResult (status=OK):
** end
```

**xCommand Audio LocalInput AddConnector**

Attaches an input connector to the local input given by the input ID. A connector is defined by its type and ID. See the Appendix > Dynamic audio API section.

Parameters: Required parameters are marked with (r):
- **InputId(r):** <0..65534>
- **ConnectorType(r):** <HDMI/Line/Microphone>
- **ConnectorId(r):** <1..8>

Example:
```
xCommand Audio LocalInput AddConnector InputId: 3 ConnectorType: Line ConnectorId: 1
OK
* r AudioInputGroupAddConnectorResult (status=OK):
** end
```
The Audio commands, cont...

**xCommand Audio LocalInput RemoveConnector**

Detach an input connector from the local input given by the input ID. A connector is defined by its type and ID. See the Appendix > Dynamic audio API section.

Parameters: Required parameters are marked with (r):

- InputId(r): <0..65534>
- ConnectorType(r): <HDMI/Line/Microphone>
- ConnectorId(r): <1..8>

Example:

```
xCommand Audio LocalInput RemoveConnector InputId: 3 ConnectorType: Line ConnectorId: 1
**r AudioInputGroupRemoveConnectorResult (status=OK):
```

** end

**xCommand Audio LocalOutput Add**

Creates a local output and generates the local output id. A local output is a mix of local input and remote input signals. All connectors attached to the local output receive the same signal. See the Appendix > Dynamic audio API section.

A local output has the following settings:

- Name: Choose a name that describes the local output.
- Loudspeaker: If one or more of the output connectors are connected to a loudspeaker, this signal should be a reference signal to the echo canceller. Hence set loudspeaker to On. NOTE! When microphone reinforcement is disabled there should only be one loudspeaker local output.
- Channels: Set channels to 1 to mix the local and remote inputs into a mono signal. To mix the inputs into a stereo signal, set channels to 2.

Parameters: Required parameters are marked with (r):

- OutputId: <0..65534>
- Name: <S: 0, 255>
- Loudspeaker: <On/Off>
- Channels: <1..2>

Example:

```
xCommand Audio LocalOutput Add
  OutputId: 47
  Name: "Loudspeaker"
  Loudspeaker: On
  Channels: 2
**r AudioOutputGroupAddResult (status=OK):
```

** end

**xCommand Audio LocalOutput Update**

Updates the settings of the local output given by the output ID. See the Appendix > Dynamic audio API section.

Name: Choose a name that describes the local output.
Loudspeaker: If one or more of the output connectors are connected to a loudspeaker, this signal should be a reference signal to the echo canceller. Hence set loudspeaker to On. NOTE! When microphone reinforcement is disabled there should only be one loudspeaker local output.
Channels: Set channels to 1 to mix the local and remote inputs into a mono signal. To mix the inputs into a stereo signal, set channels to 2.

Parameters: Required parameters are marked with (r):

- OutputId(r): <0..65534>
- Name(r): <S: 0, 255>
- Loudspeaker(r): <On/Off>
- Channels(r): <1..2>

Example:

```
xCommand Audio LocalOutput Update OutputId: 5 Name: "Loudspeaker" Loudspeaker: On Channels: 2
**r AudioOutputGroupUpdateResult (status=OK):
```

** end

**xCommand Audio LocalOutput Remove**

Removes the local output given by the output ID. See the Appendix > Dynamic audio API section.

Parameters: Required parameters are marked with (r):

- OutputId(r): <0..65534>

Example:

```
xCommand Audio LocalOutput Remove OutputId: 6
OK
**r AudioOutputGroupRemoveResult (status=OK):
```

** end
The Audio commands, cont...

**xCommand Audio LocalOutput AddConnector**
Attach an output connector to the local output given by the output ID. A connector is defined by its type and ID. See the Appendix > Dynamic audio API section.

Parameters: Required parameters are marked with (r):
- **OutputId(r):** <0..65534>
- **ConnectorType(r):** <HDMI/Line>
- **ConnectorId(r):** <1..8>

Example:
```
xcommand Audio LocalOutput AddConnector OutputId:5 ConnectorType: Line
     ConnectorId:1
     OK
   *r AudioOutputGroupAddConnectorResult (status=OK):
      ** end
```

**xCommand Audio LocalOutput RemoveConnector**
Detach an output connector from the local output given by the output ID. A connector is defined by its type and ID. See the Appendix > Dynamic audio API section.

Parameters: Required parameters are marked with (r):
- **OutputId(r):** <0..65534>
- **ConnectorType(r):** <HDMI/Line>
- **ConnectorId(r):** <1..8>

Example:
```
xcommand Audio LocalOutput RemoveConnector OutputId:5 ConnectorType: Line
  ConnectorId:1
  OK
  *r AudioOutputGroupRemoveConnectorResult (status=OK):
    ** end
```

**xCommand Audio LocalOutput ConnectInput**
Connect a local input or remote input to a local output by giving their IDs as parameters. If desired, set a gain on the input signal in the range from -53 dB to 15 dB. -54 dB equals OFF. See the Appendix > Dynamic audio API section.

Parameters: Required parameters are marked with (r):
- **OutputId(r):** <0..65534>
- **InputId(r):** <0..65534>
- **InputGain:** <-54..15>

Example:
```
xCommand Audio LocalOutput ConnectInput OutputId:6 InputId:3
  OK
  *r AudioOutputGroupConnectInputResult (status=OK):
    ** end
```

**xCommand Audio LocalOutput DisconnectInput**
Disconnect a local input or remote input from a local output by giving their IDs as parameters. See the Appendix > Dynamic audio API section.

Parameters: Required parameters are marked with (r):
- **OutputId(r):** <0..65534>
- **InputId(r):** <0..65534>

Example:
```
xCommand Audio LocalOutput DisconnectInput OutputId:6 InputId:3
  OK
  *r AudioOutputGroupDisconnectInputResult (status=OK):
    ** end
```
The Audio commands, cont...

**xCommand Audio RemoteInput Update**

When a call is made a remote input and remote output pair is created. This command updates the settings of the remote input given by the input ID. The remote input has one setting, the AGC (Automatic Gain Control). See the Appendix > Dynamic audio API section.

Parameters: Required parameters are marked with `(r)`:
- `InputId(r): <0..65534>`
- `AGC(r): <On/Off>`

Example:
```
xCommand Audio RemoteInput Update InputId:9 AGC: Off
OK
```
```
*r AudioRemoteInputGroupUpdateResult (status=OK):
** end
```

**xCommand Audio RemoteOutput ConnectInput**

When a call is made a remote input and remote output pair is created. This command connects a local input or remote input to a remote output with their IDs as parameters. If desired, set a gain on the input signal in the range from -53 dB to 15 dB. -54 dB equals OFF. See the Appendix > Dynamic audio API section.

Parameters: Required parameters are marked with `(r)`:
- `OutputId(r): <0..65534>`
- `InputId(r): <0..65534>`
- `InputGain: <-54..15>`

Example:
```
xCommand Audio RemoteOutput ConnectInput OutputId:10 InputId:8
OK
```
```
*r AudioRemoteOutputGroupConnectInputResult (status=OK):
** end
```

**xCommand Audio RemoteOutput DisconnectInput**

When a call is made a remote input and remote output pair is created. This command disconnects a local input or remote input from a remote output with their IDs as parameters. See the Appendix > Dynamic audio API section.

Parameters: Required parameters are marked with `(r)`:
- `OutputId(r): <0..65534>`
- `InputId(r): <0..65534>`

Example:
```
xCommand Audio RemoteOutput DisconnectInput OutputId:10 InputId:8
OK
```
```
*r AudioRemoteOutputGroupDisconnectInputResult (status=OK):
** end
```

**xCommand Boot**

Reboot system.

Example:
```
xCommand Boot
*r BootResult (status=OK):
*r/end
OK
```
```
CUIL reboot request, restarting
Connection closed by foreign host.
```
The Call commands

xCommand Call Disconnect
Disconnect specified call. (Tip: xStatus Call will give you a list of all active calls)
Parameters: Required parameters are marked with (r):
CallId( r): <0..65534>
Example:
  xCommand Call Disconnect CallId:17
  OK
  *r DisconnectCallResult (status=OK):
  *r/end

xCommand Call DisconnectAll
Disconnect all active calls.
Example:
  xCommand Call DisconnectAll
  OK
  *r DisconnectAllResult (status=OK):
  *r/end

xCommand Call Accept
Accept incoming call. If no call id is specified, all incoming calls will be accepted.
Parameters: Required parameters are marked with (r):
CallId: <0..65534>
Example:
  xCommand Call Accept CallId:19
  OK
  *r CallAcceptResult (status=OK):
  *r/end

xCommand Call Reject
Reject incoming call. If no call id is specified, all incoming calls will be rejected.
Parameters: Required parameters are marked with (r):
CallId: <0..65534>
Example:
  xCommand Call Reject CallId:20
  OK
  *r CallRejectResult (status=OK):
  *r/end

The Call Log commands

xCommand CallLog Clear
Clear call logs stored in the system. If a logtag is given as argument, that specific call is deleted from the logs. If not logtag is give, all call logs will be deleted.
Parameters: Required parameters are marked with (r):
LogTag: <0..2147483647>
Example:
  xCommand CallLog Clear
  *r ClearResult (status=OK):
  *r/end

xCommand CallLog Recent Delete
Delete log of recent calls. If a logtag is given as argument, that specific call is deleted from the log. If not logtag is give, the complete recent calls list will be deleted.
Parameters: Required parameters are marked with (r):
LogTag: <0..2147483647>
Example:
  xCommand CallLog Recent Delete
  *r DeleteResult (status=OK):
  *r/end

xCommand CallLog Outgoing Delete
Delete log of outgoing calls made from the system. If a logtag is given as argument, that specific call is deleted from the log. If not logtag is give, the complete outgoing calls list will be deleted.
Parameters: Required parameters are marked with (r):
LogTag: <0..2147483647>
Example:
  xCommand CallLog Outgoing Delete LogTag:202
  *r DeleteResult (status=OK):
  *r/end
The Call Log commands, *cont...*

**xCommand CallLog Received Delete**
Delete log of received calls. If a logtag is given as argument, that specific call is deleted from the log. If not logtag is give, the complete received calls list will be deleted.

Parameters: Required parameters are marked with (*r*):
LogTag: <0..2147483647>

Example:
```
xCommand CallLog Received Delete LogTag:126
*r DeleteResult (status=OK):
 *r/end
```

**xCommand CallLog Missed Delete**
Delete log of missed calls. If a logtag is given as argument, that specific call is deleted from the log. If not logtag is give, the complete missed calls list will be deleted.

Parameters: Required parameters are marked with (*r*):
LogTag: <0..2147483647>

Example:
```
xCommand CallLog Missed Delete LogTag:119
*r DeleteResult (status=OK):
 *r/end
```

The Camera Control PiP command

**xCommand CamCtrlPip**
Can be used to show or hide a small window with the camera selfview, while adjusting the camera position for instance. (If selfview isn't already shown)

Parameters: Required parameters are marked with (*r*):
Mode(*r*): <On/Off>

Example:
```
xCommand CamCtrlPip Mode: On
*r CamCtrlPipResult (status=OK):
 ** end
```
The Camera commands

**xCommand Camera BestView**
Activate the BestView function in the Precision camera, which automatically will select the best camera position based on face recognition technology.

Parameters: Required parameters are marked with (r):
- CameraId(\(r\)): <1..7>
- Duration: <0..65534>

Example:
```
xCommand Camera BestView CameraId:1 Duration:7
OK
*r BestViewResult (status=OK):
*r/end
```

**xCommand Camera CameraUpgrade**
Upgrade camera software to a specific version. This functionality requires that a valid camera software is stored somewhere in the codecs file system.

Parameters: Required parameters are marked with (r):
- CameraId(\(r\)): <1..7>
- Filename(\(r\)): <S: 0, 128>

Example:
```
xCommand Camera CameraUpgrade CameraId:1 Filename:/tmp/camsw.pkg
OK
*r CameraUpgradeResult (status=OK):
*r/end
```

**xCommand Camera PanTiltReset**
Camera pan/tilt values is positioned to its default predefined value.

Parameters: Required parameters are marked with (r):
- CameraId(\(r\)): <1..7>

Example:
```
xCommand Camera PanTiltReset CameraId:1
OK
*r PanTiltResetResult (status=OK):
*r/end
```

**xCommand Camera PositionSet**
Set camera position to specified values.

Parameters: Required parameters are marked with (r):
- CameraId(\(r\)): <1..7>
- Pan: <-65535..65535>
- Tilt: <-65535..65535>
- Zoom: <0..65535>
- Focus: <0..65535>

Example:
```
xCommand Camera PositionSet CameraId:1 Pan:200 Tilt:300
OK
*r CameraPositionSetResult (status=OK):
*r/end
```

**xCommand Camera Ramp**
Move camera in specified direction. The camera will move at specified speed until stop command is issued. Run a stop command to stop the camera.

Parameters: Required parameters are marked with (r):
- CameraId(\(r\)): <1..7>
- Pan: <Left/Right/Stop>
- PanSpeed: <1..15>
- Tilt: <Down/Stop/Up>
- TiltSpeed: <1..15>
- Zoom: <In/Out/Stop>
- ZoomSpeed: <1..15>
- Focus: <Far/Near/Stop>

Example:
```
xCommand Camera Ramp CameraId:1 Pan:left PanSpeed:1
OK
*r RampResult (status=OK):
*r/end
xCommand Camera Ramp CameraId:1 Pan:stop
OK
*r RampResult (status=OK):
*r/end
```
The Camera commands, cont...

**xCommand Camera ReconfigureCameraChain**
Reinitialize camera chain. Get info about what camera is sitting in what position in the camera chain.

**Example:**
```
xCommand Camera ReconfigureCameraChain
*r ReconfigureCameraChainResult (status=OK):
  *r/end
```

**xCommand Camera TriggerAutofocus**
Trigger the automatic focus functionality in the selected camera.

Parameters: Required parameters are marked with (*):
CameraId(): <1..7>

**Example:**
```
xCommand Camera TriggerAutofocus CameraId:1
OK
*r TriggerAutofocusResult (status=OK):
  *r/end
```

The Dial command

**xCommand Dial**
Dial out from the system.

Parameters: Required parameters are marked with (*):
Number(): <S: 0, 255>
Protocol: <H323/Sip>
CallRate: <64..6000>
CallType: <Audio/Video>

**Example:**
```
xCommand Dial Number:543210 Protocol:h323
OK
*r DialResult (status=OK):
  CallId: 2
  ConferenceId: 1
  *r/end
```
The DTMF command

**xCommand DTMFSend**
Send DTMF tones to the far end.

Parameters: Required parameters are marked with ('r):
- **CallId** ('r): <0..65534>
- **DTMFString** ('r): <S: 0, 32>

Example:
```
xCommand DTMFSend CallId:2 DTMFString:1234
*r DTMFSendResult (status=OK):
*r/end
```

The Far End Control commands, cont...

**xCommand FarEndControlPreset Activate**
Activate move of far end camera to preset position.

Parameters: Required parameters are marked with ('r):
- **CallId** ('r): <0..65534>
- **PresetId** ('r): <1..15>

Example:
```
xCommand FarEndControlPreset Activate CallId:3 PresetId:1
*r FECCPresetActivateResult (status=OK):
*r/end
```

**xCommand FarEndControlPreset Store**
Store position of far end camera to a preset.

Parameters: Required parameters are marked with ('r):
- **CallId** ('r): <0..65534>
- **PresetId** ('r): <0..15>

Example:
```
xCommand FarEndControlPreset Store CallId:3 PresetId:1
*r FECCPresetStoreResult (status=OK):
*r/end
```

**xCommand FarEndControlSource Select**
Select which video source to use as the main source on the far end system.

Parameters: Required parameters are marked with ('r):
- **CallId** ('r): <0..65534>
- **SourceId** ('r): <0..15>

Example:
```
xCommand FarEndControlSource Select CallId:3 SourceId:1
*r FECCSelectSourceResult (status=OK):
*r/end
```

The Far End Control command

**xCommand FarEndControl Camera Move**
Move far end camera. The camera will move in the specified direction until the stop command is issued.

Parameters: Required parameters are marked with ('r):
- **CallId** ('r): <0..65534>
- **Value** ('r): <Left/Right/Up/Down/ZoomIn/ZoomOut>

Example:
```
xCommand FarEndControlCameraMove CallId:3 Value:left
*r FECCMoveResult (status=OK):
*r/end
```

**xCommand FarEndControl Camera Stop**
Stop far end camera control move.

Parameters: Required parameters are marked with ('r):
- **CallId** ('r): <0..65534>

Example:
```
xCommand FarEndControlCameraStop CallId:3
*r FECCMoveResult (status=OK):
*r/end
```
The HTTP Feedback commands

**xCommand HttpFeedback Register**

Command used to instruct the system to return XML feedback over HTTP(S) to specific URLs. What parts of the Status and Configuration XML documents to monitor are specified by XPath expressions. Examples of some valid XPath expressions: “Status/Video”, “Status/Audio”, “Status/Call”, “Status/Conference”.

Parameters: Required parameters are marked with ( r):
- FeedbackSlot: <1..3>
- ServerUrl( r): <S: 1, 256>
- Expression[1..15]: <S: 1, 256>

Example:
```xml
xCommand HttpFeedback Register FeedbackSlot:1 ServerUrl:10.47.19.41 Expression[1]:Status/Video Expression[2]:Status/Audio Expression[3]:Status/Call Expression[4]:Status/Conference OK
```

```xml
*r FeedbackRegisterResult (status=OK):
FeedbackSlot: 1
*r/end
```

**xCommand HttpFeedback Deregister**

Command used to deregister XML feedback over HTTP(S).

Parameters: Required parameters are marked with ( r):
- FeedbackSlot: <1..3>

Example:
```xml
xCommand HttpFeedback Deregister FeedbackSlot:1 OK
```

```xml
*r FeedbackDeregisterResult (status=OK):
FeedbackSlot: 1
*r/end
```

The Key commands

**xCommand Key Click**

Command used to emulate pressing a key on the remote control for a short while. This command needs no release command.

Parameters: Required parameters are marked with ( r):
- Key(r): <0/1/2/3/4/5/6/7/8/9/C/Call/Disconnect/Down/F1/F2/F3/F4/F5/Grab/Home/Layout/Left/Mute/MuteMic/Ok/PhoneBook/Presentation/Right/Selfview/Square/SrcAux/SrcCamera/SrcDocCam/SrcPc/SrcVcr/Star/Up/VolumeDown/VolumeUp/ZoomIn/ZoomOut>
- Duration: <0..65534>

Example:
```xml
xCommand Key Click Key:Down Duration:1
```

```xml
*r KeyClickResult (status=OK):
** end
```

**xCommand Key Press**

Command used to emulate pressing a key on the remote control without releasing it. The Key Press command should be followed by a Key Release command to emulate releasing the key.

Parameters: Required parameters are marked with ( r):
- Key(r): <0/1/2/3/4/5/6/7/8/9/C/Call/Disconnect/Down/F1/F2/F3/F4/F5/Grab/Home/Layout/Left/Mute/MuteMic/Ok/PhoneBook/Presentation/Right/Selfview/Square/SrcAux/SrcCamera/SrcDocCam/SrcPc/SrcVcr/Star/Up/VolumeDown/VolumeUp/ZoomIn/ZoomOut>

Example:
```xml
xCommand Key Press Key:Home
```

```xml
*r KeyPressResult (status=OK):
** end
```

**xCommand Key Release**

Command used to emulate release an already pressed key on the remote control. The Key Release command should be preceded by a Key Press command to emulate pressing the key.

Parameters: Required parameters are marked with ( r):
- Key(r): <0/1/2/3/4/5/6/7/8/9/C/Call/Disconnect/Down/F1/F2/F3/F4/F5/Grab/Home/Layout/Left/Mute/MuteMic/Ok/PhoneBook/Presentation/Right/Selfview/Square/SrcAux/SrcCamera/SrcDocCam/SrcPc/SrcVcr/Star/Up/VolumeDown/VolumeUp/ZoomIn/ZoomOut>

Example:
```xml
xCommand Key Release Key:Home
```

```xml
*r KeyReleaseResult (status=OK):
** end
```
The Phonebook commands

**xCommand Phonebook Contact Add**
Add new contact to local phonebook. Stored internally in system.
Parameters: Required parameters are marked with (r):
Name( r): <S: 0, 255>
FolderId: <S: 0, 255>
Number: <S: 0, 255>
Protocol: <H323/SIP>
CallRate: <0..65534>
Device: <Mobile/Other/Telephone/Video>

Example:
```
xCommand Phonebook Contact Add Name:John Number:12345
OK
```
* PhonebookContactAddResult (status=OK):
Name: localContactId-1
** end

**xCommand Phonebook Contact Modify**
Modify existing contact in local phonebook.
Parameters: Required parameters are marked with (r):
ContactId( r): <S: 0, 255>
Name: <S: 0, 255>
FolderId: <S: 0, 255>

Example:
```
xcommand Phonebook Contact Modify ContactId:localContactId-1 Name:john.office
OK
```
* PhonebookContactModifyResult (status=OK):
Name: 1
* end

**xCommand Phonebook Contact Delete**
Delete contact from local phonebook.
Parameters: Required parameters are marked with (r):
ContactId( r): <S: 0, 255>

Example:
```
xCommand Phonebook Contact Delete ContactId:localContactId-1
OK
```
* PhonebookContactDeleteResult (status=OK):
* end

**The Phonebook commands, cont...**

**xCommand Phonebook ContactMethod Add**
Specify details about how to set up call to local phonebook contact.
Parameters: Required parameters are marked with (r):
ContactId( r): <S: 0, 255>
Device: <Mobile/Other/Telephone/Video>
Number( r): <S: 0, 255>
Protocol: <H323/SIP>
CallRate: <0..65534>

Example:
```
xCommand Phonebook ContactMethod Add ContactId:localContactId-2 Number:54321
Protocol:H323
OK
```
* PhonebookContactMethodAddResult (status=OK):
Name: 1
** end

**xCommand Phonebook ContactMethod Delete**
Delete call setup details for local phonebook contact.
Parameters: Required parameters are marked with (r):
ContactId( r): <S: 0, 255>
ContactMethodId( r): <S: 0, 255>

Example:
```
xCommand Phonebook ContactMethod Delete ContactId:localContactId-2
ContactMethodId:1
OK
```
* PhonebookContactMethodDeleteResult (status=OK):
* end

**xCommand Phonebook Folder Add**
Add a folder to the local phonebook, where phonebook entries can be stored.
Parameters: Required parameters are marked with (r):
Name( r): <S: 0, 255>
ParentFolderId: <S: 0, 255>

Example:
```
xcommand Phonebook Folder Add Name:locationA
OK
```
* PhonebookFolderAddResult (status=OK):
Name: localGroupId-3
** end
The Phonebook commands, cont...

**xCommand Phonebook Folder Modify**
Modify an existing phonebook folder

Parameters: Required parameters are marked with ():
- FolderId: <S: 0, 255>
- Name: <S: 0, 255>
- ParentFolderId: <S: 0, 255>

Example:
```
xCommand Phonebook Folder Modify FolderId:localGroupId-3 Name:locationB
OK
*r PhonebookFolderModifyResult (status=OK):
** end
```

**xCommand Phonebook Folder Delete**
Delete an existing folder from the local phonebook

Parameters: Required parameters are marked with ():
- FolderId: <S: 0, 255>

Example:
```
xCommand Phonebook Folder Delete FolderId:localGroupId-3
OK
*r PhonebookFolderDeleteResult (status=OK):
** end
```

**xCommand Phonebook Search**
Search for specific entries in the phonebook

Parameters: Required parameters are marked with ():
- PhonebookId: <S: 0, 255>
- PhonebookType: <Corporate/Local>
- SearchString: <S: 0, 255>
- SearchField: <Name/Number>
- Offset: <0..65534>
- FolderId: <S: 0, 255>
- Limit: <0..65534>

Example:
```
xcommand Phonebook Search PhonebookId: departmentA PhonebookType: Corporate
SearchString: John SearchField: Name
*r PhonebookSearchResult (status=OK):
  Name: 6
** end
```

The Presentation commands

**xCommand Presentation Start**
Will open dual presentation stream using selected presentation source when in call (if presenter option is installed). When not in call, the selected presentation source will be displayed.

Parameters: Required parameters are marked with ():
- PresentationSource: <1..5>

Example:
```
xCommand Presentation Start PresentationSource:2
OK
*r PresentationStartResult (status=OK):
*r/end
```

**xCommand Presentation Stop**
Will stop dual presentation stream when in call. Will stop displaying presentation source locally when not in call.

Example:
```
xCommand Presentation Stop
OK
*r PresentationStopResult (status=OK):
*r/end
```
The Preset commands

**xCommand Preset Activate**

Activate local preset. Will move camera to predefined position.

Parameters: Required parameters are marked with (r):
PresetId(r): <1..15>

Example:
```
xCommand Preset Activate PresetId:3
OK
*r PresetActivateResult (status=OK):
*r/end
```

**xCommand Preset Clear**

Delete a preset storing a camera position.

Parameters: Required parameters are marked with (r):
PresetId(r): <1..15>

Example:
```
xCommand Preset Clear PresetId:3
OK
*r PresetClearResult (status=OK):
*r/end
```

**xCommand Preset Store**

Store current camera position. System may hold 15 predefined camera positions (presets).

Parameters: Required parameters are marked with (r):
PresetId(r): <1..15>
Type(r): <All/Camera>
Description(r): <S: 0, 255>

Example:
```
xCommand Preset Store PresetId:3 Type:Camera Description:"Left view"
OK
*r PresetStoreResult (status=OK):
*r/end
```

The SString Send command

**xCommand SStringSend**

Used to send data to far end, e.g. for control systems. Uses the H.224 data channel (UDP).

Parameters: Required parameters are marked with (r):
Message(r): <S: 1, 256>
CallId: <0..65534>

Example:
```
xCommand SStringSend CallId:4 Message:"This is a test"
*r SStringSendResult (status=OK):
*r/end
```
The Standby commands

**xCommand Standby Activate**
Set system in standby mode, which will turn off the video outputs and put the camera to sleep.

Example:
```
  xCommand Standby Activate
  *r ActivateResult (status=OK):
  *r/end
```

**xCommand Standby Deactivate**
Bring system out of standby mode.

Example:
```
  xCommand Standby Deactivate
  *r DeactivateResult (status=OK):
  *r/end
```

**xCommand Standby ResetTimer**
System will enter standby mode after time specified by Delay parameter.
Parameters: Required parameters are marked with (r):
- Delay: <1..480>

Example:
```
  xCommand Standby ResetTimer Delay:10
  *r ResetResult (status=OK):
  *r/end
```

The System Unit commands

**xCommand SystemUnit OptionKey Add**
Add option key to add extra system capabilities, e.g. Multisite.
Parameters: Required parameters are marked with (r):
- Key(r): <S: 16, 24>

Example:
```
  xCommand SystemUnit OptionKey Add Key:***************
  *r OptionKeyResult (status=OK):
  *r/end
```

**xCommand SystemUnit ReleaseKey Add**
Add software release key. Used to enable new software (applicable for main sw releases).
Parameters: Required parameters are marked with (r):
- Key(r): <S: 16, 24>

Example:
```
  xCommand SystemUnit ReleaseKey Add Key:***************
  *r ReleaseKeyResult (status=OK):
  *r/end
```

**xCommand SystemUnit AdminPassword Set**
Set administrator password to access the codec.
Parameters: Required parameters are marked with (r):
- Password( r): <S: 0, 255>

Example:
```
  xCommand SystemUnit AdminPassword Set Password:***********
  *r AdminPasswordSetResult (status=OK):
  *r/end
```

**xCommand SystemUnit MenuPassword Set**
Set password needed to access the Advanced menu settings.
Parameters: Required parameters are marked with (r):
- Password( r): <S: 0, 255>

Example:
```
  xCommand SystemUnit MenuPassword Set Password:***********
  *r MenuPasswordSetResult (status=OK):
  *r/end
```
The System Unit commands, cont...

**xCommand SystemUnit MenuPassword Validate**

Validate that the supplied password is correct.

Parameters: Required parameters are marked with (r):
- Password(): <S: 0, 255>

Example:
```
xCommand SystemUnit MenuPassword Validate Password:**********
*r MenuPasswordValidateResult (status=OK):
  *r/end
```

**xCommand SystemUnit DateTime Set**

Configure the date and time into the system, if not available from NTP.

Parameters: Required parameters are marked with (r):
- Year: <2008..2037>
- Month: <1..12>
- Day: <1..31>
- Hour: <0..23>
- Minute: <0..59>
- Second: <0..59>

Example:
```
xCommand SystemUnit DateTime Set Year:2009 Month:7 Day:3 Hour:12 Minute:0
  Second:0
  *r DateTimeSetResult (status=OK):
  ** end
```

**xCommand SystemUnit DateTime Get**

Read out the time end date from the system

Example:
```
xcommand SystemUnit DateTime get
  *r DateTimeGetResult (status=OK):
  Year: 2009
  Month: 7
  Day: 3
  Hour: 12
  Minute: 0
  Second: 0
  ** end
```

The TString Send command

**xCommand TStringSend**

Used to send data to far end, e.g. for Telepresence control systems. Uses the H.245 control channel (TCP).

Only works with H.323 calls.

Parameters: Required parameters are marked with (r):
- CallId(): <0..65534>
- Message(): <S: 1, 1450>

Example:
```
xCommand TStringSend CallId:1 Message:"This is an example"
  *r TStringSendResult (status=OK):
  *r/end
```
The Video Layout commands

**xCommand Video PictureLayoutSet**
Select screen layout mode.
Parameters: Required parameters are marked with ():
LayoutFamily(): <Auto/Equal/Fullscreen/PresentationLargeSpeaker/PresentationSmallSpeaker>

Example:
```
xCommand Video PictureLayoutSet LayoutFamily: Equal
  *r SetPictureLayoutResult (status=OK):
  *r/end
```

**xCommand Video Layout Add**
This command will add a new, empty video layout composition. The result will be an id of the newly created layout, which you can use to add frames with different video sources to the layout.

Example:
```
xcommand Video Layout Add
  OK
  *r VideoLayoutAddResult (status=OK):
    LayoutId: 1
  ** end
```

**xCommand Video Layout Remove**
Remove an existing video layout.
Parameters: Required parameters are marked with ():
LayoutId(): <1..2147483647>

Example:
```
xCommand Video Layout Remove LayoutId: 1
  *r VideoLayoutRemoveResult (status=OK):
    ** end
```

**xCommand Video Layout RemoveAll**
Remove all existing video layouts.

Example:
```
xCommand Video Layout RemoveAll
  *r VideoLayoutRemoveAllResult (status=OK):
    ** end
```

The Video Layout commands, cont...

**xCommand Video Layout Reset**
Reset all layout compositions to factory default.

Example:
```
xcommand Video Layout Reset
  *r VideoLayoutResetResult (status=OK):
  ** end
```

**xCommand Video Layout Frame Add**
Add a Video frame to an existing layout. Select size and position of the frame, and what video source that should be shown in the frame.

Parameters: Required parameters are marked with ():
LayoutId(): <1..2147483647>
PositionX(): <0..10000>
PositionY(): <0..10000>
Width(): <1..10000>
Height(): <1..10000>
Layer(): <1..5>
Border: <On/Off>
VideoSourceType(): <graphic/localInput/localMain/localPresentation/mostSpeaking/otherMain/ownMain/presentation/remoteMain/remotePresentation/videoFile>
VideoSourceId: <0..256>

Example:
```
xcommand Video Layout Frame Add LayoutId:1 PositionX:100 PositionY:100 Width:9800 Height:9800 Layer:1 Border:off VideoSourceType:localInput VideoSourceId:1
  OK
  *r VideoLayoutFrameAddResult (status=OK):
    FrameId: 1
  ** end
```
The Video Layout commands, cont...

**xCommand Video Layout Frame Remove**
Remove a video frame from an existing layout.

Parameters: Required parameters are marked with (r):
- LayoutId(r): <1..2147483647>
- FrameId(r): <1..65535>

Example:
```
 xcommand Video Layout Frame Remove LayoutId:1 FrameId:1
 *r VideoLayoutFrameRemoveResult (status=OK):
 ** end
```

**xCommand Video Layout Frame Update**
Change the position or content of an existing frame in a layout.

Parameters: Required parameters are marked with (r):
- LayoutId(r): <1..2147483647>
- FrameId(r): <1..65535>
- PositionX(r): <0..10000>
- PositionY(r): <0..10000>
- Width(r): <1..10000>
- Height(r): <1..10000>
- Layer(r): <1..5>
- Border: <On/Off>
- VideoSourceType(r): <graphic/localInput/localMain/localPresentation/mostSpeaking/otherMain/ownMain/presentation/remoteMain/remotePresentation/videoFile>
- VideoSourceId: <0..256>

Example:
```
xCommand Video Layout Frame Update LayoutId:1 FrameId:1
 VideoSourceType:localInput VideoSourceId:1
 OK
 *r VideoLayoutFrameUpdateResult (status=OK):
 ** end
```

**xCommand Video Layout Assign**
Assign an existing layout to any local or remote output. This will make the defined video composition to appear on the specified local output or in the specified remote video stream.

Parameters: Required parameters are marked with (r):
- CallId(r): <0..65534>
- OutputId(r): <0..65534>
- LayoutId(r): <1..2147483647>

Example:
```
xCommand Video Layout Assign CallId:1 OutputId:1 LayoutId:2
 OK
 *r VideoLayoutAssignResult (status=OK):
 ** end
```

**xCommand Video Layout UnAssign**
Remove the defined video layout from an output, and go back to default.

Parameters: Required parameters are marked with (r):
- CallId(r): <0..65534>
- OutputId(r): <0..65534>

Example:
```
xCommand Video Layout UnAssign CallId: 1 OutputId: 1
 OK
 *r VideoLayoutUnassignResult (status=OK):
 ** end
```
The Experimental menu

The Experimental commands can be used 'as is' and will not be further documented.

NOTE! The Experimental commands WILL change.

\textbf{xCommand Experimental Audio LocalOutput Unmute}

Unmute the local audio output.

Parameters: Required parameters are marked with (r):
ConferenceId(r): <0..65534> 

Example:
\begin{verbatim}
xCommand Experimental Audio LocalOutput Unmute ConferenceID:1
  *r AudioLocalOutputUnmuteResult (status=OK):
  ** end
\end{verbatim}

\textbf{xCommand Experimental Audio LocalOutput MicrophoneReinforcement Add}

For a detailed description of the microphone reinforcement functionality, see Appendix > Microphone reinforcement section.

Turn on microphone reinforcement on a local output by specifying its output ID. The loudspeaker setting on this local output must be On. Only one local output can enable microphone reinforcement at a time. All loudspeakers connected to this local output are in zone 2, and thus play out the microphones in zone 1.

InputConnectors: Choose the pair of microphones to be reinforced, and thus be played out on the speakers in zone 2. These microphones will be in zone 1.

Gain: Set the gain on the microphones that are reinforced in the range from -53 dB to 15 dB. -54 dB equals OFF.

EqualizerMode: Determines whether or not the selected equalizer should be enabled.

EqualizerId: Select equalizer [1..8] for the reinforced microphone input signals.

Parameters: Required parameters are marked with (r):
OutputId(r): <0..65534> 
InputConnectors(r): <Microphone1_2/Microphone3_4/Microphone5_6/Microphone7_8> 
Gain(r): <-54..15> 
EqualizerMode(r): <On/Off> 
EqualizerId(r): <1..8> 

Example:
\begin{verbatim}
xCommand Experimental Audio LocalOutput MicrophoneReinforcement Add OutputId: 6 
  InputConnectors: Microphone1_2 Gain: 0 EqualizerMode: Off EqualizerId: 1 
  *r AudioLocalOutputMicrophoneReinforcementAddResult (status=OK):
  ** end
\end{verbatim}

\textbf{xCommand Experimental Audio LocalOutput MicrophoneReinforcement Update}

For a detailed description of the microphone reinforcement functionality, see Appendix > Microphone reinforcement section.

Update the gain and equalizer settings of the microphone reinforcement configuration by specifying the ID of the local output.

Gain: Set the gain on the microphones that are reinforced in the range from -53 dB to 15 dB. -54 dB equals OFF.

EqualizerMode: Determines whether or not the selected equalizer should be enabled.

EqualizerId: Select equalizer [1..8] for the reinforced microphone input signals.

Parameters: Required parameters are marked with (r):
OutputId(r): <0..65534> 
Gain(r): <-54..15> 
EqualizerMode(r): <On/Off> 
EqualizerId(r): <1..8> 

Example:
\begin{verbatim}
xCommand Experimental Audio LocalOutput MicrophoneReinforcement Update 
  OutputId: 6 Gain: -3 EqualizerMode: Off EqualizerId: 1 
  *r AudioLocalOutputMicrophoneReinforcementUpdateResult (status=OK):
  ** end
\end{verbatim}

\textbf{xCommand Experimental Audio LocalOutput MicrophoneReinforcement Remove}

For a detailed description of the microphone reinforcement functionality, see Appendix > Microphone reinforcement section.

Turn off microphone reinforcement on the local output given by the output ID.

Parameters: Required parameters are marked with (r):
OutputId(r): <0..65534> 

Example:
\begin{verbatim}
xCommand Experimental Audio LocalOutput MicrophoneReinforcement Remove 
  OutputId: 6 
  *r AudioLocalOutputMicrophoneReinforcementRemoveResult (status=OK):
  ** end
\end{verbatim}
Status type commands returns information about the system and system processes. The information is generated by the system and gives status about ongoing calls, network status, conference status and more.

The status information is structured in a hierarchy, making up a database constantly being updated by the system to reflect system and process changes.

**NOTE:** The description of the xStatus commands are preliminary, and subject to change.

In this chapter...
- Audio status
- Call status
- Camera status
- Conference status
- Diagnostics Call status
- H323 Gatekeeper status
- HTTP Feedback status
- MediaChannels Call status
- Network status
- SIP Proxy status
- SIP Registration status
- SystemUnit status
- Standby status
- Video input status
- Video output status
xStatus commands

Status type commands returns information about the system and system processes. The following pages will list an example of the xStatus commands and the response. Status type commands returns information about the system and system processes. You can query all information or just some of it.

We recommend you visit the TANDBERG web site regularly for updated versions of the manual. Go to: http://www.tandberg.com/docs

The Audio status

xStatus Audio

Run this command to see an overview of the audio status.

In the example below we have created one local input (ID 46) and one local output (ID 48). The system is in a call (ID 28). There is one remote input (ID 51) and one remote output (ID 52). The same IDs will be used in the audio examples in the following pages when query status information.

Example:

```
xStatus Audio
*s Audio Microphones Mute: On
*s Audio Volume: 70
*s Audio Input LocalInput 46 Name: "Microphone"
*s Audio Input LocalInput 46 MixerMode: "GainShared"
*s Audio Input LocalInput 46 Mute: "Off"
*s Audio Input LocalInput 46 Channels: 1
*s Audio Input LocalInput 46 AGC: "Off"
*s Audio Input LocalInput 46 Connector: "Microphone.1"
*s Audio Input RemoteInput 51 CallId: 28
*s Audio Input RemoteInput 51 AGC: "Off"
*s Audio Output LocalOutput 48 Name: "MyLocalOutput1"
*s Audio Output LocalOutput 48 Loudspeaker: "Off"
*s Audio Output LocalOutput 48 Channels: 1
*s Audio Output LocalOutput 48 Connector: "Line.1"
*s Audio Output LocalOutput 48 Input 51 Gain: 0
*s Audio Output RemoteOutput 52 CallId: 28
*s Audio Output RemoteOutput 52 Input 46 Gain: 0
*s Audio Module 1 Type: Unknown
*s Audio Module 1 SoftwareID: ""
*s Audio Module 1 HardwareID: ""
*s Audio Module 1 Connector: ""
** end
```

xStatus Audio Microphones Mute

States whether all microphones are muted or unmuted.
Value space: <On/Off>

Example:

```
xStatus Audio Microphones Mute
*s Audio Microphones Mute: Off
** end
```

xStatus Audio Volume

States the volume level of the loudspeaker output.
Value space: <0..100dB>

Example:

```
xStatus Audio Volume
*s Audio Volume: 70
** end
```

xStatus Audio Input LocalInput [1..n] Name

States the name of the local input with the given input ID.
Value space: <S: 0..255>

Example:

```
xStatus Audio Input LocalInput 46 Name
*s Audio Input LocalInput 46 Name: "Microphone"
** end
```

xStatus Audio Input LocalInput [1..n] MixerMode

A local input is a group of input connectors mixed together by the stated MixerMode.
Value space: <Auto/Fixed/GainShared>

Example:

```
xStatus Audio Input LocalInput 46 MixerMode
*s Audio Input LocalInput 46 MixerMode: "Auto"
** end
```
The Audio status, cont...

**xStatus Audio Input LocalInput [1..n] Mute**
States whether the local input with the given input ID is muted.
Value space: <On/Off>

Example:
```
xStatus Audio Input LocalInput 46 Mute
  "% Audio Input LocalInput 46 Mute: "Off"
** end
```

**xStatus Audio Input LocalInput [1..n] Channels**
States whether the local input mixes the input connectors into a mono signal or a stereo signal.
Value space: <1..2>

Example:
```
xStatus Audio Input LocalInput 46 Channels
  "% Audio Input LocalInput 46 Channels: 1
** end
```

**xStatus Audio Input LocalInput [1..n] AGC**
States whether Automatic Gain Control is enabled on the signal from this local input.
Value space: <On/Off>

Example:
```
xStatus Audio Input LocalInput 46 AGC
  "% Audio Input LocalInput 46 AGC: "On"
** end
```

**xStatus Audio Input LocalInput [1..n] Connector**
States the connectors mixed together in the local input with the given input ID.
Value space: <Microphone/Line/HDMI.1..8>

Example:
```
xStatus Audio Input LocalInput 46 Connector
  "% Audio Input LocalInput 46 Connector: "Microphone.1"
** end
```

**xStatus Audio Input RemoteInput [1..n] CallId**
States which CallId the remote input with the given input ID belongs to.
Value space: <Integer value>

Example:
```
xStatus Audio Input RemoteInput 51 CallId
  "% Audio Input RemoteInput 51 CallId: 28
** end
```

**xStatus Audio Input RemoteInput [1..n] AGC**
States whether Automatic Gain Control is enabled on the signal from this remote input.
Value space: <On/Off>

Example:
```
xStatus Audio Input RemoteInput 51 AGC
  "% Audio Input RemoteInput 51 AGC: "Off"
** end
```

**xStatus Audio Output LocalOutput [1..n] Name**
States the name of the local output with the given output ID.
Value space: <S: 0,.255>

Example:
```
xStatus Audio Output LocalOutput 48 Name
  "% Audio Output LocalOutput 48 Name: "MyLocalOutput1"
** end
```

**xStatus Audio Output LocalOutput [1..n] Loudspeaker**
States whether Loudspeaker is enabled on the local output with the given output ID. If one or more of the output connectors attached to this local output are connected to a loudspeaker, this signal should be a reference signal to the echo canceller and Loudspeaker should be set to On.
Value space: <On/Off>

Example:
```
xStatus Audio Output LocalOutput 48 Loudspeaker
  "% Audio Output LocalOutput 48 Loudspeaker: "Off"
** end
```
The Audio status, \textit{cont...}

\textbf{xStatus Audio Output LocalOutput [1..n] Channels}

States whether the local and remote inputs connected to this local output are mixed into a mono signal or a stereo signal.

Value space: <1..2>

Example:
\begin{verbatim}
  xStatus Audio Output LocalOutput 48 Channels
  "s Audio Output LocalOutput 48 Channels: "1"
  ** end
\end{verbatim}

\textbf{xStatus Audio Output LocalOutput [1..n] Connector}

Lists the connectors attached to the local output with the given output ID.

Value space: <Line/HDMI.1..6>

Example:
\begin{verbatim}
  xStatus Audio Output LocalOutput 48 Connector
  "s Audio Output LocalOutput 48 Connector: "Line.1"
  ** end
\end{verbatim}

\textbf{xStatus Audio Output LocalOutput [1..n] Input [1..n] Gain}

Shows the gain in dB used on the input with the given input ID if this is connected to the local output with the given output ID.

Value space: <-54..15>

Example:
\begin{verbatim}
  xStatus Audio Output LocalOutput 48 Input 51 Gain
  "s Audio Output LocalOutput 48 Input 51 Gain: 0
  ** end
\end{verbatim}

\textbf{xStatus Audio Module [1..n] Type}

States the type of the audio module with the given ID

Value space: <DigitalNAM/Unknown>

Example:
\begin{verbatim}
  xStatus Audio Module 1 Type
  "s Audio Module 1 Type: DigitalNAM
  ** end
\end{verbatim}

\textbf{xStatus Audio Module [1..n] SoftwareID}

States the SoftwareID of the DNAM dsp software.

Value space: <Integer value>

Example:
\begin{verbatim}
  xStatus Audio Module 1 SoftwareID
  "s Audio Module 1 SoftwareID: "114"
  ** end
\end{verbatim}

\textbf{xStatus Audio Module [1..n] HardwareID}

States the DNAM HardwareID.

Value space: <S: 0..255>

Example:
\begin{verbatim}
  xStatus Audio Module 1 HardwareID
  "s Audio Module 1 HardwareID: "B40F69"
  ** end
\end{verbatim}

The Audio status, \textit{cont...}

\textbf{xStatus Audio Output RemoteOutput [1..n] Input [1..n] Gain}

Shows the gain in dB used on the input with the given input ID if this is connected to the remote output with the given output ID.

Value space: <-54..15>

Example:
\begin{verbatim}
  xStatus Audio Output RemoteOutput 52 Input 46 Gain
  "s Audio Output RemoteOutput 52 Input 46 Gain: 0
  ** end
\end{verbatim}

\textbf{xStatus Audio Output RemoteOutput [1..n] CallId}

States which CallId the remote output with the given output ID belongs to.

Value space: <Integer value>

Example:
\begin{verbatim}
  xStatus Audio Output RemoteOutput 52 CallId
  "s Audio Output RemoteOutput 52 CallId: 28
  ** end
\end{verbatim}
The Call status

xStatus Call

Run this command to see an overview of the call status. The call id can be used later when query for additional information about the call.

Example:

```plaintext
xStatus Call
*s Call 27 Status: Connected
*s Call 27 Direction: Outgoing
*s Call 27 Protocol: "sip"
*s Call 27 RemoteNumber: "john.doe@company.com"
*s Call 27 CallbackNumber: "sip:john.doe@company.com"
*s Call 27 DisplayName: "john.doe"
*s Call 27 CallRate: 968
*s Call 27 TransmitCallRate: 768
*s Call 27 ReceiveCallRate: 968
*s Call 27 Encryption Type: "None"
*s Call 27 PlacedOnHold: False
** end
```

xStatus Call [1..n] Status

Status of a call.

Value space: <Dialling/Connecting/Ringing/Connected/Idle>

Example:

```plaintext
xStatus Call 27 Status
*s Call 28 Status: Connected
** end
```

xStatus Call [1..n] Direction

Direction of the call initiation.

Value space: <Incoming/Outgoing>

Example:

```plaintext
xStatus Call 28 Direction
*s Call 28 Direction: Outgoing
** end
```
The Call status, cont...

**xStatus Call [1..n] Protocol**

Call protocol. H323 or SIP.
Value space: <H323/SIP>

Example:
```
xStatus Call 28 Protocol
"s Call 28 Protocol: "h323"
** end
```

**xStatus Call [1..n] RemoteNumber**

The number or URI dialled to the far end site.
Value space: <S: 0..100>

Example:
```
xStatus Call 28 RemoteNumber
"s Call 28 RemoteNumber: "5585232"
** end
```

**xStatus Call [1..n] CallbackNumber**

Far end site dial number. Includes call protocol.
Value space: <S: 0..100>

Example:
```
xStatus Call 28 CallbackNumber
"s Call 28 CallbackNumber: "h323:john.doe@company.com"
** end
```

**xStatus Call [1..n] DisplayName**

Name to display for far end site.
Value space: <S: 0..100>

Example:
```
xStatus Call 28 DisplayName
"s Call 28 DisplayName: "john.doe@company.com"
** end
```

**xStatus Call [1..n] CallRate**

Call bandwidth in kilobits per second.
Value space: <Integer value>

Example:
```
xStatus Call 28 CallRate
"s Call 28 CallRate: 968
** end
```

**xStatus Call [1..n] TransmitCallRate**

Transmitted bandwidth in the call in kilobits per second.
Value space: <Integer value>

Example:
```
xStatus Call 28 TransmitCallRate
"s Call 28 TransmitCallRate: 768
** end
```

**xStatus Call [1..n] ReceiveCallRate**

Received bandwidth in the call in kilobits per second.
Value space: <Integer value>

Example:
```
xStatus Call 28 ReceiveCallRate
"s Call 28 ReceiveCallRate: 968
** end
```

**xStatus Call [1..n] Encryption Type**

Encryption standard.
Value space: <None/Aes-128>

Example:
```
xStatus Call 28 Encryption Type
"s Call 28 Encryption Type: "None"
** end
```
The Audio status, cont...

xStatus Call [1..n] PlacedOnHold
This status tells whether the call is placed on hold or not.
Value space: <True/False>

Example:

```plaintext
xStatus Call 28 PlacedOnHold
*s Call 28 PlacedOnHold: False
```

The Camera status

xStatus Camera
Run this command to see an overview of the camera status.

Example:

```plaintext
xStatus Camera
*s Camera 1 Connected: True
*s Camera 1 HardwareID: "50000000"
*s Camera 1 Manufacturer: "TANDBERG"
*s Camera 1 Model: "PrecisionHD 1080p 12X"
*s Camera 1 SoftwareID: "S01718-4.0FINAL [ID:40043] 2009-06-25"
*s Camera 1 Position Pan: 440
*s Camera 1 Position Tilt: 69
*s Camera 1 Position Zoom: 1
*s Camera 1 Position Focus: 4581
```

- continues with status for Camera 2-7

xStatus Camera [1..7] Connected
Indicates whether the given camera is connected or not.
Value space: <True/False>

Example:

```plaintext
xStatus Camera 1 Connected
*s Camera 1 Connected: True
```

xStatus Camera [1..7] HardwareID
States the hardware id of the camera.
Value space: <S: 0,100>

Example:

```plaintext
xStatus Camera 1 HardwareID
*s Camera 1 HardwareID: "50000000"
```

**end**
The Camera status, cont...

**xStatus Camera [1..7] Manufacturer**
States the manufacturer of the camera.
Value space: <S: 0,100>

Example:
```
xStatus Camera 1 Manufacturer
**s Camera 1 Manufacturer: "TANDBERG"
** end
```

**xStatus Camera [1..7] Model**
States the camera model.
Value space: <S: 0,100>

Example:
```
xStatus Camera 1 Model
**s Camera 1 Model: "PrecisionHD 1080p 12X"
** end
```

**xStatus Camera [1..7] SoftwareID**
States the software id of the camera.
Value space: <S: 0,100>

Example:
```
xStatus Camera 1 SoftwareID
**s Camera 1 SoftwareID: "S01718-4.0FINAL [ID:40043] 2009-06-25"
** end
```

**xStatus Camera [1..7] Position Pan**
Current pan position. Value range depends on camera type.
Value space: <-65535..65535>

Example:
```
xStatus Camera 1 Position Pan
**s Camera 1 Position Pan: 514
** end
```

**xStatus Camera [1..7] Position Tilt**
Current tilt position. Value range depends on camera type.
Value space: <-65535..65535>

Example:
```
xStatus Camera 1 Position Tilt
**s Camera 1 Position Tilt: 142
** end
```

**xStatus Camera [1..7] Position Zoom**
Current zoom position. Value range depends on camera type.
Value space: <0,65535>

Example:
```
xStatus Camera 1 Position Zoom
**s Camera 1 Position Zoom: 1636
** end
```

**xStatus Camera [1..7] Position Focus**
Current focus position. Value range will depend on camera type. 
Value space: <0,65535>

Example:
```
xStatus Camera 1 Position Focus
**s Camera 1 Position Focus: 4474
** end
```
The Conference status

**xStatus Conference**

Run this command to see an overview of the conference status.

*Example:

```
xStatus Conference
  "s Conference Presentation Mode: Off"
  "s Conference Presentation Protocol: ""
  "s Conference Presentation Resolution Height: 0"
  "s Conference Presentation Resolution Width: 0"
  "s Conference Presentation SiteId: 0"
  "s Conference Presentation LocalSource: 0"
  "s Conference Site 27 MicrophonesMuted: True"
```

**xStatus Conference Presentation Resolution Width**

Current resolution width for presentation.

Value space: `<0..4000>`

*Example:

```
xStatus Conference Presentation Resolution Width
  "s Conference Presentation Resolution Width: 0"
  ** end
```

**xStatus Conference Presentation SiteId**

Id of site currently sending presentation.

Value space: `<0..65535>`

*Example:

```
xStatus Conference Presentation SiteId
  "s Conference Presentation SiteId: 0"
  ** end
```

**xStatus Conference Presentation LocalSource**

Local video source that will be used when presentation is sent from local site.

Value space: `<1..5>`

*Example:

```
xStatus Conference Presentation LocalSource
  "s Conference Presentation LocalSource: 0"
  ** end
```

**xStatus Conference Site [1..n] MicrophonesMuted**

Lists audio mute status for other sites participating in conference with the given site id.

Value space: `<True/False>`

*Example:

```
xStatus Conference Site 27 MicrophonesMuted
  "s Conference Site 27 MicrophonesMuted: True"
  ** end
```
The Diagnostics status

xStatus Diagnostics

Run this command to see an overview of the diagnostics. The example shows the diagnostics status for an ongoing call. The call id and the id's for incoming/outgoing audio, video and data channels are required when query diagnostics information.

Example:

```
xStatus Diagnostics
  *s Diagnostics Call 27 Channels IncomingAudioChannel 327 Netstat 1 Jitter: 0
  *s Diagnostics Call 27 Channels IncomingAudioChannel 327 Netstat 1 Packets: 132305
  *s Diagnostics Call 27 Channels IncomingAudioChannel 327 Netstat 1 Loss: 0
  *s Diagnostics Call 27 Channels IncomingAudioChannel 327 Netstat 1 Drop: 0
  *s Diagnostics Call 27 Channels IncomingAudioChannel 327 Netstat 1 Bytes: 21200960
  *s Diagnostics Call 27 Channels IncomingAudioChannel 327 Netstat 1 ChannelRate: 64000
  *s Diagnostics Call 27 Channels IncomingAudioChannel 327 Netstat 1 MaxJitter: 0
  *s Diagnostics Call 27 Channels IncomingVideoChannel 330 Netstat 1 Jitter: 6
  *s Diagnostics Call 27 Channels IncomingVideoChannel 330 Netstat 1 Packets: 133166
  *s Diagnostics Call 27 Channels IncomingVideoChannel 330 Netstat 1 Loss: 0
  *s Diagnostics Call 27 Channels IncomingVideoChannel 330 Netstat 1 Drop: 0
  *s Diagnostics Call 27 Channels IncomingVideoChannel 330 Netstat 1 Bytes: 122301901
  *s Diagnostics Call 27 Channels IncomingVideoChannel 330 Netstat 1 ChannelRate: 506000
  *s Diagnostics Call 27 Channels IncomingVideoChannel 330 Netstat 1 MaxJitter: 9
  *s Diagnostics Call 27 Channels IncomingVideoChannel 333 Netstat 1 Jitter: 0
  *s Diagnostics Call 27 Channels IncomingVideoChannel 333 Netstat 1 Packets: 0
  *s Diagnostics Call 27 Channels IncomingVideoChannel 333 Netstat 1 Loss: 0
  *s Diagnostics Call 27 Channels IncomingVideoChannel 333 Netstat 1 Drop: 0
  *s Diagnostics Call 27 Channels IncomingVideoChannel 333 Netstat 1 Bytes: 0
  *s Diagnostics Call 27 Channels IncomingAudioChannel 327 Netstat 1 ChannelRate: 0
  *s Diagnostics Call 27 Channels OutgoingAudioChannel 327 Netstat 1 Jitter: 0
  *s Diagnostics Call 27 Channels OutgoingAudioChannel 327 Netstat 1 Packets: 0
  *s Diagnostics Call 27 Channels OutgoingAudioChannel 327 Netstat 1 Loss: 0
  *s Diagnostics Call 27 Channels OutgoingAudioChannel 327 Netstat 1 Drop: 0
  *s Diagnostics Call 27 Channels OutgoingAudioChannel 327 Netstat 1 Bytes: 0
  *s Diagnostics Call 27 Channels OutgoingVideoChannel 334 Netstat 1 ChannelRate: 0
  *s Diagnostics Call 27 Channels OutgoingVideoChannel 334 Netstat 1 Jitter: 0
  *s Diagnostics Call 27 Channels OutgoingVideoChannel 334 Netstat 1 Packets: 0
  *s Diagnostics Call 27 Channels OutgoingVideoChannel 334 Netstat 1 Loss: 0
  *s Diagnostics Call 27 Channels OutgoingVideoChannel 334 Netstat 1 Drop: 0
  *s Diagnostics Call 27 Channels OutgoingVideoChannel 334 Netstat 1 Bytes: 0
  *s Diagnostics Call 27 Channels OutgoingDataChannel 336 Netstat 1 ChannelRate: 0
  *s Diagnostics Call 27 Channels OutgoingDataChannel 336 Netstat 1 Jitter: 0
  *s Diagnostics Call 27 Channels OutgoingDataChannel 336 Netstat 1 Packets: 0
  *s Diagnostics Call 27 Channels OutgoingDataChannel 336 Netstat 1 Loss: 0
  *s Diagnostics Call 27 Channels OutgoingDataChannel 336 Netstat 1 Drop: 0
  *s Diagnostics Call 27 Channels OutgoingDataChannel 336 Netstat 1 Bytes: 0
`
The Diagnostics status, cont...

xStatus Diagnostics Call [1..n] Channels IncomingAudioChannel [1..n] Netstat 1 Loss

Packets lost in this media channel.
Value space: <Integer value>

Example:
```c
xStatus Diagnostics Call 27 Channels IncomingAudioChannel 327 Netstat 1 Loss
"s Diagnostics Call 27 Channels IncomingAudioChannel 327 Netstat 1 Loss: 96
" end
```

xStatus Diagnostics Call [1..n] Channels IncomingAudioChannel [1..n] Netstat 1 Drop

Packets dropped in this media channel.
Value space: <Integer value>

Example:
```c
xStatus Diagnostics Call 27 Channels IncomingAudioChannel 327 Netstat 1 Drop
"s Diagnostics Call 27 Channels IncomingAudioChannel 327 Netstat 1 Drop: 0
" end
```

xStatus Diagnostics Call [1..n] Channels IncomingAudioChannel [1..n] Netstat 1 Bytes

Number of bytes received in this media channel.
Value space: <Integer value>

Example:
```c
xStatus Diagnostics Call 27 Channels IncomingAudioChannel 327 Netstat 1 Bytes
"s Diagnostics Call 27 Channels IncomingAudioChannel 327 Netstat 1 Bytes: 129920
" end
```

xStatus Diagnostics Call [1..n] Channels IncomingAudioChannel [1..n] Netstat 1 ChannelRate

Current bandwidth for this media channel.
Value space: <Integer value>

Example:
```c
xStatus Diagnostics Call 27 Channels IncomingAudioChannel 327 Netstat 1 ChannelRate
"s Diagnostics Call 27 Channels IncomingAudioChannel 327 Netstat 1 ChannelRate: 128000
" end
```

The Diagnostics status, cont...

xStatus Diagnostics Call [1..n] Channels IncomingAudioChannel [1..n] Netstat 1 MaxJitter

Max jitter measured during last time interval (5 seconds).
Value space: <Integer value>

Example:
```c
xStatus Diagnostics Call 27 Channels IncomingAudioChannel 327 Netstat 1 MaxJitter
"s Diagnostics Call 27 Channels IncomingAudioChannel 327 Netstat 1 MaxJitter: 0
" end
```

xStatus Diagnostics Call [1..n] Channels IncomingVideoChannel [1..n] Netstat 1 Jitter

Current jitter as specified by RFC3550.
Value space: <Integer value>

Example:
```c
xStatus Diagnostics Call 27 Channels IncomingVideoChannel 330 Netstat 1 Jitter
"s Diagnostics Call 27 Channels IncomingVideoChannel 330 Netstat 1 Jitter: 6
" end
```

xStatus Diagnostics Call [1..n] Channels IncomingVideoChannel [1..n] Netstat 1 Packets

Number of packets received in this media channel.
Value space: <Integer value>

Example:
```c
xStatus Diagnostics Call 27 Channels IncomingVideoChannel 330 Netstat 1 Packets
"s Diagnostics Call 27 Channels IncomingVideoChannel 330 Netstat 1 Packets: 38699
" end
```

xStatus Diagnostics Call [1..n] Channels IncomingVideoChannel [1..n] Netstat 1 Loss

Packets lost in this media channel.
Value space: <Integer value>

Example:
```c
xStatus Diagnostics Call 27 Channels IncomingVideoChannel 330 Netstat 1 Loss
"s Diagnostics Call 27 Channels IncomingVideoChannel 330 Netstat 1 Loss: 0
" end
```
The Diagnostics status, cont...

**xStatus Diagnostics Call [1..n] Channels IncomingVideoChannel [1..n] Netstat 1 Drop**

Packets dropped in this media channel.
Value space: <Integer value>

Example:
```c
*xStatus Diagnostics Call 27 Channels IncomingVideoChannel 330 Netstat 1 Drop
 *s Diagnostics Call 27 Channels IncomingVideoChannel 330 Netstat 1 Drop: 0
 ** end
```

**xStatus Diagnostics Call [1..n] Channels IncomingVideoChannel [1..n] Netstat 1 Bytes**

Number of bytes received in this media channel.
Value space: <Integer value>

Example:
```c
*xStatus Diagnostics Call 27 Channels IncomingVideoChannel 330 Netstat 1 Bytes
 *s Diagnostics Call 27 Channels IncomingVideoChannel 330 Netstat 1 Bytes: 0
 ** end
```

**xStatus Diagnostics Call [1..n] Channels IncomingVideoChannel [1..n] Netstat 1 ChannelRate**

Current bandwidth for this media channel.
Value space: <Integer value>

Example:
```c
*xStatus Diagnostics Call 27 Channels IncomingVideoChannel 330 Netstat 1 ChannelRate
 *s Diagnostics Call 27 Channels IncomingVideoChannel 330 Netstat 1 ChannelRate: 0
 ** end
```

**xStatus Diagnostics Call [1..n] Channels IncomingVideoChannel [1..n] Netstat 1 MaxJitter**

Max jitter measured during last time interval (5 seconds).
Value space: <Integer value>

Example:
```c
*xStatus Diagnostics Call 27 Channels IncomingVideoChannel 330 Netstat 1 MaxJitter
 *s Diagnostics Call 27 Channels IncomingVideoChannel 330 Netstat 1 MaxJitter: 0
 ** end
```

**The Diagnostics status, cont...**

**xStatus Diagnostics Call [1..n] Channels IncomingDataChannel [1..n] Netstat 1 Jitter**

Current jitter as specified by RFC3550.
Value space: <Integer value>

Example:
```c
*xStatus Diagnostics Call 27 Channels IncomingDataChannel 335 Netstat 1 Jitter
 *s Diagnostics Call 27 Channels IncomingDataChannel 335 Netstat 1 Jitter: 0
 ** end
```

**xStatus Diagnostics Call [1..n] Channels IncomingDataChannel [1..n] Netstat 1 Packets**

Number of packets received in this media channel.
Value space: <Integer value>

Example:
```c
*xStatus Diagnostics Call 27 Channels IncomingDataChannel 335 Netstat 1 Packets
 *s Diagnostics Call 27 Channels IncomingDataChannel 335 Netstat 1 Packets: 10
 ** end
```

**xStatus Diagnostics Call [1..n] Channels IncomingDataChannel [1..n] Netstat 1 Loss**

Packets lost in this media channel.
Value space: <Integer value>

Example:
```c
*xStatus Diagnostics Call 27 Channels IncomingDataChannel 335 Netstat 1 Loss
 *s Diagnostics Call 27 Channels IncomingDataChannel 335 Netstat 1 Loss: 0
 ** end
```

**xStatus Diagnostics Call [1..n] Channels IncomingDataChannel [1..n] Netstat 1 Drop**

Packets dropped in this media channel.
Value space: <Integer value>

Example:
```c
*xStatus Diagnostics Call 27 Channels IncomingDataChannel 335 Netstat 1 Drop
 *s Diagnostics Call 27 Channels IncomingDataChannel 335 Netstat 1 Drop: 0
 ** end
```
The Diagnostics status, cont...

**xStatus Diagnostics Call [1..n] Channels IncomingDataChannel [1..n] Netstat 1 Bytes**

Number of bytes received in this media channel.
Value space: <Integer value>

Example:
```
xStatus Diagnostics Call 27 Channels IncomingDataChannel 335 Netstat 1 Bytes
  *s Diagnostics Call 27 Channels IncomingDataChannel 335 Netstat 1 Bytes: 263
  ** end
```

**xStatus Diagnostics Call [1..n] Channels IncomingDataChannel [1..n] Netstat 1 ChannelRate**

Current bandwidth for this media channel.
Value space: <Integer value>

Example:
```
xStatus Diagnostics Call 27 Channels IncomingDataChannel 335 Netstat 1 ChannelRate
  *s Diagnostics Call 27 Channels IncomingDataChannel 335 Netstat 1 ChannelRate: 0
  ** end
```

**xStatus Diagnostics Call [1..n] Channels IncomingDataChannel [1..n] Netstat 1 MaxJitter**

Max jitter measured during last time interval (5 seconds).
Value space: <Integer value>

Example:
```
xStatus Diagnostics Call 27 Channels IncomingDataChannel 335 Netstat 1 MaxJitter
  *s Diagnostics Call 27 Channels IncomingDataChannel 335 Netstat 1 MaxJitter: 0
  ** end
```

**xStatus Diagnostics Call [1..n] Channels OutgoingAudioChannel [1..n] Netstat 1 Jitter**

Current jitter as specified by RFC3550.
Value space: <Integer value>

Example:
```
xStatus Diagnostics Call 27 Channels OutgoingAudioChannel 328 Netstat 1 Jitter
  *s Diagnostics Call 27 Channels OutgoingAudioChannel 328 Netstat 1 Jitter: 0
  ** end
```

The Diagnostics status, cont...

**xStatus Diagnostics Call [1..n] Channels OutgoingAudioChannel [1..n] Netstat 1 Packets**

Number of packets received in this media channel.
Value space: <Integer value>

Example:
```
xStatus Diagnostics Call 27 Channels OutgoingAudioChannel 328 Netstat 1 Packets
  *s Diagnostics Call 27 Channels OutgoingAudioChannel 328 Netstat 1 Packets: 24000
  ** end
```

**xStatus Diagnostics Call [1..n] Channels OutgoingAudioChannel [1..n] Netstat 1 Loss**

Packets lost in this media channel.
Value space: <Integer value>

Example:
```
xStatus Diagnostics Call 27 Channels OutgoingAudioChannel 328 Netstat 1 Loss
  *s Diagnostics Call 27 Channels OutgoingAudioChannel 328 Netstat 1 Loss: 0
  ** end
```

**xStatus Diagnostics Call [1..n] Channels OutgoingAudioChannel [1..n] Netstat 1 Drop**

Packets dropped in this media channel.
Value space: <Integer value>

Example:
```
xStatus Diagnostics Call 27 Channels OutgoingAudioChannel 328 Netstat 1 Drop
  *s Diagnostics Call 27 Channels OutgoingAudioChannel 328 Netstat 1 Drop: 0
  ** end
```

**xStatus Diagnostics Call [1..n] Channels OutgoingAudioChannel [1..n] Netstat 1 Bytes**

Number of bytes sent in this media channel.
Value space: <Integer value>

Example:
```
xStatus Diagnostics Call 27 Channels OutgoingAudioChannel 328 Netstat 1 Bytes
  *s Diagnostics Call 27 Channels OutgoingAudioChannel 328 Netstat 1 Bytes: 7653930
  ** end
```
xStatus Diagnostics Call [1..n] Channels OutgoingAudioChannel [1..n] Netstat 1 ChannelRate

Current bandwidth for this media channel.

Value space: <integer value>

Example:

```
xStatus Diagnostics Call 27 Channels OutgoingAudioChannel 328 Netstat 1
ChannelRate
```

```
* s Diagnostics Call 27 Channels OutgoingAudioChannel 328 Netstat 1
ChannelRate: 127000
** end
```

xStatus Diagnostics Call [1..n] Channels OutgoingAudioChannel [1..n] Netstat 1 MaxJitter

Max jitter measured during last time interval (5 seconds).

Value space: <integer value>

Example:

```
xStatus Diagnostics Call 27 Channels OutgoingAudioChannel 328 Netstat 1
MaxJitter
```

```
* s Diagnostics Call 27 Channels OutgoingAudioChannel 328 Netstat 1 MaxJitter: 0
** end
```

xStatus Diagnostics Call [1..n] Channels OutgoingVideoChannel [1..n] Netstat 1 Jitter

Current jitter as specified by RFC3550.

Value space: <integer value>

Example:

```
xStatus Diagnostics Call 27 Channels OutgoingVideoChannel 331 Netstat 1
Jitter
```

```
* s Diagnostics Call 27 Channels OutgoingVideoChannel 331 Netstat 1 Jitter: 1
** end
```

xStatus Diagnostics Call [1..n] Channels OutgoingVideoChannel [1..n] Netstat 1 Packets

Number of packets received in this media channel.

Value space: <integer value>

Example:

```
xStatus Diagnostics Call 27 Channels OutgoingVideoChannel 331 Netstat 1
Packets
```

```
* s Diagnostics Call 27 Channels OutgoingVideoChannel 331 Netstat 1 Packets: 43096
** end
```

xStatus Diagnostics Call [1..n] Channels OutgoingVideoChannel [1..n] Netstat 1 Loss

Packets lost in this media channel.

Value space: <integer value>

Example:

```
xStatus Diagnostics Call 27 Channels OutgoingVideoChannel 331 Netstat 1 Loss
```

```
* s Diagnostics Call 27 Channels OutgoingVideoChannel 331 Netstat 1 Loss: 0
** end
```

xStatus Diagnostics Call [1..n] Channels OutgoingVideoChannel [1..n] Netstat 1 Drop

Packets dropped in this media channel.

Value space: <integer value>

Example:

```
xStatus Diagnostics Call 27 Channels OutgoingVideoChannel 331 Netstat 1 Drop
```

```
* s Diagnostics Call 27 Channels OutgoingVideoChannel 331 Netstat 1 Drop: 0
** end
```

xStatus Diagnostics Call [1..n] Channels OutgoingVideoChannel [1..n] Netstat 1 Bytes

Number of bytes sent in this media channel.

Value space: <integer value>

Example:

```
xStatus Diagnostics Call 27 Channels OutgoingVideoChannel 331 Netstat 1 Bytes
```

```
* s Diagnostics Call 27 Channels OutgoingVideoChannel 331 Netstat 1 Bytes:
3911160
** end
```

xStatus Diagnostics Call [1..n] Channels OutgoingVideoChannel [1..n] Netstat 1 ChannelRate

Current bandwidth for this media channel.

Value space: <integer value>

Example:

```
xStatus Diagnostics Call 27 Channels OutgoingVideoChannel 331 Netstat 1
ChannelRate
```

```
* s Diagnostics Call 27 Channels OutgoingVideoChannel 331 Netstat 1
ChannelRate: 652000
** end
```
The Diagnostics status, cont...

xStatus Diagnostics Call [1..n] Channels OutgoingVideoChannel [1..n] Netstat 1 MaxJitter
Max jitter measured during last time interval (5 seconds).
Value space: <Integer value>
Example:
  xStatus Diagnostics Call 27 Channels OutgoingVideoChannel 331 Netstat 1 MaxJitter
  "s Diagnostics Call 27 Channels OutgoingVideoChannel 331 Netstat 1 MaxJitter: 1
  ** end

xStatus Diagnostics Call [1..n] Channels OutgoingDataChannel [1..n] Netstat 1 Jitter
Current jitter as specified by RFC3550.
Value space: <Integer value>
Example:
  xStatus Diagnostics Call 27 Channels OutgoingDataChannel 336 Netstat 1 Jitter
  "s Diagnostics Call 27 Channels OutgoingDataChannel 336 Netstat 1 Jitter: 0
  ** end

xStatus Diagnostics Call [1..n] Channels OutgoingDataChannel [1..n] Netstat 1 Packets
Number of packets received in this media channel.
Value space: <Integer value>
Example:
  xStatus Diagnostics Call 27 Channels OutgoingDataChannel 336 Netstat 1 Packets
  "s Diagnostics Call 27 Channels OutgoingDataChannel 336 Netstat 1 Packets: 2
  ** end

xStatus Diagnostics Call [1..n] Channels OutgoingDataChannel [1..n] Netstat 1 Loss
Packets lost in this media channel.
Value space: <Integer value>
Example:
  xStatus Diagnostics Call 27 Channels OutgoingDataChannel 336 Netstat 1 Loss
  "s Diagnostics Call 27 Channels OutgoingDataChannel 336 Netstat 1 Loss: 0
  ** end

xStatus Diagnostics Call [1..n] Channels OutgoingDataChannel [1..n] Netstat 1 Bytes
Number of bytes sent in this media channel.
Value space: <Integer value>
Example:
  xStatus Diagnostics Call 27 Channels OutgoingDataChannel 336 Netstat 1 Bytes
  "s Diagnostics Call 27 Channels OutgoingDataChannel 336 Netstat 1 Bytes: 107
  ** end

xStatus Diagnostics Call [1..n] Channels OutgoingDataChannel [1..n] Netstat 1 ChannelRate
Current bandwidth for this media channel.
Value space: <Integer value>
Example:
  xStatus Diagnostics Call 27 Channels OutgoingDataChannel 336 Netstat 1 ChannelRate
  "s Diagnostics Call 27 Channels OutgoingDataChannel 336 Netstat 1 ChannelRate: 0
  ** end

xStatus Diagnostics Call [1..n] Channels OutgoingDataChannel [1..n] Netstat 1 MaxJitter
Max jitter measured during last time interval (5 seconds).
Value space: <Integer value>
Example:
  xStatus Diagnostics Call 27 Channels OutgoingDataChannel 336 Netstat 1 MaxJitter
  "s Diagnostics Call 27 Channels OutgoingDataChannel 336 Netstat 1 MaxJitter: 0
  ** end
The H323 status

xStatus H323

Run this command to see an overview of the H323 status.
Value space: <N/A>

Example:

```
xStatus H323
*s H323 Gatekeeper Status: Registered
*s H323 Gatekeeper Address: "10.47.1.58"
*s H323 Gatekeeper Port: 1719
*s H323 Gatekeeper Reason: ""
** end
```

xStatus H323 Gatekeeper Status

Gatekeeper registration status.
Value space: <Registered/Inactive/Rejected>

Example:

```
xStatus H323 Gatekeeper Status
*s H323 Gatekeeper Status: Registered
** end
```

xStatus H323 Gatekeeper Address

Address of gatekeeper this system is registered against.
Value space: <S: 0..100>

Example:

```
xStatus H323 Gatekeeper Address
*s H323 Gatekeeper Address: "10.47.1.83"
** end
```

xStatus H323 Gatekeeper Port

The port to connect to on gatekeeper.
Value space: <Integer value>

Example:

```
xStatus H323 Gatekeeper Port
*s H323 Gatekeeper Port: 1719
** end
```
The HTTP Feedback status

**xStatus HTTPFeedBack**

Run this command to see an overview of the HTTP status.

Value space: <N/A>

Example:

```plaintext
xStatus HTTP
```

```plaintext
*s HttpFeedback 1 Expression: "/History/CallLog/History"
*s HttpFeedback 1 Expression: "/Status/Call[Status='connected']"
*s HttpFeedback 1 Expression: "/Status/H323/Gatekeeper"
*s HttpFeedback 1 Expression: "/Status/Ethernet"
*s HttpFeedback 1 Expression: "/Event/CallSuccessful"
```

- continues with HttpFeedback 2-3

** end

**xStatus HttpFeedback [1..3] Expression**

A set of 15 feedback expressions can be registered for each URL.

Value space: <S: 0..256>

Example:

```plaintext
xStatus HttpFeedback 1 Expression
```

```plaintext
*s HttpFeedback 1 Expression: "/History/CallLog/History"
*s HttpFeedback 1 Expression: "/Status/Call[Status='connected']"
*s HttpFeedback 1 Expression: "/Status/H323/Gatekeeper"
*s HttpFeedback 1 Expression: "/Status/Ethernet"
*s HttpFeedback 1 Expression: "/Event/CallSuccessful"
```

** end

**xStatus HttpFeedback [1..3] URL**

Three different servers, specified by URL, can register feedback expressions on this system.

Value space: <S: 0..100>

Example:

```plaintext
xStatus HttpFeedback 1 URL
```

```plaintext
```

** end
The Media Channel status

**xStatus MediaChannel**

Run this command to see an overview of the media channel status. The example shows the media channel status for an ongoing call. The call id and the id’s for incoming/outgoing audio and video channels are required when query media channels information.

**Example:**

```plaintext
xStatus Media
*s MediaChannels Call 27 IncomingAudioChannel 327 Encryption Status: Off
*s MediaChannels Call 27 IncomingAudioChannel 327 Audio Protocol: AACLD
*s MediaChannels Call 27 IncomingAudioChannel 327 Audio Mute: True
*s MediaChannels Call 27 IncomingVideoChannel 330 Encryption Status: Off
*s MediaChannels Call 27 IncomingVideoChannel 330 Video Protocol: H264
*s MediaChannels Call 27 IncomingVideoChannel 330 Video ResolutionX: 352
*s MediaChannels Call 27 IncomingVideoChannel 330 Video ResolutionY: 288
```

**xStatus MediaChannels Call [1..n] IncomingAudioChannel [1..n] Encryption Status**

Encryption status on media channel.
Value space: <On/off>

**Example:**

```plaintext
xStatus MediaChannels Call 27 IncomingAudioChannel 327 Encryption Status: Off
*s MediaChannels Call 27 IncomingAudioChannel 327 Encryption Status: Off
```

**xStatus MediaChannels Call [1..n] IncomingAudioChannel [1..n] Audio Protocol**

Audio algorithm.
Value space: <AACLD/G722/G7221/G711Mu>

**Example:**

```plaintext
xStatus MediaChannels Call 27 IncomingAudioChannel 327 Audio Protocol: AACLD
*s MediaChannels Call 27 IncomingAudioChannel 327 Audio Protocol: AACLD
```

**xStatus MediaChannels Call [1..n] IncomingAudioChannel [1..n] Audio Mute**

Audio mute status of incoming audio.
Value space: <True/False>

**Example:**

```plaintext
xStatus MediaChannels Call 27 IncomingAudioChannel 327 Audio Mute: True
*s MediaChannels Call 27 IncomingAudioChannel 327 Audio Mute: True
```

**xStatus MediaChannels Call [1..n] IncomingAudioChannel [1..n] Audio Channels**

Number of audio channels.
Value space: <Integer value>

**Example:**

```plaintext
xStatus MediaChannels Call 27 IncomingAudioChannel 327 Audio Channels: 1
*s MediaChannels Call 27 IncomingAudioChannel 327 Audio Channels: 1
```

**xStatus MediaChannels Call [1..n] IncomingVideoChannel [1..n] Encryption Status**

Encryption status on media channel.
Value space: <On/Off>

**Example:**

```plaintext
xStatus MediaChannels Call 27 IncomingVideoChannel 330 Encryption Status: Off
*s MediaChannels Call 27 IncomingVideoChannel 330 Encryption Status: Off
```

**xStatus MediaChannels Call [1..n] IncomingVideoChannel [1..n] Video Protocol**

Video protocol.
Value space: <H264/H263/H263+>

**Example:**

```plaintext
xStatus MediaChannels Call 27 IncomingVideoChannel 330 Video Protocol: H264
*s MediaChannels Call 27 IncomingVideoChannel 330 Video Protocol: H264
```

**xStatus MediaChannels Call [1..n] IncomingVideoChannel [1..n] Video ResolutionX**

Horizontal resolution.
Value space: <Integer value>

**Example:**

```plaintext
xStatus MediaChannels Call 27 IncomingVideoChannel 330 Video ResolutionX: 352
*s MediaChannels Call 27 IncomingVideoChannel 330 Video ResolutionX: 352
```

**xStatus MediaChannels Call [1..n] IncomingVideoChannel [1..n] Video ResolutionY**

Vertical resolution.
Value space: <Integer value>

**Example:**

```plaintext
xStatus MediaChannels Call 27 IncomingVideoChannel 330 Video ResolutionY: 288
*s MediaChannels Call 27 IncomingVideoChannel 330 Video ResolutionY: 288
```

**xStatus MediaChannels Call [1..n] OutgoingAudioChannel [1..n] Encryption Status**

Encryption status on media channel.
Value space: <On/Off>

**Example:**

```plaintext
xStatus MediaChannels Call 27 OutgoingAudioChannel 328 Encryption Status: Off
*s MediaChannels Call 27 OutgoingAudioChannel 328 Encryption Status: Off
```

**xStatus MediaChannels Call [1..n] OutgoingAudioChannel [1..n] Audio Protocol**

Audio algorithm.
Value space: <AACLD/G722/G7221/G711Mu>

**Example:**

```plaintext
xStatus MediaChannels Call 27 OutgoingAudioChannel 328 Audio Protocol: AACLD
*s MediaChannels Call 27 OutgoingAudioChannel 328 Audio Protocol: AACLD
```

**xStatus MediaChannels Call [1..n] OutgoingAudioChannel [1..n] Audio Mute**

Audio mute status of outgoing audio.
Value space: <True/False>

**Example:**

```plaintext
xStatus MediaChannels Call 27 OutgoingAudioChannel 328 Audio Mute: False
*s MediaChannels Call 27 OutgoingAudioChannel 328 Audio Mute: False
```

**xStatus MediaChannels Call [1..n] OutgoingAudioChannel [1..n] Audio Channels**

Number of audio channels.
Value space: <Integer value>

**Example:**

```plaintext
xStatus MediaChannels Call 27 OutgoingAudioChannel 328 Audio Channels: 1
*s MediaChannels Call 27 OutgoingAudioChannel 328 Audio Channels: 1
```

**xStatus MediaChannels Call [1..n] OutgoingVideoChannel [1..n] Encryption Status**

Encryption status on media channel.
Value space: <On/Off>

**Example:**

```plaintext
xStatus MediaChannels Call 27 OutgoingVideoChannel 331 Encryption Status: Off
*s MediaChannels Call 27 OutgoingVideoChannel 331 Encryption Status: Off
```

**xStatus MediaChannels Call [1..n] OutgoingVideoChannel [1..n] Video Protocol**

Video protocol.
Value space: <H264/H263/H263+>

**Example:**

```plaintext
xStatus MediaChannels Call 27 OutgoingVideoChannel 331 Video Protocol: H264
*s MediaChannels Call 27 OutgoingVideoChannel 331 Video Protocol: H264
```

**xStatus MediaChannels Call [1..n] OutgoingVideoChannel [1..n] Video ResolutionX**

Horizontal resolution.
Value space: <Integer value>

**Example:**

```plaintext
xStatus MediaChannels Call 27 OutgoingVideoChannel 331 Video ResolutionX: 1024
*s MediaChannels Call 27 OutgoingVideoChannel 331 Video ResolutionX: 1024
```

**xStatus MediaChannels Call [1..n] OutgoingVideoChannel [1..n] Video ResolutionY**

Vertical resolution.
Value space: <Integer value>

**Example:**

```plaintext
xStatus MediaChannels Call 27 OutgoingVideoChannel 331 Video ResolutionY: 576
*s MediaChannels Call 27 OutgoingVideoChannel 331 Video ResolutionY: 576
```
The Media Channel status, cont...

**xStatus MediaChannels Call [1..n] IncomingVideoChannel [1..n] ChannelRole**
Main video channel or presentation video channel.
Value space: <Main/Presentation>

Example:
```
xStatus MediaChannels Call 27 IncomingVideoChannel 330 ChannelRole
* MediaChannels Call 27 IncomingVideoChannel 330 ChannelRole: Main
** end
```

**xStatus MediaChannels Call [1..n] IncomingVideoChannel [1..n] Video Protocol**
Video algorithm.
Value space: <H264/H263pp/H263/H261>

Example:
```
xStatus MediaChannels Call 27 IncomingVideoChannel 330 Video Protocol
* MediaChannels Call 27 IncomingVideoChannel 330 Video Protocol: H264
** end
```

**xStatus MediaChannels Call [1..n] IncomingVideoChannel [1..n] Video ResolutionX**
Resolution width for incoming video.
Value space: <Integer value>

Example:
```
xStatus MediaChannels Call 27 IncomingVideoChannel 330 Video ResolutionX
* MediaChannels Call 27 IncomingVideoChannel 330 Video ResolutionX: 768
** end
```

**xStatus MediaChannels Call [1..n] IncomingVideoChannel [1..n] Video ResolutionY**
Resolution height for incoming video.
Value space: <Integer value>

Example:
```
xStatus MediaChannels Call 27 IncomingVideoChannel 330 Video ResolutionY
* MediaChannels Call 27 IncomingVideoChannel 330 Video ResolutionY: 448
** end
```

**xStatus MediaChannels Call [1..n] OutgoingAudioChannel [1..n] Encryption Status**
Encryption status on media channel.
Value space: <On/Off>

Example:
```
xStatus MediaChannels Call 27 OutgoingAudioChannel 328 Encryption Status
* MediaChannels Call 27 OutgoingAudioChannel 328 Encryption Status: Off
** end
```

**xStatus MediaChannels Call [1..n] OutgoingAudioChannel [1..n] Audio Protocol**
Audio algorithm.
Value space: <AACLD/G722/G7221/G711Mu>

Example:
```
xStatus MediaChannels Call 27 OutgoingAudioChannel 328 Audio Protocol
* MediaChannels Call 27 OutgoingAudioChannel 328 Audio Protocol: AACLD
** end
```

**xStatus MediaChannels Call [1..n] OutgoingAudioChannel [1..n] Audio Channels**
Number of audio channels.
Value space: <Integer value>

Example:
```
xStatus MediaChannels Call 27 OutgoingAudioChannel 328 Audio Channels
* MediaChannels Call 27 OutgoingAudioChannel 328 Audio Channels: 1
** end
```

**xStatus MediaChannels Call [1..n] OutgoingVideoChannel [1..n] Encryption Status**
Encryption status on media channel.
Value space: <On/Off>

Example:
```
xStatus MediaChannels Call 27 OutgoingVideoChannel 331 Encryption Status
* MediaChannels Call 27 OutgoingVideoChannel 331 Encryption Status: Off
** end
```
The Media Channel status, cont...

**xStatus MediaChannels Call [1..n] OutgoingVideoChannel [1..n] ChannelRole**

Main video channel or presentation video channel.

Value space: <Main/Presentation>

Example:

```
xStatus MediaChannels Call 27 OutgoingVideoChannel 331 ChannelRole
    *s MediaChannels Call 27 OutgoingVideoChannel 331 ChannelRole: Main
** end
```

**xStatus MediaChannels Call [1..n] OutgoingVideoChannel [1..n] Video Protocol**

Video algorithm.

Value space: <H264/H263pp/H263/H261>

Example:

```
xStatus MediaChannels Call 27 OutgoingVideoChannel 331 Video Protocol
    *s MediaChannels Call 27 OutgoingVideoChannel 331 Video Protocol: "H264"
** end
```

**xStatus MediaChannels Call [1..n] OutgoingVideoChannel [1..n] Video ResolutionX**

Resolution width for incoming video.

Value space: <Integer value.>

Example:

```
xStatus MediaChannels Call 27 OutgoingVideoChannel 331 Video ResolutionX
    *s MediaChannels Call 27 OutgoingVideoChannel 331 Video ResolutionX: 768
** end
```

**xStatus MediaChannels Call [1..n] OutgoingVideoChannel [1..n] Video ResolutionY**

Resolution height for incoming video.

Value space: <Integer value.>

Example:

```
xStatus MediaChannels Call 27 OutgoingVideoChannel 331 Video ResolutionY
    *s MediaChannels Call 27 OutgoingVideoChannel 331 Video ResolutionY: 448
** end
```

The Network status

**xStatus Network**

Run this command to see an overview of the network status.

Example:

```
xStatus Network
    *s Network 1 Ethernet MacAddress: "00:50:60:02:E7:D3"
    *s Network 1 Ethernet Speed: "1000full"
    *s Network 1 IPv4 Address: "10.47.21.62"
    *s Network 1 IPv4 SubnetMask: "255.255.255.0"
    *s Network 1 IPv4 Gateway: "10.47.21.1"
    *s Network 1 IPv4 DNS Domain Name: "sales.company.com eu.company.int"
    *s Network 1 IPv4 DNS Server 1 Address: "10.47.21.61"
    *s Network 1 IPv4 DNS Server 2 Address: "10.47.21.14"
    *s Network 1 IPv4 DNS Server 3 Address: ""
    *s Network 1 IPv4 DNS Server 4 Address: ""
    *s Network 1 IPv4 DNS Server 5 Address: ""
    *s Network 1 IPv4 MTU: 1500
** end
```

**xStatus Network 1 Ethernet MacAddress**

Mac address for Ethernet interface.

Value space: <S: 0,100>

Example:

```
xStatus Network 1 Ethernet MacAddress
    *s Network 1 Ethernet MacAddress: "00:50:60:02:FD:C7"
** end
```

**xStatus Network 1 Ethernet Speed**

Speed in Mbps. Full or half duplex.

Value space: <Integer value>

Example:

```
xStatus Network 1 Ethernet Speed
    *s Network 1 Ethernet Speed: "100full"
** end
```
The Network status, cont...

**xStatus Network 1 IPv4 Address**

Ip address of this system.
Value space: <S: 0..100>

Example:
```
xStatus Network 1 IPv4 Address
*s Network 1 IPv4 Address: "10.47.21.62"
** end
```

**xStatus Network 1 IPv4 SubnetMask**

A mask used to determine what subnet the IPv4 address belongs to.
Value space: <S: 0..100>

Example:
```
xStatus Network 1 IPv4 SubnetMask
*s Network 1 IPv4 SubnetMask: "255.255.255.0"
** end
```

**xStatus Network 1 IPv4 Gateway**

The gateway used.
Value space: <S: 0..100>

Example:
```
xStatus Network 1 IPv4 Gateway
*s Network 1 IPv4 Gateway: "10.47.21.1"
** end
```

**xStatus Network 1 IPv4 DNS Domain Name**

The Domain Name
Value space: <S: 0..100>

Example:
```
xStatus Network 1 IPv4 DNS Domain Name
*s Network 1 IPv4 DNS Domain Name: "sales.company.com eu.company.int"
** end
```

The Network status, cont...

**xStatus Network 1 IPv4 DNS Server [1..5] Address**

The IP address of the DNS server to use.
Value space: <S: 0..100>

Example:
```
xStatus Network 1 IPv4 DNS Server 1 Address
*s Network 1 IPv4 DNS Server 1 Address: "10.47.1.92"
** end
```

**xStatus Network 1 IPv4 MTU**

Specifies the MTU (Maximum Transmission Unit) size for the network.
Value space: <Integer value>

Example:
```
xStatus Network 1 IPv4 MTU
*s Network 1 IPv4 MTU: 1500
** end
```
The Camera Preset status

xStatus Preset
Run this command to see an overview of the camera presets status.

Example:
```
xStatus Preset
*s Preset 1 Defined: True
*s Preset 1 Type: All
*s Preset 1 Description: "Zoom in"
- continues with Preset 2-15
** end
```

xStatus Preset [1..15] Defined
Specifies if a camera preset is stored at this position.
Value space: <True/False>

Example:
```
xStatus Preset 3 Defined
*s Preset 3 Defined: True
** end
```

xStatus Preset [1..15] Type
Specifies the camera preset type.
Value space: <All/>.

Example:
```
xStatus Preset 3 Type
*s Preset 3 Type: All
** end
```

xStatus Preset [1..15] Description
Lists the configured name for the specific preset.
Value space: <S: 0..100>

Example:
```
xStatus Preset 3 Description
*s Preset 3 Description: "Whiteboard"
** end
```

The SIP status

xStatus SIP
Run this command to see an overview of the SIP status.
Value space: <N/A>

Example:
```
xStatus SIP
*s SIP Proxy 1 Status: Active
*s SIP Proxy 1 Address: "10.47.21.58"
*s SIP Proxy 1 Secure: True
*s SIP Proxy 1 Verified: False
*s SIP Registration 1 Status: Registered
*s SIP Registration 1 Reason: ""
*s SIP Registration 1 URI: "john.doe@company.com"
*s SIP Registration 1 Authentication: Off
** end
```

xStatus SIP Proxy 1 Status
Status of communication between this endpoint and SIP proxy.
Value space: <Active/DNSFailed/Off/Timeout/UnableTCP/UnableTLS/Unknown>

Example:
```
xStatus SIP Proxy 1 Status
*s SIP Proxy 1 Status: Active
** end
```

xStatus SIP Proxy 1 Address
The active proxy this system communicates with.
Value space: <S: 0..255>

Example:
```
xStatus SIP Proxy 1 Address
*s SIP Proxy 1 Address: "10.47.1.63"
** end
```
The SIP status, cont...

**xStatus SIP Proxy 1 Secure**

Encryption status of signalling with proxy.
Value space: <True/False>

*Example:*

```
xStatus SIP Proxy 1 Secure
  "s SIP Proxy 1 Secure: True
  ** end
```

**xStatus SIP Proxy 1 Verified**

To be described.
Value space: <True/False>

*Example:*

```
xStatus SIP Proxy 1 Verified
  "s SIP Proxy 1 Verified: False
  ** end
```

**xStatus SIP Registration [1..n] Status**

Registration status of SIP Registration URI.
Value space: <Deregister/Failed/Inactive/Registered/Registering>

*Example:*

```
xStatus SIP Registration 1 Status
  "s SIP Registration 1 Status: Registered
  ** end
```

**xStatus SIP Registration [1..n] Reason**

Specifies the reason why a SIP registration fails.
Value space: <S: 0..100>

*Example:*

```
xStatus SIP Registration 1 Reason
  "s SIP Registration 1 Reason: "404 Not Found"
  ** end
```

The SIP status, cont...

**xStatus SIP Registration [1..n] URI**

The URI used for registration vs SIP registrar.
Value space: <S: 0..100>

*Example:*

```
xStatus SIP Registration 1 URI
  "s SIP Registration 1 URI: "john.doe@company.com"
  ** end
```

**xStatus SIP Registration [1..n] Authentication**

States what Authentication mechanism is used.
Value space: <Digest/NTLM/Off>

*Example:*

```
xStatus SIP Registration 1 Authentication
  "s SIP Registration 1 Authentication: Off
  ** end
```
The System Unit status

**xStatus SystemUnit**

Run this command to see an overview of the system unit status.

Example:

```
xStatus SystemUnit
* s SystemUnit ProductType: "TANDBERG Codec"
* s SystemUnit ProductId: "TANDBERG Codec C90"
* s SystemUnit Uptime: 597095
* s SystemUnit Software Application: "Endpoint"
* s SystemUnit Software Version: "TC2.0.0"
* s SystemUnit Software Name: "s52000"
* s SystemUnit Software ReleaseDate: "2009-07-03"
* s SystemUnit Software MaxVideoCalls: 3
* s SystemUnit Software ReleaseKey: "true"
* s SystemUnit Software OptionKeys NaturalPresenter: "true"
* s SystemUnit Software OptionKeys MultiSite: "true"
* s SystemUnit Software OptionKeys PremiumResolution: "true"
* s SystemUnit Hardware Module SerialNumber: "B1AD25A00003"
* s SystemUnit Hardware Module Identifier: "0"
* s SystemUnit Hardware MainBoard SerialNumber: "PH0497201"
* s SystemUnit Hardware MainBoard Identifier: "101401-3 [04]"
* s SystemUnit Hardware VideoBoard SerialNumber: "PH0497874"
* s SystemUnit Hardware VideoBoard Identifier: "101560-1 [02]"
* s SystemUnit Hardware AudioBoard SerialNumber: "N/A"
* s SystemUnit Hardware AudioBoard Identifier: ""s
* s SystemUnit Hardware BootSoftware: "U-Boot 2009.03-37"
* s SystemUnit State System: Initialized
* s SystemUnit State MaxNumberOfCalls: 3
* s SystemUnit State MaxNumberOfActiveCalls: 3
* s SystemUnit State NumberOfActiveCalls: 1
* s SystemUnit State NumberOfSuspendedCalls: 0
* s SystemUnit State NumberOfInProgressCalls: 0
* s SystemUnit State Subsystem Application: Initialized
* s SystemUnit ContactInfo: "support@company.com"
** end
```

**xStatus SystemUnit ProductType**

Displays the product type.
Value space: <S: 0,.100>

Example:

```
xStatus SystemUnit ProductType
* s SystemUnit ProductType: "TANDBERG Codec"
** end
```

**xStatus SystemUnit ProductId**

Displays what product this is.
Value space: <S: 0,.100>

Example:

```
xStatus SystemUnit ProductId
* s SystemUnit ProductId: "TANDBERG Codec C90"
** end
```

**xStatus SystemUnit Uptime**

Seconds since last system boot.
Value space: <Integer value>

Example:

```
xStatus SystemUnit Uptime
* s SystemUnit Uptime: 357708
** end
```

**xStatus SystemUnit Software Application**

Specifies which software application is running.
Value space: <S: 0,.100>

Example:

```
xStatus SystemUnit Software Application
* s SystemUnit Software Application: "Endpoint"
** end
```

**xStatus SystemUnit Software Version**

Version of installed software.
Value space: <S: 0,.100>

Example:

```
xStatus SystemUnit Software Version
* s SystemUnit Software Version: "TC2.0.0"
** end
```
The System Unit status, cont...

**xStatus SystemUnit Software Name**

Specifies the name of the installed system.
Value space: <S: 0..100>

Example:
```
xStatus SystemUnit Software Name
  "s SystemUnit Software Name: "s52000"
  ** end
```

**xStatus SystemUnit Software ReleaseDate**

Date of software release.
Value space: <S: 0..100>

Example:
```
xStatus SystemUnit Software ReleaseDate
  "s SystemUnit Software ReleaseDate: "2009-07-03"
  ** end
```

**xStatus SystemUnit Software MaxVideoCalls**

Max number of simultaneous video calls from this system.
Value space: <Integer value>

Example:
```
xStatus SystemUnit Software MaxVideoCalls
  "s SystemUnit Software MaxVideoCalls: 3
  ** end
```

**xStatus SystemUnit Software ReleaseKey**

States whether system has a valid releasekey for this software version.
Value space: <S: 0..100>

Example:
```
xStatus SystemUnit Software ReleaseKey
  "s SystemUnit Software ReleaseKey: "true"
  ** end
```

**xStatus SystemUnit Hardware Module SerialNumber**

Serial number of the full system (box).
Value space: <S: 0..100>

Example:
```
xStatus SystemUnit Hardware Module SerialNumber
  "s SystemUnit Hardware Module SerialNumber: "B1AD25A00002"
  ** end
```

The System Unit status, cont...

**xStatus SystemUnit Software OptionKeys NaturalPresenter**

States whether system supports NaturalPresenter functionality.
Value space: <S: 0..100>

Example:
```
xStatus SystemUnit Software OptionKeys NaturalPresenter
  "s SystemUnit Software OptionKeys NaturalPresenter: "true"
  ** end
```

**xStatus SystemUnit Software OptionKeys MultiSite**

States whether system supports MultiSite functionality.
Value space: <S: 0..100>

Example:
```
xStatus SystemUnit Software OptionKeys MultiSite
  "s SystemUnit Software OptionKeys MultiSite: "true"
  ** end
```

**xStatus SystemUnit Software OptionKeys PremiumResolution**

States whether system supports PremiumResolution functionality.
Value space: <S: 0..100>

Example:
```
xStatus SystemUnit Software OptionKeys PremiumResolution
  "s SystemUnit Software OptionKeys PremiumResolution: "true"
  ** end
```
The System Unit status, cont...

**xStatus SystemUnit Hardware Module Identifier**

States hardware revision of full system.
Value space: \(<S: \ 0..100>\)

Example:
```
*xStatus SystemUnit Hardware Module Identifier
"s SystemUnit Hardware Module Identifier: "1"
** end
```

**xStatus SystemUnit Hardware MainBoard SerialNumber**

Serial number of main board.
Value space: \(<S: \ 0..100>\)

Example:
```
*xStatus SystemUnit Hardware MainBoard SerialNumber
"s SystemUnit Hardware MainBoard SerialNumber: "PH0528833"
** end
```

**xStatus SystemUnit Hardware MainBoard Identifier**

States hardware revision of MainBoard.
Value space: \(<S: \ 0..100>\)

Example:
```
*xStatus SystemUnit Hardware MainBoard Identifier
"s SystemUnit Hardware MainBoard Identifier: "101400-5 [06]"
** end
```

**xStatus SystemUnit Hardware VideoBoard SerialNumber**

Serial number of VideoBoard.
Value space: \(<S: \ 0..100>\)

Example:
```
*xStatus SystemUnit Hardware VideoBoard SerialNumber
"s SystemUnit Hardware VideoBoard SerialNumber: "PH0534914"
** end
```

**xStatus SystemUnit Hardware VideoBoard Identifier**

States hardware revision of VideoBoard.
Value space: \(<S: \ 0..100>\)

Example:
```
*xStatus SystemUnit Hardware VideoBoard Identifier
"s SystemUnit Hardware VideoBoard Identifier: "101410-4 [07]"
** end
```

**xStatus SystemUnit Hardware AudioBoard SerialNumber**

Serial number of AudioBoard.
Value space: \(<S: \ 0..100>\)

Example:
```
*xStatus SystemUnit Hardware AudioBoard SerialNumber
"s SystemUnit Hardware AudioBoard SerialNumber: "TBD"
** end
```

**xStatus SystemUnit Hardware AudioBoard Identifier**

States hardware revision of AudioBoard.
Value space: \(<S: \ 0..100>\)

Example:
```
*xStatus SystemUnit Hardware AudioBoard Identifier
"s SystemUnit Hardware AudioBoard Identifier: "101420-2 [No objl.]
** end
```

**xStatus SystemUnit Hardware BootSoftware**

Boot software id.
Value space: \(<S: \ 0..100>\)

Example:
```
*xStatus SystemUnit Hardware BootSoftware
"s SystemUnit Hardware BootSoftware: "u-boot 2009.03-37"
** end
```
The System Unit status, cont...

**xStatus SystemUnit State System**
System state.
Value space: <InCall/Initialized/Initializing/Multisite/Sleeping>
Example:
```
xStatus SystemUnit State System
  *s SystemUnit State System: Initialized
** end
```

**xStatus SystemUnit State MaxNumberOfCalls**
Max number of calls supported.
Value space: <0..5>
Example:
```
xStatus SystemUnit State MaxNumberOfCalls
  *s SystemUnit State MaxNumberOfCalls: 3
** end
```

**xStatus SystemUnit State MaxNumberOfActiveCalls**
Max number of active calls supported.
Value space: <0..5>
Example:
```
xStatus SystemUnit State MaxNumberOfActiveCalls
  *s SystemUnit State MaxNumberOfActiveCalls: 3
** end
```

**xStatus SystemUnit State NumberOfActiveCalls**
Number of active calls.
Value space: <0..5>
Example:
```
xStatus SystemUnit State NumberOfActiveCalls
  *s SystemUnit State NumberOfActiveCalls: 0
** end
```

**xStatus SystemUnit State NumberOfSuspendedCalls**
Number of suspended calls.
Value space: <0..5>
Example:
```
xStatus SystemUnit State NumberOfSuspendedCalls
  *s SystemUnit State NumberOfSuspendedCalls: 0
** end
```

**xStatus SystemUnit State NumberOfInProgressCalls**
Number of calls in progress.
Value space: <0..5>
Example:
```
xStatus SystemUnit State NumberOfInProgressCalls
  *s SystemUnit State NumberOfInProgressCalls: 0
** end
```

**xStatus SystemUnit State Subsystem Application**
State of system application.
Value space: <Initialized/Initializing>
Example:
```
xStatus SystemUnit State Subsystem Application
  *s SystemUnit State Subsystem Application: Initialized
** end
```

**xStatus SystemUnit ContactInfo**
This gives the address another system should dial to reach this system.
Value space: <S: 0..100>
Example:
```
xStatus SystemUnit ContactInfo
  *s SystemUnit ContactInfo: "support@company.com"
** end
```
The Standby status

xStatus Standby Active
States whether standby mode is active.

Example:
```bash
xStatus Standby Active
*s Standby Active: Off
** end
```

The Video Input status

xStatus Video Input
Run this command to see an overview of the video input status.

Example:
```bash
xStatus Video Input
*s Video Input Source 1 Resolution Height: 1080
*s Video Input Source 1 Resolution Width: 1920
*s Video Input Source 1 Resolution RefreshRate: 64
*s Video Input Source 2 Resolution Height: 1080
*s Video Input Source 2 Resolution Width: 1920
*s Video Input Source 2 Resolution RefreshRate: 64
*s Video Input Source 3 Resolution Height: 1080
*s Video Input Source 3 Resolution Width: 1920
*s Video Input Source 3 Resolution RefreshRate: 60
*s Video Input Source 4 Resolution Height: 0
*s Video Input Source 4 Resolution Width: 0
*s Video Input Source 4 Resolution RefreshRate: 0
*s Video Input Source 5 Resolution Height: 0
*s Video Input Source 5 Resolution Width: 0
*s Video Input Source 5 Resolution RefreshRate: 0
*s Video Input HDMI 1 Connected: True
*s Video Input HDMI 2 Connected: True
*s Video Input HDMI 3 Connected: True
*s Video Input HDMI 4 Connected: False
*s Video Input HDSI 1 Connected: False
*s Video Input HDSI 2 Connected: False
*s Video Input HDSI 3 Connected: False
*s Video Input HDSI 4 Connected: False
*s Video Input YPbPr 1 Connected: False
*s Video Input YPbPr 2 Connected: False
*s Video Input DVI 3 Connected: False
*s Video Input DVI 5 Connected: False
*s Video Input Legacy 5 Connected: False
** end
```

xStatus Video Input Source [1..5] Resolution Height
Last detected resolution height for source.
Value space: <0..3000>

Example:
```bash
xStatus Video Input Source 1 Resolution Height
*s Video Input Source 1 Resolution Height: 1080
** end
```
The Video Input status, cont...

**xStatus Video Input Source [1..5] Resolution Width**

Last detected resolution width for source.

Value space: <0..4000>

Example:

```c
xStatus Video Input Source 1 Resolution Width
*s Video Input Source 1 Resolution Width: 1920
** end
```

**xStatus Video Input Source [1..5] Resolution RefreshRate**

Last detected resolution refresh rate for source.

Value space: <0..300>

Example:

```c
xStatus Video Input Source 1 Resolution RefreshRate
*s Video Input Source 1 Resolution RefreshRate: 50
** end
```

**xStatus Video Input HDMI [1..4] Connected**

True if a connection on HDMI 1..4 is detected. Not all connections can be detected.

Value space: <True/False>

Example:

```c
xStatus Video Input HDMI 2 Connected
*s Video Input HDMI 2 Connected: False
** end
```

**xStatus Video Input HDSDI [1..4] Connected**

True if a connection on HD-SDI 1..4 is detected. Not all connections can be detected.

Value space: <True/False>

Example:

```c
xStatus Video Input HDSDI 3 Connected
*s Video Input HDSDI 3 Connected: False
** end
```

**xStatus Video Input DVI [3, 5] Connected**

True if a connection on DVI 3 or DVI 5 is detected. Not all connections can be detected.

Value space: <True/False>

Example:

```c
xStatus Video Input DVI 3 Connected
*s Video Input DVI 3 Connected: False
** end
```

**xStatus Video Input Legacy [5..5] Connected**

True if a connection on Legacy 5 is detected. Not all connections can be detected.

Value space: <True/False>

Example:

```c
xStatus Video Input Legacy 5 Connected
*s Video Input Legacy 5 Connected: False
** end
```
The Video Output status

**xStatus Video Output**

Run this command to see an overview of the video output status.

Example:
```
xStatus Video Output
*s Video Output HDMI 1 Resolution Height: 1080
*s Video Output HDMI 1 Resolution Width: 1920
*s Video Output HDMI 1 Resolution RefreshRate: 60
*s Video Output HDMI 3 Resolution Height: 720
*s Video Output HDMI 3 Resolution Width: 1280
*s Video Output HDMI 3 Resolution RefreshRate: 60
*s Video Output DVI 2 Resolution Height: 720
*s Video Output DVI 2 Resolution Width: 1280
*s Video Output DVI 2 Resolution RefreshRate: 60
*s Video Output DVI 4 Resolution Height: 720
*s Video Output DVI 4 Resolution Width: 1280
*s Video Output DVI 4 Resolution RefreshRate: 60
*s Video Output Legacy 5 Resolution Height: 576
*s Video Output Legacy 5 Resolution Width: 720
*s Video Output Legacy 5 Resolution RefreshRate: 50
** end
```

**xStatus Video Output HDMI [1, 3] Resolution Height**

Last confirmed resolution height for output HDMI 1 and 3.
Value space: <120..3000>

Example:
```
xStatus Video Output HDMI 1 Resolution Height
*s Video Output HDMI 1 Resolution Height: 720
** end
```

**xStatus Video Output HDMI [1, 3] Resolution Width**

Last confirmed resolution width for output HDMI 1 and 3.
Value space: <176..4000>

Example:
```
xStatus Video Output HDMI 1 Resolution Width
*s Video Output HDMI 1 Resolution Width: 1280
** end
```

**xStatus Video Output HDMI [1, 3] Resolution RefreshRate**

Last confirmed refresh rate for output HDMI 1 and 3.
Value space: <1..300>

Example:
```
xStatus Video Output HDMI 1 Resolution RefreshRate
*s Video Output HDMI 1 Resolution RefreshRate: 60
** end
```

**xStatus Video Output DVI [2, 4] Resolution Height**

Last confirmed resolution height for output DVI 2 and 4.
Value space: <120..3000>

Example:
```
xStatus Video Output DVI 2 Resolution Height
*s Video Output DVI 2 Resolution Height: 720
** end
```

**xStatus Video Output DVI [2, 4] Resolution Width**

Last confirmed resolution width for output DVI 2 and 4.
Value space: <176..4000>

Example:
```
xStatus Video Output DVI 2 Resolution Width
*s Video Output DVI 2 Resolution Width: 1280
** end
```

**xStatus Video Output DVI [2, 4] Resolution RefreshRate**

Last confirmed refresh rate for output DVI 2 and 4.
Value space: <1..300>

Example:
```
xStatus Video Output DVI 2 Resolution RefreshRate
*s Video Output DVI 2 Resolution RefreshRate: 60
** end
```
The Video Output status, cont...

**xStatus Video Output Legacy [5..5] Resolution Height**

Last confirmed resolution height for output Legacy 5.

Value space: $<120..3000>$

Example:

```
xStatus Video Output Legacy 5 Resolution Height
* 5 Video Output Legacy 5 Resolution Height: 480
** end
```

**xStatus Video Output Legacy [5..5] Resolution Width**

Last confirmed resolution width for output Legacy 5.

Value space: $<176..4000>$

Example:

```
xStatus Video Output Legacy 5 Resolution Width
* 5 Video Output Legacy 5 Resolution Width: 720
** end
```

**xStatus Video Output Legacy [5..5] Resolution RefreshRate**

Last confirmed refresh rate for output Legacy 5.

Value space: $<1..300>$

Example:

```
xStatus Video Output Legacy 5 Resolution RefreshRate
* 5 Video Output Legacy 5 Resolution RefreshRate: 60
** end
```

The Video Layout status

**xStatus Video Layout**

Run this command to see an overview of the video status.

Example:

```
xStatus Video Layout
* 5 Video Layout Site 1 Output 1 FamilyName: "speaker"
* 5 Video Layout Site 1 Output 1 FullFamilyName: "speaker-sv-on"
* 5 Video Layout Site 1 Output 1 FamilyNumber: 1027
* 5 Video Layout Site 1 Output 1 GraphicName: "ltop-lsmall"
* 5 Video Layout Site 1 Output 1 GraphicNumber: 1017
* 5 Video Layout Site 1 Output 1 Descriptor: 4
* 5 Video Layout Site 1 Output 1 DescriptorOutput: 1
* 5 Video Layout Site 1 Output 1 Frame 1 PositionX: 1333
* 5 Video Layout Site 1 Output 1 Frame 1 PositionY: 59
* 5 Video Layout Site 1 Output 1 Frame 1 Width: 7334
* 5 Video Layout Site 1 Output 1 Frame 1 Height: 7334
* 5 Video Layout Site 1 Output 1 Frame 1 VideoSourceType: "site"
* 5 Video Layout Site 1 Output 1 Frame 1 VideoSourceId: 27
* 5 Video Layout Site 1 Output 1 Frame 1 InputNumber: 1
* 5 Video Layout Site 1 Output 1 Frame 1 Filename: ""
* 5 Video Layout Site 1 Output 1 Frame 2 PositionX: 1333
* 5 Video Layout Site 1 Output 1 Frame 2 PositionY: 59
* 5 Video Layout Site 1 Output 1 Frame 2 Width: 7334
* 5 Video Layout Site 1 Output 1 Frame 2 Height: 7334
* 5 Video Layout Site 1 Output 1 Frame 2 VideoSourceType: "site"
* 5 Video Layout Site 1 Output 1 Frame 2 VideoSourceId: 27
* 5 Video Layout Site 1 Output 1 Frame 2 InputNumber: 1
* 5 Video Layout Site 1 Output 1 Frame 2 Filename: ""
* 5 Video Layout Site 1 Output 1 Frame 3 PositionX: 1333
* 5 Video Layout Site 1 Output 1 Frame 3 PositionY: 59
* 5 Video Layout Site 1 Output 1 Frame 3 Width: 7334
* 5 Video Layout Site 1 Output 1 Frame 3 Height: 7334
* 5 Video Layout Site 1 Output 1 Frame 3 VideoSourceType: "site"
* 5 Video Layout Site 1 Output 1 Frame 3 VideoSourceId: 27
* 5 Video Layout Site 1 Output 1 Frame 3 InputNumber: 1
* 5 Video Layout Site 1 Output 1 Frame 3 Filename: ""
* 5 Video Layout Site 1 Output 1 Frame 4 PositionX: 1333
* 5 Video Layout Site 1 Output 1 Frame 4 PositionY: 59
* 5 Video Layout Site 1 Output 1 Frame 4 Width: 7334
* 5 Video Layout Site 1 Output 1 Frame 4 Height: 7334
* 5 Video Layout Site 1 Output 1 Frame 4 VideoSourceType: "site"
* 5 Video Layout Site 1 Output 1 Frame 4 VideoSourceId: 27
* 5 Video Layout Site 1 Output 1 Frame 4 InputNumber: 1
* 5 Video Layout Site 1 Output 1 Frame 4 Filename: ""
* 5 Video Layout Site 1 Output 1 Frame 5 PositionX: 1333
* 5 Video Layout Site 1 Output 1 Frame 5 PositionY: 59
* 5 Video Layout Site 1 Output 1 Frame 5 Width: 7334
* 5 Video Layout Site 1 Output 1 Frame 5 Height: 7334
* 5 Video Layout Site 1 Output 1 Frame 5 VideoSourceType: "site"
* 5 Video Layout Site 1 Output 1 Frame 5 VideoSourceId: 27
* 5 Video Layout Site 1 Output 1 Frame 5 InputNumber: 1
* 5 Video Layout Site 1 Output 1 Frame 5 Filename: ""
** end
```

* continues with the video layout status for the Sites [1..n], Outputs [1..5] and Frames [1..6].

**xStatus Video Layout Site [1..n] Output [1..5] FamilyName**

Specifies what layout family is used on the specific output

Value space: $<S: 0,.100>$

Example:

```
xStatus Video Layout Site 1 Output 1 FamilyName
* 5 Video Layout Site 1 Output 1 FamilyName: "full"
** end
```

**xStatus Video Layout Site [1..n] Output [1..5] FullFamilyName**

Specifies family with selfview information is used on the specific output

Value space: $<S: 0,.100>$

Example:

```
xStatus Video Layout Site 1 Output 1 FullFamilyName
* 5 Video Layout Site 1 Output 1 FullFamilyName: "full-sv-on"
** end
```
xStatus Video Layout Site [1..n] Output [1..5] FamilyNumber

Layout family number used on the specific output
Value space: <Integer value>

Example:
```
xStatus Video Layout Site 1 Output 1 FamilyNumber
*s Video Layout Site 1 Output 1 FamilyNumber: 1014
** end
```

xStatus Video Layout Site [1..n] Output [1..5] GraphicName

Name of the layout used right now at the specified output. Note that while the FamilyName is constant as long as configurations on the system doesn't change, the GraphicName varies depending on system state (how many participants for instance).
Value space: <S: 0..100>

Example:
```
xStatus Video Layout Site 1 Output 1 GraphicName
*s Video Layout Site 1 Output 1 GraphicName: "full-pip"
** end
```

xStatus Video Layout Site [1..n] Output [1..5] GraphicNumber

A number identifying the layout used right now at the specified output.
Value space: <Integer value>

Example:
```
xStatus Video Layout Site 1 Output 1 GraphicNumber
*s Video Layout Site 1 Output 1 GraphicNumber: 1037
** end
```

xStatus Video Layout Site [1..n] Output [1..5] Descriptor

Descriptor of the chosen layout for the specified output
Value space: <Integer value>

Example:
```
xStatus Video Layout Site 1 Output 1 Descriptor
*s Video Layout Site 1 Output 1 Descriptor: 3
** end
```

xStatus Video Layout Site [1..n] Output [1..5] DescriptorOutput

DescriptorOutput of the chosen layout for the specified output
Value space: <Integer value>

Example:
```
xStatus Video Layout Site 1 Output 1 DescriptorOutput
*s Video Layout Site 1 Output 1 DescriptorOutput: 1
** end
```

xStatus Video Layout Site [1..n] Output [1..5] Frame [1..6] PositionX

The horizontal position of the upper left corner of a specific frame on a specific output.
Value space: <0..10000>

Example:
```
xStatus Video Layout Site 1 Output 1 Frame 1 PositionX
*s Video Layout Site 1 Output 1 Frame 1 PositionX: 0
** end
```

xStatus Video Layout Site [1..n] Output [1..5] Frame [1..6] PositionY

The vertical position of the upper left corner of a specific frame on a specific output.
Value space: <0..10000>

Example:
```
xStatus Video Layout Site 1 Output 1 Frame 1 PositionY
*s Video Layout Site 1 Output 1 Frame 1 PositionY: 0
** end
```


The width of a specific frame on a specific output.
Value space: <0..10000>

Example:
```
xStatus Video Layout Site 1 Output 1 Frame 1 Width
*s Video Layout Site 1 Output 1 Frame 1 Width: 10000
** end
```
The Video Layout status, cont...

**xStatus Video Layout Site [1..n] Output [1..5] Frame [1..6] Height**

The height of a specific frame on a specific output.
Value space: <0..10000>

Example:
```plaintext
*xStatus Video Layout Site 1 Output 1 Frame 1 Height
 *s Video Layout Site 1 Output 1 Frame 1 Height: 10000
 ** end
```

**xStatus Video Layout Site [1..n] Output [1..5] Frame [1..6] Layer**

The layer of a specific frame on a specific output.
Value space: <1..6>

Example:
```plaintext
*xStatus Video Layout Site 1 Output 1 Frame 1 Layer
 *s Video Layout Site 1 Output 1 Frame 1 Layer: 1
 ** end
```

**xStatus Video Layout Site [1..n] Output [1..5] Frame [1..6] VideoSourceType**

Describes what type of content is displayed in a specific frame on a specific output.
Value space: <S:0..100>

Example:
```plaintext
*xStatus Video Layout Site 1 Output 1 Frame 1 VideoSourceType
 *s Video Layout Site 1 Output 1 Frame 1 VideoSourceType: “graphic”
 ** end
```

**xStatus Video Layout Site [1..n] Output [1..5] Frame [1..6] VideoSourceId**

If the type of content that is displayed in a specific frame on a specific output need an identifier, this is shown here.
Value space: <1..5>

Example:
```plaintext
*xStatus Video Layout Site 1 Output 1 Frame 1 VideoSourceId
 *s Video Layout Site 1 Output 1 Frame 1 VideoSourceId: 0
 ** end
```

**xStatus Video Layout Site [1..n] Output [1..5] Frame [1..6] InputNumber**

If the type of content that is displayed in a specific frame on a specific output need an input number, this is shown here.
Value space: <1..5>

Example:
```plaintext
*xStatus Video Layout Site 1 Output 1 Frame 1 InputNumber
 *s Video Layout Site 1 Output 1 Frame 1 InputNumber: 0
 ** end
```

**xStatus Video Layout Site [1..n] Output [1..5] Frame [1..6] Filename**

If graphics is shown in a frame in a specific output, the filename where the graphics is located is specified here.
Value space: <S: 0..200>

Example:
```plaintext
*xStatus Video Layout Site 1 Output 1 Frame 1 Filename
 *s Video Layout Site 1 Output 1 Frame 1 Filename: “/user/posters/wallpaper.png”
 ** end
```
The Experimental menu

The Experimental commands can be used ‘as is’ and will not be further documented.

NOTE! The Experimental commands WILL change.

xStatus Experimental Audio Input Connectors Microphone [1..8] Activity
States whether there is a signal on the connector.
Value space: <True/False>
Example:

xStatus Experimental Audio Input Connectors Microphone 1 Activity
*s Experimental Audio Input Connectors Microphone 1 Activity: True
** end

xStatus Experimental Audio Input Connectors Line [1..4] Activity
States whether there is a signal on the connector.
Value space: <True/False>
Example:

xStatus Experimental Audio Input Connectors Line 1 Activity
*s Experimental Audio Input Connectors Line 1 Activity: False
** end

xStatus Experimental Audio Input Connectors HDMI [3, 4] Activity
States whether there is a signal on the connector.
Value space: <True/False>
Example:

xStatus Experimental Audio Input Connectors HDMI 3 Activity
*s Experimental Audio Input Connectors HDMI 3 Activity: False
** end

We recommend you visit the TANDBERG web site regularly for updated versions of the manual.
Go to: ► http://www.tandberg.com/docs

xStatus Experimental Audio Output LocalOutput [1..n] MicrophoneReinforcement InputConnectors
States which pair of microphones that is reinforced, i.e. played out on the speakers in zone 2. These microphones will be in zone 1. See the Appendix > Microphone reinforcement section.
Value space: <Microphone1_2/Microphone3_4/Microphone5_6/Microphone7_8>
Example:

xStatus Experimental Audio Output LocalOutput 48 MicrophoneReinforcement InputConnectors
*s Experimental Audio Output LocalOutput 48 MicrophoneReinforcement InputConnectors: Microphone1_2
** end

xStatus Experimental Audio Output LocalOutput [1..n] MicrophoneReinforcement Gain
States the gain in dB used on the microphones that are reinforced. See the Appendix > Microphone reinforcement section.
Value space: <-54..15>
Example:

xStatus Experimental Audio Output LocalOutput 48 MicrophoneReinforcement Gain
*s Experimental Audio Output LocalOutput 48 MicrophoneReinforcement Gain: 0
** end

xStatus Experimental Audio Output LocalOutput [1..n] MicrophoneReinforcement EqualizerMode
States whether or not the selected equalizer is enabled. See the Appendix > Microphone reinforcement section.
Value space: <On/Off>
Example:

xStatus Experimental Audio Output LocalOutput 48 MicrophoneReinforcement EqualizerMode
*s Experimental Audio Output LocalOutput 48 MicrophoneReinforcement EqualizerMode: Off
** end
The Experimental menu, cont...
The Experimental commands can be used ‘as is’ and will not be further documented.

**NOTE!** The Experimental commands WILL change.

xStatus Experimental Audio Output LocalOutput [1..n] MicrophoneReinforcement EqualizerId

States which equalizer that is selected for the reinforced microphone input signals. See the Appendix > Microphone reinforcement section.

Value space: <1..8>

Example:
```
xStatus Experimental Audio Output LocalOutput 48 MicrophoneReinforcement EqualizerId
`* Experimental Audio Output LocalOutput 48 MicrophoneReinforcement EqualizerId: 1
** end
```

We recommend you visit the TANDBERG web site regularly for updated versions of the manual.
Go to: http://www.tandberg.com/docs
Your TANDBERG PrecisionHD 1080p Camera has been designed to give you many years of safe, reliable operation. Additional information about the camera is found in the TANDBERG PrecisionHD 1080p User Guide.

In this chapter...
- The PrecisionHD 1080p camera
- Connecting the camera
- Best view—Face recognition
- Video output formats
- Cameras in daisy chain
The PrecisionHD 1080p camera

Video out (HDMI, HD-SDI). For video signals, connect from the video out on the camera to the video in on the codec.

Power and camera control. For power in and camera control, connect from the camera control & power on the camera to the Camera port on the codec. When the camera is used with TANDBERG codecs power will be supplied through Camera Control cable. When used with non-TANDBERG Codecs, you may have to connect power separately.

HDMI and HD-SDI

- HDMI is the main source for video out when connected to Codec C90. Maximum resolution is 1080p60.
- HD-SDI is the secondary source for video. Maximum resolution is 1080p30.
- The HDMI and HD-SDI can be used simultaneously. The maximum resolution is then 1080p30 if you want both to run with the same resolution.

Kensington lock

The Kensington lock may be used to prevent the camera to be moved from its place or to prevent theft.

Cascaded cameras

The sockets named Extra Camera Out and Power In are used when connecting cameras in daisy chain.

- The first camera in the chain is powered up by the camera control cable. The next cameras must use the 12V DC Power in.
- The daisy chained cameras are connected by using an extra camera cable between the Extra Camera sockets.
Connecting the camera
The HDMI and HD-SDI can be used simultaneously.

HDMI cable
The HDMI cable delivered with the camera is 5 meters.
Maximum length is 15 meter with a category 2 certified good quality HDMI cable.

HD-SDI cable
The HD-SDI cable must be purchased separately. The maximum recommendable length of HD SDI cable is 100 m.

HDMI to DVI-D adapter
The HDMI to DVI-D adapter is used when connecting to a TANDBERG MXP codec or TANDBERG Video Switch.
The PrecisionHD 1080p camera, cont...

Best view—Face recognition

This camera is capable of face recognition when used with TANDBERG C60/C90 Codecs. Consequently, the functionality is subject to change without prior notice in order to take advantage of further developments.

NOTE: Observe that the Best view feature is still a preview feature.

The face recognition system aims to search for faces in order to optimize the picture frame, hence the name Best view. Once a face or group of faces has been detected camera zoom and camera angle will be changed accordingly to obtain an optimal presentation on the screen.

Read this before using Best view:

- The Best view optimization process may take up to 5 seconds.
- The detection of faces works better when people look towards the camera.
- The area from the eyebrows down to just below the lips should be uncovered.
- Beard is normally not a problem.

Using Best view

Note that Best view works with TANDBERG C60/C90 Codecs only!

1. Press the Layout key on the remote control to display the Layout menu. Select Selfview to be shown as required.

2. Press the Home key on the remote control to display the Home menu and select Camera control

3. Press the second soft button on the remote control to display the Preset menu. Select Best view from the menu press the OK key on the remote control to start the Best view optimization process.

4. Look towards the camera for about five seconds. The system will look for human faces and adjust the zoom and camera angle to obtain a best fit.
Video output formats
This section describes the video output formats for the TANDBERG PrecisionHD 1080p camera.

DIP switch settings for video output formats
The video output format for the camera is set by DIP switches. The DIP switches are found on the bottom side of the camera.
The default setting is Auto. When using HDMI, the video output format is automatically detected. See the table to the right.
Maximum resolution for HDMI is 1080p60.
Maximum resolution for HD-SDI is 1080p30.

Line voltage frequency
The camera will automatically detect the line voltage frequency when it is 50 or 60 Hz. You may set the video output format to a specific value (use the DIP switches) to override the auto frequency detection, if a different line voltage frequency is an issue.

DIP Switch table for video formats

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>HDMI</th>
<th>HD-SDI</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>Auto</td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1920x1080p25</td>
<td>1920x1080p25</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1920x1080p30</td>
<td>1920x1080p30</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
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<td>1</td>
<td>1920x1080p50</td>
<td>1280x720p50</td>
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<td>1</td>
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<td>0</td>
<td>1920x1080p60</td>
<td>1280x720p60</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>1280x720p25</td>
<td>1280x720p25</td>
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<tr>
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<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>Software control</td>
<td></td>
</tr>
</tbody>
</table>

The table shows the different settings available for the HDMI and the HD-SDI outputs.
**Auto:** Camera negotiates format over HDMI. HD-SDI tracks HDMI and defaults to 1080p30 in absence of HDMI sync.
**Software:** For more on the Software control setting, read about video mode selections in the TANDBERG PrecisionHD 1080p User Guide.
Cameras in daisy chain

A single daisy chain can have up to seven cameras.

Cascaded cameras

The sockets named Extra Camera and Power In are used when connecting cameras in daisy chain.

- HDMI and HD-SDI. The HDMI and HD-SDI can be used simultaneously on the same camera.
- Power. The first camera in the chain is powered up from the codec by the VISCA camera control cable. Additional cameras must use the 12V DC Power in.
- Extra camera cable. The daisy chained cameras are connected by using the VISCA Extra Camera cable between the Extra Camera In and Codec Control In sockets.

**Example.** Four daisy chained TANDBERG PrecisionHD 1080p cameras.
The PrecisionHD 720p camera
This page describes the TANDBERG PrecisionHD 720p camera.

Connecting the camera

**Video out.** For video out signals, connect from the HDMI on the camera to a HDMI video input on the codec.

**Power and camera control.** For power in and camera control, connect from the camera control & power on the camera to the Camera port on the codec.

HDMI
- HDMI is the main source for video out when connected to a Codec C90. Maximum resolution is 1280x720p30
- This output does not support HDCP (High Bandwidth Digital Content Protection).

Cascaded cameras
The sockets named Extra Camera and Power In are used when connecting cameras in daisy chain.
- The first camera in the chain is powered up by the camera control cable. The next cameras must use the 12V DC Power in.
- The daisy chained cameras are connected by using an extra camera cable (maximum length ## m) between the Extra Camera sockets.

Kensington lock
The Kensington lock may be used to prevent the camera to be moved from its place or to prevent theft.

<table>
<thead>
<tr>
<th>Pin</th>
<th>Signal name</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>GND</td>
</tr>
<tr>
<td>5</td>
<td>GND</td>
</tr>
<tr>
<td>4</td>
<td>RXD (in)</td>
</tr>
<tr>
<td>3</td>
<td>TXD (out)</td>
</tr>
<tr>
<td>2</td>
<td>Presence (12V in daisy chain)</td>
</tr>
<tr>
<td>1</td>
<td>GND</td>
</tr>
</tbody>
</table>

**Pin-out—VISCA Daisy chain**
RJ 6 pins modular jack

<table>
<thead>
<tr>
<th>Pin</th>
<th>Signal name</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>+12V (presence 2.8mA current source when connected in daisy chain)</td>
</tr>
<tr>
<td>7</td>
<td>GND</td>
</tr>
<tr>
<td>6</td>
<td>TXD (out)</td>
</tr>
<tr>
<td>5</td>
<td>NC (no connect)</td>
</tr>
<tr>
<td>4</td>
<td>NC (no connect)</td>
</tr>
<tr>
<td>3</td>
<td>RXD (in)</td>
</tr>
<tr>
<td>2</td>
<td>GND</td>
</tr>
<tr>
<td>1</td>
<td>+12V</td>
</tr>
</tbody>
</table>

**Pin-out—VISCA camera control**
RJ 8 pins shielded modular jack

<table>
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<th>D-SUB pin</th>
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<tr>
<td>+12V DC</td>
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<tr>
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<td>2</td>
<td>5</td>
</tr>
<tr>
<td>TX</td>
<td>3</td>
<td>Twisted pair 2</td>
</tr>
<tr>
<td>RX</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>NC</td>
<td>4</td>
<td>Twisted pair 1</td>
</tr>
<tr>
<td>NC</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>GND</td>
<td>7</td>
<td>Twisted pair 5</td>
</tr>
<tr>
<td>+12V DC</td>
<td>8</td>
<td>4</td>
</tr>
</tbody>
</table>
Chapter 9

Appendices

In this chapter...
- Dynamic audio API
- The equalizer
- Microphone reinforcement
- Stereo
- Password protection
- Startup scripts
- The web interface
  - System info page
  - Software upgrade
  - Advanced configuration
  - Custom wallpaper
  - Making a call
  - Upload certificate
  - XML files
  - Logs
  - Add release key
- Remote control TRC5
- Remote control key map
- Supported RFCs in SIP
- China RoHS
- CE Declaration
- Dimensions
- Technical specifications
Dynamic audio API

With a set of xCommand Audio API commands, the audio system is fully configurable:

- A local input is defined as a mix of input connectors. A local input can be created and deleted. You can add and remove input connectors and update the local input settings.
- A local output is a mix of local input and remote input signals. All connectors attached to a local output receive the same signal.
- A remote input and remote output pair is created for each call.
- A remote input receives the signals from all local and remote inputs, except the remote input from the same site.
- The mixer matrix of each local and remote output can easily be managed by disconnecting and connecting local and remote inputs.

Example 1:

The dynamic audio API offers a great flexibility when configuring the system and it is simple to use. To have audio in your calls you only need one local input with a microphone attached to it, and one local output with an output connector attached to it.

When the call is established a remote input and remote output pair are created and all the connections to these from the local audio system are set up automatically.

The Local input 1 has been defined with two Microphones.

The Local output 2 has been defined with two Line outputs.

The audio from the Remote input 3 goes to the Local output 2.

The audio from the Local input 1 goes to the Remote output 4.
The equalizer

The system has 8 user defined equalizers, each made up of 6 second order IIR sections, see the illustration below.

There is a set of experimental API commands for the audio equalizer and audio input/output. The experimental commands can be used ‘as is’ and is documented in the xConfiguration section and the xCommand sections.

NOTE! The experimental commands WILL change.
Microphone reinforcement
To improve speech intelligibility in a large room, the local microphones are played out on speakers locally as well as being sent to far end.

- The room can be viewed as being divided in two zones. It is assumed that there is a low acoustic coupling between microphones in zone 1 and speakers in zone 2 and vice versa.
- Microphones in zone 1 will be played out on all loudspeakers in zone 2.
- Microphones in both zones will be transmitted to far end.
- The input signal from far end will be played out on loudspeakers in both zones.
Stereo

Stereo in point to point call

Receive stereo
If the other participant sends stereo the codec will receive stereo. To play stereo the local output still needs to be configured correctly (see local stereo circuit example).

Transmit stereo
In order to send stereo, the other participant must be able to receive stereo. Also, the local input with the stereo signal must be configured correctly (see local stereo circuit example). In addition, there must be a signal on one of the connectors connected to the local input.

Stereo in Multisite

Stereo in Multisite on Codec C90
The TANDBERG Codec C90 also sends and receives stereo signals in multisite.

Stereo in Multisite on Codec C60
The TANDBERG Codec C60 will only send and receive mono signals in multisite.

Example of local stereo configuration
When you want to record a stereo presentation the audio system can be configured as shown in the illustration.

In the example the local input has two connectors: Line 1 and Line 2. When these two connectors are mixed together as a stereo signal, Line 1 is the left channel and Line 2 is the right channel.

And the local output has two connectors: Line 3 and Line 4. The local output pans the stereo signal according to the channel configuration of the connectors. Line 3 receives the left channel and Line 4 receives the right channel.

Local stereo circuit example with API commands
The graphic gives a picture of how to configure the audio system for recording a stereo presentation. You can do the same from the API. The belonging xCommands and xConfigurations are listed below.

In this example there is a local input with input id 5 and a local output with output id 6. Both are set to stereo by the channels parameter.

- xCommand Audio LocalInput Update Inputid:5 Name:"Presentation" MixerMode:Fixed AGC:On Mute:Off Channels:2
- xCommand Audio LocalOutput Update Outputid:6 Name:"Recorder" Loudspeaker:No Channels:2
- xConfiguration Audio Input Line 1 Channel: Left
- xConfiguration Audio Input Line 2 Channel: Right
- xConfiguration Audio Output Line 3 Channel: Left
- xConfiguration Audio Output Line 4 Channel: Right
Password protection
The system can be password protected in two ways:

- The codec can be password protected with an administrator password. If the codec is password protected a user name and password is required to logon to the codec.
- The Advanced menus can be password protected with a menu password.

NOTE! When a new password has been defined make sure you save a copy of the password in a safe place.

Contact your TANDBERG representative if you have forgotten the password.

Setting the codec administrator password
Do the following to define the administrator password on the codec:

1. Connect to the codec through the network or the serial data port, using a command line interface (ssh, telnet or scp)
2. Login to the codec with user name (admin) and no password.
3. Run the following API command and enter a password:
   xCommand SystemUnit AdminPassword Set
   Password: "****"
4. The password format is a string with 0–255 characters.
5. Reboot the codec.

Login to the codec
- You can login to the codec with the user name and password, either from a web interface or from a command line interface. You will need to enter both the user name and password.
- The user name is admin, and cannot be changed.

How to deactivate the administrator password
1. Connect to the codec through the network, using a command line interface (ssh, telnet or scp).
2. Login to the codec with the required user name (admin) and password.
3. Run the following API command with a blank password:
   xCommand SystemUnit AdminPassword Set
   Password: ""
4. Reboot the codec.

Setting the menu password
Do the following to define a password for the Advanced menus:

1. Open the menu on screen and go to: Home > Settings > Advanced > Change password.
2. The password is a string with 0–255 characters.
3. Enter the password and press Save.

Login to the Advanced menu
When a password is set, the password is required to get access to the Advanced menu on screen.

How to change the menu password
1. To change the password, go to: Home > Settings > Advanced > Change password in the menu.
2. Enter the new password in the Set password menu.
3. Press Save to save the new password.

How to deactivate the menu password
1. To change the password, go to: Home > Settings > Advanced > Change password in the menu.
2. Leave the text field empty in the Set password menu.
3. Press Save to save the blank password. This will deactivate the menu password.
Adding a startup script

The startup script can be used to execute certain commands from the API during boot up. To enable this feature one must log in to the codec as root and follow the below points.

Login to the codec

1. Connect to the codec through the network, using a command line interface (ssh, telnet or scp) and login as root.
2. Make a user directory using the following command: "mkdir /user/scripts.d"
3. Put an executable file (permission must be changed to executable) in this directory.

Example of such a file:

```
#!/usr/bin/env tsh
xCCommand Audio LocalInput Update InputId: 1 MixerMode:Fixed
```

About the startup script file

- The file must start with the following sequence:
  
  `#/usr/bin/env tsh`
- The file can contain any xCommand or xConfiguration command
- The system will execute the commands/configurations in sequence.
- The file can have any name as long as it is placed in this directory.
- For multiple commands you must use Unix end of line (LF). Windows end of line will not work.
The web interface

The web interface allows for remote administration of the system.

Open a web browser and enter the IP address of the codec. From this page you have the following menu options:

- **System info**
- Upgrade software
- Advanced configuration
- Wallpaper
- Call
- Upload certificates
- XML files
- Logs
- Add release key

Password protection of the web interface

If the codec is password protected with an administrator password a user name and password will be required to get access to the codec from the web interface. Read more about password protection of the codec in the previous page.
The web interface, cont...

The web interface allows for remote administration of the system.

Open a web browser and enter the IP address of the codec. From this page you have the following menu options:

- System info
- Upgrade software
- Advanced configuration
- Wallpaper
- Call
- Upload certificates
- XML files
- Logs
- Add release key

How to upgrade the software on the codec:

1. Contact your TANDBERG representative to obtain the software upgrade file.

2. Click Browse... and locate the upgrade file (.PKG)

3. Click the Upgrade button to start the installation.

4. Leave the system to allow the installation process to complete. You can follow the progress on this page. When the upgrade is successfully completed a message will appear. The upgrade process takes a few minutes.
The web interface, cont...

The web interface allows for remote administration of the system.

Open a web browser and enter the IP address of the codec. From this page you have the following menu options:

- System info
- Upgrade software
- Advanced configuration
- Wallpaper
- Call
- Upload certificates
- XML files
- Logs
- Add release key

The Advanced configuration page

The Advanced configuration defines the system settings and are structured in a hierarchy, making up a database of system settings.

Expanded view

Edit a value: To change a value, click on the value to see the expanded view as shown above.

Save: Click the OK button to save the new value.

Cancel: When you want to leave without saving, click Cancel.
The web interface, *cont...*

The web interface allows for remote administration of the system.

Open a web browser and enter the IP address of the codec. From this page you have the following menu options:

- System info
- Upgrade software
- **Advanced configuration**
- Wallpaper
- Call
- Upload certificates
- XML files
- Logs
- Add release key

The Advanced configuration, search functionality

The Advanced configuration, search functionality

The search functionality

When searching for words like H323 or SIP, all settings beginning with these words, included all settings below in the hierarchy, will show in the list.

**Search:** Enter as many characters as needed to get the desired result and click the **Search** button to initiate the search.

**Clear:** Click the **Clear** button to return to the main view.
The web interface, cont...

The web interface allows for remote administration of the system.

Open a web browser and enter the IP address of the codec. From this page you have the following menu options:

- System info
- Upgrade software
- Advanced configuration
- Wallpaper
- Call
- Upload certificates
- XML files
- Logs
- Add release key

How to upload a custom wallpaper to the codec and configure the codec to make use of it:

1. Click the Browse... button to locate the wallpaper file (.PNG)
2. Click the Upload button to upload the file to the codec and refresh the web page to see the wallpaper you just uploaded.
3. Go to: Advanced configuration page and search for Wallpaper. From the drop down list, select Custom. The new wallpaper should now show on the monitor which is connected to the codec.

If the new wallpaper does not show on the monitor connected to the codec, you may have to toggle once between Wallpaper: None and Custom to make the change take effect.
The web interface, cont...

The web interface allows for remote administration of the system.

Open a web browser and enter the IP address of the codec. From this page you have the following menu options:

- System info
- Upgrade software
- Advanced configuration
- Wallpaper
- Call
- Upload certificates
- XML files
- Logs
- Add release key

The Call page

Dial
Enter the number or address and press the **Dial** button to dial.

Hang up
Press the **Disconnect** button to end the call.

NOTE! No status information is shown on the page during the call.
The web interface, *cont...*

The web interface allows for remote administration of the system.

Open a web browser and enter the IP address of the codec. From this page you have the following menu options:

- System info
- Upgrade software
- Advanced configuration
- Wallpaper
- Call
- **Upload certificates**
- XML files
- Logs
- Add release key

The SSL Certificates page

![SSL Certificate Interface](image)

**About certificates**

To install a certificate, you will need:

- HTTPS certificate (.PEM format)
- ROOT certificate (.PEM format)
- Private key (.PEM format)
- Passphrase (optional)

**How to upload the certificate**

1. Contact your system administrator to obtain the required files (.PEM format).
2. Click **Browse...** and locate the certificate files (.PEM).
3. Enter the **Passphrase** (optional).
4. Click the **Upload** button to install the certificates to the codec.
The web interface, cont...

The web interface allows for remote administration of the system.

Open a web browser and enter the IP address of the codec. From this page you have the following menu options:

- System info
- Upgrade software
- Advanced configuration
- Wallpaper
- Call
- Upload certificates
- XML files
- Logs
- Add release key

The XML files page

<table>
<thead>
<tr>
<th>C90</th>
<th>XML Files</th>
</tr>
</thead>
<tbody>
<tr>
<td>System info</td>
<td>Configuration</td>
</tr>
<tr>
<td>Upgrade software</td>
<td>Status</td>
</tr>
<tr>
<td>Advanced configuration</td>
<td>Command</td>
</tr>
<tr>
<td>Wallpaper</td>
<td>Directory</td>
</tr>
<tr>
<td>Call</td>
<td>Valuespace</td>
</tr>
<tr>
<td>Upload certificates</td>
<td>Documentation</td>
</tr>
<tr>
<td>XML files</td>
<td></td>
</tr>
<tr>
<td>Logs</td>
<td></td>
</tr>
<tr>
<td>Add release key</td>
<td></td>
</tr>
</tbody>
</table>

Configuration
The Configuration file gives an overview of the system settings, which are controlled from the Advanced configuration menu or from the API. The configuration commands are structured in a hierarchy, making up a database of system settings.

Status
The status information is structured in a hierarchy, making up a database constantly being updated by the system to reflect system and process changes.

Command
The Command file gives an overview of the commands available to instruct the system to perform an action and are issued from the API. A Command type command is usually followed by a set of parameters to specify how the given action is to be executed.

Directory
The Directory file will be described later.

Valuespace
The Valuespace gives an overview of all the available value spaces.

Documentation
The Documentation file will be described later.
The web interface, *cont...*

The web interface allows for remote administration of the system.

Open a web browser and enter the IP address of the codec. From this page you have the following menu options:

- System info
- Upgrade software
- Advanced configuration
- Wallpaper
- Call
- Upload certificates
- XML files
- Logs
- Add release key

The Logs page

The Logs page allows you to access historical and current log files.

**Historical log files**

Time stamped historical log files. Click on a file and follow the instructions in the dialog box to save the application file.

**Current log files**

Time stamped event log files. Click on a text file to view the file or follow the instructions in the dialog box to save an application file.

### Index of /log/

<table>
<thead>
<tr>
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<th>Last Modified</th>
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**indexdir/1.4.20**

### Index of /eventlog/

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<td>61.6K</td>
<td>text/plain</td>
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</tr>
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<td>video4.log</td>
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<td>text/plain</td>
</tr>
</tbody>
</table>

**lightcapd/1.4.20**
The web interface, cont...

The web interface allows for remote administration of the system.

Open a web browser and enter the IP address of the codec. From this page you have the following menu options:

- System info
- Upgrade software
- Advanced configuration
- Wallpaper
- Call
- Upload certificates
- XML files
- Logs
- **Add release key**

### The Add release key page

![Add release key page](image)

**The release key**

Contact your TANDBERG representative to obtain the release key.
TANDBERG Remote Control TRC5

Microphone: Press the key to toggle the microphones on/off.

Volume: Press the + or – on the key to adjust the codec volume.

Mute: Press the – on the key to mute the volume during an incoming call.

OK/Select: Press the key to confirm your choice or selection.

Phone book: Press the key to display the local Phone book.

Home: Press the key to show the menu on screen.

Call: Using the key:
- INITIATE A CALL: Select a name from the Phone book or enter the name, number or URI and press the Call key to initiate the call.
- SHORTCUT TO RECENT CALLS: Use the Call key as a shortcut to Recent Calls when the Call menu is not visible.

Clear: Press the key to remove characters in a text field.

Waking up the system
Grab the remote control and make sure your hand touches the rubber line sensors going along both sides of the remote control.
- or: Touch any key on the remote control.

Function keys: Represents shortcuts and advanced functions. Each key reflects a soft key on screen.

Presentation: Press the key to show/hide a presentation.

Zoom: Press the + or – on the key to zoom the camera in and out.

Arrows:
- • Up/Down: Use the ▲ and ▼ arrow keys to navigate in the menu.
- • Arrow Right: Press the ➤ arrow key to expand the selected menu item or to move to the right in a text field.
- • Arrow Left: Press the ◄ arrow key to go one step back in the menu or to move to the left in a text field.

Layout: Press the key to display the Layout menu, then select a view in the menu.

End call/Standby: Press the key to end a call, or when idle, press and hold the key to go into standby mode.

Alphanumeric keypad: Use the keypad in the same way as you would use a cellular phone.
- • 0-9, a-z, period (.), @, space, *: Press a key repeatedly to toggle between the options displayed on each key.
- • abc/123 #: Press the # key to toggle between touch tones mode (long press), lower case characters and numbers.

IR transmitter range (DIP switch setting)
The IR transmitter has a short and long range. Open the battery cover and remove the batteries to set the DIP switch.
- • Short range (1 m): Move the DIP switch down.
- • Longer range: Move the DIP switch up.
## TANDBERG Remote Control TRC5 key map

The TANDBERG Remote control TRC5 has the following button codes and IR signal parameters.

<table>
<thead>
<tr>
<th>Button codes - Remote control TRC5</th>
<th>Button codes - Remote control TRC5</th>
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<tbody>
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<tr>
<td>IR carrier frequency</td>
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</table>
Supported RFCs in SIP

The RFC (Request for Comments) series contains technical and organizational documents about the Internet, including the technical specifications and policy documents produced by the Internet Engineering Task Force (IETF).

Current RFCs and drafts supported in SIP

- RFC 1889 RTP: A Transport Protocol for Real-time Applications
- RFC 2190 RTP Payload Format for H.263 Video Streams
- RFC 2327 SDP: Session Description Protocol
- RFC 2396 Uniform Resource Identifiers (URI): Generic Syntax
- RFC 2517 Digest Authentication
- RFC 2782 DNS RR for specifying the location of services (DNS SRV)
- RFC 2833 RTP Payload for DTMF Digits, Telephony Tones and Telephony Signals
- RFC 2976 The SIP INFO Method
- RFC 3016 RTP Payload Format for MPEG-4 Audio/Visual Streams
- RFC 3047 RTP Payload Format for ITU-T Recommendation G.722.1
- RFC 3261 SIP: Session Initiation Protocol
- RFC 3262 Reliability of Provisional Responses in SIP
- RFC 3263 Locating SIP Servers
- RFC 3264 An Offer/Answer Model with SDP
- RFC 3311 UPDATE method
- RFC 3361 DHCP Option for SIP Servers
- RFC 3420 Internet Media Type message/sipfrag
- RFC 3515 Refer method
- RFC 3550 RTP: A Transport Protocol for Real-Time Applications
- RFC 3581 Symmetric Response Routing
- RFC 3605 RTCP attribute in SDP
- RFC 3711 The Secure Real-time Transport Protocol (SRTP)
- RFC 3840 Indicating User Agent Capabilities in SIP
- RFC 3890 A Transport Independent Bandwidth Modifier for SDP
- RFC 3891 The SIP “Replaces” Header
- RFC 3892 Referred-By Mechanism
- RFC 3960 Early Media
- RFC 3984 RTP Payload Format for H.264 Video
- RFC 4028 Session Timers in SIP
- RFC 4145 TCP-Based Media Transport in the SDP
- RFC 4568 SDP-Security Descriptions for Media Streams
- RFC 4574 The Session Description Protocol (SDP) Label Attribute
- RFC 4582 The Binary Floor Control Protocol
- RFC 4585 Extended RTP Profile for RTCP-Based Feedback
- RFC 4587 RTP Payload Format for H.261 Video Streams
- RFC 4629 RTP Payload Format for ITU-T Rec. H.263 Video
- RFC 5168 XML Schema for Media Control
- RFC 4796 The SDP Content Attribute
- RFC 4583 SDP Format for BFCP Streams
- RFC 5589: SIP Call Control Transfer
draft-ietf-avt-rtp-h264-rcdo-02
draft-ietf-avt-rtp-rfc3984bis-06
draft-ietf-sip-outbound-20: Managing Client Initiated Connections

Media capabilities supported in SIP

The audio and video media capabilities supported in SIP are the same as for H.323.
China RoHS table
This product complies with the Chinese RoHS.

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说明：

O：表示该有毒有害物质在此部件所有均质材料中的含量均在中国标准《电子信息产品中有毒有害物质的限量要求》(SJ/T 11363 2006) 所规定的限量要求以下。

X：表示该有毒有害物质至少在该部件的某一均质材料中的含量超出中国标准《电子信息产品中有毒有害物质的限量要求》(SJ/T 11363-2006) 所规定的限量要求。

注意：在所售产品中未必包含所有上述所列部件。

除非在产品上有另外特别的标注，以下标志为针对所涉及产品的环保使用期限标志。环保使用期限只适用于产品在产品手册中所规定的使用条件。
### CE Declaration for Codec C90

For an official, signed version of this document, or details regarding documentation from the technical construction file, please contact TANDBERG.

<table>
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<tr>
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TANDBERG Codec C90 dimensions

Dimensions in mm.

Front view

Left side view

Top view
PrecisionHD 1080p camera dimensions
PrecisionHD camera dimensions
UNIT DELIVERED COMPLETE WITH:
Video conferencing codec, remote control, rack mounting rails, LAN cable, power cable

BANDWIDTH
- H.323/SIP up to 6 Mbps point-to-point
- Up to 10 Mbps total MultiSite bandwidth

FIREWALL TRAVERSAL
- TANDBERG Expressway™ Technology
- H.460.18, H.460.19 Firewall Traversal

VIDEO STANDARDS
- H.261, H.263, H.263+, H.264

VIDEO FEATURES
- Native 16:9 Widescreen
- Advanced Screen Layouts
- Intelligent Video Management
- Local Auto Layout

VIDEO INPUTS (13 INPUTS)
4 x HDMI inputs, supported formats:
- 1920 x 1080@60 Hz (1080p)
- 1080 x 576@50 Hz
- 1280 x 720@60 Hz (720p)
- 720 x 576@50 Hz (720p)
- 1280 x 720@50 Hz (720p50)
- 1280 x 720@30 Hz (720p30)
- 720 x 576@50 Hz (720p)
- 720 x 480@60 Hz (480p60)
- 1280 x 720@60 Hz (720p60)
- 1280 x 720@50 Hz (720p50)
- 1280 x 720@30 Hz (720p30)
- 720 x 576@50 Hz (720p)
- 720 x 480@60 Hz (480p60)
- 2 x DVI-I inputs, supported formats:
  - Digital (DVI-D):
    - Same as HDMI, ref. above.
  - Analog RGB (DVI-A):
    - 1920 x 1080@60 Hz (1080p)
    - 2048 x 1536@60 Hz (UXGA)
    - 1680 x 1050@60 Hz (WXGA+)
    - 1600 x 1200@60 Hz (UXGA)
    - 1440 x 900@60 Hz (UXGA+)
    - 1280 x 768@60 Hz
    - 1280 x 720@60 Hz (720p)
    - 1280 x 1024@60 Hz (SXGA)
    - 1024 x 768@60 Hz (720p)
    - 1024 x 768@60 Hz
    - 1280 x 1024@50 Hz (SXGA)
    - 1280 x 720@50 Hz (720p50)
    - 1280 x 720@30 Hz (720p30)
    - 720 x 576@50 Hz (720p)
    - 720 x 480@60 Hz (480p60)

4 x HD-SDI inputs, supported formats:
- 1920 x 1080@30 Hz (1080p30)
- 1920 x 1080@25 Hz (1080p25)
- 1280 x 720@60 Hz (720p60)
- 1280 x 720@50 Hz (720p50)
- 1280 x 720@30 Hz (720p30)
- 1280 x 720@25 Hz (720p25)

VESA Monitor Power Management

1 X Composite output (BNC connector), supported formats:
- PAL/NTSC

VIDEO OUTPUTS (5 OUTPUTS)
2 x HDMI outputs, 2 x DVI-I outputs, supported formats:
- 1920 x 1080@60 Hz (1080p60)
- 1280 x 720@50 Hz (720p50)
- 1280 x 720@30 Hz (720p30)
- 720 x 576@50 Hz (720p)
- 720 x 480@60 Hz (480p60)

2 x DVI-I outputs, supported formats:
- Digital (DVI-D):
  - Same as HDMI, ref. above.
- Analog RGB (DVI-A):
  - 1920 x 1080@60 Hz (1080p)
  - 2048 x 1536@60 Hz (UXGA)
  - 1680 x 1050@60 Hz (WXGA+)
  - 1600 x 1200@60 Hz (UXGA)
  - 1440 x 900@60 Hz (UXGA+)
  - 1280 x 768@60 Hz
  - 1280 x 720@60 Hz (720p)
  - 1280 x 1024@60 Hz (SXGA)
  - 1024 x 768@60 Hz (720p)
  - 1024 x 768@60 Hz
  - 1280 x 1024@50 Hz (SXGA)
  - 1280 x 720@50 Hz (720p50)
  - 1280 x 720@30 Hz (720p30)
  - 720 x 576@50 Hz (720p)
  - 720 x 480@60 Hz (480p60)

DYNAMIC DISPLAY IDENTIFICATION DATA
2 x YPbPr inputs, supported formats:
- 1920 x 1080@60 Hz (1080p)
- 1920 x 1080@50 Hz (1080p50)
- 1280 x 720@60 Hz (720p)
- 1280 x 720@50 Hz (720p50)

1 X S-Video/Composite input (BNC connector), supported formats:
- PAL/NTSC

LIVE VIDEO RESOLUTIONS (ENCODE/DECODE)
- 176 x 144@8 fps (QCIF)
- 352 x 288@30 fps (CIF)
- 512 x 288@30 fps (w288p)
- 576 x 448@30 fps (448p)
- 768 x 448@30 fps (w448p)
- 704 x 576@30 fps (4CIF)
- 1024 x 768@30 fps (w768p)
- 640 x 480@30 fps (VGA)
- 800 x 600@30 fps (SVGA)
- 1280 x 768@30 fps (SXGA)
- 1360 x 960@30 fps (w960p)
- 1600 x 1200@30 fps (w1200p)
- 1600 x 1200@30 fps (UXGA)
- 512 x 288@60 fps (w288p60)*
- 768 x 448@60 fps (w448p60)*
- 1024 x 768@60 fps (w768p60)*
- 1280 x 720@60 fps (720p60)*

AUDI0 STANDARDS
- G.711, G.722, G.722.1, 64 bit & 128 bit MPEG4 AAC-LD, AAC-LD Stereo

AUDIO FEATURES
- CD-Quality 20KHz Mono and Stereo
- Eight separate acoustic echo cancellers
- 8-port Audio mixer
- Automatic Gain Control (AGC)
- Automatic Noise Reduction
- Active lip synchronization

AUDIO INPUTS (14 INPUTS)
- 8 x microphone, 48V phantom powered, XLR connector each with separate echo cancellers and noise reduction, all microphones can be set for balanced line level
- 2 x RCA/Phono, Line Level: Stereo PC input
- 2 x RCA/Phono, Line Level: Stereo auxiliary/DVD input
- 2 x HDMI digital: Stereo PC/DVD inputs

AUDIO OUTPUTS (8 OUTPUTS)
- 2 x XLR, balanced line level, stereo main audio
- 2 x RCA/Phono, line level, stereo main audio, configurable to S/PDIF
- 2 x RCA/Phono, line level, stereo to recording device
- 1 x HDMI digital, stereo main audio
- 1 x HDMI, digital, stereo to recording device

DUAL STREAM
- H.239 (H.323) dual stream
- EFCP (SIP) dual stream
- Available in MultiSite from any site
- Support for resolutions up to 1080p30 in both main stream and dual stream simultaneously

MULTISITE FEATURES
- 4-way High Definition SIP/H.323 MultiSite
- Full Individual audio and video transcoding up to 1080p30
- Individual layouts in MultiSite CP (Takes out SelfView)
- H.323/SIP/VoIP in the same conference
- Best Impression (Automatic CP Layouts)
- H.264, Encryption, Dual Stream from any site
### System Integrator Guide

**Codec C90**

<table>
<thead>
<tr>
<th>Contents</th>
<th>Introduction</th>
<th>Getting started</th>
<th>Interfaces</th>
<th>About the API</th>
<th>xConfiguration</th>
<th>xCommand</th>
<th>xStatus</th>
<th>Cameras</th>
<th>Appendices</th>
<th>Contact us</th>
</tr>
</thead>
</table>

- IP Downspeeding
- Dial in/Dial out
- Conference rates up to 10 Mbps

**Protocols**
- H.323
- SIP

**Embedded Encryption**
- H.323/SIP point-to-point and multipoint calls
- Standards-based: H.235 v2 & v3 and AES
- Automatic key generation and exchange
- Supported in Dual Stream & MultiSite

**IP Network Features**
- DNS lookup for service configuration
- Differentiated Services (QoS)
- IP adaptive bandwidth management (including flow control)
- Auto gatekeeper discovery
- Dynamic playout and lip-sync buffering
- H.245 DTMF tones in H.323
- Date and Time support via NTP
- Packet Loss based Downspeeeding
- URI Dialing
- TCP/IP
- DHCP

**Security Features**
- Management via HTTPS and SSH
- IP Administration Password
- Menu Administration Password
- Disable IP services
- Network Settings protection

**Network Interfaces**
- 1 x LAN/Ethernet (RJ-45) 10/100/1000 Mbit

**Other Interfaces**
- USB host for future usage
- USB device for future usage
- GPIO for future usage

**PrecisionHD 1080p Camera**
- 1/3” CMOS
- 12 x zoom
- +15°/-25° tilt, +/- 90° pan
- 43.5° vertical field of view
- 72° horizontal field of view
- Focus distance 0.3m—infinity
- 1920 x 1080 pixels progressive @ 60fps
- Other formats supported (configurable through Dip-switch):
  - 1920 x 1080@60 Hz (HDMI only)
  - 1920 x 1080@50 Hz (HDMI only)
  - 1920 x 1080@30 Hz
  - 1280 x 720@60 Hz
  - 1280 x 720@50 Hz
  - 1280 x 720@30 Hz
  - 1280 x 720@25 Hz
- Automatic or manual focus/brightness/whitebalance
- Far-end camera control
- Daisy-chain support (Visca protocol camera)
- Dual HDMI and HD-SDI output
- Upside-down mounting with automatic flipping of picture

**System Management**
- Support for the TANDBERG Management Suite
- Total management via embedded SNMP, Telnet, SSH, XML, SOAP
- Remote software upload: via web server, SCP, HTTP, HTTPS
- 1 x RS-232 local control and diagnostics
- Remote control and on-screen menu system

**Directory Services**
- Support for Local directories (My Contacts)
- Corporate Directory
- Unlimited entries using Server directory supporting LDAP and H.350
- Unlimited number for Corporate directory (through TMS)
- 200 number local directory
- Received Calls
- Placed Calls
- Missed Calls with Date and Time

**Power**
- Auto-sensing power supply
- 100–240 VAC, 50/60 Hz
- 175 watts max. for codec and main camera

**Operating Temperature and Humidity**
- 0° C to 55° C (32° F to 95° F) ambient temperature
- 10% to 90% Relative Humidity (RH)

**Storage and Transport Temperature**
- -20° C to 60° C (-4° F to 140° F) at RH 10–90% (non-condensing)

**Approvals**
- Directive 2006/95/EC (Low Voltage Directive)—Standard EN 60950-1
- Approved according to UL 60950-1 and **CSA 60950-1-07**
- Complies with FCC 15B **Class B**

**Dimensions**
- Length: 17.38”/44.1cm
- Height: 3.67”/9.3cm
- Depth: 11.8”/30cm
- Weight: 11.22 lbs/5.1 kg

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- 11.22 lbs/5.1 kg
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**APPROVALS**
- Directive 2006/95/EC (Low Voltage Directive)—Standard EN 60950-1
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- Depth: 11.8”/30cm
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**Improvements**
- 11.22 lbs/5.1 kg
- Depth: 11.8”/30cm
- Height: 3.67”/9.3cm
- Length: 17.36”/44.1cm

**Appendices**

**MTBF Product Reliability/MTBF**
The predicted reliability is expressed in the expected random Mean Time Between Failures (MTBF) for the electronic components based on the Power On Hours: Power On Hours (POH): > 69,000 hours

**Useful Life Cycle > 6 years**

**ISO 9001 certificate is available upon request**

July 2009

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* requires option
** only one LAN/Ethernet interface supported