



# TANDBERG Codec C90

## System Integrator Guide

# What's in this guide?

The top menu bar and the entries in the Table of Contents are all hyperlinks, just click on them to go to the topic.



**TANDBERG**  
See: 

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# Chapter 1

## Introduction

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>



### In this chapter...

- Intellectual property rights
- Trademark
- Copyright
- Disclaimer
- Patent information
- Safety instructions
- Environmental issues



## Intellectual Property Rights

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## Disclaimer

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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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## Patent Information

The products described in this manual are covered by one or more of the following patents:

US6,584,077	US5,838,664	US5,600,646
US5,003,532	US5,768,263	US5,991,277
US7,034,860	US7,010,119	EP01953201
US6.731.334	GB1338127	

Other patents pending.

Please view ► [www.tandberg.com/tandberg\\_pm.jsp](http://www.tandberg.com/tandberg_pm.jsp) for an updated list

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## 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.

Do not place the product in direct sunlight or close to a surface directly heated by the sun.

### 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.

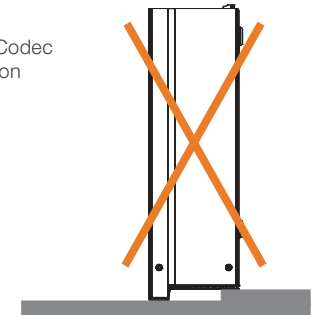
### IMPORTANT!

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 web site: ► <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 wheelee bin symbol that invites you to use those take-back systems.

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.

### 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.

## 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.

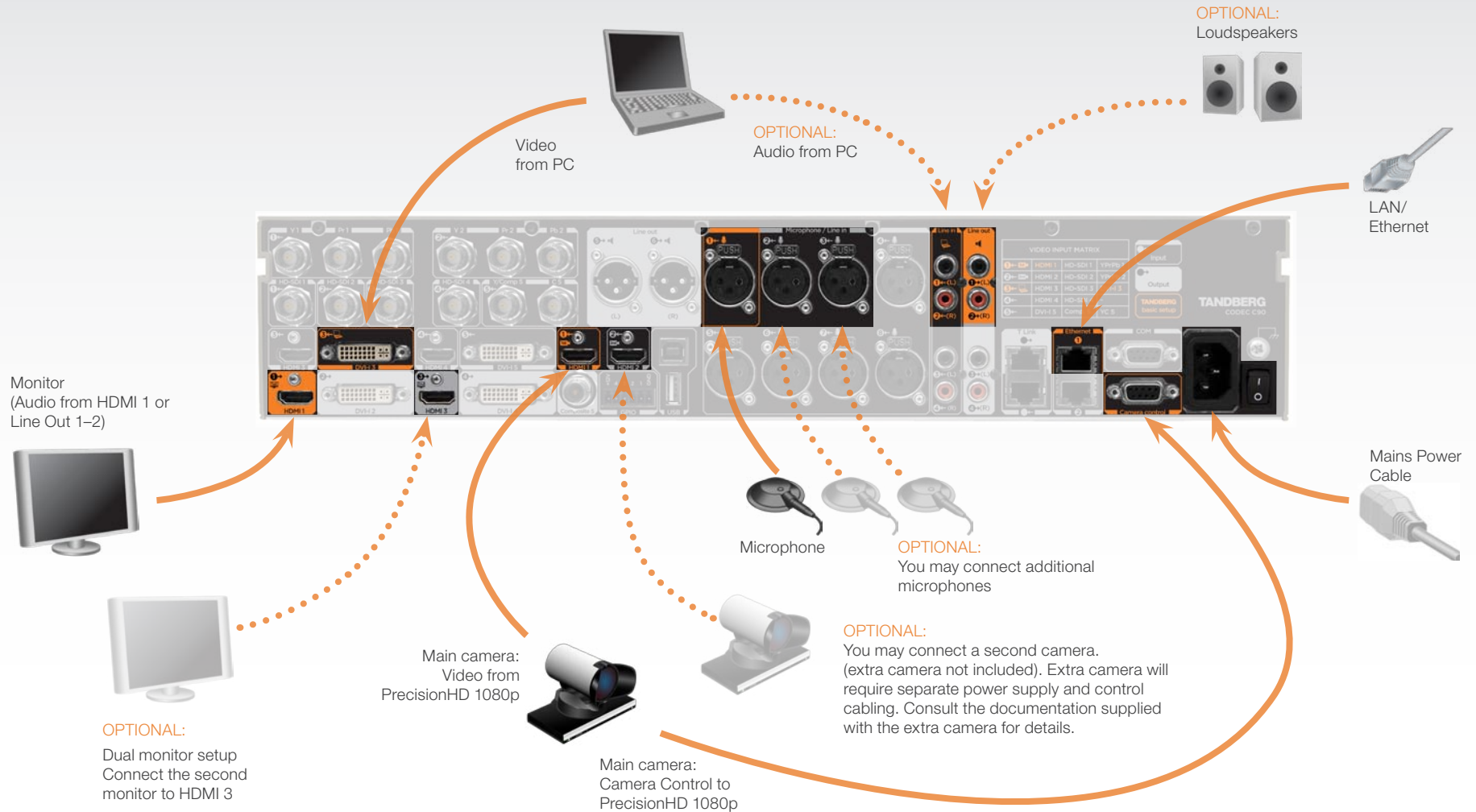



### In this chapter...

- ▶ Assemble your system
- ▶ Using the remote control
- ▶ Turn on the system
- ▶ Verify IP address settings
- ▶ Setting a static IP address
- ▶ Add the system to the network
- ▶ Verify your settings
- ▶ Time zone settings
- ▶ About 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.



 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.

**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.

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

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

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

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

**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.

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

## 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

### 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.



**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.

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

### 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.

### Waking up the system

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

Press the **HOME** key to show the menu on screen



Touch the rubber line sensors along the sides to wake up the system

### 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.

The DIP switch





# 1 Turn on the system

- Turn on the codec and wait a few minutes for the system to start
- Make sure the remote control has the batteries installed.
- Press **Home** (🏠) on the remote control to show the menu on screen
- When you can see the menu on screen, proceed to Step 2.

### Show the menu:

- Press **Home** (🏠) on the remote control to show the menu on screen

### Navigate in the menu:

- Use the arrow keys on the remote control to navigate up and down in the menus

### Confirm your choice:

- To confirm your choice, press **OK** (✓) on the remote control

# 2 Verify IP address settings

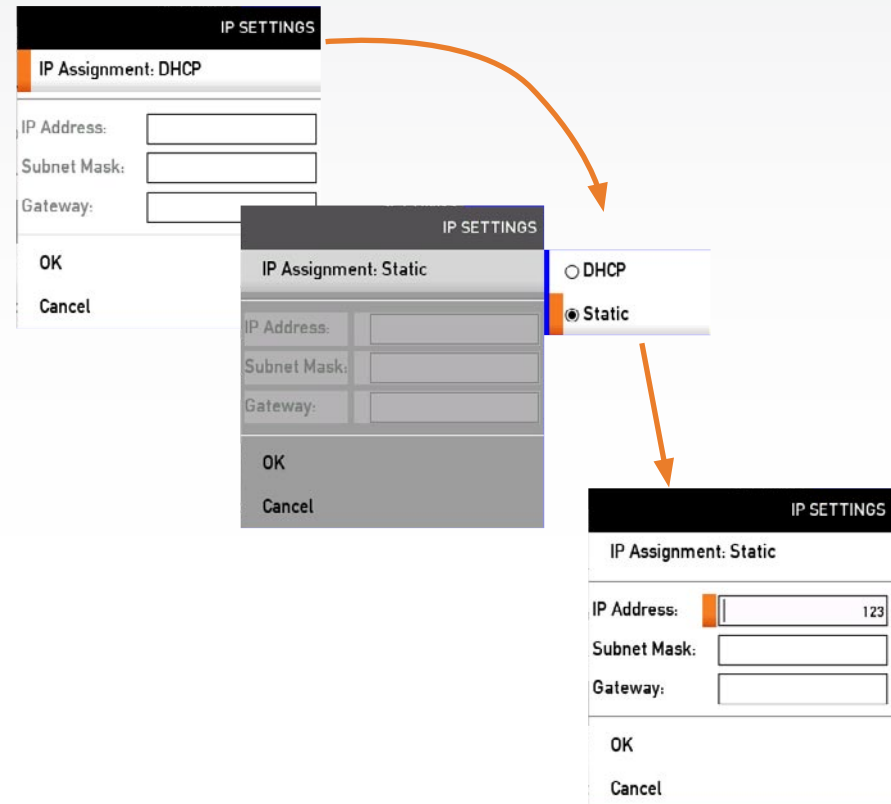
Go to System Information to verify the IP address:

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

# 3 If you need to set a static IP address

Go to IP Settings to set static IP addresses:

1. Navigate to Settings > Administrator Settings > IP Settings.
2. Set IP Assignment to Static. Press the left arrow key to go back one step
3. Enter the IP Address, Subnet Mask and Gateway address in the address fields. The sequence is shown below.
4. Press **OK** to save the changes, or Cancel to leave without saving.
5. Press **Home** (🏠) to exit.



## 4 Add the system to the network

Your service provider should have provided you with the information you need to get on-line.

For H323 type of communication, this will include such things as system name, H323 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 **H323** and **SIP** settings are configured from the Administrator Settings menu:

Navigate to **Settings > Administrator Settings > Advanced Settings**.

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



## 5 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 you IP address setting.

Go to System Information to verify the settings:

- Navigate to **Settings > System Information**
- Verify the previous configurations. For example, if you successfully registered to a SIP server the **Status** will show **Registered**. If the registration failed the **Status** will show **Not registered**.
- Press Home (🏠) to exit.

## 6 Time zone settings

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

Go to Time settings to set the NTP (date and time) settings:

- Navigate to **Settings > Administrator Settings > Time > Zone**
- You may need to consult the NTP Time Zone expression list to find the exact expression. Go to the [Appendices](#) section and the [NTP Time Zone expressions](#) to see a complete overview.
- Enter the time zone expression for where the system is located. The default value is **Etc/UTC**.

**NOTE:** Spelling correctly is important when entering the NTP Time Zone expression

- Press **Save** to save the changes, or **Cancel** to leave without saving.
- 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.

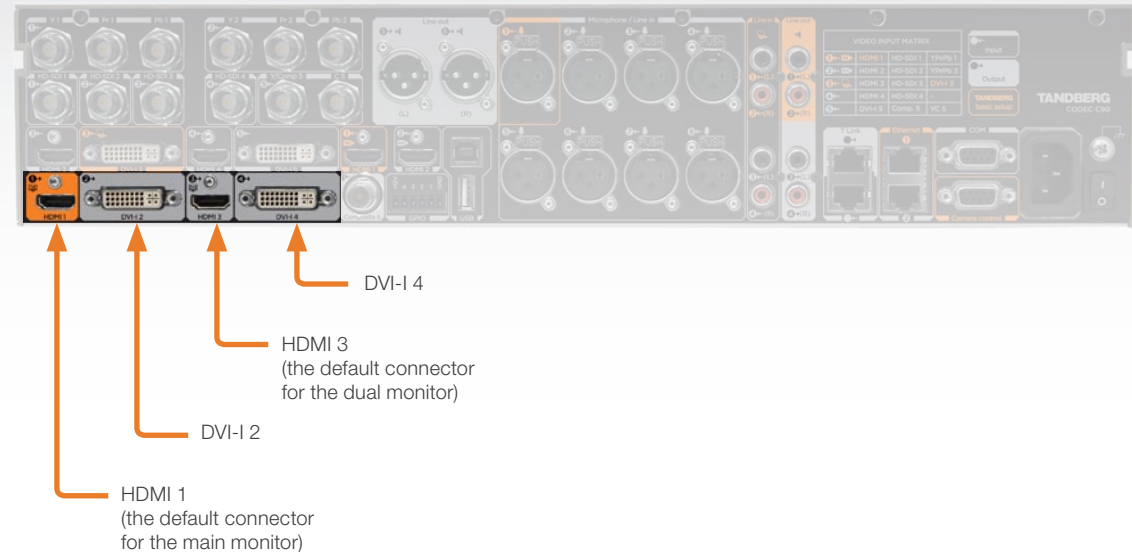
- **Disconnect \* # \* # 0 x #** (where **x** is output **2, 3** or **4**)

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.

### The video outputs at Codec C90



### 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.



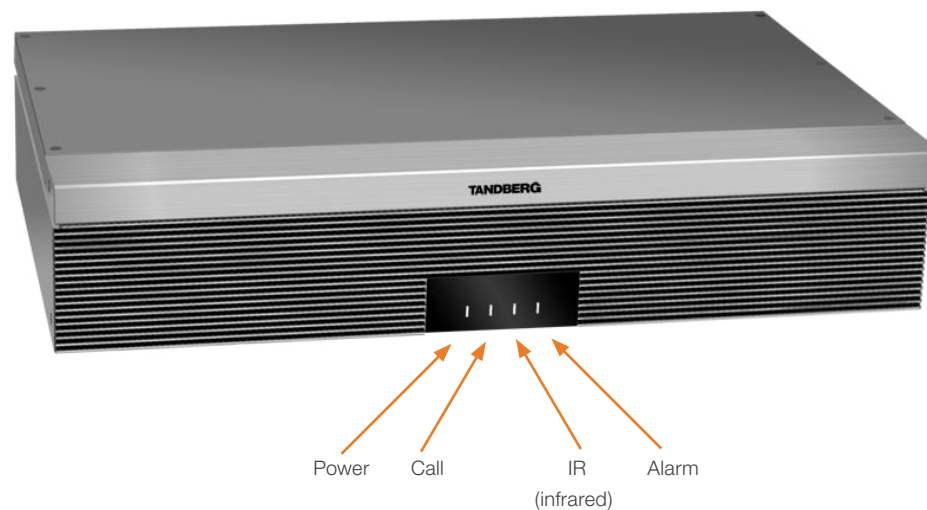
In this chapter...

- ▶ 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.

Inputs	Outputs	TANDBERG Basic Setup
① ←	→ ①	The main connectors for TANDBERG basic setup are highlighted in orange.

\* Not supported in version 1

\*\* For future use

### Video sockets

The video input sockets are:

- 4 x HDMI
- 4 x HD-SDI
- 2 x DVI-I
- 2 x Analog Component (Y-Pr-Pb)
- 1 x Composite\* or 1 x S-Video(YC)\*

The video output sockets are:

- 2 x HDMI
- 2 x DVI-I
- 1 Composite

### Audio sockets

The audio input sockets are:

- 8 x XLR Female - Microphone/Line In
- 4 x RCA - Line In (1 Left, 2 Right, 3 Left, 4 Right)
- 2 x HDMI

The audio output sockets are:

- 2 x XLR Male - Line Out
- 4 x RCA - 1 Left (SPDIF), 2 Right, 3 Left (SPDIF), 4 Right
- 2 x HDMI

### 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\*\*

### Codec C90 Rear Panel

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

Video sockets

Audio sockets

Video sockets

Audio sockets

T Link

Network interface sockets

COM Port, Camera Control

Power socket

Power switch

GPIO and USB

## 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:

What connectors are active is determined by the configuration of the video input connector settings:

- 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

Video input matrix				
Input Sources	Connector Name			
1	1st Camera	HDMI 1	HD-SDI 1	YPrPb 1
2	2nd Camera	HDMI 2	HD-SDI 2	YPrPb 2
3	PC	HDMI 3	HD-SDI 3	DVI-I 3
4		HDMI 4	HD-SDI 4	–
5		DVI-I 5	Comp. 5*	YC 5*

\* Comp 5 and YC 5 are not supported in version 1

### 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 ftp 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

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)

2 x 3 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\*

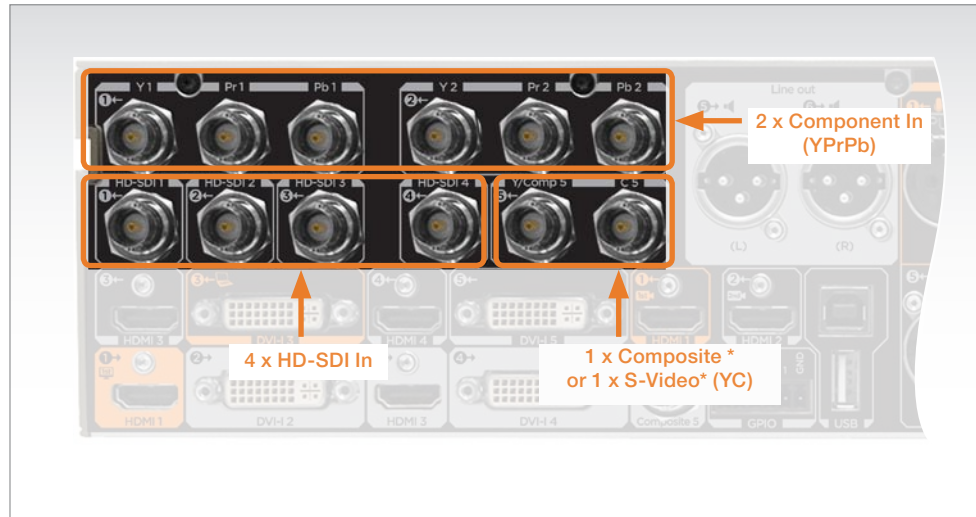
2 BNC sockets, analog video input 5.

\* Comp 5 and YC 5 are not supported in version 1.

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.



#### BNC pin-out

External view of socket



**BNC:** Bayonet Neill-Concelman

**HD-SDI:** High Definition - Serial Digital Interface

**Y-Pr-Pb:** Y: Information about luma (luminance); Pr: Red color; Pb: Blue color

**Y-C:** Y: Information about luma (luminance); C: Information about chroma (color)

## Video input formats supported

### HD-SDI

- 1920x1080@30Hz
- 1920x1080@25Hz
- 1280x720@60Hz
- 1280x720@50Hz
- 1280x720@30Hz
- 1280x720@25Hz

### Analog component

- 1920x1080@60Hz
- 1920x1080@50Hz
- 1920x1080@30Hz
- 1920x1080@25Hz
- 1280x720@60Hz
- 1280x720@50Hz
- 1280x720@30Hz
- 720x576@50Hz
- 720x480@60Hz

### Composite/S-Video

PAL / NTSC

### 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. 1Vpp, 75 Ω

S-Video (YC)

- Y: 1Vpp, 75 Ω
- C (PAL): 0.3Vpp, 75 Ω
- C (NTSC): 0.28Vpp, 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

4 x HDMI 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

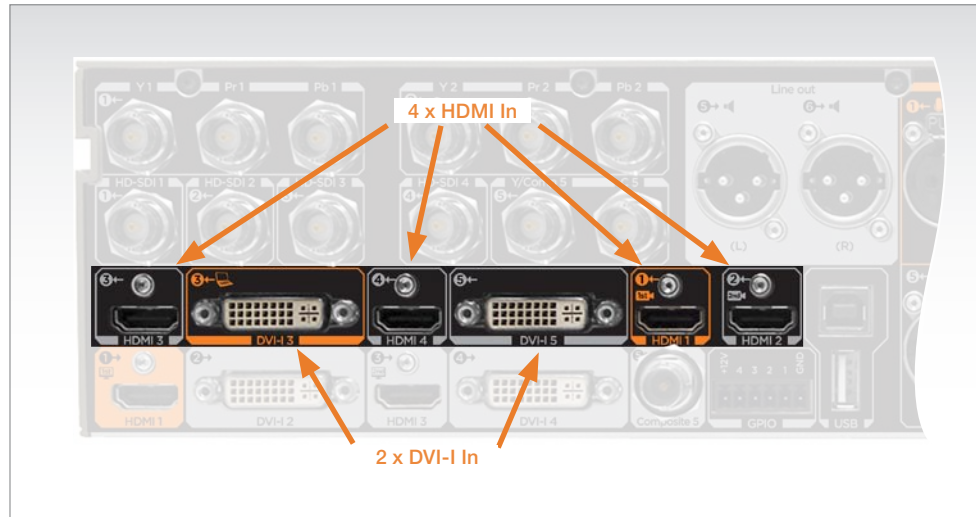
2 x DVI-I sockets, digital/analog video input 3, 5.

- DVI-D
- DVI-A (Analog RGB / VGA)

**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 Precision HD Camera.

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



## Video input formats supported

### DVI-D/HDMI

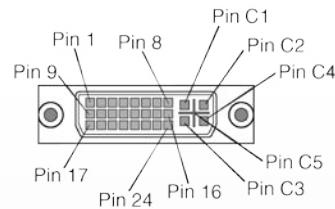
- 1920x1080@60Hz
- 1920x1080@50Hz
- 1920x1080@30Hz
- 1920x1080@25Hz
- 1920x1080@24Hz
- 1280x720@60Hz
- 1280x720@50Hz
- 720x480@60Hz

### DVI-A

- 640x480@72, 75, 85 Hz (VGA)
- 800x600@56, 60, 72, 75, 85 Hz (SVGA)
- 1024x768@60, 70, 75, 85 Hz (XGA)
- 1280x1024@60, 75 Hz (SXGA)

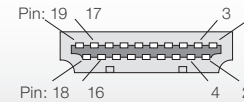
### DVI-I pin-out

External view of socket



### HDMI pin-out

External view of socket



HDMI Pin-out			
Pin	Assignment	Pin	Assignment
1	T.M.D.S. Data 2+	11	T.M.D.S. Clock Shield
2	T.M.D.S. Data 2 Shield	12	T.M.D.S. Clock-
3	T.M.D.S. Data 2-	13	CEC
4	T.M.D.S. Data 1	14	Reserved (N.C. on device)
5	T.M.D.S. Data 1 Shield	15	SCL
6	T.M.D.S. Data 1-	16	SDA
7	T.M.D.S. Data 0	17	DDC/CEC Ground
8	T.M.D.S. Data 0 Shield	18	+5 V Power (max 50 mA)
9	T.M.D.S. Data 0-	19	Hot Plug Detect
10	T.M.D.S. Clock+		

## Video outputs

### HDMI 1 and 3

2 x HDMI 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

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

- DVI-D
- DVI-A (Analog RGB / VGA)

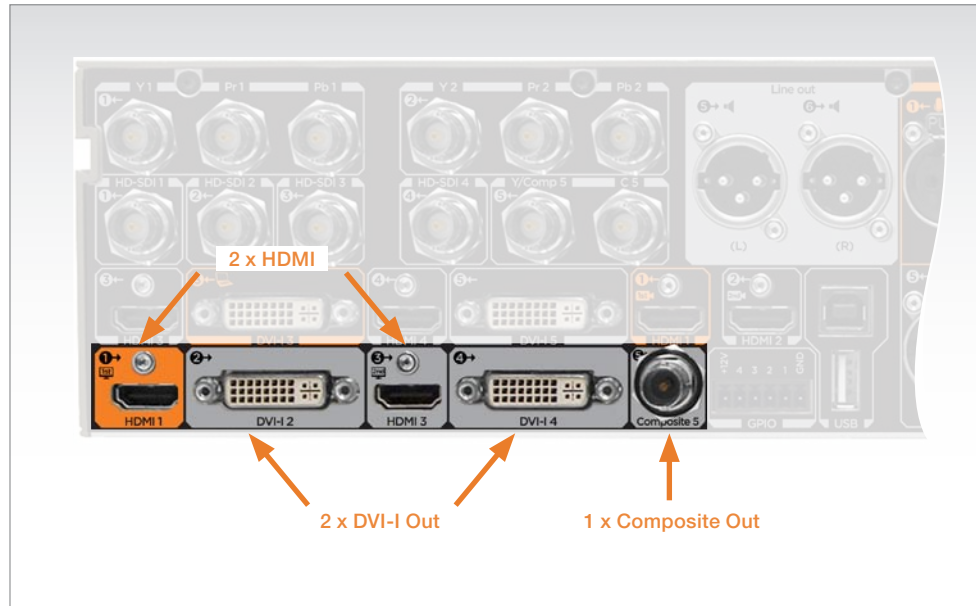
**DVI-I** - Digital Video Interface - Integrated (digital DVI-D and analog DVI-A)

**Typical use.** Monitors.

### Composite 5

1 x BNC sockets, analog video output 5.

**Typical use.** Monitor.



## Video output formats supported

### DVI-D/DVI-I/HDMI

- 1920x1080@60fps (HD1080p60)
- 1280x720@60fps (HD720p60)
- 1366x768@60fps (WXGA)
- 1280x768@60fps (WXGA)
- 1024x768@60fps (XGA)
- 1280x1024@60fps (SXGA)
- 640x480@60fps (VGA)
- 800x600@60fps (SVGA)

### Composite

PAL / NTSC

### Levels

Composite. 1Vpp, 75 Ω

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

**BNC** - Bayonet Neill-Concelman

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

Please refer to previous page for pin-out scheme.

**DVI-I pin-out**  
External view of socket

## Audio inputs (I)

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

### Microphone/Line In 1–8 (XLR)

8 x Balanced 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

2 x HDMI 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.

#### XLR pin-out

External view of socket

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

XLR - Electrical Connector (Canon XL series with Rubber compound)

#### HDMI pin-out

External view of socket

Please refer to previous page for pin-out scheme.

## Audio inputs (II)

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

### Line In 1-4 (RCA)

4 x RCA 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:

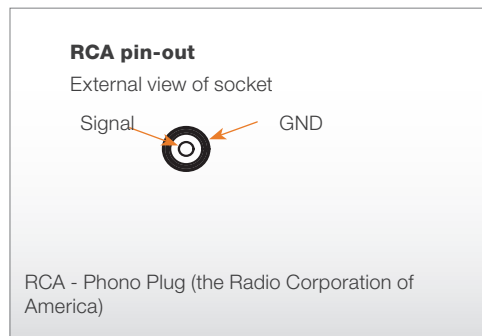
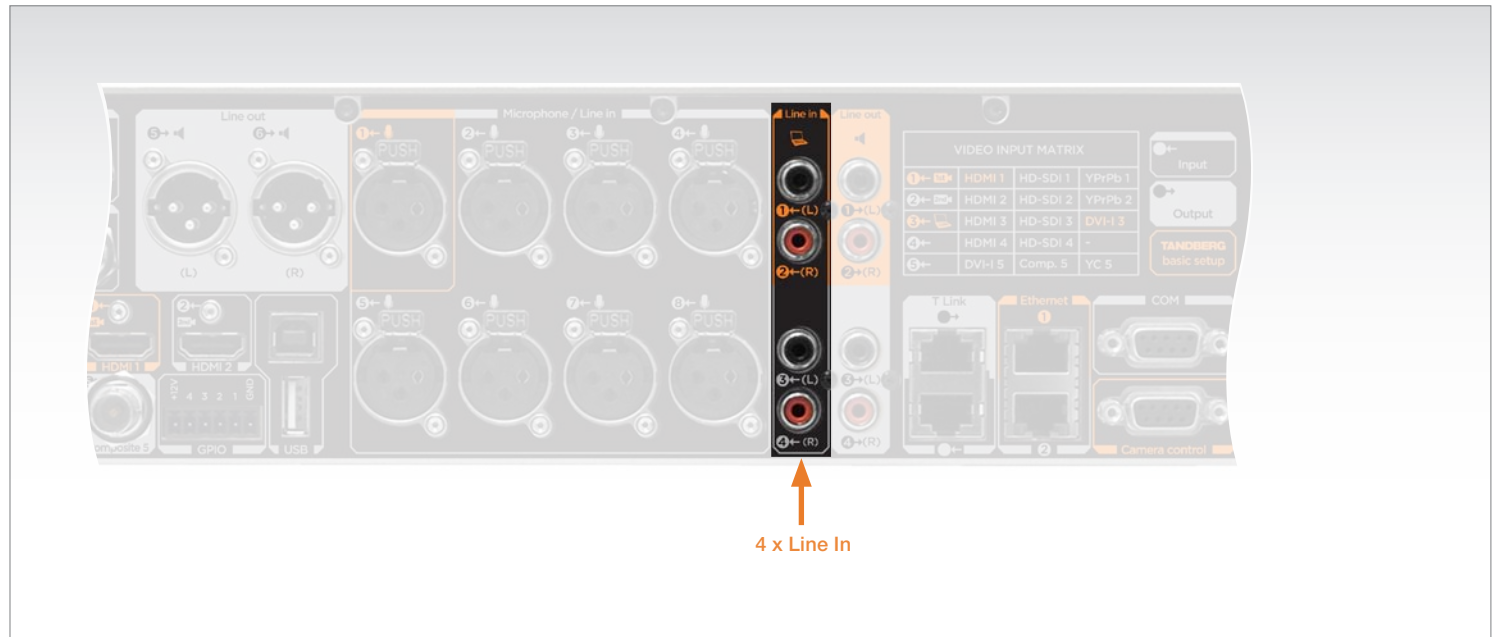
- Connect the left channel to Line In 1 or 3
- Connect the right channel to Line In 2 or 4

**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)

2 x 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

2 x 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

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

XLR - Electrical Connector (Cannon XL series with Rubber compound)

**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)

4 x RCA 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).

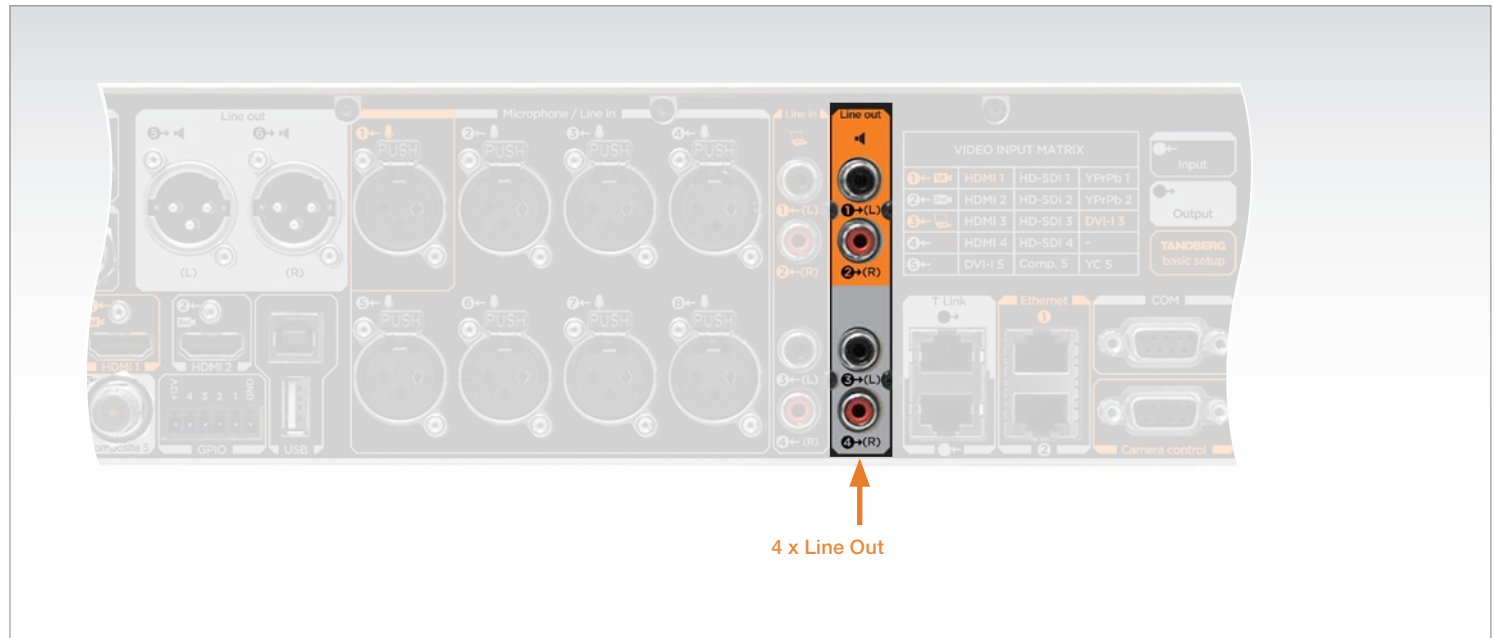
**Default configuration Line Out 1-2.** In default configuration, Line Out 1 and 2 are configured as stereo speakers.

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.



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

RCA - Phono Plug (the Radio Corporation of America)

**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 Signal Levels tables

Microphone Inputs 1 to 8 XLR female			
Signal levels	Clipping level		Nominal level
	[mVpp]	[dBu]	[dBu]
Level setting [dB]			
0.0	275.0	-18.0	-36.0
1.0	245.1	-19.0	-37.0
2.0	218.4	-20.0	-38.0
3.0	194.7	-21.0	-39.0
4.0	173.5	-22.0	-40.0
5.0	154.6	-23.0	-41.0
6.0	137.8	-24.0	-42.0
7.0	122.8	-25.0	-43.0
8.0	109.5	-26.0	-44.0
9.0	97.6	-27.0	-45.0
10.0	87.0	-28.0	-46.0
11.0	77.5	-29.0	-47.0
12.0	69.1	-30.0	-48.0
13.0	61.6	-31.0	-49.0
<b>14.0</b>	<b>54.9</b>	<b>-32.0</b>	<b>-50.0</b>
15.0	48.9	-33.0	-51.0
16.0	43.6	-34.0	-52.0
17.0	38.8	-35.0	-53.0
18.0	34.6	-36.0	-54.0

Line Inputs 1 to 8 XLR female			
Signal levels	Clipping level		Nominal level
	[Vpp]	[dBu]	[dBu]
Level setting [dB]			
<b>0.0</b>	<b>34.7</b>	<b>24.0</b>	<b>6.0</b>
1.0	31.0	23.0	5.0
2.0	27.6	22.0	4.0
3.0	24.6	21.0	3.0
4.0	21.9	20.0	2.0
5.0	19.5	19.0	1.0
6.0	17.4	18.0	0.0
7.0	15.5	17.0	-1.0
8.0	13.8	16.0	-2.0
9.0	12.3	15.0	-3.0
10.0	11.0	14.0	-4.0
11.0	9.8	13.0	-5.0
12.0	8.7	12.0	-6.0
13.0	7.8	11.0	-7.0
14.0	6.9	10.0	-8.0
15.0	6.2	9.0	-9.0
16.0	5.5	8.0	-10.0
17.0	4.9	7.0	-11.0
18.0	4.4	6.0	-12.0

Line outputs 5 to 6 XLR male			
Signal levels	Absolute max output level		Nominal level
	[Vpp]	[dBu]	[dBu]
Level setting [dB]			
-18.0	4.4	6.0	-12.0
-17.0	4.9	7.0	-11.0
-16.0	5.5	8.0	-10.0
-15.0	6.2	9.0	-9.0
-14.0	6.9	10.0	-8.0
-13.0	7.8	11.0	-7.0
-12.0	8.7	12.0	-6.0
-11.0	9.8	13.0	-5.0
-10.0	11.0	14.0	-4.0
-9.0	12.4	15.0	-3.0
-8.0	13.9	16.0	-2.0
-7.0	15.6	17.0	-1.0
-6.0	17.5	18.0	0.0
-5.0	19.6	19.0	1.0
-4.0	22.0	20.0	2.0
-3.0	24.7	21.0	3.0
<b>-2.0</b>	<b>27.7</b>	<b>22.0</b>	<b>4.0</b>
-1.0	31.0	23.0	5.0
0.0	34.8	24.0	6.0

Line Inputs 1 to 4 Female RCA/phone			
Signal levels	Clipping level		Nominal level
	[Vpp]	[dBu]	[dBu]
Level setting [dB]			
0.0	17.4	18.0	0.0
1.0	15.5	17.0	-1.0
2.0	13.8	16.0	-2.0
3.0	12.3	15.0	-3.0
4.0	11.0	14.0	-4.0
5.0	9.8	13.0	-5.0
6.0	8.7	12.0	-6.0
7.0	7.8	11.0	-7.0
8.0	6.9	10.0	-8.0
9.0	6.2	9.0	-9.0
<b>10.0</b>	<b>5.5</b>	<b>8.0</b>	<b>-10.0</b>
11.0	4.9	7.0	-11.0
12.0	4.4	6.0	-12.0
13.0	3.9	5.0	-13.0
14.0	3.5	4.0	-14.0
15.0	3.1	3.0	-15.0
16.0	2.8	2.0	-16.0
17.0	2.5	1.0	-17.0
18.0	2.2	0.0	-18.0

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.

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...

Line outputs 1 to 4 Female RCA/phone			
Signal levels	Absolute max output level		Nominal level
Level setting [dB]	[Vpp]	[dBu]	[dBu]
-18.0	2.2	0.0	-18.0
-17.0	2.5	1.0	-17.0
-16.0	2.8	2.0	-16.0
-15.0	3.1	3.0	-15.0
-14.0	3.5	4.0	-14.0
-13.0	3.9	5.0	-13.0
-12.0	4.4	6.0	-12.0
-11.0	4.9	7.0	-11.0
<b>-10.0</b>	<b>5.5</b>	<b>8.0</b>	<b>-10.0</b>
-9.0	6.2	9.0	-9.0
-8.0	6.9	10.0	-8.0
-7.0	7.8	11.0	-7.0
-6.0	8.7	12.0	-6.0
-5.0	9.8	13.0	-5.0
-4.0	11.0	14.0	-4.0
-3.0	12.3	15.0	-3.0
-2.0	13.8	16.0	-2.0
-1.0	15.5	17.0	-1.0
0.0	17.4	18.0	0.0

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 hardware information table

Signal type	Hardware Information				
	Mic 1-8 *	Line in 1-8 **	Line out 5-6	Line in 1-4	Line out 1-4
	Balanced	Balanced	Balanced	Unbalanced	Unbalanced
Connector (codec)	XLR-F	XLR-F	XLR-M	Female RCA/phono	Female RCA/phono
Input impedance	8100 Ohm (pin 2-3)	10k Ohm (pin 2-3)		10k Ohm	
Output impedance			50 Ohm		100 Ohm
Max input level when set to Min input level	-18dBu/275mVpp	24dBu/34.7Vpp		18dBu/17.4Vpp	
Max input level when set to Max input level	-36dBu/35mVpp	6dBu/4.4Vpp		0.0dBu/2.2Vpp	
Max output level when set to Min output level			6dBu/4.4Vpp		0dBu/2.2Vpp
Max output level when set to Max output level			24dBu/34.8Vpp		18dBu/17.4Vpp
Gain range	←- 18dB (18 steps of 1dB) ->				
Phantom power	48 Volt +/- 2%				
Phantom power resistor pin 1	6800 Ohm				
Phantom power resistor pin 2	6800 Ohm				
Max phantom power current (per mic)	14mA				

\* 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

Volume control	
Ring tone volume*	Audio gain value
0	0
1	-34.5 dB
70	0.0 dB
100	15.0 dB

\* The ring tone volume which is displayed on screen, when using the TRC5 remote control, goes from 0 to 20.

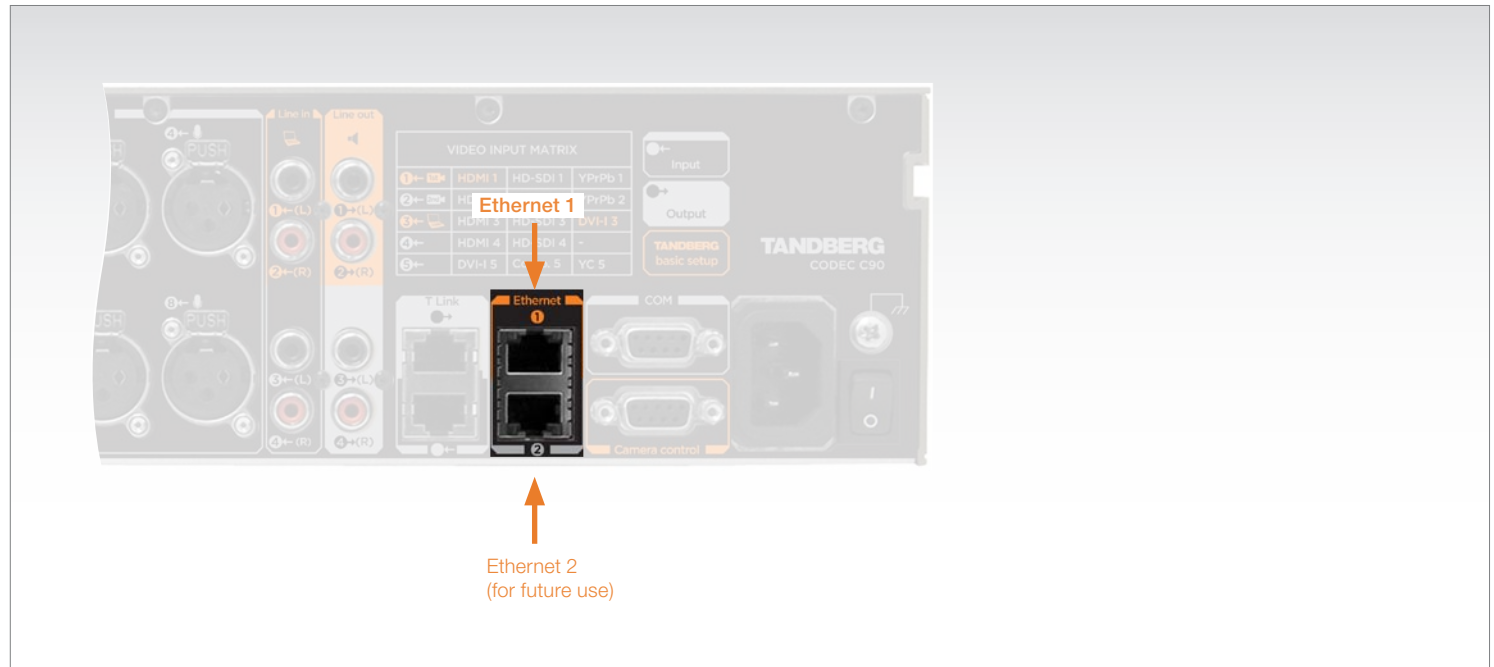
## Network connectors

### Ethernet interface

2 × 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**

TOP

FRONT

Wiring diagram standard cable

- 1 ----- 1
- 2 ----- 2
- 3 ----- 3
- 6 ----- 6

## COM port and Camera Control port

### COM port

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

### Camera Control port

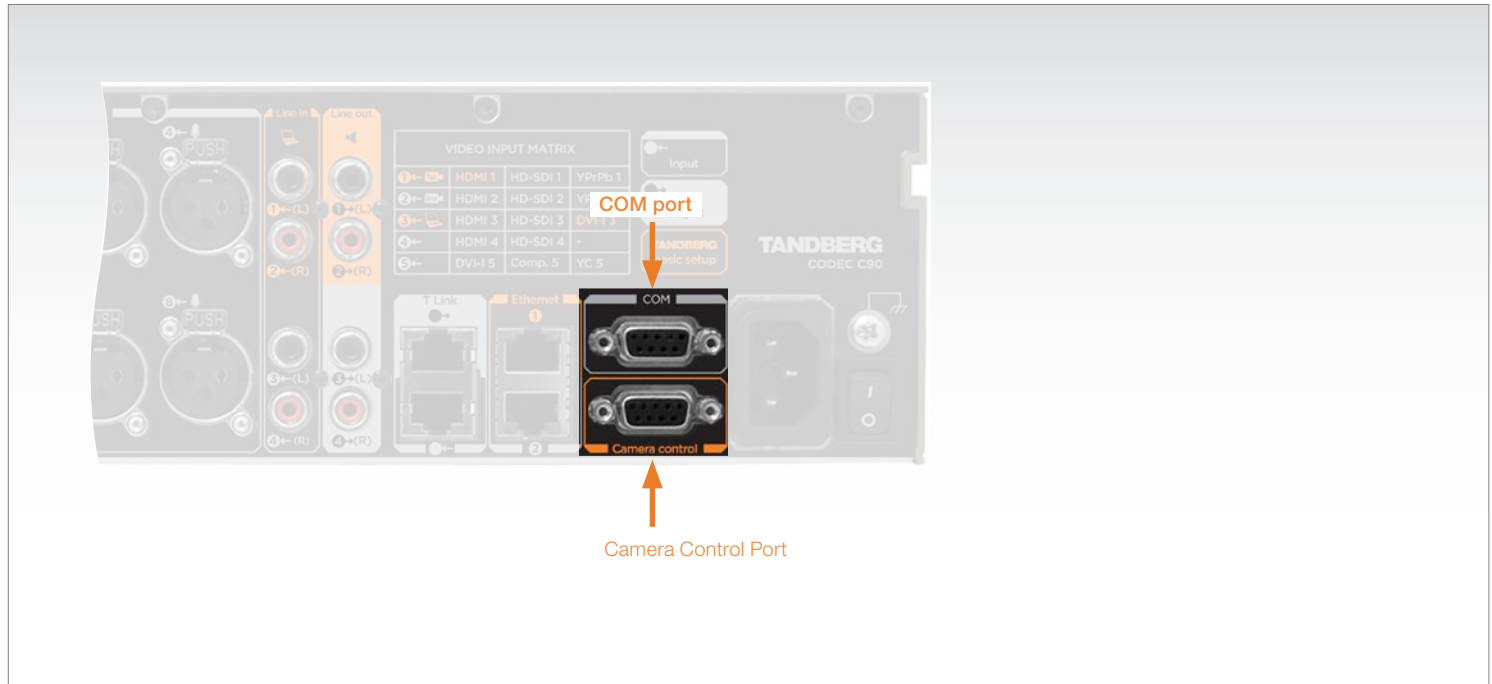
1 x Camera Control (RS-232) port for power and camera control (pan, tilt, zoom) using the VISCA™\* protocol.

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

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



Pin-out—COM Port		
Pin	Signal name	Direction
1	Carrier detect, CD	From DCE
2	Receive data, RXD	From DCE
3	Transmit data, TXD	To DCE
4	12V/1A	To the main camera
5	Signal GND	
6	Data set ready, DSR	From DCE
7	Ready to send, RTS	To DCE
8	Clear to send, CTS	From DCE
9	Ring indicator, RI	From DCE

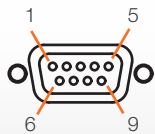
Pin-out—VISCA™ camera control RJ11, 8 pins shielded modular jack	
Pin	Signal name
8	+12V (presence 2.8mA current source when connected in daisy chain)
7	GND
6	TXD (out)
5	NC (no connect)
4	NC (no connect)
3	RXD (in)
2	GND
1	+12V

Pin-out—TANDBERG camera cable			
Signal name	RJ-45 pin		D-SUB pin
+12V DC	1	Twisted pair	4
GND	2		5
RX	3	Twisted pair	2
TX	6		3
NC	4	Twisted pair	1
NC	5		6
GND	7	Twisted pair	5
+12V DC	8		4

\*VISCA™ is a trademark of Sony Corporation

### RS232 9 pin D-SUB pin-out

External view of socket



# Power

## Power socket

Power Cord Socket.

Accepts 100-240V, 50/60Hz, 2.8A max.

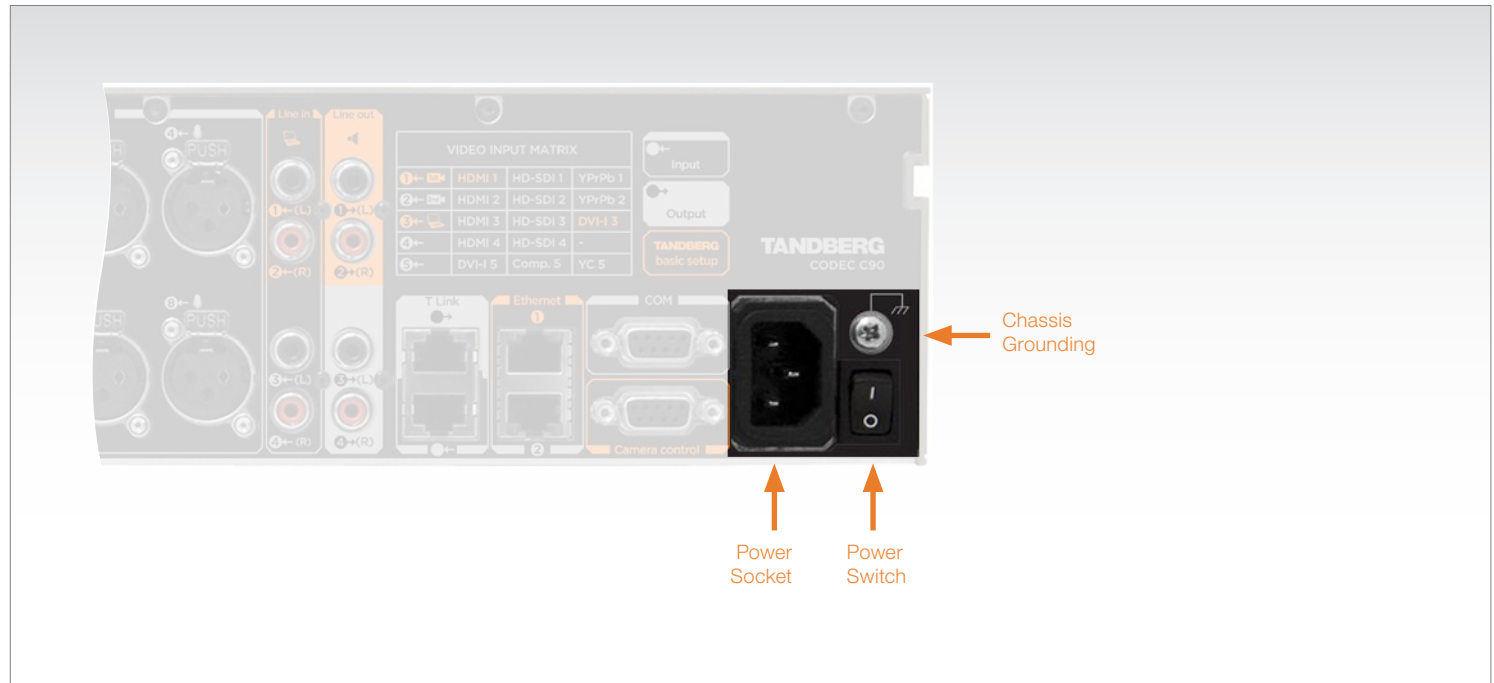
**CAUTION!** This equipment must be grounded.

## Power switch

Power Switch (On/Off)

## Chassis grounding

For grounding of the chassis



## Other connectors

### USB

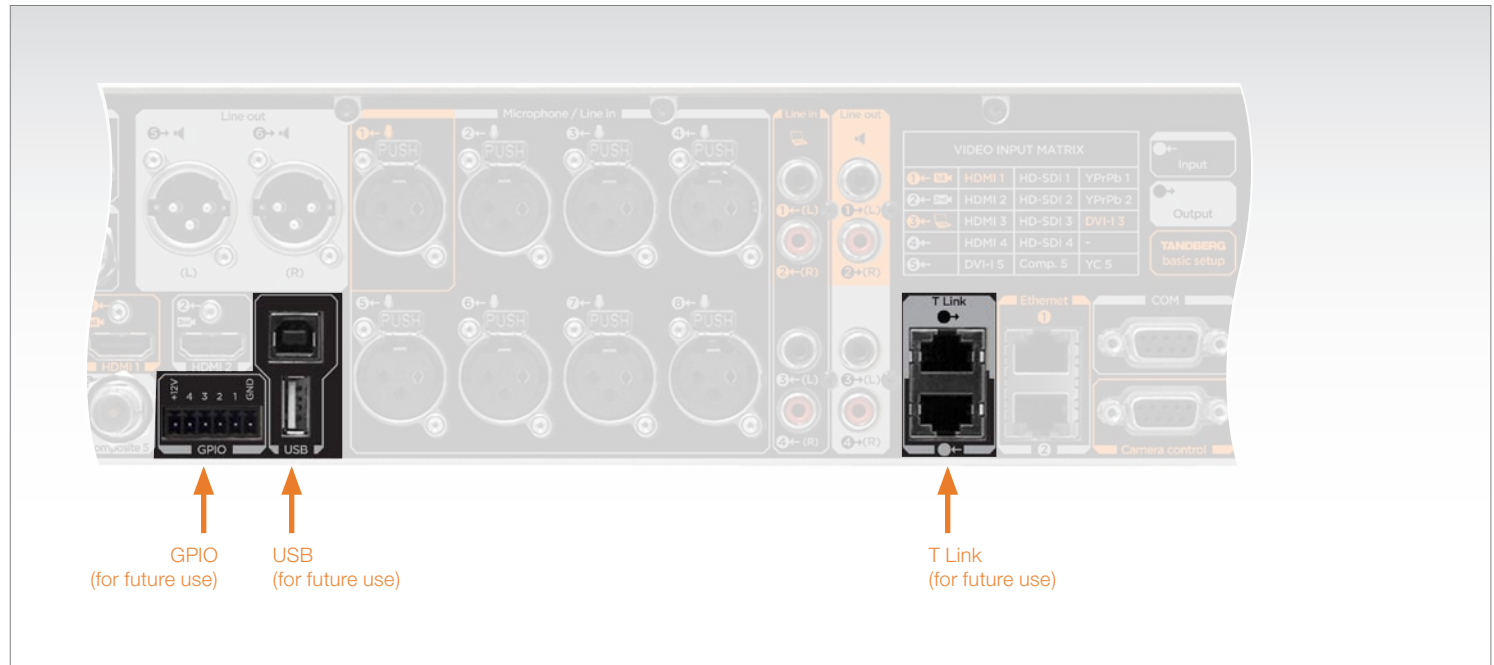
- 1 × USB Host
- 1 × USB Device
- For future use.

### 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.



## Chapter 4

# About the TANDBERG API

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.



In this chapter...

- ▶ The TANDBERG API
- ▶ Connecting to the codec
- ▶ Value types and formats
- ▶ Root commands
- ▶ Main type of commands
- ▶ About xConfiguration
- ▶ xConfiguration operations
- ▶ About xCommand
- ▶ xCommand operations
- ▶ About xStatus
- ▶ Query xStatus information
- ▶ About xHistory
- ▶ About xFeedback
- ▶ About xPreferences
- ▶ TANDBERG XML API Service



# 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.

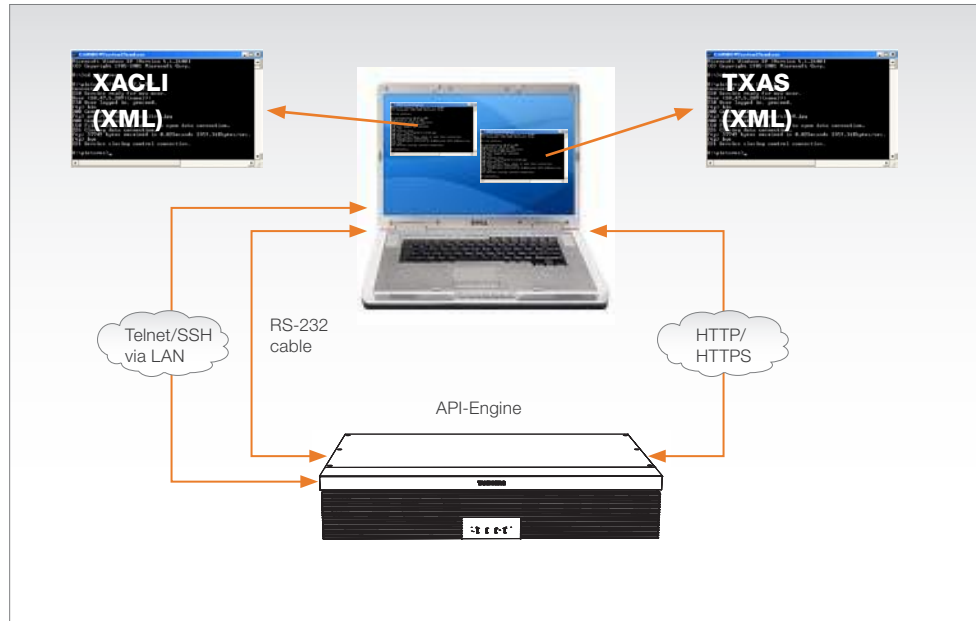
This is similar to viewing files on a computer. Accessing catalogues on a Windows computer using the Command Prompt gives a different view than using Windows Explorer, but the information is the same.

## 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).

## Main types of information

If we look at the TANDBERG systems we can identify three main types of information

- **READ** information (R)
- **WRITE** information (W)
- **READ/WRITE** information (RW)

**(R) READ** information. This is Status Information about the system and system processes, i.e. information generated by the system.

Typical examples include: status 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 process changes.

**(W) WRITE** information. This is Command information the user/control application supply to initiate an action.

Typical examples include: instructing the system to place a call, assigning floor to a specific site, disconnecting a call etc.

A command is usually followed by a set of parameters to specify how the given action is to be executed.

**(RW) READ/WRITE** information. This is Configuration Information defining system settings. This information can both be supplied and read by the user/control application. Typical examples include: default call rate, baud rate of a serial port, enabling/disabling of various features etc.

All configuration information is structured in a hierarchy making up a database of system settings. But for the Configuration information, the data in the database can only be updated by the user/control application.

## 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 TANDBERG SimplePath

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`

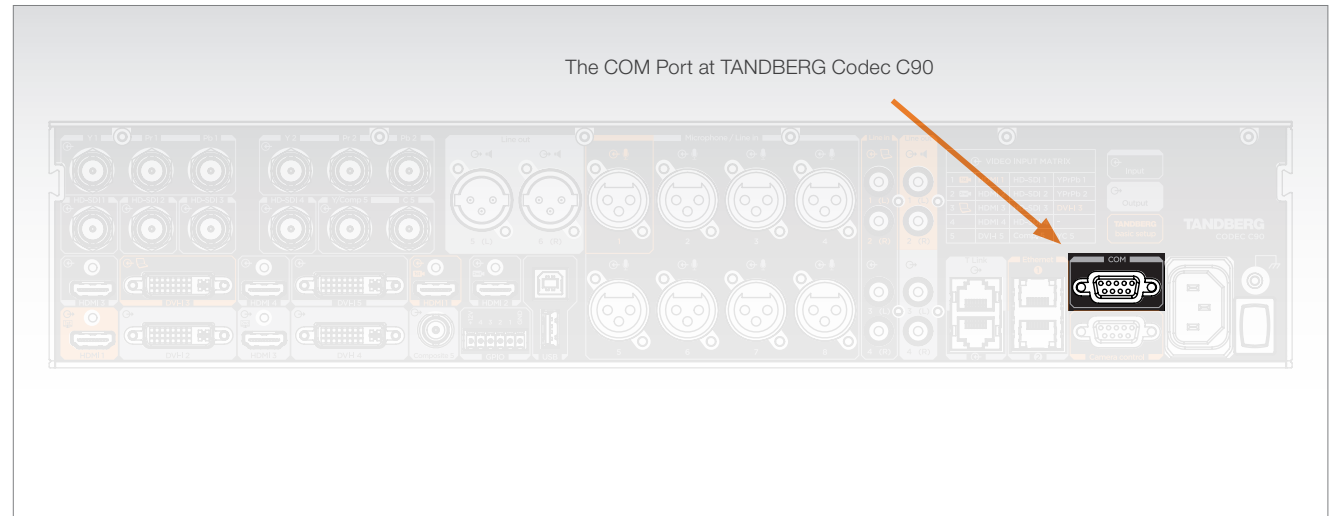
Telnet/SSH login

- 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.

COM port (RS-232)			Cable wiring (RS-232) TANDBERG DCE <-> PC		
Pin	Signal name	Direction	TANDBERG DCE 9 pin	Direction	PC DTE, 9 pin
1	Carrier detect, CD	From DCE	1 CD	->	1 CD
2	Receive data, RXD	From DCE	2 RD	->	2 RD
3	Transmit data, TXD	To DCE	3 TD	<-	3 TD
4	Data terminal ready, DTR	From DCE	4 DTR	<-	4 DTR
5	Signal GND		5 GND	<->	5 GND
6	Data set ready, DSR	From DCE	6 DSR	->	6 DSR
7	Ready to send, RTS	To DCE	7 RTS	<-	7 RTS
8	Clear to send, CTS	From DCE	8 CTS	->	8 CTS
9	Ring indicator, RI	From DCE	9 RI	->	9 RI

## 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

### Formats for values types

Integer values: <x..y>

Defines the valid range for an integer input. x = min value, y = max value.

<1..100>

Literal values: <X/Y/..Z>

Defines the possible values for a given configuration.

<On/Off/Auto>

String values: <S: x, y>

Defines that the valid input for this configuration is a String with minimum length x and maximum length of y characters.

<S: 0, 49>

IPv4 Address values: <IPAddr>

Defines that the input must be an IPv4 address.

<IPAddr>

IPv6 Address values: <IPv6Addr: x, y>

Defines that the input must be an IPv6 address with minimum length x and maximum length y.

<IPv6Addr: 0, 43>

IPv4 or IPv6 Address values: <IPv4v6Addr: x, y>

Defines that the input must be an IPv4 or IPv6 address with minimum length x and maximum length y.

<IPv4v6Addr: 0, 43>

## 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`



```
xConfiguration ?

- User Configurations -

Audio                SIP
Cameras              Standby
DoNotDisturb         SystemUnit
H323                 Time
NetworkServices      Video
Phonebook            Experimental
Provisioning         Conference 1
SerialPort           Network 1

OK
```

```
xConfiguration ??

*h xConfiguration Audio Volume: <0..100>
*h xConfiguration Audio Input Microphone [1..8] Type: <Microphone/Line>
*h xConfiguration Audio Input Microphone [1..8] Mode: <On/Off>
*h xConfiguration Audio Input Microphone [1..8] Level: <0..18>
*h xConfiguration Audio Input Microphone [1..8] Channel: <Left/Right/Mono>
*h xConfiguration Audio Input Microphone [1..8] EchoControl Mode: <On/Off>
*h xConfiguration Audio Input Microphone [1..8] EchoControl NoiseReduction: <On/Off>
*h xConfiguration Audio Input HDMI [1..4] Mode: <On/Off>
*h xConfiguration Audio Input Line [1..4] Mode: <On/Off>
*h xConfiguration Audio Input Line [1..4] Level: <0..18>
.
.
.
OK
```

## xConfiguration operations

Configuration type commands defines 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)

### 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 ?`  
Returns information about the setting defined by the path.
- `xConfiguration H323 Profile 1 Gatekeeper help`  
As above.

### xConfiguration Read

When reading a value you will use the configuration read. The level of details is defined by the path:

- `xConfiguration H323 Profile 1 Gatekeeper Discovery`  
Returns the current value of the setting defined by the path.

### xConfiguration Write

When defining a system setting you will use the configuration write. The structure is described by the example to the right.

- `xConfiguration H323 Profile 1 Gatekeeper Discovery: Auto`  
Writes this value to the setting defined by the path.

#### Example with xConfiguration Help:

To get help on xConfiguration, type ? or help after the configuration path (address expression):

`xConfiguration <address expression> ?`

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

#### 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>`

```
xConfiguration H323 Profile 1 Gatekeeper Discovery
*c xConfiguration H323 Profile 1 Gatekeeper Discovery: Manual
OK
```

#### 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>`

```
xConfiguration H323 Profile 1 Gatekeeper Discovery: Auto
```

## About xCommand

xCommand type commands instructs 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:

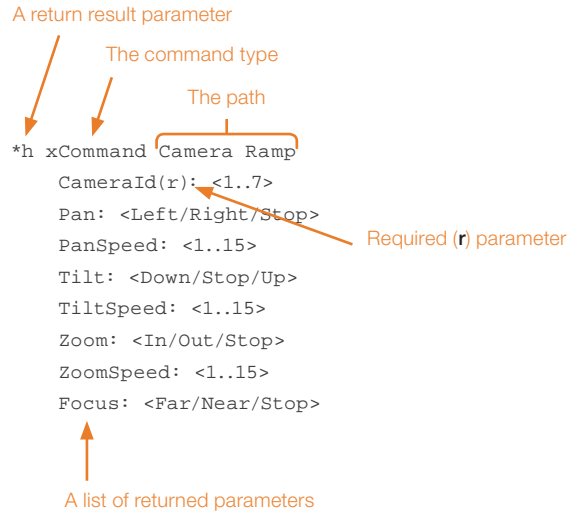
- xCommand `??`

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:



```
xCommand ?

- User Commands -

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

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.

### xCommand Write

When issuing a command, the system will return a set of return values. The structure is described by the example to the right.

- `xCommand Dial Number: 12345`  
Issues the command and gives a response. See the example to the right.

The response will by default be on the same format as the standard XACLI Status format. The XML status format is also supported.

You can read more about XML in the xPreferences section.

#### 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>
OK
```

#### Example with xCommand Write

Dial a number with only the required parameter:

```
xCommand dial number: 558458
*r Result (status=OK):
  CallRef: 1
  LogTag: 6
*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

```
xStatus ?  
  
- Status -  
  
Audio                HTTPFeedback  
Call                 MediaChannels  
Camera               Network  
Conference            SIP  
Diagnostics           SystemUnit  
Call                  Standby  
H323                  Video  
  
OK
```

## 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:jon.nordal.office@tandberg.com"
*s Call 8 DisplayName: "jon.nordal.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

```
xHistory ?
```

```
- History -
```

```
    CallLogs
```

```
OK
```



## 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.

xFeedback ?

Usage: xfeedback register <XPathExpression>

or: xfeedback deregister <XPathExpression>

or: xfeedback list

-

<examples:

"xfeedback register status/call" - to monitor all changes

"xfeedback register status/call--" - to monitor only call state changes

"xfeedback register configuration" - to monitor all configuration changes

"xfeedback register event" - to monitor all events >

OK

## 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 help`

```
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 Incorrect XPath expression, a <Fault> element with a <XPathError> element will be returned.

getxml

REQUEST:

/getxml

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:

/formputxml

PARAM:

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

REQUEST:

/putxml

PARAM:

HTTP BODY as argument

## Chapter 5

# xConfiguration type commands

This chapter gives a detailed description of the xConfiguration commands.

Configuration type commands defines 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.



In this chapter...

- ▶ Audio
- ▶ Cameras
- ▶ Conference
- ▶ Do Not Disturb
- ▶ H323 Profile
- ▶ Network
- ▶ Network Services
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- ▶ System Unit
- ▶ Time Zone
- ▶ Video
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## 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>

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

### The Audio settings

#### 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

Volum level equals Audio gain value

0 equals 0

1 equals -34.5 dB

70 equals 0.0 dB

100 equals 15.0 dB

**Example:** `xConfiguration Audio Volume: 70`

#### 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.

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

#### 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.

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

#### xConfiguration Audio Input Microphone [1..8] Level: <0..18>

Defines the input level of each microphone in steps of 1dB from 0dB to 18 dB. Addresses the specific microphone.

Please see the Audio Level labels in the Codec C90 System Integrators Guide for a complete overview of the menu values represented in dB.

Range: 0 to 18 dB

**Example:** `xConfiguration Audio Input Microphone 1 Level: 14`

#### 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 HDMI [3, 4] Mode: <On/Off>

Determines whether or not the audio channel on the HDMI input should be active. The HDMI 3 and HDMI 4 has audio channels. Addresses the specific Audio HDMI input.

On: Set to On to enable the audio channel on the HDMI input 3 or 4.

Off: Set to On to disable the audio channel on the HDMI input.

**Example:** `xConfiguration Audio Input HDMI 3 Mode: On`

#### xConfiguration Audio Input Line [1..4] Mode: <On/Off>

Determines whether or not an Audio Line input is active. 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 Line [1..4] Level: <0..18>**

Defines the input level of each Line input in steps of 1dB from 0dB to 18 dB. Addresses the specific Audio Line input.

Please see the Audio Level labels in the Codec C90 System Integrators Guide for a complete overview of the menu values represented in dB.

Range: 0 to 18 dB

**Example:** `xConfiguration Audio Input Line 1 Level: 10`

**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 3 Channel: Left`

**xConfiguration Audio Input Line [3..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. This function may be useful if a DVD player is connected to both an input and an output of the codec. If the DVD player is in stop or record mode it will loop the output signal from the codec directly back to the codec's input.

On: Set to On to activate Loop Suppression. When Loop Suppression is activated the codec will detect delayed signal loops from line output 3 to line input 3 and from line output 4 to line input 4. (Only line input 3 and 4, and line output 3 and 4 are intended connected to a DVD player in the current setup.)

Off: Set to Off to deactivate Loop Suppression. Note! Line input 1 and 2 do not support Loop Suppression, hence Loop Suppression can be set to Off only for these outputs.

**Example:** `xConfiguration Audio Input Line 3 LoopSuppression: On`

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

Determines whether or not an Audio Line output is active. 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 Output Line [1, 3] Type: <Auto/SPDIF>**

Determines if the Audio Line output is an analog or digital type output. Addresses the specified Audio Line output (1 or 3).

Auto: The system will select analog or digital (SPDIF) mode depending on the detected Audio Module. If a TANDBERG Digital NAM is detected then SPDIF mode will be selected, otherwise analog mode will be selected.

SPDIF: Set to SPDIF when you want the Audio Line 1 or 3 output to be in digital mode. This will disable Output Line 2 and 4.

**Example:** `xConfiguration Audio Output Line 1 Type: Auto`

**xConfiguration Audio Output Line [2, 4..6] Type: <Analog>**

Line output 2, 4, 5, 6 are dedicated analog outputs, hence type can be set to analog only.

**Example:** `xConfiguration Audio Output line 2 type: analog`

**xConfiguration Audio Output Line [1..6] Level: <-18..0>**

Defines the output level of the specified Audio Output Line in steps of 1dB from -18dB to 0dB. Addresses the specific Audio Line output connector.

Please see the Audio Level labels in the Codec C90 System Integrators Guide for a complete overview of the menu values represented in dB.

Range: -18 to 0 dB

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

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

Determines whether or not the audio channel on the HDMI output should be active. Addresses the specific Audio HDMI output.

On: Set to On to enable the audio channel on the HDMI 1 or HDMI 3 output.

Off: Set to On to disable the audio channel on the HDMI 1 or HDMI 3 output.

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

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

Determines whether or not the system should 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 RingVolume: <0..100>**

Defines the volume of the ring tone for an incoming call.

The ring tone volume level bar which is displayed on screen, when using the remote control, goes from 0 to 20.

Range: The ring tone volume goes from 0 to 100

Volum level equals Audio gain value

0 equals 0

1 equals -34.5 dB

70 equals 0.0 dB

100 equals 15.0 dB

**Example:** `xConfiguration Audio SoundsAndAlerts RingVolume: 50`

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

Defines the ringtone for incoming calls.

Range: Select a tone from the list of ringtones.

**Example:** `xConfiguration Audio SoundsAndAlerts RingTone: Jazz`

## The Camera settings

**xConfiguration Cameras Camera [1..7] Backlight: <On/Off>**

Backlight is used to compensate for lights shining directly at the camera (usually the sun entering the window) to avoid a too dark image from the room. Addresses the specific camera.

On: Set to On to turn on the backlight compensation.

Off: Set to Off to turn the backlight compensation off.

**Example:** `xConfiguration Cameras Camera 1 Backlight: Off`

**xConfiguration Cameras Camera [1..7] Mirror: <On/Off>**

The Mirror mode makes it possible to reverse the the video on screen. Normally you will see yourself in the same view as other people sees 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] 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] 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] Brightness Mode: <Auto/Manual>**

Define whether to control the camera brightness manually or to have it automatically adjusted by the system. Addresses the specific camera.

Auto: When set to Auto, the camera brightness is automatically set by the system.

Manual: Set to Manual to enable manual control of the camera brightness, e.g. the level of the brightness level setting will be used for the camera.

**Example:** `xConfiguration Cameras Camera 1 Brightness Mode: auto`

**xConfiguration Cameras Camera [1..7] Brightness Level: <1..31>**

Define the Brightness Level for the camera. Requires the Brightness Mode to be set to manual. Addresses the specific camera.

Range: 1-31

**Example:** `xConfiguration Cameras Camera 1 Brightness Level: 1`

**xConfiguration Cameras Camera [1..7] Whitebalance Mode: <Auto/Manual>**

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 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`

**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 Mode: <Auto/Manual>**

Applies to cameras which supports Gamma mode. The Gamma Mode setting enables for 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] 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 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`

## The Conference settings

**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 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] 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`

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

Lets you control 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] 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] 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: 766`

**The Do not disturb setting****xConfiguration 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`

**The H323 Profile settings****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, ie 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`

**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: "name.surname@company.com", "My H.323 Alias ID"

Format: String with a maximum of 49 characters

**Example:** `xConfiguration H323 Profile 1 H323Alias ID: ""`

**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. Example: "9047615901", ""550092"

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

**Example:** `xConfiguration H323 Profile 1 H323Alias E164: ""`

**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>**

Determines 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] 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`

## 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] 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 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 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 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`

**xConfiguration Network [1..1] IPv4 QoS Diffserv Signalling: <0..63>**

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.

Signalling: A recommended value is DiffServ Code Point (DSCP) AF31 which equals the value 26. If in doubt, contact your network administrator.

Range: 0-63

**Example:** `xConfiguration Network 1 IPv4 QoS Diffserv Signalling: 0`

**xConfiguration Network [1..1] IPv4 QoS Diffserv Video: <0..63>**

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.

Range: 0-63

**Example:** `xConfiguration Network 1 IPv4 QoS Diffserv Video: 0`

**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..5] Address: ""`

**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"`

## The Network services settings

**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`

**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 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 enable the SNMP network service for queries only.

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

**Example:** `xConfiguration NetworkServices SNMP Mode: ReadWrite`

**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 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: ""`

**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: ""`

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

Enter the IP 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 HostIpAddress 1: ""`

**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 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`

**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 requiring H.235 authentication. 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 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.

Format: String with a maximum of 64 characters.

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

## The Phone book settings

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

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

Format: String with a maximum of 64 characters.

**Example:** `xConfiguration Phonebook Server 1 ID: ""`

### 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.

**Example:** `xConfiguration Phonebook Server 1 URL: "http://tms.company.com/tms/public/external/phonebook/phonebook.asmx"`

## The Provisioning settings

### 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`

### xConfiguration Provisioning ExternalManager Address: <S: 0, 64>

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.

Specifies the IP Address to the External Manager/Management system.

Format: String with a maximum of 64 characters.

**Example:** `xConfiguration Provisioning ExternalManager Address: ""`

### 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 ExternalManager Path: <S: 0, 255>

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. Specifies the path to the External Manager/Management system.

Example: `tms/public/external/management/SystemManagementService.asmx`

Format: String with a maximum of 255 characters.

**Example:** `xConfiguration Provisioning ExternalManager Path: ""`

## 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: Off`



## The SIP Profile settings

### xConfiguration SIP Profile [1..1] URI [1..1]: <S: 0, 255>

The SIP URI or number is used to address the system. This is the URI that is registered and used by the SIP services to route inbound calls to the system. A Uniform Resource Identifier (URI) is a compact string of characters used to identify or name a resource.

Example: "sip:name@example.com", "1234", "1234@example.com"

Format: Compact string with a maximum of 255 characters.

**Example:** xConfiguration SIP Profile 1 URI 1: "sip:name@example.com"

### 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

### xConfiguration SIP Profile [1..1] TlsVerify: <On/Off>

For TLS connections a CA-list can be uploaded from the web interface.

On: Set to On to verify TLS connections. Only TLS connections to servers, whom x.509 certificate is validated against the CA-list, will be allowed.

Off: Set to Off to allow TLS connections without verifying them. The TLS connections are allowed to be set up without verifying the x.509 certificate received from the server against the local CA-list. This should typically be selected if no SIP CA-list has been uploaded.

**Example:** xConfiguration SIP Profile 1 TlsVerify: Off

### xConfiguration SIP Profile [1..1] Type: <Auto/Nortel/Microsoft/Cisco/Alcatel/Experimental/Avaya/Siemens>

Enables SIP extensions and special behaviour for a vendor or provider

Auto: Should be used when registering to standard SIP proxy like OpenSer.

Nortel: Must be used when registering to a Nortel MCS 5100 or MCS 5200 PBX.

Microsoft: Must be used when registering to a Microsoft LCS or OCS server.

Cisco: Must be used when registering to a Cisco CallManager version 5 or later.

Alcatel: Must be used when registering to a Alcatel-Lucent OmniPCX Enterprise R7 or later.

Siemens: Must be used when registering to a Siemens HiPath 8000.

Telio: Must be used in combination with a Telio subscription (www.telio.no).

Experimental: Can be used if auto is not working Note! This mode is for testing purposes only.

**Example:** xConfiguration SIP Profile 1 Type: Auto

### xConfiguration SIP Profile [1..1] Proxy [1..1] Discovery: <Auto/Manual>

Manual: When Manual is selected, the manually configured SIP Proxy address will be used

Auto: When Auto is selected, the SIP Proxy address is obtained using Dynamic Host Configuration Protocol (DHCP).

**Example:** xConfiguration SIP Profile 1 Proxy 1 Discovery: Manual

### xConfiguration SIP Profile [1..1] Proxy [1..1] Address: <S: 0, 255>

The Proxy Address is the manually configured address for the outbound proxy. It is possible to use a fully qualified domain name, or an IP address. The default port is 5060 for TCP and UDP but another one can be provided.

Format: Compact string with a maximum of 255 characters.

**Example:** xConfiguration SIP Profile 1 Proxy 1 Address: ""

### 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:

## The Standby settings

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

The Standby Control setting determines whether the system should go into standby mode or not.

On: The system will go into standby mode when the Standby Delay has timed out. Requires the Standby Delay to be set to an appropriate value.

Off: The system will not go into standby.

**Example:** xConfiguration Standby Control: On

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

Defines how long (in seconds) the system will wait before it goes into standby mode. Requires the Standby Control to be enabled.

Range: 1-480 seconds

**Example:** xConfiguration Standby Delay: 10



## The System unit settings

### 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"`

### 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`

## The Time zone setting

### xConfiguration Time Zone: <S: 0, 100>

Specifies the NTP time zone where the system is located. See a list of the valid NTP Time Zone expressions in the Appendices section.

Format: String with a maximum of 100 characters.

**Example:** `xConfiguration Time Zone: "Etc./UTC"`

## The Video settings

### 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: <Summersky/Growing/None>

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

Summersky, Growing: Select the wallpaper to be displayed on screen.

None: Set to None when you do not want a wallpaper to be displayed on screen.

**Example:** `xConfiguration Video Selfview: None`

### 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 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 Monitors: <Single/Dual>

The codec can be used with more than one monitor and this setting lets you set the codec's monitor layout mode to Single or Dual. The dual output is provided on HDMI output 3.

Single: The same layout is shown on all monitors.

Dual: The layout is distributed on two 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.

Range: Monitor 1-4

**Example:** xConfiguration Video OSD Output: 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..5] CameraControl CameraId: <1..5>**

Select the ID of the camera in the Visca chain that is connected to this camera source. The CameraId 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](http://www.tandberg.com/docs)

**Example:** xConfiguration Video Input Source 1 CameraControl CameraId: 1

**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 Connector: <HDMI/HDSDI/YPbPr>**

Select which video input connector to be active on connector group 1

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

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

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

DVI: Select DVI-I when you want to use the DVI-I 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

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

**xConfiguration Video Input Source 5 Connector: <YC/Composite/DVI>**

Select which video input connector to be active on connector group 5

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.

DVI: Select DVI-I when you want to use the DVI-I 5 connector as input.

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

**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 HDMI 1 Quality: Motion

**xConfiguration Video Output HDMI [1, 3] Resolution: <640\_480\_60/800\_600\_60/1024\_768\_60/1280\_1024\_60/1280\_720\_60/1920\_1080\_60/1280\_768\_60/1360\_768\_60/1366\_768\_60>**

Select the preferred resolution for the monitor connected to video output HDMI 1 or 3. This will force the selected resolution on the monitor.

Range: 640x480@60p, 800x600@60p, 1024x768@60p, 1280x1024@60p, 1280x720@60p, 1920x1080@60p, 1280x768@60p, 1360x768@60p, 1366x768@60p

**Example:** xConfiguration Video Output HDMI 1 Resolution: 1920\_1080\_60

**xConfiguration Video Output DVI [2, 4] Resolution: <640\_480\_60/800\_600\_60/1024\_768\_60/1280\_1024\_60/1280\_720\_60/1920\_1080\_60/1280\_768\_60/1360\_768\_60/1366\_768\_60>**

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.

Range: 640x480@60p, 800x600@60p, 1024x768@60p, 1280x1024@60p, 1280x720@60p, 1920x1080@60p, 1280x768@60p, 1360x768@60p, 1366x768@60p

**Example:** xConfiguration Video Output DVI 2 Resolution: 1920\_1080\_60

**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

## 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.

We recommend you visit the TANDBERG web site regularly for updated versions of the manual.

Go to: ► <http://www.tandberg.com/docs>

## Chapter 6

# xCommand type commands

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.



In this chapter...

- ▶ Audio commands
- ▶ Boot command
- ▶ Call commands
- ▶ CallLog commands
- ▶ Camera commands
- ▶ Dial command
- ▶ DTMF command
- ▶ FarEndControl commands
- ▶ HTTPFeedback commands
- ▶ Key commands
- ▶ Presentation commands
- ▶ Preset commands
- ▶ TStringSend, SStringSend
- ▶ Standby commands
- ▶ Video commands
- ▶ CamCtrlPip commands
- ▶ SystemUnit commands
- ▶ Phonebook commands
- ▶ Experimental commands

## xCommands with parameters

In the following pages you will find a complete list of all xCommand type commands with parameters.

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

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

### The Audio commands

#### xCommand Audio Microphones Mute

Mute all microphones.

Example:

```
xCommand Audio Microphones Mute
*r AudioMicrophonesMuteResult (status=OK):
*r/end
```

#### xCommand Audio Microphones Unmute

Unmute microphones.

Example:

```
xCommand Audio Microphones Unmute
*r AudioMicrophonesUnmuteResult (status=OK):
*r/end
```

### xCommand Audio LocalInput Update

Update local input settings.

Required parameters with (r):

InputId(r): <0..65534>

MixerMode: <Auto/Fixed>

AGC: <On/Off>

Mute: <On/Off>

Channels: <1..2>

#### Example:

```
xCommand Audio LocalInput Update InputId:1 AGC:off
```

OK

```
*r AudioInputGroupUpdateResult (status=OK):
```

```
*r/end
```

### xCommand Audio RemoteInput Update

Update remote input settings.

Required parameters with (r):

InputId(r): <0..65534>

AGC(r): <On/Off>

#### Example:

```
xCommand Audio RemoteInput Update InputId:37 AGC:off
```

OK

```
*r AudioRemoteInputUpdateResult (status=OK):
```

```
*r/end
```

### xCommand Audio Sound Play

Play specified audio sound.

Required parameters with (r):

Sound(r): <Busy/CallWaiting/KeyTone/Ringing/SpecialInfo/TelephoneCall/VideoCall>

Loop: <On/Off>

#### Example:

```
xCommand Audio Sound Play Sound:Ringing
```

```
*r AudioSoundPlayResult (status=OK):
```

```
*r/end
```

### xCommand Audio Sound Stop

Stop playing audio sound.

#### Example:

```
xCommand Audio Sound Stop
```

```
*r AudioSoundStopResult (status=OK):
```

```
*r/end
```

## The Boot command

### xCommand Boot

Boot 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.

Required parameters with (r):

CallId(r): <0..65534>

#### Example:

```
xCommand Call Disconnect CallId:17

OK
*r DisconnectCallResult (status=OK):
*r/end
```

### xCommand Call DisconnectAll

Disconnect all 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.

Required parameters 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.

Required parameters 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 all call logs.

#### Example:

```
xCommand CallLog Clear
```

```
*r ClearResult (status=OK):
```

```
*r/end
```

### xCommand CallLog Recent Delete

Delete log of recent calls.

Required parameters 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.

Required parameters with (r):

LogTag: <0..2147483647>

#### Example:

```
xCommand CallLog Outgoing Delete LogTag:202
```

```
*r DeleteResult (status=OK):
```

```
*r/end
```

### xCommand CallLog Received Delete

Delete log of received calls.

Required parameters 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.

Required parameters with (r):

LogTag: <0..2147483647>

#### Example:

```
xCommand CallLog Missed Delete LogTag:119
```

```
*r DeleteResult (status=OK):
```

```
*r/end
```



## The Camera commands

### xCommand Camera BestView

Activate the best view function.

Required parameters 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.

Required parameters with (r):

CameraId(r): <1..7>

Filename(r): <S: 0, 128>

#### Example:

To be described.

### xCommand Camera DirectIRControl

Camera is controlled directly from remote control. Camera does not receive control signals from codec.

Required parameters with (r):

CameraId(r): <1..7>

OnOff(r): <On/Off>

#### Example:

```
xCommand Camera DirectIRControl CameraId:1 OnOff:on
```

```
OK
```

```
*r DirectIRControlResult (status=OK):
```

```
*r/end
```

### xCommand Camera PanTiltReset

Camera pan/tilt values is positioned to predefined value.

Required parameters 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.

Required parameters 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. Camera will move at specified speed until stop command is issued.

Required parameters 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
```

### 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

OK
```

### xCommand Camera TriggerAutofocus

Trigger auto focus.

Required parameters with (r):

CameraId(r): <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.

Required parameters with (r):

Number(r): <S: 0, 255>

Protocol: <H323/Sip>

CallRate: <64..6000>

#### Example:

```
xCommand Dial Number:543210 Protocol:h323

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

## The DTMF Send command

### xCommand DTMFSend

Send DTMF tones to the far end.

Required parameters with (r):

CallId(r): <0..65534>

DTMFString(r): <S: 0, 32>

#### Example:

```
xCommand DTMFSend CallId:2 DTMFString:1234
```

```
*r DTMFSendResult (status=OK):
```

```
*r/end
```

OK

## 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.

Required parameters with (r):

CallId(r): <0..65534>

Message(r): <S: 1, 1450>

#### Example:

```
xCommand TStringSend CallId:1 Message:"This is an example"
```

```
*r TStringSendResult (status=OK):
```

```
*r/end
```

OK

## The Far End Control commands

### xCommand FarEndControl Camera Move

Move far end camera.

Required parameters with (r):

CallId(r): <0..65534>

Value(r): <Left/Right/Up/Down/ZoomIn/ZoomOut>

#### Example:

```
xCommand FarEndControl Camera Move CallId:3 Value:left
*r FECCMoveResult (status=OK):
*r/end
```

### xCommand FarEndControl Camera Stop

Stop far end control move.

Required parameters with (r):

CallId(r): <0..65534>

#### Example:

```
xCommand FarEndControl Camera Stop CallId:3
*r FECCMoveResult (status=OK):
*r/end
```

### xCommand FarEndControl Preset Activate

Activate move of far end camera to preset position.

Required parameters with (r):

CallId(r): <0..65534>

PresetId(r): <1..15>

#### Example:

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

OK
```

### xCommand FarEndControl Preset Store

Store position of far end camera.

Required parameters with (r):

CallId(r): <0..65534>

PresetId(r): <0..15>

#### Example:

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

OK
```

**xCommand FarEndControl Source Select**

To be described.

Required parameters with (r):

CallId(r): <0..65534>

PresetId(r): <0..15>

**Example:**

```
xCommand FarEndControl Source Select CallId:3 PresetId:1
*r FECCSelectSourceResult (status=OK):
*r/end

OK
```

## 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.

Required parameters with (r):

FeedbackSlot: <1..3>

ServerUrl(r): <S: 1, 256>

Expression: <S: 1, 256>

Expression: <S: 1, 256>

Expression: <S: 1, 256>

Expression: <S: 1, 256>

Expression: <S: 1, 256>

Expression: <S: 1, 256>

Expression: <S: 1, 256>

Expression: <S: 1, 256>

Expression: <S: 1, 256>

Expression: <S: 1, 256>

Expression: <S: 1, 256>

Expression: <S: 1, 256>

Expression: <S: 1, 256>

Expression: <S: 1, 256>

Expression: <S: 1, 256>

**Example:**

```
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

*r FeedbackRegisterResult (status=OK):
FeedbackSlot: 1

*r/end
```

## xCommand HttpFeedback Deregister

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

Required parameters with (r):

FeedbackSlot: <1..3>

### Example:

```
xCommand HttpFeedback Deregister FeedbackSlot:1
```

OK

```
*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.

Required parameters 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:

To be described.

### 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.

Required parameters 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:

```
xCommand Key Click Key:Home
```

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

```
*r/end
```

OK

## 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.

Required parameters 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>\nExample:
```

```
xCommand Key Release Key:Home
```

```
*r KeyReleaseResult (status=OK):
```

```
*r/end
```

```
OK
```

## 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.

Required parameters with (r):

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.

Required parameters 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.

Required parameters 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).

Required parameters 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).

Required parameters 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
```

OK

## The Standby commands

### xCommand Standby Activate

Set system in standby mode.

#### Example:

```
xCommand Standby Activate
```

```
*r ActivateResult (status=OK):
```

```
*r/end
```

OK

### xCommand Standby Deactivate

Bring system out of standby mode.

#### Example:

```
xCommand Standby Deactivate
```

```
*r DeactivateResult (status=OK):
```

```
*r/end
```

OK

### xCommand Standby ResetTimer

System will enter standby mode after time specified by Delay parameter.

Required parameters with (r):

Delay: <1..480>

#### Example:

```
xCommand Standby ResetTimer Delay:10
```

```
*r ResetResult (status=OK):
```

```
*r/end
```

OK

## The Video command

### xCommand Video PictureLayoutSet

Select screen layout mode.

Required parameters with (r):

LayoutFamily(r): <auto/equal/fullscreen/presentationlargespeaker/  
presentationssmallspeaker>

#### Example:

```
xCommand Video PictureLayoutSet LayoutFamily:equal
*r SetPictureLayoutResult (status=OK):
*r/end
```

OK

## The CamCtrlPip command

### xCommand CamCtrlPip

To be described.

Required parameters with (r):

Mode(r): <On/Off>

#### Example:

To be described.

## The System Unit commands

### xCommand SystemUnit OptionKey Add

Add option key to add extra system capabilities, e.g. Multisite.

Required parameters with (r):

Key(r): <S: 16, 24>

#### Example:

```
xCommand SystemUnit OptionKey Add Key:*****
*r OptionKeyResult (status=OK):
*r/end
```

OK

### xCommand SystemUnit ReleaseKey Add

Add software release key. Used to enable new software (applicable for main sw releases).

Required parameters 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.

Required parameters with (r):

Password(r): <S: 0, 255>

#### Example:

```
xCommand SystemUnit AdminPassword Set Password:*****
*r AdminPasswordSetResult (status=OK):
*r/end
```

OK

### xCommand SystemUnit MenuPassword Set

Set password needed to access advanced menu settings.

Required parameters with (r):

Password(r): <S: 0, 255>

#### Example:

```
xCommand SystemUnit MenuPassword Set Password:*****
*r MenuPasswordSetResult (status=OK):
*r/end
```

OK

### xCommand SystemUnit MenuPassword Validate

Validate that supplied password is correct.

Required parameters with (r):

Password(r): <S: 0, 255>

#### Example:

```
xCommand SystemUnit MenuPassword Validate Password:*****
```

```
*r MenuPasswordValidateResult (status=OK):
```

```
*r/end
```

OK

### The Phone book commands

#### xCommand Phonebook Contact Add

Add new contact to local phonebook. Stored internally in system.

Required parameters with (r):

ContactType(r): <Group/Person/System/Room/Other>

DisplayName(r): <S: 0, 255>

ImageUrl: <S: 0, 255>

ParentGroupId: <S: 0, 255>

#### Example:

```
xCommand Phonebook Contact Add ContactType:Person DisplayName:John.Smith
```

OK

```
*r LpbAddContactResult (status=OK):
```

```
Name: localContactId-1
```

```
*r/end
```

**xCommand Phonebook Contact Modify**

Modify existing contact in local phonebook.

Required parameters with (r):

ContactId(r): <S: 0, 255>

ContactType: <Group/Person/System/Room/Other>

DisplayName: <S: 0, 255>

ImageUrl: <S: 0, 255>

ParentGroupId: <S: 0, 255>

**Example:**

```
xCommand Phonebook Contact Modify ContactId:localContactId-1
  DisplayName:john.smith.office
```

OK

```
*r LpbModContactResult (status=OK):
```

```
*r/end
```

**xCommand Phonebook Contact Delete**

Delete contact from local phonebook.

Required parameters with (r):

ContactId(r): <S: 0, 255>

**Example:**

```
xCommand Phonebook Contact Delete ContactId:localContactId-1
```

OK

```
*r LpbDelContactResult (status=OK):
```

```
*r/end
```

**xCommand Phonebook ContactMethod Add**

Specify details about how to set up call to local phonebook contact.

Required parameters with (r):

ContactId(r): <S: 0, 255>

GroupId: <S: 0, 255>

Type: <S: 0, 255>

Number(r): <S: 0, 255>

Protocol(r): <S: 0, 255>

CallRate: <0..65534>

**Example:**

```
xCommand Phonebook ContactMethod Add ContactId:localContactId-2 Number:54321
  Protocol:H323
```

OK

```
*r LpbAddContactMethodResult (status=OK):
```

```
Name: 1
```

```
*r/end
```

**xCommand Phonebook ContactMethod Delete**

Delete call setup details for local phonebook contact.

Required parameters with (r):

ContactId(r): <S: 0, 255>

ID(r): <S: 0, 255>

**Example:**

```
xCommand Phonebook ContactMethod Delete ContactId:localContactId-2 ID:1
```

OK

```
*r LpbDelContactMethodResult (status=OK):
```

```
*r/end
```

### xCommand Phonebook Group Add

Add a local phonebook group (used to group phonebook contacts).

Required parameters with (r):

DisplayName(r): <S: 0, 255>

Number: <S: 0, 255>

Description: <S: 0, 255>

ParentGroupId: <S: 0, 255>

#### Example:

```
xCommand Phonebook Group Add GroupId:TestDept DisplayName:TestDept
  Description:Test
```

OK

```
*r LpbAddGroupResult (status=OK):
```

```
Name: localGroupId-3
```

```
*r/end
```

### xCommand Phonebook Group Modify

Modify details about local phonebook group.

Required parameters with (r):

GroupId(r): <S: 0, 255>

DisplayName: <S: 0, 255>

Number: <S: 0, 255>

Description: <S: 0, 255>

ParentGroupId: <S: 0, 255>

#### Example:

```
xCommand Phonebook Group Modify GroupId:localGroupId-3 DisplayName:QaDept
```

OK

```
*r LpbModGroupResult (status=OK):
```

```
*r/end
```

### xCommand Phonebook Group Delete

Delete local phonebook group.

Required parameters with (r):

GroupId(r): <S: 0, 255>

#### Example:

```
xCommand Phonebook Group Delete GroupId:localGroupId-3
```

OK

```
*r LpbDelGroupResult (status=OK):
```

```
*r/end
```

## xCommand Phonebook Search

To be described.

Required parameters with (r):

PhonebookId: <S: 0, 255>

SearchString(r): <S: 0, 255>

SearchType: <Default/T9/WordStart>

SearchFields: <S: 0, 255>

ContactTypes: <S: 0, 255>

OrderBy: <S: 0, 255>

SortOrder: <Ascending/Descending>

Offset: <0..65534>

GroupId: <S: 0, 255>

Limit: <0..65534>

Recursive: <False/True>

### Example:

To be described.

## xCommand Phonebook SearchDetails

To be described.

Required parameters with (r):

PhonebookId: <S: 0, 255>

ContactId(r): <S: 0, 255>

### Example:

To be described.



## The Experimental menu

The Experimental commands can be used 'as is' and will not be further documented.

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

We recommend you visit the TANDBERG web site regularly for updated versions of the manual.

Go to: ► <http://www.tandberg.com/docs>

### xCommand Experimental Audio LocalInput Add

Required parameters with (r):

Name: <S: 0, 255>

MixerMode: <Auto/Fixed>

AGC: <On/Off>

Mute: <On/Off>

Channels: <1..2>

### xCommand Experimental Audio LocalInput Remove

Required parameters with (r):

InputId(r): <0..65534>

### xCommand Experimental Audio LocalInput AddConnector

Required parameters with (r):

InputId(r): <0..65534>

ConnectorType(r): <HDMI/Line/Microphone>

ConnectorId(r): <1..8>

### xCommand Experimental Audio LocalInput RemoveConnector

Required parameters with (r):

InputId(r): <0..65534>

ConnectorType(r): <HDMI/Line/Microphone>

ConnectorId(r): <1..8>

### xCommand Experimental Audio LocalOutput Add

Required parameters with (r):

Name: <S: 0, 255>

Loudspeaker: <False/True>

Channels: <1..2>

### xCommand Experimental Audio LocalOutput Update

Required parameters with (r):

OutputId(r): <0..65534>

Loudspeaker(r): <False/True>

Channels: <1..2>

### xCommand Experimental Audio LocalOutput Remove

Required parameters with (r):

OutputId(r): <0..65534>

### xCommand Experimental Audio LocalOutput AddConnector

Required parameters with (r):

OutputId(r): <0..65534>

ConnectorType(r): <HDMI/Line>

ConnectorId(r): <1..8>

### xCommand Experimental Audio LocalOutput RemoveConnector

Required parameters with (r):

OutputId(r): <0..65534>

ConnectorType(r): <HDMI/Line>

ConnectorId(r): <1..8>

**NOTE!** The Experimental commands can be used 'as is' and WILL change.

### xCommand Experimental Audio LocalOutput ConnectInput

Required parameters with (r):

OutputId(r): <0..65534>

InputId(r): <0..65534>

### xCommand Experimental Audio LocalOutput DisconnectInput

Required parameters with (r):

OutputId(r): <0..65534>

InputId(r): <0..65534>

### xCommand Experimental Audio RemoteOutput Update

Required parameters with (r):

OutputId(r): <0..65534>

### xCommand Experimental Audio RemoteOutput ConnectInput

Required parameters with (r):

OutputId(r): <0..65534>

InputId(r): <0..65534>

### xCommand Experimental Audio RemoteOutput DisconnectInput

Required parameters with (r):

OutputId(r): <0..65534>

InputId(r): <0..65534>

### xCommand Experimental Video Layout Add

### xCommand Experimental Video Layout Remove

Required parameters with (r):

LayoutId(r): <1..2147483647>

### xCommand Experimental Video Layout RemoveAll

### xCommand Experimental Video Layout Frame Add

Required parameters with (r):

LayoutId(r): <1..2147483647>

PositionX(r): <0..10000>

PositionY(r): <0..10000>

Width(r): <1..10000>

Height(r): <1..10000>

Layer(r): <1..5>

VideoSourceType(r): <graphic/localInput/localMain/localPresentation/  
mostSpeaking/otherMain/ownMain/presentation/remoteMain/  
remotePresentation/videoFile>

VideoSourceId: <0..256>

### xCommand Experimental Video Layout Frame Remove

Required parameters with (r):

LayoutId(r): <1..2147483647>

FrameId(r): <1..65535>

**NOTE!** The Experimental commands can be used 'as is' and WILL change.

### xCommand Experimental Video Layout Frame Update

Required parameters 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>

VideoSourceType(r): <graphic/localInput/localMain/localPresentation/  
mostSpeaking/otherMain/ownMain/presentation/remoteMain/  
remotePresentation/videoFile>

VideoSourceId: <0..256>

### xCommand Experimental Video Layout Assign

Required parameters with (r):

SiteId(r): <0..65534>

OutputId(r): <0..65534>

LayoutId(r): <1..2147483647>

### xCommand Experimental Video Layout UnAssign

Required parameters with (r):

SiteId(r): <0..65534>

OutputId(r): <0..65534>

### xCommand Experimental Camera DirectIRControl

Required parameters with (r):

CameraId(r): <1..7>

OnOff(r): <On/Off>

### xCommand Experimental SetLowLevel

Required parameters with (r):

Mode(r): <On/Off>

### xCommand Experimental SetExperiaMode

Required parameters with (r):

Mode(r): <On/Off>

## Chapter 7

# xStatus type commands

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
- ▶ HTTPFeedback 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.

We recommend you visit the TANDBERG web site regularly for updated versions of the manual.

Go to: ► <http://www.tandberg.com/docs>

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

### Examples of returned status information

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

In this section the examples shows the returned information when running the full xStatus command.

**Example 1:** Query only the microphone 1 activity status

```
xStatus Audio Input Connectors Microphone 1 Activity
*s Audio Input Connectors Microphone 1 Activity: False
OK
```

**Example 2:** Query all connectors status

```
xStatus Audio Input Connectors
*s Audio Input Connectors Microphone 1 Activity: True
*s Audio Input Connectors Microphone 2 Activity: False
*s Audio Input Connectors Microphone 3 Activity: False
*s Audio Input Connectors Microphone 4 Activity: False
*s Audio Input Connectors Microphone 5 Activity: False
*s Audio Input Connectors Microphone 6 Activity: False
*s Audio Input Connectors Microphone 7 Activity: False
*s Audio Input Connectors Microphone 8 Activity: False
*s Audio Input Connectors Line 1 Activity: True
*s Audio Input Connectors Line 2 Activity: False
*s Audio Input Connectors Line 3 Activity: False
*s Audio Input Connectors Line 4 Activity: False
*s Audio Input Connectors HDMI 3 Activity: False
*s Audio Input Connectors HDMI 4 Activity: False
OK
```

### The Audio status

#### xStatus Audio Microphones Mute

States whether all microphones are muted or unmuted

**Value space:** On, Off

**Default value:** Off

**Example:** \*s Audio Microphones Mute: On

#### xStatus Audio Volume

States the volume level of the loudspeaker output

**Value space:** 0..100

**Default value:** 70

**Example:** \*s Audio Volume: 0

#### xStatus Audio Input Connectors Microphone [1..8] Activity

States whether there is a signal on the connector

**Value space:** True/False

**Default value:** False

**Example:** \*s Audio Input Connectors Microphone 3 Activity: False

#### xStatus Audio Input Connectors Line [1..4] Activity

States whether there is a signal on the connector

**Value space:** True/False

**Default value:** False

**Example:** \*s Audio Input Connectors Line 1 Activity: False

#### xStatus Audio Input Connectors HDMI [3, 4] Activity

States whether there is a signal on the connector

**Value space:** True/False

**Default value:** False

**Example:** \*s Audio Input Connectors HDMI 3 Activity: False

**xStatus Audio Input LocalInput [1..n] Name**

States the name of the LocalInput with InputId n

**Value space:** S: 0..100

**Default value:** N/A

**Example:** \*s Audio Input LocalInput 1 Name: "Microphone"

**xStatus Audio Input LocalInput [1..n] MixerMode**

A LocalInput is a group of connectors mixed together by the stated mixermode

**Value space:** Auto/Fixed

**Default value:** N/A

**Example:** \*s Audio Input LocalInput 1 MixerMode: "Auto"

**xStatus Audio Input LocalInput [1..n] Mute**

States whether the LocalInput is muted

**Value space:** On/Off

**Default value:** N/A

**Example:** \*s Audio Input LocalInput 1 Mute: "Off"

**xStatus Audio Input LocalInput [1..n] Channels**

States whether the LocalInput is a mono or multichannel signal

**Value space:** 1..2

**Default value:** N/A

**Example:** \*s Audio Input LocalInput 1 Channels: 1

**xStatus Audio Input LocalInput [1..n] AGC**

States whether Automatic Gain Control is enabled on the LocalInput

**Value space:** On/Off

**Default value:** N/A

**Example:** \*s Audio Input LocalInput 1 AGC: "On"

**xStatus Audio Input LocalInput [1..n] Connector**

States the connectors mixed together in the LocalInput

**Value space:** Microphone/Line/HDMI.1..8

**Default value:** N/A

**Example:** \*s Audio Input LocalInput 1 Connector: "Microphone.1"

**xStatus Audio Input RemoteInput [1..n] CallId**

The remote audio input belongs to call with this id

**Value space:** Integer value

**Default value:** N/A

**Example:** \*s Audio Input RemoteInput 23 CallId: 11

**xStatus Audio Input RemoteInput [1..n] AGC**

States whether Automatic Gain Control is enabled on the RemoteInput

**Value space:** On/Off

**Default value:** N/A

**Example:** \*s Audio Input RemoteInput 23 AGC: "Off"

## The Call status

**xStatus Call [1..n] Status**

Status of call.

**Value space:** Dialling/Connecting/Ringing/Connected/Idle

**Default value:** N/A

**Example:** \*s Call 11 Status: Connected

**xStatus Call [1..n] Direction**

Direction of call initiation.

**Value space:** Incoming/Outgoing

**Default value:** N/A

**Example:** \*s Call 11 Direction: Outgoing

**xStatus Call [1..n] Protocol**

Call protocol. H323 or SIP.

**Value space:** H323/SIP

**Default value:** N/A

**Example:** \*s Call 11 Protocol: "h323"

**xStatus Call [1..n] RemoteNumber**

Far end site dial number.

**Value space:** S: 0..100

**Default value:** N/A

**Example:** \*s Call 11 RemoteNumber: "5585232"

**xStatus Call [1..n] CallbackNumber**

Far end site dial number. Includes call protocol.

**Value space:** S: 0..100

**Default value:** N/A

**Example:** \*s Call 11 CallbackNumber: "h323:john.office@acme.com"

**xStatus Call [1..n] DisplayName**

Name to display for far end site.

**Value space:** S: 0..100

**Default value:** N/A

**Example:** \*s Call 11 DisplayName: "john.office@acme.com"

**xStatus Call [1..n] CallRate**

Call bandwidth in kilobits per second.

**Value space:** Integer value

**Default value:** N/A

**Example:** \*s Call 11 CallRate: 768

**xStatus Call [1..n] Encryption Type**

Encryption standard.

**Value space:** None/Aes-128

**Default value:** N/A

**Example:** \*s Call 11 Encryption Type: "None"

## The Camera status

**xStatus Camera [1..7] Connected**

Indicates whether the given camera is connected or not.

**Value space:** True/False

**Default value:** False

**Example:** \*s Camera 1 Connected: True

**xStatus Camera [1..7] HardwareID**

States the hardware id of the camera.

**Value space:** S: 0..100

**Default value:** N/A

**Example:** \*s Camera 1 HardwareID: "50000000"

**xStatus Camera [1..7] Manufacturer**

States the manufacturer of the camera.

**Value space:** S: 0..100

**Default value:** N/A

**Example:** \*s Camera 1 Manufacturer: "Tandberg"

**xStatus Camera [1..7] Model**

States the camera model.

**Value space:** S: 0..100

**Default value:** N/A

**Example:** \*s Camera 1 Model: "Rover"

**xStatus Camera [1..7] SoftwareID**

States the software id of the camera.

**Value space:** S: 0..100

**Default value:** N/A

**Example:** \*s Camera 1 SoftwareID: "S01718-4.0FINAL [ID:40020] 2008-11-10"

**xStatus Camera [1..7] Position Pan**

Current pan position. Value range depends on camera type.

Value space: -65535..65535

Default value: N/A

Example: \*s Camera 1 Position Pan: 514

**xStatus Camera [1..7] Position Tilt**

Current tilt position. Value range depends on camera type.

Value space: -65535..65535

Default value: N/A

Example: \*s Camera 1 Position Tilt: 142

**xStatus Camera [1..7] Position Zoom**

Current zoom position. Value range depends on camera type.

Value space: 0..65535

Default value: N/A

Example: \*s Camera 1 Position Zoom: 1636

**xStatus Camera [1..7] Position Focus**

Current focus position. Value range will depend on camera type.

Value space: 0..65535

Default value: N/A

Example: \*s Camera 1 Position Focus: 4474

## The Conference status

**xStatus Conference Presentation Mode**

Secondary video stream status.

Value space: Off, Sending, Receiving

Default value: N/A

Example: \*s Conference Presentation Mode: Off

**xStatus Conference Presentation Resolution Height**

Current resolution height for presentation.

Value space: 0..3000

Default value: N/A

Example: \*s Conference Presentation Resolution Height: 0

**xStatus Conference Presentation Resolution Width**

Current resolution width for presentation.

Value space: 0..4000

Default value: N/A

Example: \*s Conference Presentation Resolution Width: 0

**xStatus Conference Presentation SiteId**

Id of site currently sending presentation.

Value space: 0..65535

Default value: N/A

Example: \*s Conference Presentation SiteId: 0

**xStatus Conference Presentation LocalSource**

Local video source that will be used when presentation is sent from local site.

Value space: 1..5

Default value: N/A

Example: \*s Conference Presentation LocalSource: 0

**xStatus Conference Site [1..n] MicrophonesMuted**

Lists audio mute status for other sites participating in conference.

Value space: True/False

Default value: N/A

Example: \*s Conference Site 12 MicrophonesMuted: True



The Diagnostics Call status

#### xStatus Diagnostics Call [1..n] Channels IncomingAudioChannel [1..n] Netstat 1 Jitter

Current jitter as specified by RFC3550.

**Value space:** Integer value

**Default value:** N/A

**Example:** \*s Diagnostics Call 11 Channels IncomingAudioChannel 168 Netstat 1 Jitter: 0

#### xStatus Diagnostics Call [1..n] Channels IncomingAudioChannel [1..n] Netstat 1 Packets

Number of packets received in this media channel.

**Value space:** Integer value

**Default value:** N/A

**Example:** \*s Diagnostics Call 11 Channels IncomingAudioChannel 168 Netstat 1 Packets: 405

#### xStatus Diagnostics Call [1..n] Channels IncomingAudioChannel [1..n] Netstat 1 Loss

Packets lost in this media channel.

**Value space:** Integer value

**Default value:** N/A

**Example:** \*s Diagnostics Call 11 Channels IncomingAudioChannel 168 Netstat 1 Loss: 96

#### xStatus Diagnostics Call [1..n] Channels IncomingAudioChannel [1..n] Netstat 1 Drop

Packets dropped in this media channel.

**Value space:** Integer value

**Default value:** N/A

**Example:** \*s Diagnostics Call 11 Channels IncomingAudioChannel 168 Netstat 1 Drop: 0

#### xStatus Diagnostics Call [1..n] Channels IncomingAudioChannel [1..n] Netstat 1 Bytes

Number of bytes received in this media channel.

**Value space:** Integer value

**Default value:** N/A

**Example:** \*s Diagnostics Call 11 Channels IncomingAudioChannel 168 Netstat 1 Bytes: 129920

#### xStatus Diagnostics Call [1..n] Channels IncomingAudioChannel [1..n] Netstat 1 ChannelRate

Current bandwidth for this media channel.

**Value space:** Integer value

**Default value:** N/A

**Example:** \*s Diagnostics Call 11 Channels IncomingAudioChannel 168 Netstat 1 ChannelRate: 128000

#### 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

**Default value:** N/A

**Example:** \*s Diagnostics Call 11 Channels IncomingAudioChannel 168 Netstat 1 MaxJitter: 0

#### xStatus Diagnostics Call [1..n] Channels IncomingVideoChannel [1..n] Netstat 1 Jitter

Current jitter as specified by RFC3550.

**Value space:** Integer value

**Default value:** N/A

**Example:** \*s Diagnostics Call 11 Channels IncomingVideoChannel 171 Netstat 1 Jitter: 6

#### xStatus Diagnostics Call [1..n] Channels IncomingVideoChannel [1..n] Netstat 1 Packets

Number of packets received in this media channel.

**Value space:** Integer value

**Default value:** N/A

**Example:** \*s Diagnostics Call 11 Channels IncomingVideoChannel 171 Netstat 1 Packets: 38699

#### xStatus Diagnostics Call [1..n] Channels IncomingVideoChannel [1..n] Netstat 1 Loss

Packets lost in this media channel.

**Value space:** Integer value

**Default value:** N/A

**Example:** \*s Diagnostics Call 11 Channels IncomingVideoChannel 171 Netstat 1 Loss: 0

**xStatus Diagnostics Call [1..n] Channels IncomingVideoChannel [1..n] Netstat 1 Drop**

Packets dropped in this media channel.

**Value space:** Integer value

**Default value:** N/A

**Example:** \*s Diagnostics Call 11 Channels IncomingVideoChannel 174 Netstat 1 Drop:  
0

**xStatus Diagnostics Call [1..n] Channels IncomingVideoChannel [1..n] Netstat 1 Bytes**

Number of bytes received in this media channel.

**Value space:** Integer value

**Default value:** N/A

**Example:** \*s Diagnostics Call 11 Channels IncomingVideoChannel 174 Netstat 1  
Bytes: 0

**xStatus Diagnostics Call [1..n] Channels IncomingVideoChannel [1..n] Netstat 1 ChannelRate**

Current bandwidth for this media channel.

**Value space:** Integer value

**Default value:** N/A

**Example:** \*s Diagnostics Call 11 Channels IncomingVideoChannel 174 Netstat 1  
ChannelRate: 0

**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

**Default value:** N/A

**Example:** \*s Diagnostics Call 11 Channels IncomingVideoChannel 174 Netstat 1  
MaxJitter: 0

**xStatus Diagnostics Call [1..n] Channels IncomingDataChannel [1..n] Netstat 1 Jitter**

Current jitter as specified by RFC3550.

**Value space:** Integer value

**Default value:** N/A

**Example:** \*s Diagnostics Call 11 Channels IncomingDataChannel 176 Netstat 1  
Jitter: 0

**xStatus Diagnostics Call [1..n] Channels IncomingDataChannel [1..n] Netstat 1 Packets**

Number of packets received in this media channel.

**Value space:** Integer value

**Default value:** N/A

**Example:** \*s Diagnostics Call 11 Channels IncomingDataChannel 176 Netstat 1  
Packets: 10

**xStatus Diagnostics Call [1..n] Channels IncomingDataChannel [1..n] Netstat 1 Loss**

Packets lost in this media channel.

**Value space:** Integer value

**Default value:** N/A

**Example:** \*s Diagnostics Call 11 Channels IncomingDataChannel 176 Netstat 1 Loss:  
0

**xStatus Diagnostics Call [1..n] Channels IncomingDataChannel [1..n] Netstat 1 Drop**

Packets dropped in this media channel.

**Value space:** Integer value

**Default value:** N/A

**Example:** \*s Diagnostics Call 11 Channels IncomingDataChannel 176 Netstat 1 Drop:  
0

**xStatus Diagnostics Call [1..n] Channels IncomingDataChannel [1..n] Netstat 1 Bytes**

Number of bytes received in this media channel.

**Value space:** Integer value

**Default value:** N/A

**Example:** \*s Diagnostics Call 11 Channels IncomingDataChannel 176 Netstat 1 Bytes:  
263

**xStatus Diagnostics Call [1..n] Channels IncomingDataChannel [1..n] Netstat 1 ChannelRate**

Current bandwidth for this media channel.

**Value space:** Integer value

**Default value:** N/A

**Example:** \*s Diagnostics Call 11 Channels IncomingDataChannel 176 Netstat 1  
ChannelRate: 0

**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

**Default value:** N/A

**Example:** \*s Diagnostics Call 11 Channels IncomingDataChannel 176 Netstat 1 MaxJitter: 0

**xStatus Diagnostics Call [1..n] Channels OutgoingAudioChannel [1..n] Netstat 1 Jitter**

Current jitter as specified by RFC3550.

**Value space:** Integer value

**Default value:** N/A

**Example:** \*s Diagnostics Call 11 Channels OutgoingAudioChannel 169 Netstat 1 Jitter: 0

**xStatus Diagnostics Call [1..n] Channels OutgoingAudioChannel [1..n] Netstat 1 Packets**

Number of packets received in this media channel.

**Value space:** Integer value

**Default value:** N/A

**Example:** \*s Diagnostics Call 11 Channels OutgoingAudioChannel 169 Netstat 1 Packets: 24000

**xStatus Diagnostics Call [1..n] Channels OutgoingAudioChannel [1..n] Netstat 1 Loss**

Packets lost in this media channel.

**Value space:** Integer value

**Default value:** N/A

**Example:** \*s Diagnostics Call 11 Channels OutgoingAudioChannel 169 Netstat 1 Loss: 0

**xStatus Diagnostics Call [1..n] Channels OutgoingAudioChannel [1..n] Netstat 1 Drop**

Packets dropped in this media channel.

**Value space:** Integer value

**Default value:** N/A

**Example:** \*s Diagnostics Call 11 Channels OutgoingAudioChannel 169 Netstat 1 Drop: 0

**xStatus Diagnostics Call [1..n] Channels OutgoingAudioChannel [1..n] Netstat 1 Bytes**

Number of bytes sent in this media channel.

**Value space:** Integer value

**Default value:** N/A

**Example:** \*s Diagnostics Call 11 Channels OutgoingAudioChannel 169 Netstat 1 Bytes: 7653930

**xStatus Diagnostics Call [1..n] Channels OutgoingAudioChannel [1..n] Netstat 1 ChannelRate**

Current bandwidth for this media channel.

**Value space:** Integer value

**Default value:** N/A

**Example:** \*s Diagnostics Call 11 Channels OutgoingAudioChannel 169 Netstat 1 ChannelRate: 127000

**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

**Default value:** N/A

**Example:** \*s Diagnostics Call 11 Channels OutgoingAudioChannel 169 Netstat 1 MaxJitter: 0

**xStatus Diagnostics Call [1..n] Channels OutgoingVideoChannel [1..n] Netstat 1 Jitter**

Current jitter as specified by RFC3550.

**Value space:** Integer value

**Default value:** N/A

**Example:** \*s Diagnostics Call 11 Channels OutgoingVideoChannel 172 Netstat 1 Jitter: 1

**xStatus Diagnostics Call [1..n] Channels OutgoingVideoChannel [1..n] Netstat 1 Packets**

Number of packets received in this media channel.

**Value space:** Integer value

**Default value:** N/A

**Example:** \*s Diagnostics Call 11 Channels OutgoingVideoChannel 172 Netstat 1 Packets: 43096

**xStatus Diagnostics Call [1..n] Channels OutgoingVideoChannel [1..n] Netstat 1 Loss**

Packets lost in this media channel.

**Value space:** Integer value

**Default value:** N/A

**Example:** \*s Diagnostics Call 11 Channels OutgoingVideoChannel 172 Netstat 1 Loss: 0

**xStatus Diagnostics Call [1..n] Channels OutgoingVideoChannel [1..n] Netstat 1 Drop**

Packets dropped in this media channel.

**Value space:** Integer value

**Default value:** N/A

**Example:** \*s Diagnostics Call 11 Channels OutgoingVideoChannel 172 Netstat 1 Drop: 0

**xStatus Diagnostics Call [1..n] Channels OutgoingVideoChannel [1..n] Netstat 1 Bytes**

Number of bytes sent in this media channel.

**Value space:** Integer value

**Default value:** N/A

**Example:** \*s Diagnostics Call 11 Channels OutgoingVideoChannel 172 Netstat 1 Bytes: 39111160

**xStatus Diagnostics Call [1..n] Channels OutgoingVideoChannel [1..n] Netstat 1 ChannelRate**

Current bandwidth for this media channel.

**Value space:** Integer value

**Default value:** N/A

**Example:** \*s Diagnostics Call 11 Channels OutgoingVideoChannel 172 Netstat 1 ChannelRate: 652000

**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

**Default value:** N/A

**Example:** \*s Diagnostics Call 11 Channels OutgoingVideoChannel 172 Netstat 1 MaxJitter: 1

**xStatus Diagnostics Call [1..n] Channels OutgoingDataChannel [1..n] Netstat 1 Jitter**

Current jitter as specified by RFC3550.

**Value space:** Integer value

**Default value:** N/A

**Example:** \*s Diagnostics Call 11 Channels OutgoingDataChannel 177 Netstat 1 Jitter: 0

**xStatus Diagnostics Call [1..n] Channels OutgoingDataChannel [1..n] Netstat 1 Packets**

Number of packets received in this media channel.

**Value space:** Integer value

**Default value:** N/A

**Example:** \*s Diagnostics Call 11 Channels OutgoingDataChannel 177 Netstat 1 Packets: 2

**xStatus Diagnostics Call [1..n] Channels OutgoingDataChannel [1..n] Netstat 1 Loss**

Packets lost in this media channel.

**Value space:** Integer value

**Default value:** N/A

**Example:** \*s Diagnostics Call 11 Channels OutgoingDataChannel 177 Netstat 1 Loss: 0

**xStatus Diagnostics Call [1..n] Channels OutgoingDataChannel [1..n] Netstat 1 Drop**

Packets dropped in this media channel.

**Value space:** Integer value

**Default value:** N/A

**Example:** \*s Diagnostics Call 11 Channels OutgoingDataChannel 177 Netstat 1 Drop: 0

**xStatus Diagnostics Call [1..n] Channels OutgoingDataChannel [1..n] Netstat 1 Bytes**

Number of bytes sent in this media channel.

**Value space:** Integer value

**Default value:** N/A

**Example:** \*s Diagnostics Call 11 Channels OutgoingDataChannel 177 Netstat 1 Bytes: 107

**xStatus Diagnostics Call [1..n] Channels OutgoingDataChannel [1..n] Netstat 1 ChannelRate**

Current bandwidth for this media channel.

**Value space:** Integer value

**Default value:** N/A

**Example:** \*s Diagnostics Call 11 Channels OutgoingDataChannel 177 Netstat 1 ChannelRate: 0

**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

**Default value:** N/A

**Example:** \*s Diagnostics Call 11 Channels OutgoingDataChannel 177 Netstat 1 MaxJitter: 0

**xStatus H323 Gatekeeper Status**

Gatekeeper registration status.

**Value space:** Registered/Inactive/Rejected

**Default value:** N/A

**Example:** \*s H323 Gatekeeper Status: Registered

## The H323 Gatekeeper status

**xStatus H323 Gatekeeper Address**

Address of gatekeeper this system is registered against.

**Value space:** S: 0..100

**Default value:** N/A

**Example:** \*s H323 Gatekeeper Address: "10.47.1.83"

**xStatus H323 Gatekeeper Port**

The port to connect to on gatekeeper.

**Value space:** Integer value

**Default value:** N/A

**Example:** \*s H323 Gatekeeper Port: 1719

**xStatus H323 Gatekeeper Reason**

Reason for rejected registration.

**Value space:** S: 0..100

**Default value:** N/A

**Example:** \*s H323 Gatekeeper Reason: ""

## The HTTPFeedback status

**xStatus HttpFeedback [1..3] URL**

Three different servers, specified by URL, can register feedback expressions on this system.

**Value space:** S: 0..100

**Default value:** N/A

**Example:** URL: "http://tms.acme.com/tms/public/feedback/code.aspx"

**xStatus HttpFeedback [1..3] Expression**

A set of 15 feedback expressions can be registered for each URL.

**Value space:** S: 0..256

**Default value:** N/A

**Example:** Expression 1: "/History/Call"

## The Media channels call status

**xStatus MediaChannels Call [1..n] IncomingAudioChannel [1..n] Encryption Status**

Encryption status on media channel.

**Value space:** On/off

**Default value:** N/A

**Example:** \*s MediaChannels Call 11 IncomingAudioChannel 181 Encryption Status: Off

**xStatus MediaChannels Call [1..n] IncomingAudioChannel [1..n] Audio Protocol**

Audio algorithm.

**Value space:** AACLD, G722, G7221, G711Mu

**Default value:** N/A

**Example:** \*s MediaChannels Call 11 IncomingAudioChannel 181 Audio Protocol: AACLD

**xStatus MediaChannels Call [1..n] IncomingAudioChannel [1..n] Audio Mute**

Audio mute status of incoming audio.

**Value space:** True/False

**Default value:** N/A

**Example:** \*s MediaChannels Call 11 IncomingAudioChannel 181 Audio Mute: True

**xStatus MediaChannels Call [1..n] IncomingAudioChannel [1..n] Audio Channels**

Number of audio channels.

**Value space:** Integer value

**Default value:** N/A

**Example:** \*s MediaChannels Call 11 IncomingAudioChannel 181 Audio Channels: 1

**xStatus MediaChannels Call [1..n] IncomingVideoChannel [1..n] Encryption Status**

Encryption status on media channel.

**Value space:** On/Off

**Default value:** N/A

**Example:** \*s MediaChannels Call 11 IncomingVideoChannel 184 Encryption Status: off

**xStatus MediaChannels Call [1..n] IncomingVideoChannel [1..n] ChannelRole**

Main video channel or presentation video channel.

**Value space:** Main/Presentation

**Default value:** N/A

**Example:** \*s MediaChannels Call 11 IncomingVideoChannel 184 ChannelRole: Main

**xStatus MediaChannels Call [1..n] IncomingVideoChannel [1..n] Video Protocol**

Video algorithm.

**Value space:** H264, H263pp, H263, H261

**Default value:** N/A

**Example:** \*s MediaChannels Call 11 IncomingVideoChannel 184 Video Protocol: H264

**xStatus MediaChannels Call [1..n] IncomingVideoChannel [1..n] Video ResolutionX**

Resolution width for incoming video.

**Value space:** Integer value

**Default value:** N/A

**Example:** \*s MediaChannels Call 11 IncomingVideoChannel 184 Video ResolutionX: 768

**xStatus MediaChannels Call [1..n] IncomingVideoChannel [1..n] Video ResolutionY**

Resolution height for incoming video.

**Value space:** Integer value

**Default value:** N/A

**Example:** \*s MediaChannels Call 11 IncomingVideoChannel 184 Video ResolutionY: 448

**xStatus MediaChannels Call [1..n] OutgoingAudioChannel [1..n] Encryption Status**

Encryption status on media channel.

**Value space:** On/Off

**Default value:** N/A

**Example:** \*s MediaChannels Call 11 OutgoingAudioChannel 182 Encryption Status: Off

**xStatus MediaChannels Call [1..n] OutgoingAudioChannel [1..n] Audio Protocol**

Audio algorithm.

**Value space:** AACLD, G722, G7221, G711Mu

**Default value:** N/A

**Example:** \*s MediaChannels Call 11 OutgoingAudioChannel 182 Audio Protocol: AACLD

**xStatus MediaChannels Call [1..n] OutgoingAudioChannel [1..n] Audio Channels**

Number of audio channels.

**Value space:** Integer value

**Default value:** N/A

**Example:** \*s MediaChannels Call 11 OutgoingAudioChannel 182 Audio Channels: 1

**xStatus MediaChannels Call [1..n] OutgoingVideoChannel [1..n] Encryption Status**

Encryption status on media channel.

**Value space:** On/Off

**Default value:** N/A

**Example:** \*s MediaChannels Call 11 OutgoingVideoChannel 185 Encryption Status: Off

**xStatus MediaChannels Call [1..n] OutgoingVideoChannel [1..n] ChannelRole**

Main video channel or presentation video channel.

**Value space:** Main/Presentation

**Default value:** N/A

**Example:** \*s MediaChannels Call 11 OutgoingVideoChannel 185 ChannelRole: Main

**xStatus MediaChannels Call [1..n] OutgoingVideoChannel [1..n] Video Protocol**

Video algorithm.

**Value space:** H264, H263pp, H263, H261

**Default value:** N/A

**Example:** \*s MediaChannels Call 11 OutgoingVideoChannel 185 Video Protocol: "H264"

**xStatus MediaChannels Call [1..n] OutgoingVideoChannel [1..n] Video PictureMode**

Do not use. Will be removed in next sw release.

**Value space:** N/A

**Default value:** N/A

**Example:** \*s MediaChannels Call 11 OutgoingVideoChannel 185 Video PictureMode: AUTO

**xStatus MediaChannels Call [1..n] OutgoingVideoChannel [1..n] Video ResolutionX**

Resolution width for incoming video.

**Value space:** Integer value.

**Default value:** N/A

**Example:** \*s MediaChannels Call 11 OutgoingVideoChannel 185 Video ResolutionX: 768

**xStatus MediaChannels Call [1..n] OutgoingVideoChannel [1..n] Video ResolutionY**

Resolution height for incoming video.>

**Value space:** Integer value.

**Default value:** N/A

**Example:** \*s MediaChannels Call 11 OutgoingVideoChannel 185 Video ResolutionY: 448

## The Network status

**xStatus Network 1 Ethernet MacAddress**

Mac address for ethernet interface.

**Value space:** S: 0..100

**Default value:** N/A

**Example:** \*s Network 1 Ethernet MacAddress: "00:50:60:02:FD:C7"

**xStatus Network 1 Ethernet Speed**

Speed in Mbps. Full or half duplex.

**Value space:** Integer value

**Default value:** N/A

**Example:** \*s Network 1 Ethernet Speed: "100full"

**xStatus Network 1 IPv4 Address**

Ip address of this system.

**Value space:** S: 0..100

**Default value:** N/A

**Example:** \*s Network 1 IPv4 Address: "10.47.21.62"

**xStatus Network 1 IPv4 SubnetMask**

A mask used to determine what subnet the IPv4 address belongs to.

**Value space:** S: 0..100

**Default value:** N/A

**Example:** \*s Network 1 IPv4 SubnetMask: "255.255.255.0"

**xStatus Network 1 IPv4 Gateway**

To be described

**Value space:** S: 0..100

**Default value:** N/A

**Example:** \*s Network 1 IPv4 Gateway: "10.47.21.1"

**xStatus Network 1 IPv4 DNS Domain Name**

To be described.

**Value space:** S: 0..100

**Default value:** N/A

**Example:** \*s Network 1 IPv4 DNS Domain Name: "sales.acme.com emea.acme.int"

**xStatus Network 1 IPv4 DNS Server [1..5] Address**

To be described.

**Value space:** S: 0..100

**Default value:** N/A

**Example:** \*s Network 1 IPv4 DNS Server 1 Address: "10.47.1.92"

## The SIP status

**xStatus SIP Proxy 1 Status**

Status of communication between this endpoint and SIP proxy.

**Value space:** Active, DNSFailed, Off, Timeout, UnableTCP, UnableTLS, Unknown

**Default value:** Off

**Example:** \*s SIP Proxy 1 Status: Active

**xStatus SIP Proxy 1 Address**

The active proxy this system communicates with.

**Value space:** S: 0..255

**Default value:** N/A

**Example:** \*s SIP Proxy 1 Address: "10.47.1.63"

**xStatus SIP Proxy 1 Secure**

Encryption status of signalling with proxy.

**Value space:** True, False

**Default value:** False

**Example:** \*s SIP Proxy 1 Secure: True

**xStatus SIP Proxy 1 Verified**

To be described.

**Value space:** True, False

**Default value:** False

**Example:** \*s SIP Proxy 1 Verified: False

**xStatus SIP Registration [1..n] Status**

Registration status of SIP Registration URI.

**Value space:** Deregister, Failed, Inactive, Registered, Registering

**Default value:** Inactive

**Example:** \*s SIP Registration 1 Status: Registered

**xStatus SIP Registration [1..n] URI**

The URI used for registration vs SIP registrar.

**Value space:** S: 0..100

**Default value:** N/A

**Example:** \*s SIP Registration 1 URI: "jaba@acme.com"

**xStatus SIP Registration [1..n] Authentication**

States what Authentication mechanism is used.

**Value space:** Digest, NTLM, Off

**Default value:** Off

**Example:** \*s SIP Registration 1 Authentication: Off

## The System unit status

**xStatus SystemUnit ProductType**

Product type.

**Value space:** S: 0..100

**Default value:** N/A

**Example:** \*s SystemUnit ProductType: "TANDBERG Codec"



**xStatus SystemUnit ProductId**

Product id.

Value space: S: 0..100

Default value: N/A

Example: `*s SystemUnit ProductId: "TANDBERG Codec C90"`

**xStatus SystemUnit Uptime**

Seconds since last system reboot.

Value space: Integer value

Default value: N/A

Example: `*s SystemUnit Uptime: 357708`

**xStatus SystemUnit Software Application**

Software application.

Value space: S: 0..100

Default value: N/A

Example: `*s SystemUnit Software Application: "Endpoint"`

**xStatus SystemUnit Software Version**

Version of installed software.

Value space: S: 0..100

Default value: N/A

Example: `*s SystemUnit Software Version: "TC1.0.0"`

**xStatus SystemUnit Software Name**

To be described.

Value space: S: 0..100

Default value: N/A

Example: `*s SystemUnit Software Name: "TBD"`

**xStatus SystemUnit Software ReleaseDate**

Date of software release.

Value space: S: 0..100

Default value: N/A

Example: `*s SystemUnit Software ReleaseDate: "2008-11-13"`

**xStatus SystemUnit Software MaxVideoCalls**

Max number of simultaneous video calls from this system.

Value space: Integer value

Default value: N/A

Example: `*s SystemUnit Software MaxVideoCalls: 3`

**xStatus SystemUnit Software OptionKeys NaturalPresenter**

States whether system supports NaturalPresenter functionality.

Value space: S: 0..100

Default value: N/A

Example: `*s SystemUnit Software OptionKeys NaturalPresenter: "true"`

**xStatus SystemUnit Software OptionKeys MultiSite**

States whether system supports MultiSite functionality.

Value space: S: 0..100

Default value: N/A

Example: `*s SystemUnit Software OptionKeys MultiSite: "true"`

**xStatus SystemUnit Software OptionKeys PremiumResolution**

States whether system supports PremiumResolution functionality.

Value space: S: 0..100

Default value: N/A

Example: `*s SystemUnit Software OptionKeys PremiumResolution: "true"`

**xStatus SystemUnit Hardware Module SerialNumber**

Serial number of the full system (box).

Value space: S: 0..100

Default value: N/A

Example: `*s SystemUnit Hardware Module SerialNumber: "B1AC36A00002"`

**xStatus SystemUnit Hardware Module Identifier**

States hardware revision of full system.

Value space: S: 0..100

Default value: N/A

Example: `*s SystemUnit Hardware Module Identifier: "1"`

**xStatus SystemUnit Hardware MainBoard SerialNumber**

Serial number of main board.

Value space: S: 0..100

Default value: N/A

Example: `*s SystemUnit Hardware MainBoard SerialNumber: "PH0528833"`

**xStatus SystemUnit Hardware MainBoard Identifier**

States hardware revision of MainBoard.

Value space: S: 0..100

Default value: N/A

Example: `*s SystemUnit Hardware MainBoard Identifier: "101400-5 [06]"`

**xStatus SystemUnit Hardware VideoBoard SerialNumber**

Serial number of VideoBoard.

Value space: S: 0..100

Default value: N/A

Example: `*s SystemUnit Hardware VideoBoard SerialNumber: "PH0534914"`

**xStatus SystemUnit Hardware VideoBoard Identifier**

States hardware revision of VideoBoard.

Value space: S: 0..100

Default value: N/A

Example: `*s SystemUnit Hardware VideoBoard Identifier: "101410-4 [07]"`

**xStatus SystemUnit Hardware AudioBoard SerialNumber**

Serial number of AudioBoard.

Value space: S: 0..100

Default value: N/A

Example: `*s SystemUnit Hardware AudioBoard SerialNumber: "TBD"`

**xStatus SystemUnit Hardware AudioBoard Identifier**

States hardware revision of AudioBoard.

Value space: S: 0..100

Default value: N/A

Example: `*s SystemUnit Hardware AudioBoard Identifier: "101420-2 [No objl.]"`

**xStatus SystemUnit Hardware BootSoftware**

Boot software id.

Value space: S: 0..100

Default value: N/A

Example: `*s SystemUnit Hardware BootSoftware: "U-Boot 1.3.0-20"`

**xStatus SystemUnit State System**

System state.

Value space: InCall, Initialized, Initializing, Multisite, Sleeping

Default value: N/A

Example: `*s SystemUnit State System: Initialized`

**xStatus SystemUnit State MaxNumberOfCalls**

Max number of calls supported.

Value space: 0..5

Default value: N/A

Example: `*s SystemUnit State MaxNumberOfCalls: 3`

**xStatus SystemUnit State MaxNumberOfActiveCalls**

Max number of active calls supported.

Value space: 0..5

Default value: N/A

Example: `*s SystemUnit State MaxNumberOfActiveCalls: 3`

**xStatus SystemUnit State NumberOfActiveCalls**

Number of active calls.

Value space: 0..5

Default value: N/A

Example: `*s SystemUnit State NumberOfActiveCalls: 0`

**xStatus SystemUnit State NumberOfSuspendedCalls**

Number of suspended calls.

Value space: 0..5

Default value: N/A

Example: `*s SystemUnit State NumberOfSuspendedCalls: 0`

**xStatus SystemUnit State NumberOfInProgressCalls**

Number of calls in progress.

Value space: 0..5

Default value: N/A

Example: `*s SystemUnit State NumberOfInProgressCalls: 0`

**xStatus SystemUnit State Subsystem Application**

State of system application.

Value space: Initialized, Initializing

Default value: N/A/Initializing

Example: `*s SystemUnit State Subsystem Application: Initialized`

**xStatus SystemUnit ContactInfo**

To be described.

Value space: S: 0..100

Default value: N/A

Example: `*s SystemUnit ContactInfo: "support@acme.com"`

## The Standby status

**xStatus Standby Active**

States whether standby mode is active.

Value space: On, Off

Default value: Off

Example: `*s Standby Active: On`

## The Video status

**xStatus Video Input Source [1..5] Resolution Height**

Last detected resolution height for source.

Value space: 0..3000

Default value: 0

Example: `*s Video Input Source 1 Resolution Height: 1080`

**xStatus Video Input Source [1..5] Resolution Width**

Last detected resolution width for source.

Value space: 0..4000

Default value: 0

Example: `*s Video Input Source 1 Resolution Width: 1920`

**xStatus Video Input Source [1..5] Resolution RefreshRate**

Last detected resolution refresh rate for source.

Value space: 0..300

Default value: 0

Example: `*s Video Input Source 1 Resolution RefreshRate: 50`

**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

Default value: N/A

Example: `*s Video Input HDMI 2 Connected: False`

**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

Default value: N/A

Example: `*s Video Input HDSDI 3 Connected: False`

**xStatus Video Input YPbPr [1..2] Connected**

True if a connection on YPbPr 1 or YPbPr 2 is detected. Not all connections can be detected.

Value space: True/False

Default value: N/A

Example: `*s Video Input YPbPr 2 Connected: False`

**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

Default value: N/A

Example: `*s Video Input DVI 3 Connected: False`

**xStatus Video Input Legacy 5 Connected**

True if a connection on Legacy 5 is detected. Not all connections can be detected.

Value space: True/False

Default value: N/A

Example: `*s Video Input Legacy 5 Connected: False`

**xStatus Video Output HDMI [1, 3] Resolution Height**

Last confirmed resolution height for output HDMI 1 and 3.

Value space: 120..3000

Default value: 768

Example: `*s Video Output HDMI 1 Resolution Height: 720`

**xStatus Video Output HDMI [1, 3] Resolution Width**

Last confirmed resolution width for output HDMI 1 and 3.

Value space: 176..4000

Default value: 1280

Example: `*s Video Output HDMI 1 Resolution Width: 1280`

**xStatus Video Output HDMI [1, 3] Resolution RefreshRate**

Last confirmed refresh rate for output HDMI 1 and 3.

Value space: 1..300

Default value: 60

Example: `*s Video Output HDMI 1 Resolution RefreshRate: 60`

**xStatus Video Output DVI [2, 4] Resolution Height**

Last confirmed resolution height for output DVI 2 and 4.

Value space: 120..3000

Default value: 768

Example: `*s Video Output DVI 2 Resolution Height: 720`

**xStatus Video Output DVI [2, 4] Resolution Width**

Last confirmed resolution width for output DVI 2 and 4.

Value space: 176..4000

Default value: 1280

Example: `*s Video Output DVI 2 Resolution Width: 1280`

**xStatus Video Output DVI [2, 4] Resolution RefreshRate**

Last confirmed refresh rate for output DVI 2 and 4.

Value space: 1..300

Default value: 60

Example: `*s Video Output DVI 2 Resolution RefreshRate: 60`

**xStatus Video Output Legacy 5 Resolution Height**

Last confirmed resolution height for output Legacy 5.

Value space: 120..3000

Default value: 768

Example: `*s Video Output Legacy 5 Resolution Height: 480`

**xStatus Video Output Legacy 5 Resolution Width**

Last confirmed resolution width for output Legacy 5.

Value space: 176..4000

Default value: 1280

Example: `*s Video Output Legacy 5 Resolution Width: 720`

**xStatus Video Output Legacy 5 Resolution RefreshRate**

Last confirmed refresh rate for output Legacy 5.

Value space: 1..300

Default value: 60

Example: `*s Video Output Legacy 5 Resolution RefreshRate: 60`

## Chapter 8

# Cameras

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.

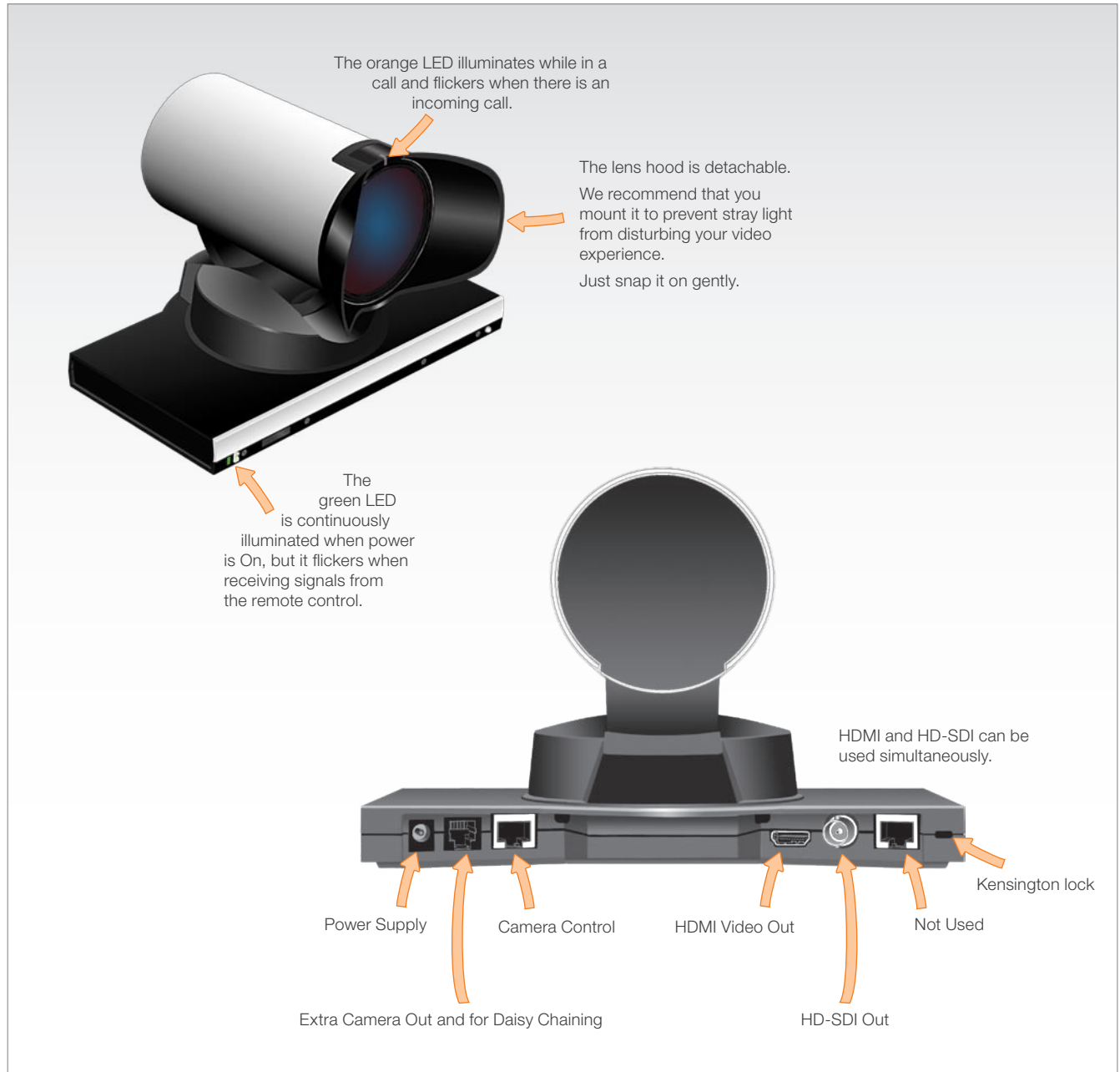
### Kensington lock

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.



See the **TANDBERG PrecisionHD 1080p User Guide** for comprehensive information about the camera. Go to: <http://www.tandberg.com/docs>

### Connecting the camera

The HDMI and HD-SDI can be used simultaneously.

#### HDMI cable

The HDMI cable delivered with the camera is 5 meters.

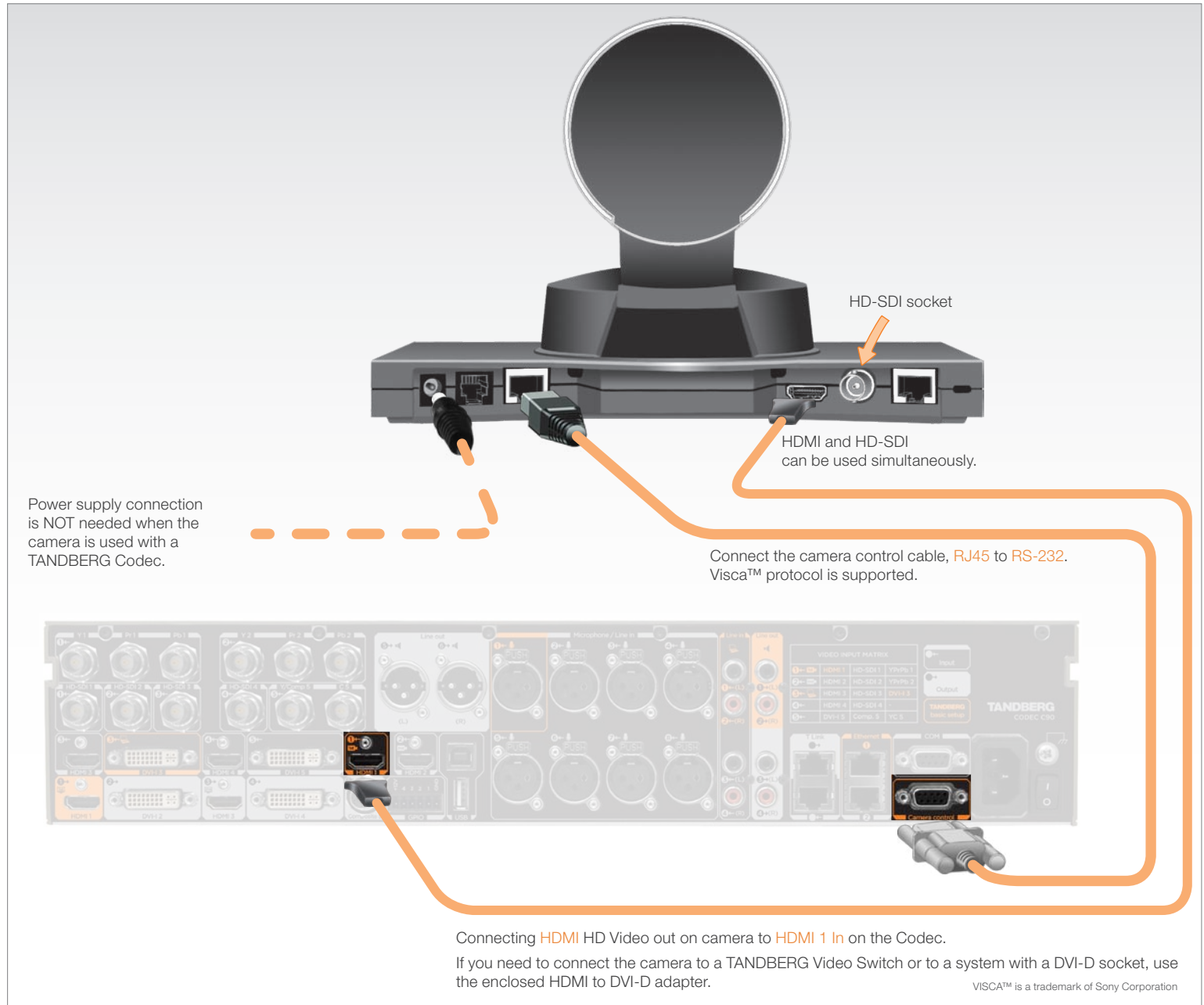
Maximum length is 15 meter with a category 2 certified good quality HDMI cable.

#### HD-SDI cable

The HD-SDI cable must be purchased separately. The maximum recommendable length of HD SDI cable is 100m.

#### HDMI to DVI-D adapter

The HDMI to DVI-D adapter is used when connecting to a TANDBERG MXP codec or TANDBERG Video Switch



## Best view—Face recognition

This camera is capable of face recognition when used with TANDBERG C90 Codecs. Consequently, the functionality is subject to change without further 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.

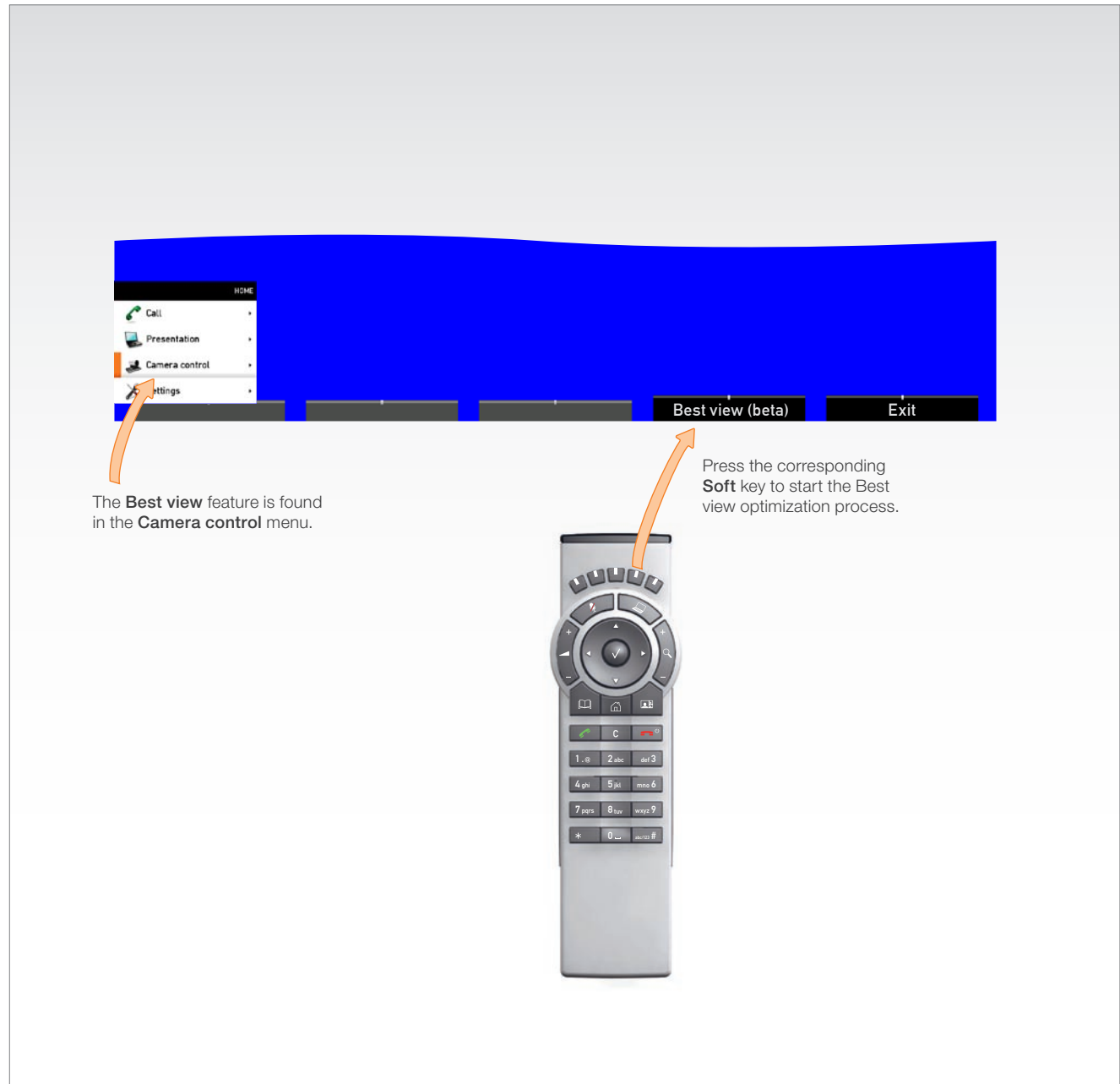
Kindly observe the following:

- 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 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. In the Camera control menu, locate the **Best view** button at the bottom of the screen.
4. Press the corresponding **Soft** key on the remote control to start the **Best view** optimization process. Look towards the camera for about five seconds.
5. The system will now 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.

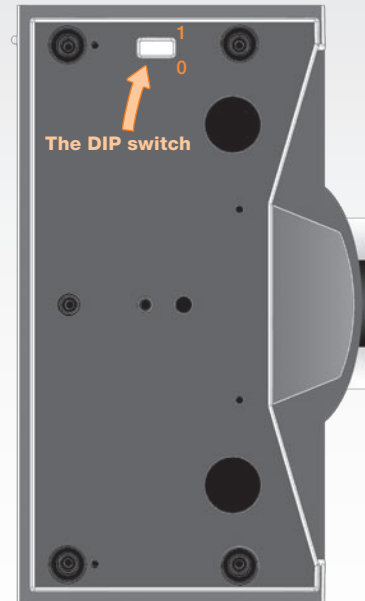
The default setting is Auto. When using HDMI, the video output format is automatically detected. See the table to the right.

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 60Hz. 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.



Bottom side of the TANDBERG PrecisionHD 1080p camera

DIP Switch table for video formats						
1	2	3	4	5	HDMI	HD-SDI
0	0	0	0	0	Auto	
0	0	0	0	1	1920x1080p25	1920x1080p25
0	0	0	1	0	1920x1080p30	1920x1080p30
0	0	0	1	1	1920x1080p50	1280x720p50
0	0	1	0	0	1920x1080p60	1280x720p60
0	0	1	0	1	1280x720p25	1280x720p25
0	0	1	1	0	1280x720p30	1280x720p30
0	0	1	1	1	1280x720p50	1280x720p50
0	1	0	0	0	1280x720p60	1280x720p60
0	1	0	0	1	Software control	

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.

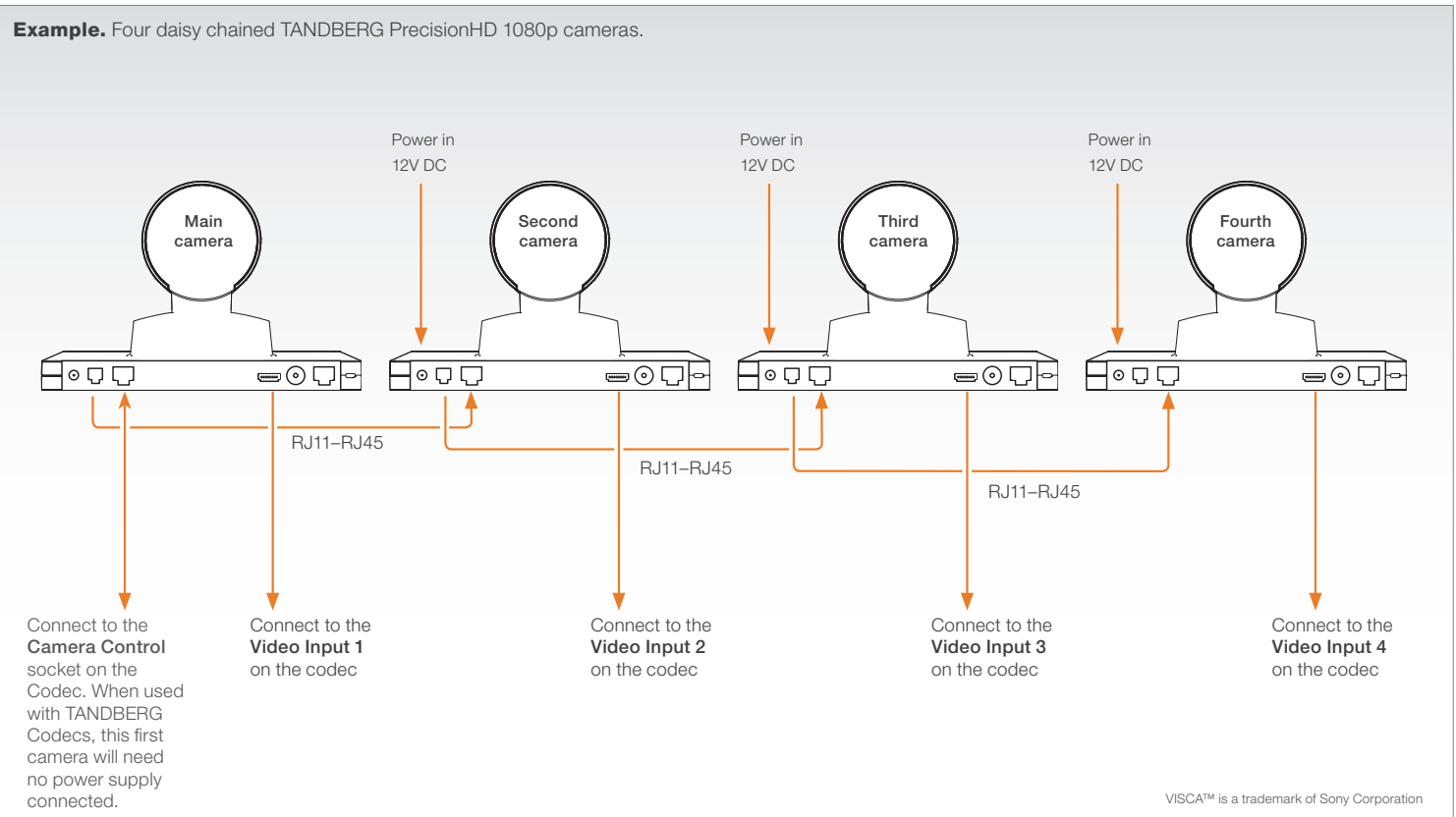
## Cameras in daisy chain

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



## Chapter 9

# Appendices



### In this chapter...

- ▶ Software upgrade
- ▶ Upload certificates
- ▶ XML files
- ▶ Log files
- ▶ NTP Time Zone expression
- ▶ Supported RFCs in SIP
- ▶ Remote Control TRC5
- ▶ Remote Control key map
- ▶ PrecisionHD camera
- ▶ CE Declaration
- ▶ China RoHS
- ▶ Codec C90 dimensions
- ▶ PrecisionHD 1080p dim.
- ▶ PrecisionHD dimensions
- ▶ License information
- ▶ Technical specifications

## Software upgrade

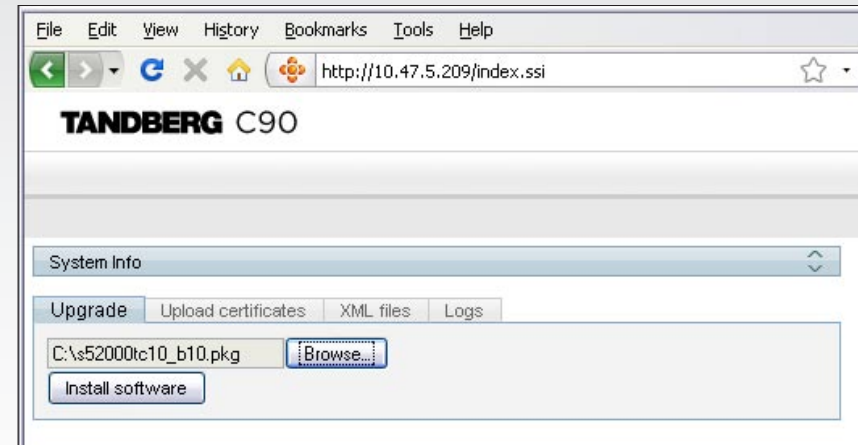
The **Upgrade** tab lets you select the software upgrade file for TANDBERG Codec C90 and install the new software.

Please follow the procedure described on this page.

### The software upgrade procedure

Contact your TANDBERG representative to obtain the software upgrade file.

1. Open a web browser and enter the IP address to connect to the Codec C90 by HTTP
2. Select the **Upgrade** tab
3. Click **Browse...** and locate the upgrade file (.PKG)
4. Click the **Install software** button to start the installation.
5. Leave the system for a few minutes to allow the installation process to complete. The upgrade process takes about 4–5 minutes.



## Upload certificates

The **Upload certificates** tab lets you upload a CA list (ROOT certificate) to authenticate TLS connections on SIP and a HTTPS certificate to enable HTTPS.

The system administrator issues/obtains and installs unique certificates to each system.

For TLS connections a ROOT Certificate (CA-list) can be uploaded from the web interface.

When the SIP setting TlsVerify is enabled, only TLS connections to servers, whom x.509 certificate is validated against the CA-list, will be allowed.

Go to: Settings > Administrator settings > Advanced configuration > SIP > Profile > TlsVerify

To install a certificate, you need:

- HTTPS certificate (.PEM format)
- ROOT certificate (.PEM format)
- Private key (.PEM format)
- Passphrase (optional)

### The certificates upload procedure

Contact your system administrator to obtain the required files (.PEM format).

#### How to upload the certificate

1. Open a web browser and enter the IP address to connect to the Codec C90 by HTTP.
2. Select the **Upload certificates** tab
3. Click **Browse...** and locate the certificate files (.PEM)
4. Type in the **Passphrase**
5. Click the **Upload** button to start the certificate installation.

The screenshot shows a web browser window displaying the TANDBERG C90 configuration interface. The browser's address bar shows the URL 'http://10.47.5.209/index.ssi#'. The page title is 'TANDBERG C90'. Below the title, there is a 'System Info' section. The main content area features a navigation bar with tabs for 'Upgrade', 'Upload certificates', 'XML files', and 'Logs'. The 'Upload certificates' tab is selected, showing a form with the following fields and buttons:

- HTTPS certificate (PEM format):
- ROOT certificate (PEM format):
- Private key (PEM format):
- Passphrase:
-

## XML files

The **XML files** tab gives a complete overview of the status of the system and the commands available on XML format.

## Configuration

Configuration type commands defines the system settings and are controlled from the Administrator Settings menu or from the API. Configuration type commands are either supplied or read by the user.

**Example:** Set IP addresses, default presentation source, standby delay, and enabling/disabling of various features etc.

The configuration commands are structured in a hierarchy, making up a database of system settings.

## Status

Status type commands returns information about the system and system processes and are issued from the API. 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.

## Command

Command type commands instructs the system to perform an action and are issued from the API. Command type commands are supplied by the user.

**Example:** instructing the system to place a call, mute/unmute microphones, 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.

### View XML files

Select the XML file to see a tree structure of all the configuration commands

The screenshot shows the TANDBERG C90 web interface in Mozilla Firefox. The browser address bar shows `http://10.47.5.209/index.ssi#`. The page title is "TANDBERG C90". Below the title, there is a "System Info" section and a navigation menu with tabs for "Upgrade", "Upload certificates", "XML files", and "Logs". The "XML files" tab is active, showing a list of menu items: "Configuration", "Status", "Command", "Directory", "Valuespace", and "Documentation".

Three browser windows are open, each displaying XML data:

- Top-left window:** `http://10.47.5.209/config`. It shows XML configuration data for the Audio section:
 

```

            - <Configuration product="TANDBERG Codec" version="1.0">
            - <Audio item="1">
            <Volume item="1" valueSpaceRef="/Volume" value="50"/>
            - <Input item="1">
            - <Microphone item="1">
            <Type item="1" valueSpaceRef="/TTPAR_MicrophoneLine[@item='1']" value="1"/>
            <Mode item="1" valueSpaceRef="/Mode" value="1"/>
            <Level item="1" valueSpaceRef="/Level" value="1"/>
            <Channel item="1" valueSpaceRef="/Channel" value="1"/>
            - <EchoControl item="1">
            
```
- Bottom-left window:** `http://10.47.5.209/status`. It shows XML status data for the Audio section:
 

```

            - <Status product="TANDBERG Codec" version="1.0">
            - <Audio item="1">
            - <Microphones item="1">
            <Mute item="1">Off</Mute>
            </Microphones>
            <Volume item="1">50</Volume>
            - <Input item="1">
            - <Connectors item="1">
            - <Microphone item="1">
            <Activity item="1">True</Activity>
            </Microphone>
            
```
- Bottom-right window:** `http://10.47.5.209/command`. It shows XML command data for the Audio section:
 

```

            - <Command product="TANDBERG Codec" version="1.0">
            - <Audio item="1">
            - <Microphones item="1">
            <Mute item="1" command="True">
            <OnOff item="1" required="True" value="1"/>
            </Mute>
            </Microphones>
            - <LocalInput item="1">
            - <Add item="1" command="True">
            <Name item="1" required="False" value="1"/>
            <MixerMode item="1" required="True" value="1"/>
            
```

Orange arrows indicate the mapping from the "Configuration", "Status", and "Command" menu items to their respective XML content windows.



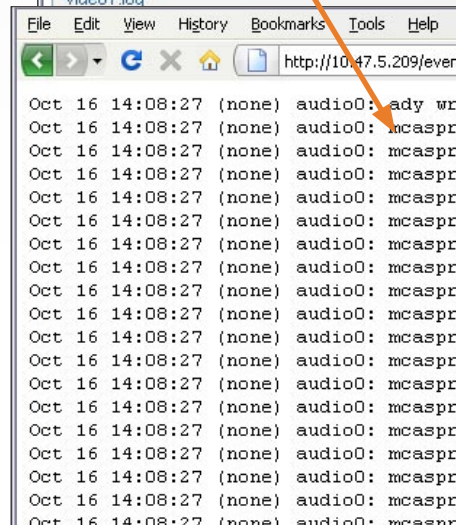
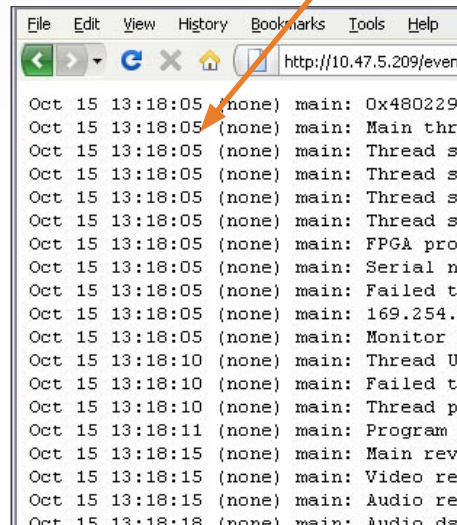
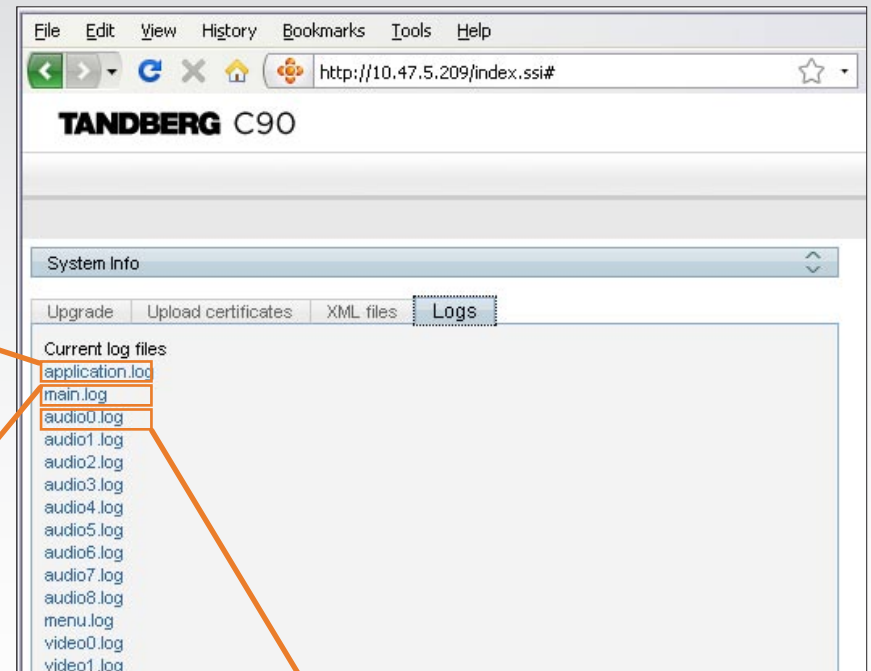
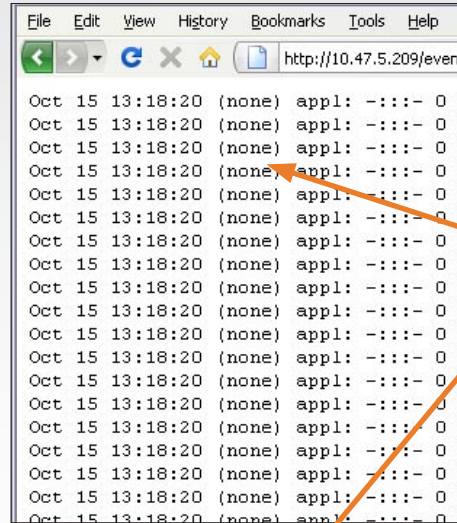
## Log files

In the **Logs** tab you will find debug log files.

These are TANDBERG specific debug files which may be required by TANDBERG in the need of technical support.

### Debug log files

Select a debug log file by clicking on the name of the file.  
Some of the log files can be opened or saved.



Some of the log files can be saved. You will then see the following dialog box:



## NTP Time Zone expressions

With reference to the setting **xConfiguration Time Zone: <S: 0, 100>** which is described in the **xConfiguration** section.

Specifies the NTP time zone where the system is located.

Example 1: xConfiguration Time Zone: "America/New\_York"

Example 2: xConfiguration Time Zone: "Etc/UTC"

**NOTE:** Spelling correctly is important when entering the NTP Time Zone expression.

Africa	Africa/Libreville	America/Argentina/Cordoba	America/Cordoba	America/Inuvik
Africa/Abidjan	Africa/Lome	America/Argentina/Jujuy	America/Costa_Rica	America/Iqaluit
Africa/Accra	Africa/Luanda	America/Argentina/La_Rioja	America/Cuiaba	America/Jamaica
Africa/Addis_Ababa	Africa/Lubumbashi	America/Argentina/Mendoza	America/Curacao	America/Jujuy
Africa/Algiers	Africa/Lusaka	America/Argentina/Rio_Gallegos	America/Danmarkshavn	America/Juneau
Africa/Asmara	Africa/Malabo	America/Argentina/San_Juan	America/Dawson	America/Kentucky
Africa/Asmera	Africa/Maputo	America/Argentina/San_Luis	America/Dawson_Creek	America/Kentucky/Louisville
Africa/Bamako	Africa/Maseru	America/Argentina/Tucuman	America/Denver	America/Kentucky/Monticello
Africa/Bangui	Africa/Mbabane	America/Argentina/Ushuaia	America/Detroit	America/Knox_IN
Africa/Banjul	Africa/Mogadishu	America/Aruba	America/Dominica	America/La_Paz
Africa/Bissau	Africa/Monrovia	America/Asuncion	America/Edmonton	America/Lima
Africa/Blantyre	Africa/Nairobi	America/Atikokan	America/Eirunepe	America/Los_Angeles
Africa/Brazzaville	Africa/Ndjamena	America/Atka	America/El_Salvador	America/Louisville
Africa/Bujumbura	Africa/Niamey	America/Bahia	America/Ensenada	America/Maceio
Africa/Cairo	Africa/Nouakchott	America/Barbados	America/Fort_Wayne	America/Managua
Africa/Casablanca	Africa/Ouagadougou	America/Belem	America/Fortaleza	America/Manaus
Africa/Ceuta	Africa/Porto-Novo	America/Belize	America/Glace_Bay	America/Marigot
Africa/Conakry	Africa/Sao_Tome	America/Blanc-Sablon	America/Godthab	America/Martinique
Africa/Dakar	Africa/Timbuktu	America/Bogota	America/Goose_Bay	America/Mazatlan
Africa/Dar_es_Salaam	Africa/Tripoli	America/Boa_Vista	America/Grand_Turk	America/Mendoza
Africa/Djibouti	Africa/Tunis	America/Boise	America/Grenada	America/Menominee
Africa/Douala	Africa/Windhoek	America/Buenos_Aires	America/Guadeloupe	America/Merida
Africa/El_Aaiun	America	America/Cambridge_Bay	America/Guatemala	America/Mexico_City
Africa/Freetown	America/Adak	America/Campo_Grande	America/Guayaquil	America/Miquelon
Africa/Gaborone	America/Anchorage	America/Cancun	America/Guyana	America/Moncton
Africa/Harare	America/Anguilla	America/Caracas	America/Halifax	America/Monterrey
Africa/Johannesburg	America/Antigua	America/Catamarca	America/Havana	America/Montevideo
Africa/Kampala	America/Araguaina	America/Cayenne	America/Hermosillo	America/Montreal
Africa/Khartoum	America/Argentina	America/Cayman	America/Indiana	America/Montserrat
Africa/Kigali	America/Argentina/Buenos_Aires	America/Chicago	America/Indiana/Indianapolis	America/Nassau
Africa/Kinshasa	America/Argentina/Catamarca	America/Chihuahua	America/Indiana/Knox	America/New_York
Africa/Lagos	America/Argentina/ComodRivadavia	America/Coral_Harbour	America/Indiana/Marengo	America/Nipigon
			America/Indiana/Petersburg	America/Nome
			America/Indiana/Tell_City	America/Noronha
			America/Indiana/Vevay	America/North_Dakota
			America/Indiana/Vincennes	America/North_Dakota/Center
			America/Indiana/Winamac	America/North_Dakota/New_Salem
			America/Indianapolis	America/Panama



## NTP Time Zone expressions, cont...

America/Pangnirtung	America/Yellowknife	Asia/Dili	Asia/Rangoon	Atlantic/South_Georgia
America/Paramaribo	Antarctica	Asia/Dubai	Asia/Riyadh	Atlantic/St_Helena
America/Phoenix	Antarctica/Casey	Asia/Dushanbe	Asia/Riyadh87	Atlantic/Stanley
America/Port_of_Spain	Antarctica/Davis	Asia/Gaza	Asia/Riyadh88	Australia
America/Port-au-Prince	Antarctica/DumontDUrville	Asia/Harbin	Asia/Riyadh89	Australia/ACT
America/Porto_Acre	Antarctica/Mawson	Asia/Ho_Chi_Minh	Asia/Saigon	Australia/Adelaide
America/Porto_Velho	Antarctica/McMurdo	Asia/Hong_Kong	Asia/Sakhalin	Australia/Brisbane
America/Puerto_Rico	Antarctica/Palmer	Asia/Hovd	Asia/Samarkand	Australia/Broken_Hill
America/Rainy_River	Antarctica/Rothera	Asia/Irkutsk	Asia/Seoul	Australia/Canberra
America/Rankin_Inlet	Antarctica/South_Pole	Asia/Istanbul	Asia/Shanghai	Australia/Currie
America/Recife	Antarctica/Syowa	Asia/Jakarta	Asia/Singapore	Australia/Darwin
America/Regina	Antarctica/Vostok	Asia/Jayapura	Asia/Taipei	Australia/Eucla
America/Resolute	Arctic	Asia/Jerusalem	Asia/Tashkent	Australia/Hobart
America/Rio_Branco	Arctic/Longyearbyen	Asia/Kabul	Asia/Tbilisi	Australia/LHI
America/Rosario	Asia	Asia/Kamchatka	Asia/Tehran	Australia/Lindeman
America/Santiago	Asia/Aden	Asia/Karachi	Asia/Tel_Aviv	Australia/Lord_Howe
America/Santo_Domingo	Asia/Almaty	Asia/Kashgar	Asia/Thimbu	Australia/Melbourne
America/Sao_Paulo	Asia/Amman	Asia/Katmandu	Asia/Thimphu	Australia/North
America/Scoresbysund	Asia/Anadyr	Asia/Kolkata	Asia/Tokyo	Australia/NSW
America/Shiprock	Asia/Aqtau	Asia/Krasnoyarsk	Asia/Ujung_Pandang	Australia/Perth
America/St_Barthelemy	Asia/Aqtobe	Asia/Kuala_Lumpur	Asia/Ulan_Bator	Australia/Queensland
America/St_Johns	Asia/Ashgabat	Asia/Kuching	Asia/Ulaanbaatar	Australia/South
America/St_Kitts	Asia/Ashkhabad	Asia/Kuwait	Asia/Urumqi	Australia/Sydney
America/St_Lucia	Asia/Baghdad	Asia/Macao	Asia/Vientiane	Australia/Tasmania
America/St_Thomas	Asia/Bahrain	Asia/Macau	Asia/Vladivostok	Australia/Victoria
America/St_Vincent	Asia/Baku	Asia/Magadan	Asia/Yakutsk	Australia/West
America/Swift_Current	Asia/Bangkok	Asia/Makassar	Asia/Yekaterinburg	Australia/Yancowinna
America/Tegucigalpa	Asia/Beirut	Asia/Manila	Asia/Yerevan	Brazil
America/Thule	Asia/Bishkek	Asia/Muscat	Atlantic	Brazil/Acre
America/Thunder_Bay	Asia/Brunei	Asia/Nicosia	Atlantic/Azores	Brazil/DeNoronha
America/Tijuana	Asia/Calcutta	Asia/Novosibirsk	Atlantic/Bermuda	Brazil/East
America/Toronto	Asia/Choibalsan	Asia/Omsk	Atlantic/Canary	Brazil/West
America/Tortola	Asia/Chongqing	Asia/Oral	Atlantic/Cape_Verde	Canada
America/Vancouver	Asia/Chungking	Asia/Phnom_Penh	Atlantic/Faeroe	Canada/Atlantic
America/Virgin	Asia/Colombo	Asia/Pontianak	Atlantic/Faroe	Canada/Central
America/Whitehorse	Asia/Dacca	Asia/Pyongyang	Atlantic/Jan_Mayen	Canada/Eastern
America/Winnipeg	Asia/Damascus	Asia/Qatar	Atlantic/Madeira	Canada/East-Saskatchewan
America/Yakutat	Asia/Dhaka	Asia/Qyzylorda	Atlantic/Reykjavik	Canada/Mountain

## NTP Time Zone expressions, cont...

Canada/Newfoundland	Etc/GMT-2	Europe/Luxembourg	GMT+0	Navajo	Pacific/Tarawa
Canada/Pacific	Etc/GMT-3	Europe/Madrid	GMT0	NZ	Pacific/Tongatapu
Canada/Saskatchewan	Etc/GMT-4	Europe/Malta	GMT-0	NZ-CHAT	Pacific/Truk
Canada/Yukon	Etc/GMT-5	Europe/Mariehamn	Greenwich	Pacific	Pacific/Wake
CET	Etc/GMT-6	Europe/Minsk	Hongkong	Pacific/Apia	Pacific/Wallis
Chile	Etc/GMT-7	Europe/Monaco	HST	Pacific/Auckland	Pacific/Yap
Chile/Continental	Etc/GMT-8	Europe/Moscow	Iceland	Pacific/Chatham	Poland
Chile/EasterIsland	Etc/GMT-9	Europe/Nicosia	Indian	Pacific/Easter	Portugal
CST6CDT	Etc/Greenwich	Europe/Oslo	Indian/Antananarivo	Pacific/Efate	posixrules
Cuba	Etc/UCT	Europe/Paris	Indian/Chagos	Pacific/Enderbury	PRC
EET	Etc/Universal	Europe/Podgorica	Indian/Christmas	Pacific/Fakaofu	PST8PDT
Egypt	Etc/UTC	Europe/Prague	Indian/Cocos	Pacific/Fiji	ROC
Eire	Etc/Zulu	Europe/Riga	Indian/Comoro	Pacific/Funafuti	ROK
EST	Europe	Europe/Rome	Indian/Kerguelen	Pacific/Galapagos	Singapore
EST5EDT	Europe/Amsterdam	Europe/Samara	Indian/Mahe	Pacific/Gambier	Turkey
Etc	Europe/Andorra	Europe/San_Marino	Indian/Maldives	Pacific/Guadalcanal	UCT
Etc/GMT	Europe/Athens	Europe/Sarajevo	Indian/Mauritius	Pacific/Guam	Universal
Etc/GMT+0	Europe/Belfast	Europe/Simferopol	Indian/Mayotte	Pacific/Honolulu	US
Etc/GMT+1	Europe/Belgrade	Europe/Skopje	Indian/Reunion	Pacific/Johnston	US/Alaska
Etc/GMT+10	Europe/Berlin	Europe/Sofia	Iran	Pacific/Kiritimati	US/Aleutian
Etc/GMT+11	Europe/Bratislava	Europe/Stockholm	iso3166.tab	Pacific/Kosrae	US/Arizona
Etc/GMT+12	Europe/Brussels	Europe/Tallinn	Israel	Pacific/Kwajalein	US/Central
Etc/GMT+2	Europe/Bucharest	Europe/Tirane	Jamaica	Pacific/Majuro	US/Eastern
Etc/GMT+3	Europe/Budapest	Europe/Tiraspol	Japan	Pacific/Marquesas	US/East-Indiana
Etc/GMT+4	Europe/Chisinau	Europe/Uzhgorod	Kwajalein	Pacific/Midway	US/Hawaii
Etc/GMT+5	Europe/Copenhagen	Europe/Vaduz	Libya	Pacific/Nauru	US/Indiana-Starke
Etc/GMT+6	Europe/Dublin	Europe/Vatican	localtime	Pacific/Niue	US/Michigan
Etc/GMT+7	Europe/Gibraltar	Europe/Vienna	MET	Pacific/Norfolk	US/Mountain
Etc/GMT+8	Europe/Guernsey	Europe/Vilnius	Mexico	Pacific/Noumea	US/Pacific
Etc/GMT+9	Europe/Helsinki	Europe/Volgograd	Mexico/BajaNorte	Pacific/Pago_Pago	US/Pacific-New
Etc/GMT0	Europe/Isle_of_Man	Europe/Warsaw	Mexico/BajaSur	Pacific/Palau	US/Samoa
Etc/GMT-0	Europe/Istanbul	Europe/Zagreb	Mexico/General	Pacific/Pitcairn	UTC
Etc/GMT-1	Europe/Jersey	Europe/Zaporozhye	Mideast	Pacific/Ponape	WET
Etc/GMT-10	Europe/Kaliningrad	Europe/Zurich	Mideast/Riyadh87	Pacific/Port_Moresby	W-SU
Etc/GMT-11	Europe/Kiev	Factory	Mideast/Riyadh88	Pacific/Rarotonga	zone.tab
Etc/GMT-12	Europe/Lisbon	GB	Mideast/Riyadh89	Pacific/Saipan	Zulu
Etc/GMT-13	Europe/Ljubljana	GB-Eire	MST	Pacific/Samoa	
Etc/GMT-14	Europe/London	GMT	MST7MDT	Pacific/Tahiti	

## 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 2429 RTP Payload Format for the 1998 Version of ITU-T Rec. H.263 Video (H.263+)
- RFC 2617 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
- draft-ietf-sipping-cc-transfer-06.txt
- draft-ietf-avt-rtp-h264-rcdo-01.txt
- draft-ietf-avt-rtp-h264-params-01.txt

### Media capabilities supported in SIP

The audio and video media capabilities supported in SIP are the same as for H.323.

# TANDBERG Remote Control TRC5

**Function keys:** Represents shortcuts and advanced functions. Each key reflects a soft key on screen.



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

**Volume:** Press the + or - on the key to adjust the codec volume.

**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.

**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.

Button codes - Remote control TRC5

Dec	Hex	Address	Button name
0	0		
1	1	0	Number 1
2	2	0	Number 2
3	3	0	Number 3
4	4	0	Number 4
5	5	0	Number 5
6	6	0	Number 6
7	7	0	Number 7
8	8	0	Number 8
9	9	0	Number 9
10	0A	0	Number 0
11	0B	0	*
12	0C	0	#
13	0D		
14	0E		
15	0F		
16	10		
17	11	0	Presenter
18	12		
19	13		
20	14		
21	15		
22	16	0	Zoom out
23	17	0	Zoom in
24	18		
25	19	0	Volume down
26	1A	0	Volume up
27	1B	0	Microphone off
28	1C		
29	1D	0	Arrow up
30	1E	0	Arrow down
31	1F	0	Arrow left
32	20	0	Arrow right

Button codes - Remote control TRC5

Dec	Hex	Address	Button name
33	21	0	Ok
34	22	0	Call
35	23	0	End call
36	24	0	Phone book
37	25	0	Layout
38	26	0	Clear
39	27		
-	-		
41	29		
42	2A	0	Soft key 1
43	2B	0	Soft key 2
44	2C	0	Soft key 3
45	2D	0	Soft key 4
46	2E	0	Soft key 5
-	-		
-	-		
-	-		
-	-		
51	33	0	Home

IR Signal parameters

Name	Description
Protocol	
Reference frequency	
Address	
IR wavelength	
IR carrier frequency	

## The PrecisionHD camera

This page describes the TANDBERG PrecisionHD camera, which was the first TANDBERG HD 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).

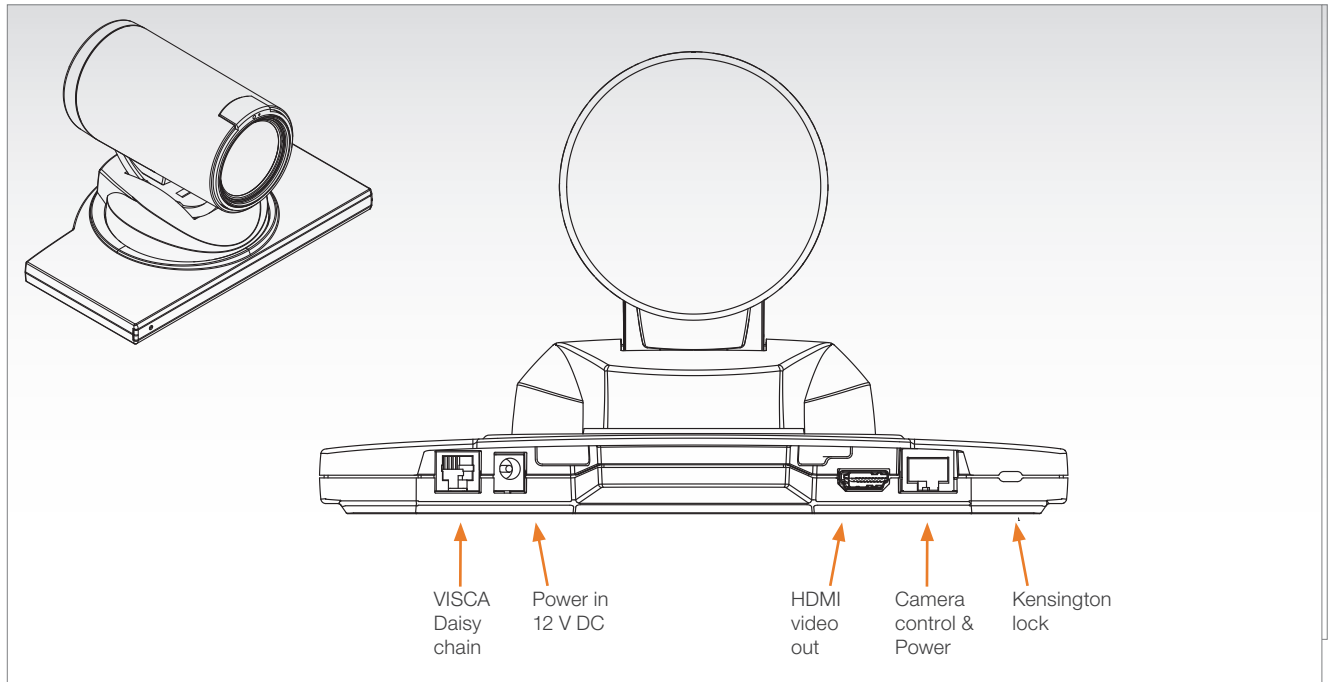
### Cascaded cameras

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.



Pin-out—VISCA Daisy chain RJ 6 pins modular jack	
Pin	Signal name
6	GND
5	GND
4	RXD (in)
3	TXD (out)
2	Presence (12V in daisy chain)
1	GND

Pin-out—VISCA camera control RJ 8 pins shielded modular jack	
Pin	Signal name
8	+12V (presence 2.8mA current source when connected in daisy chain)
7	GND
6	TXD (out)
5	NC (no connect)
4	NC (no connect)
3	RXD (in)
2	GND
1	+12V

Pin-out—TANDBERG camera cable RJ45 (8 pin) to D-SUB			
Signal name	RJ45 pin		D-SUB pin
+12V DC	1	Twisted pair	4
GND	2		5
RX	3	Twisted pair	2
TX	6		3
NC	4	Twisted pair	1
NC	5		6
GND	7	Twisted pair	5
+12V DC	8		4

## 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.

EC Declaration of conformity		
MANUFACTURER:	TANDBERG Telecom AS	
PRODUCT NAME:	TANDBERG Codec C90	
TYPE NUMBER:	TTC6-09	
DESCRIPTION:	Video Conferencing Equipment	
DIRECTIVES:	LVD 2006/95/EC	
This equipment complies with.	EMC 2004/108/EC	
HARMONIZED STANDARDS:	EN 60950-1:2001, A11:2004	
Applied in order to verify compliance with directives.	EN 55022 (2006)	
	EN 55024 (1998) + A1 (2001) + A2 (2003)	
	EN 61000-3-2 (2006)	
	EN 61000-3-3 (1995) + A1 (2001) + A2 (2005)	
TEST REPORTS and CERTIFICATES ISSUED BY:	Reports: LVD (Nemko AS) EMC (Nemko AS)	Certificates No.: 106684 E08517.00
TECHNICAL CONSTRUCTION FILE NO.:	X14347	
YEAR WHICH THE CE-MARK WAS AFFIXED:	2008	

## China RoHS table

This product complies with the Chinese RoHS.

产品中有毒有害物质表

部件名称	有毒有害物质或元素					
	铅	汞	镉	六价铬	多溴联苯	多溴二苯醚
金属部件	X	O	O	O	O	O
印刷电路板及组件	X	O	O	O	O	O
线缆和线缆组装	X	O	O	O	O	O
显示器（包括照明灯）	X	X	O	O	O	O

**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。

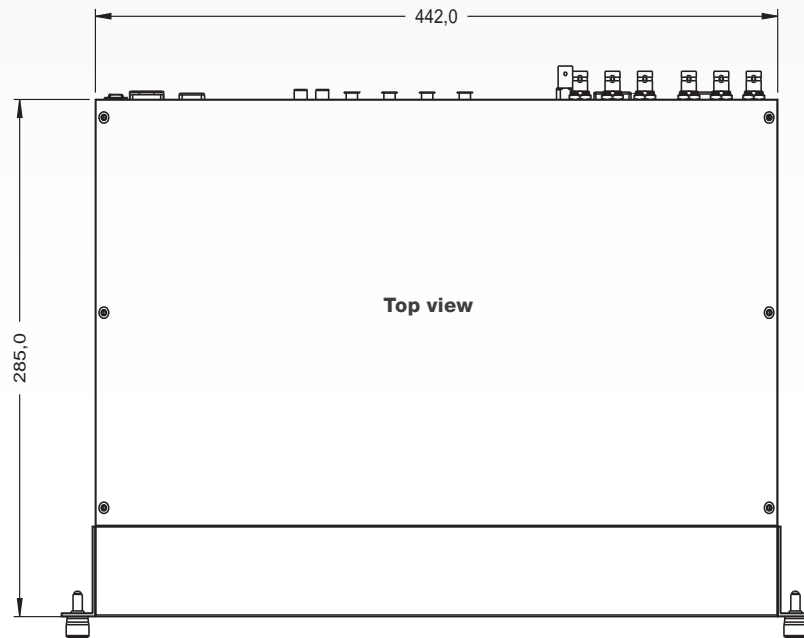
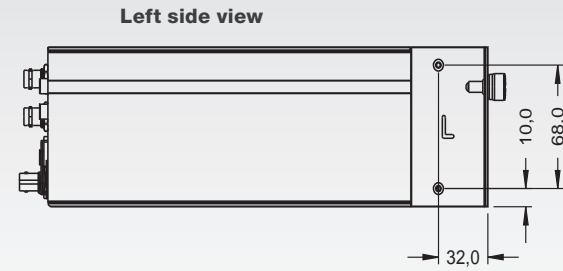
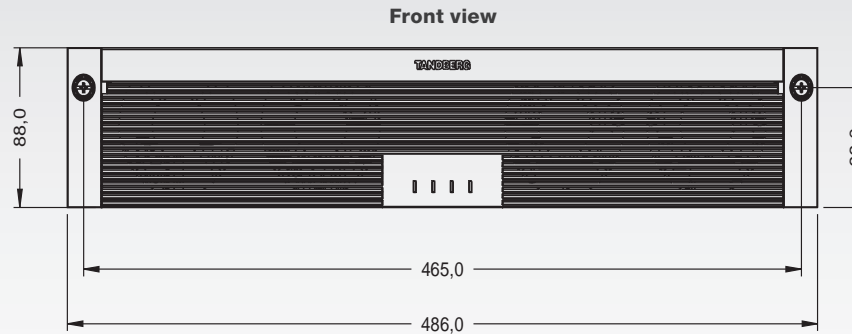
除非在产品上有另外特别的标注，以下标志为针对所涉及产品的环保使用期限标志。环保使用期限只适用于产品在产品手册中所规定的使用条件。



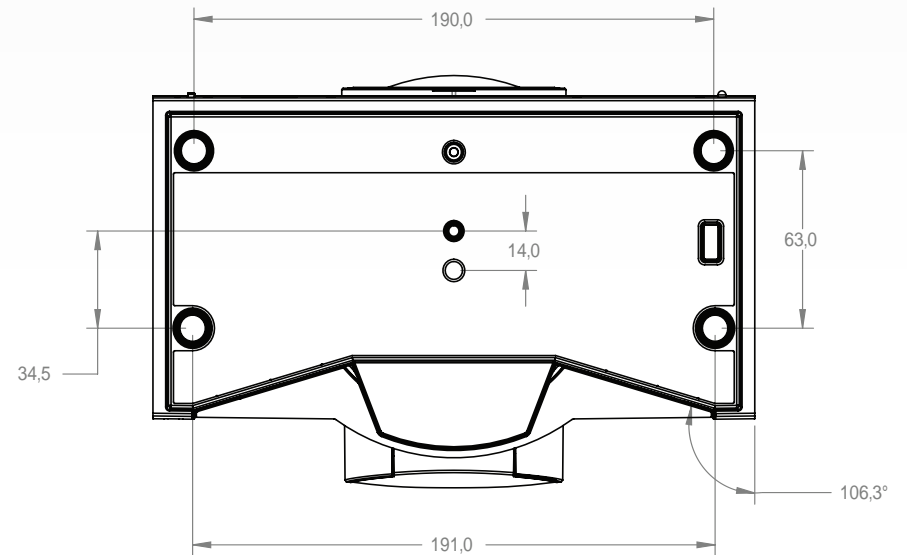
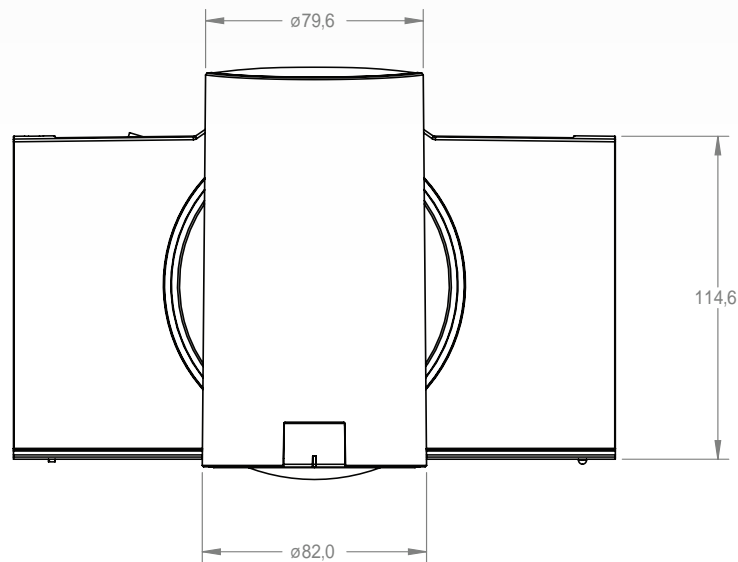
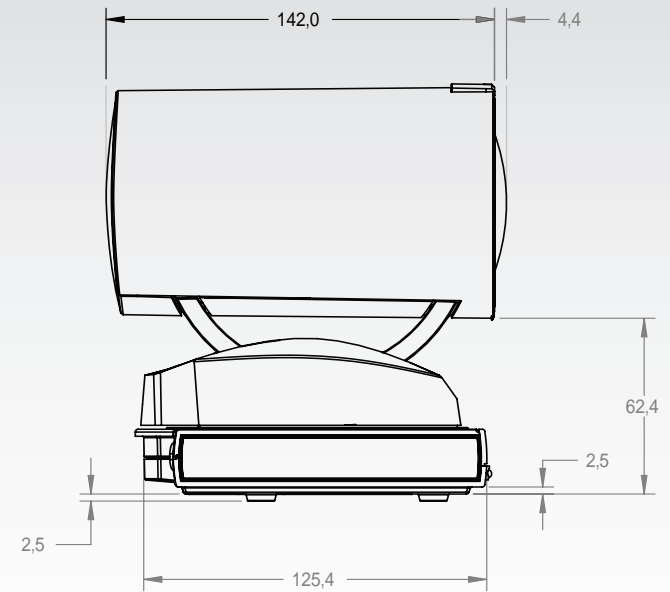
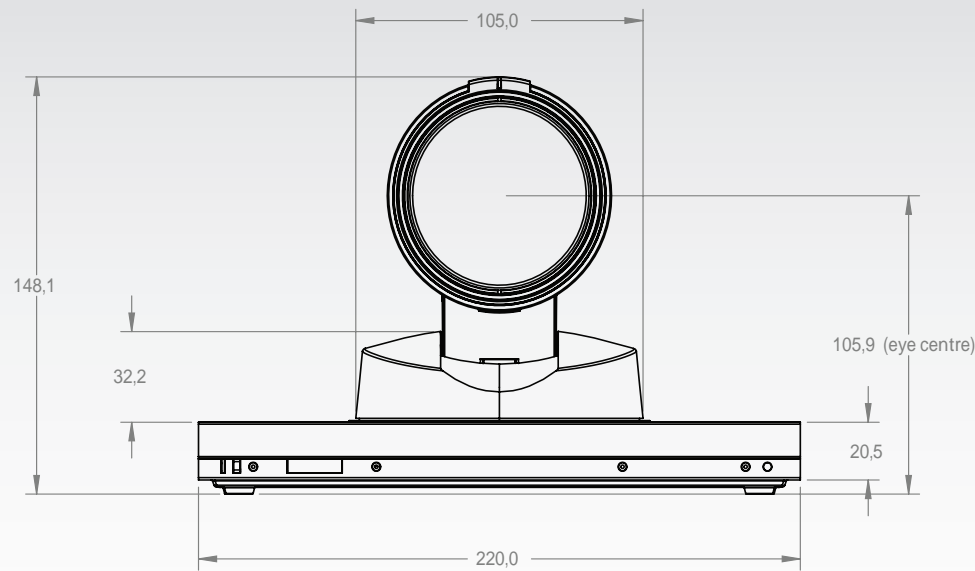


## TANDBERG Codec C90 dimensions

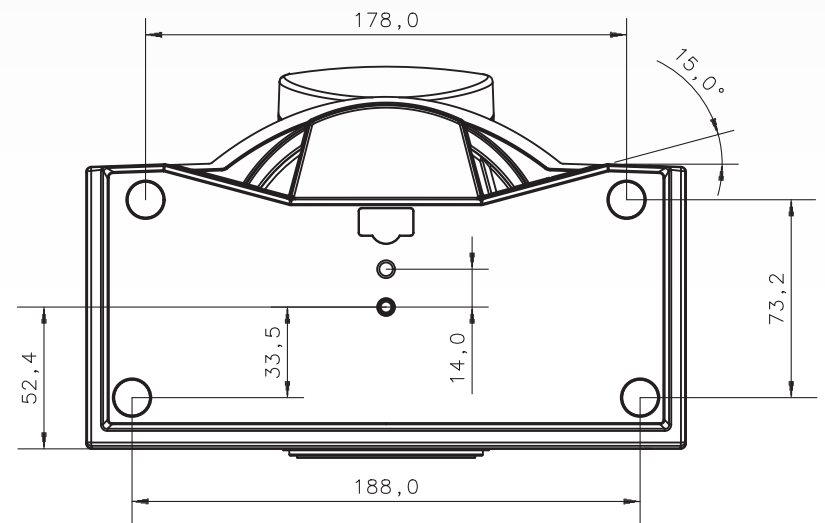
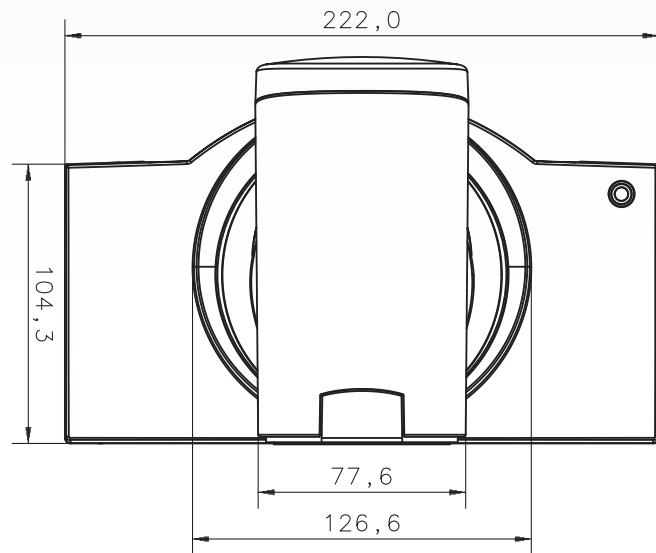
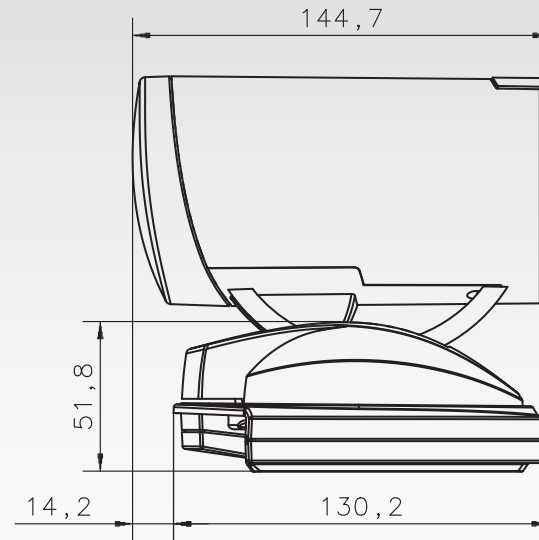
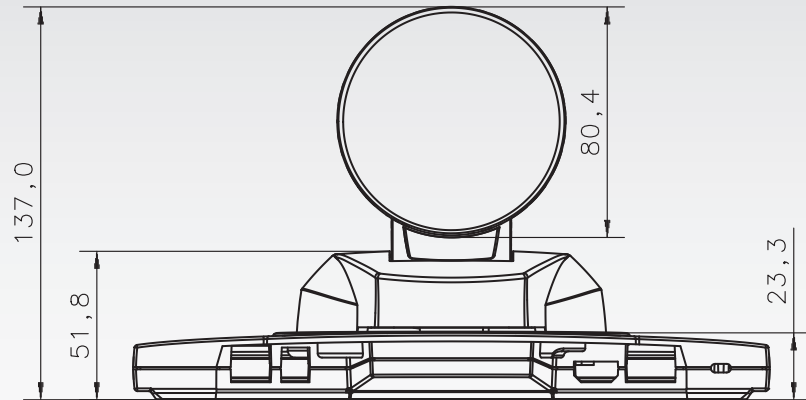
Dimensions in mm.



### PrecisionHD 1080p camera dimensions



### PrecisionHD camera dimensions



## Technical specifications

### 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:

- 1920x1080@60 fps (1080p60)
- 1920x1080@50 fps (1080p50)
- 1920x1080@30 fps (1080p30)
- 1920x1080@25 fps (1080p25)
- 1280x720@60 fps (720p60)
- 1280x720@50 fps (720p50)
- 640x480@60 fps (480p60)
- 800x600@60 fps (SVGA)
- 1024x768@60, 70, 75, 85 fps (XGA)
- 1280x1024@60, 75 fps (SXGA)

4 x HD-SDI inputs, supported formats:

- 1920x1080@30 fps (1080p30)
- 1920x1080@25 fps (1080p25)
- 1280x720@60 fps (720p60)
- 1280x720@50 fps (720p50)

- 1280x720@30 fps (720p30)
- 1280x720@25 fps (720p25)

2 x DVI-I inputs, supported formats:

Analog (VGA):

- 1024x768@60, 70, 75, 85 fps (XGA)
- 1280x1024@60, 75 fps (SXGA)
- Digital (DVI-D):
- 1920x1080@60 fps (1080p60)
- 1920x1080@50 fps (1080p50)
- 1920x1080@30 fps (1080p30)
- 1920x1080@25 fps (1080p25)
- 1280x720@60 fps (720p60)
- 1280x720@50 fps (720p50)
- 640x480@60 fps (480p60)
- 800x600@60 fps (SVGA)
- 1024x768@60, 70, 75, 85 fps (XGA)
- 1280x1024@60, 75 fps (SXGA)

2 x YPbPr inputs, supported formats:

- 1920x1080@60fps (1080p60)
- 1920x1080@50fps (1080p50)
- 1920x1080@30fps (1080p30)
- 1920x1080@25fps (1080p25)
- 1280x720@60fps (720p60)
- 1280x720@50fps (720p50)
- 1280x720@30fps (720p30)
- 720x576@50fps (576p50)
- 720x480@60fps (w480p60)

1 x S-Video/Composite input (BNC connectors)\*

- PAL/NTSC

Extended Display Identification Data (EDID)

### VIDEO OUTPUTS (5 OUTPUTS)

2 x HDMI outputs, 2 x DVI-I outputs, supported formats:

- 1920x1080@60fps (HD1080p60)
- 1280x720@60fps (HD720p60)
- 1366x768@60fps (WXGA)

- 1280x768@60fps (WXGA)
- 1024x768@60fps (XGA)
- 1280x1024@60fps (SXGA)
- 640x480@60fps (VGA)
- 800x600@60fps (SVGA)

1 x COMPOSITE OUTPUT (BNC CONNECTOR), supported formats:

- PAL/NTSC

VESA Monitor Power Management

### LIVE VIDEO RESOLUTIONS (ENCODE/DECODE)

- 176x144@30fps (QCIF)
- 352x288@30fps (CIF)
- 512x288@30fps (w288p)
- 576x448@30fps (448p)
- 768x448@30fps (w448p)
- 704x576@30fps (4CIF)
- 1024x576@30fps (w576p)
- 640x480@30fps (VGA)
- 800x600@30fps (SVGA)
- 1024x768@30fps (XGA)
- 1280x1024@30fps (SXGA)
- 1280x720@30fps (HD720p30)
- 1920x1080@30fps (HD1080p30)\*\*

### AUDIO 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
- BFCP (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
- 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 Downsampling
- 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**

- 2\*\*\* x separate LAN/Ethernet (RJ-45) 10/100/1000 Mbit

**OTHER INTERFACES**

- USB host for future usage
- USB device for future usage
- GPIO\*

**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):
- 1920x1080@60fps (HDMI only)
- 1920x1080@50fps (HDMI only)
- 1920x1080@30fps

- 1920x1080@25fps
- 1280x720@60fps
- 1280x720@50fps
- 1280x720@30fps
- 1280x720@25fps
- 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 35° 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
- Directive 2004/108/EC (EMC Directive)
- — Standard EN 55022, Class B
- — Standard EN 55024
- — Standard EN 61000-3-2/-3-3
- Approved according to UL 60950-1 and CSA 60950-1-07
- Complies with FCC15B Class B

**DIMENSIONS**

- Length: 17.36"/44.1cm
- Height: 3.67"/9.3cm
- Depth: 11.8"/30cm
- Weight: 11.22 lbs/5.1 kg

\*not supported in version 1

\*\*requires option

\*\*\*only one LAN/Ethernet interface supported in version 1

All specifications subject to change without notice, system specifics may vary.

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**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

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# TANDBERG

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