TANDBERG

Codec

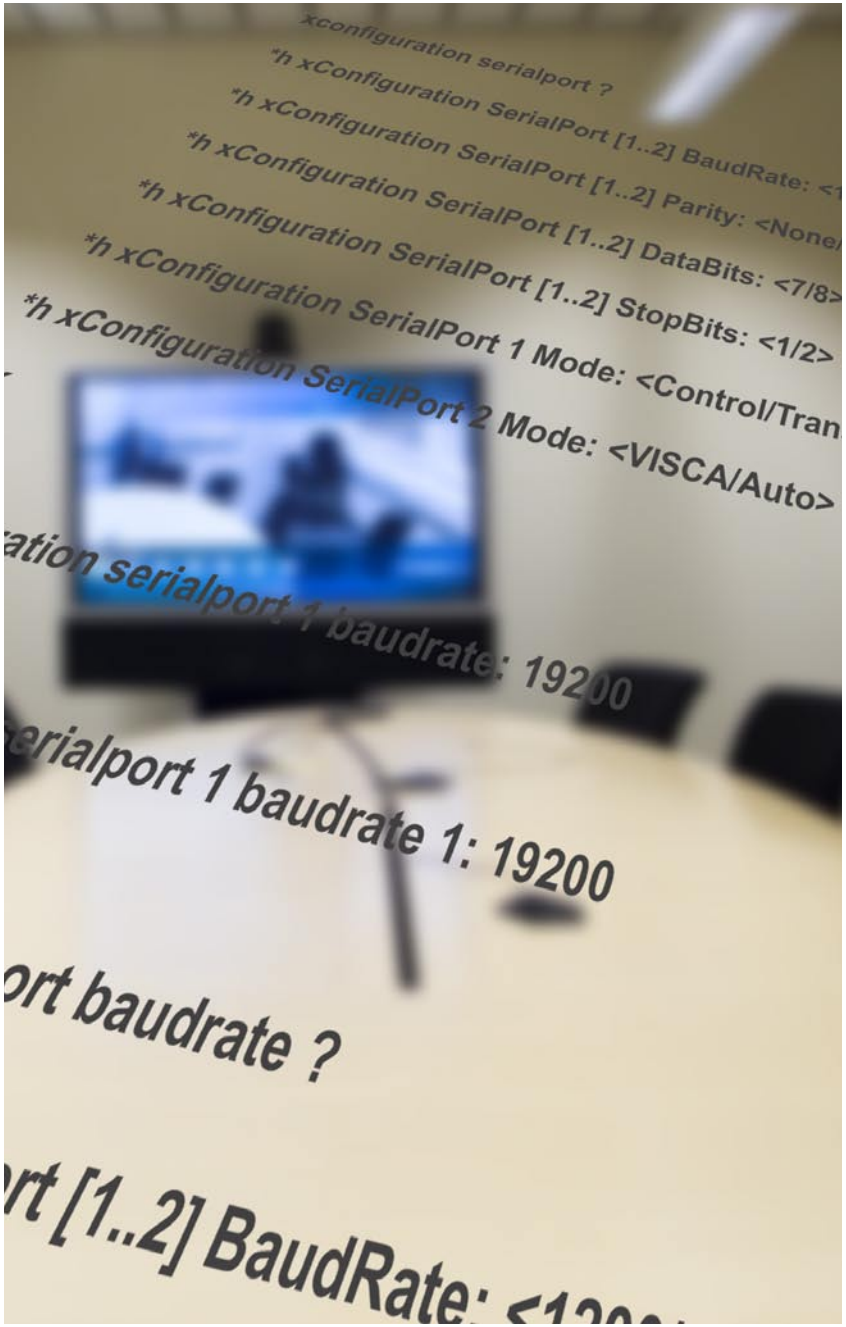
3000
6000
MXP

- Designed for custom integrations
- 19" mountable codecs
- Expandability for future applications
- Total management via serial port, embedded web server, SNMP, Telnet, XML, HTTP / HTTPS, FTP and on screen menu
- Best possible call for each MultiSite participant with rate matching and transcoding
- URI dialling
- H.323, H.320 & SIP support
- TANDBERG Expressway™ Technology
- Protection against network interruptions in point-to-point and multipoint calls with automatic downspeeding and IPLR
- Standards-based embedded encryption (AES & DES)

REFERENCE GUIDE

FOR SYSTEM INTEGRATORS

Software version F8.X
D13887.09
APRIL 2009



Finding the Information You Need

We recommend that you check out the TANDBERG web site regularly for updated versions of this manual:

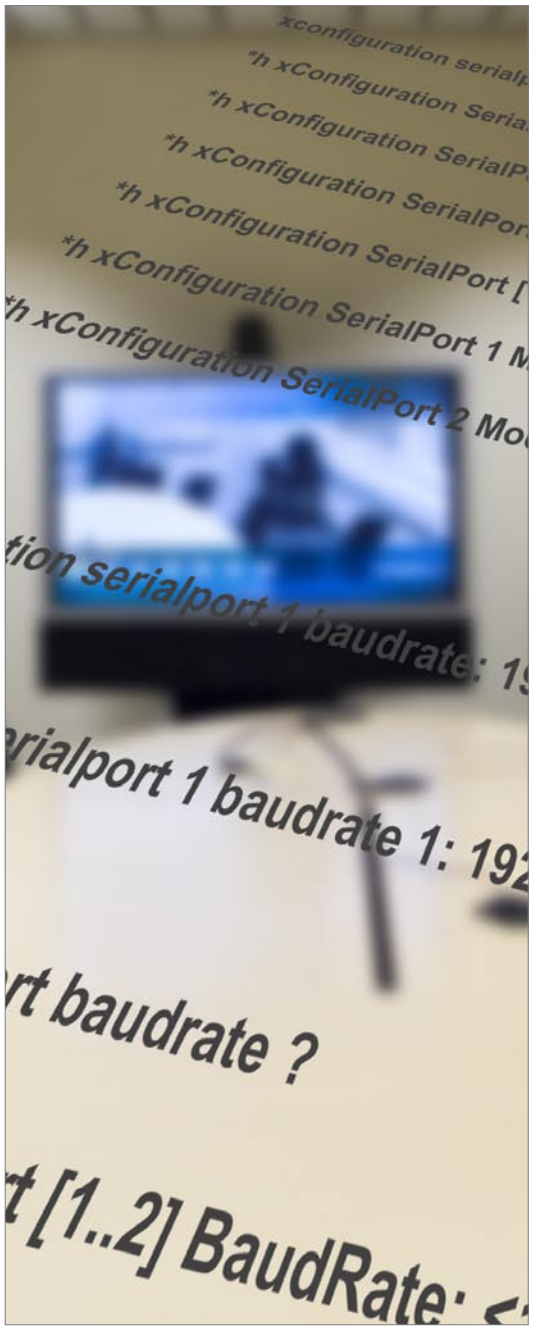
http://www.tandberg.com/docs

Thank you for choosing TANDBERG!

The TANDBERG Codec 3000 ***MXP*** and Codec 6000 ***MXP*** have been designed to provide you with many years of safe, reliable operation.

This section of the User Guides contains an overview of what's new in this version and the Table of Contents.

Our objective with this Reference User Guide for System Integrators has been to address your goals and needs. Please let us know how well we succeeded!



TANDBERG

What's New in This Version?

There are a number of new and altered instructions available in version F8.0

Software release note

The F8 software release note is found at the TANDBERG web site. Go to: http://www.tandberg.com/support/documentation.php?p=Upgrades_and_Diagnostics

Configuration Commands

Audio HearingImpaired Mode: <On/Off>

New in version F8. If set to *On* the Hearing Impaired Mode reduces the delay on audio output 3 from 100 ms to 23 ms, allowing an assisted listening device (ALD) to be installed in conjunction with this output and still maintain a high level of lip synchronization.

Audio Delay AUX: <On/Off>

New in version F8. The audio delay on AUX can be enabled/disabled.

Audio Delay VCR: <On/Off>

New in version F8. The audio delay on VCR can be enabled/disabled.

Audio HearingImpaired NoiseReduction: <On/Off>

New in version F8. The noise reduction can be controlled on the endpoint. Noise reduction is added to the output used for hearing impaired devices installed on output 3.

Audio HearingImpaired EQ: <On/Off>

New in version F8. An equalizer (EQ) can be enabled on the endpoint, adding more amplification to the higher frequencies typically found in voices.

Camera [1..13] Brightness Level: <0..31>

Altered. Defines the brightness level to use if Brightness Mode is set to Manual. Updated the value space from 0..16 to 0..31.

Camera [1..13] Whitebalance Mode: <Auto/Manual/Indoor/Outdoor/Gain>

Altered. The camera picture control white balance setting has been enhanced with Indoor and Outdoor settings in addition to the Auto and Manual settings.

Camera [1..13] Whitebalance Gain Red: <0..255>

New in version F8. The camera picture control white balance setting has been enhanced with a new Red Gain setting.

Camera [1..13] Whitebalance Gain Blue: <0..255>

New in version F8. The camera picture control white balance setting has been enhanced with a new Blue Gain setting.

CameraReverseControl: <On/Off>

New in version F8. Reverse the local camera control, allowing the camera to more naturally mimic the directional arrows of the remote control.

Conference VideoFormatCP: <16:9/4:3>

New in version F8. As an enhancement to the Continuous Presence (CP) layouts already supported by the MXP endpoints, this version includes support for wide CP layouts, transmitted in w576p (1024x576) in both the 4-split and 5+1-split video layout to the far-end systems. If the normal CP layout is preferred the host will transmit all CP layouts using 4CIF (704x576).

KeepDuoOpen: <On/Off>

New in version F8. Keeps the dual channel open even when there is no presentation video source connected to the endpoint.

MaxBandwidth: <128..6144>

Altered. Limit max bandwidth usage for the system. Related to IP-Media MaxVideoTXRate, which only controls upstream bandwidth. Updated the value space from MaxBandwidth: <128..10240> to MaxBandwidth: <128..6144>.

Multipoint Mode <Off/Multisite/Multiway>

New in version F8. The Multiway feature will extend point to point calls to conferences on MCU's hosted on the network over H.323 and SIP. The new participant will be consulted before he is added to the conference. Requires the uses of the TANDBERG Vide Communications Server (VCS) software Ver. X4.1 or higher, and the uses of the TANDBERG/Codian MCU software Ver. 3.0 or higher. Set to *MultiSite* if you have the optional feature MultiSite installed. Set to *Off* if none of the above features are being used.

Multipoint MulitwayURI <S: 0, 60>

New in version F8. Specify the Multiway URI. When calling Multiway on SIP the SIP prefix must be added to the URI for the endpoint who initiates the Multiway call.

Multipoint MulitwayMultiprotocol <On/Off>

New in version F8. Enable/disable the Multiway multi protocol.

Multipoint MulitwayStartupPeriod <0..21>

New in version F8. Specify the startup period (in seconds) for the Multiway call.

OSD Menu Language: <English/German/Norwegian/French/Swedish/Italian/Portuguese/Japanese/Chinese/TraditionalChinese/Russian/Spanish/Korean/Finnish/Thai/Arabic/Polish/Czech/Hungarian/Turkish/Danish/Romanian/Welsh>

Altered. The menu language has been enhanced with more languages: Polish, Czech, Hungarian, Turkish, Romanian and Welsh.

OSD Menu InputEditor Language: <Off/Japanese/Chinese/Korean/Russian>

Altered. The input editor menu language has been enhanced with Russian language.

PresentationSoftkey: <DuoScr/MainScr>

New in version F8.

You can configure the Presentation key on the remote control to either select dual source or main source when in a call, Default is DuoSrc (dual source).

Preset [1..15] Camera Brightness Level: <0..31>

Altered. Defines the brightness level to use if Brightness Mode is set to Manual. Updated the value space from 0..16 to 0..31.

RTP MTU: <400..1400>

Altered. Maximum Transfer Unit is the number of bytes of video payload per packet. Updated the value space from 1200..1400 to 400..1400.

Security Level: <0..2>

New in version F8. A Security level parameter has been added to the configuration of the endpoint, restricting access to the system. When configured for level 0, the system will have a similar security regime as F7.x. Password storage, encryption, logging etc. will not be influenced by setting this to 0. When configured for level 1, the system password can only be changed once every 24 hours and three failed attempts to log into the system will lock the interface for 30 minutes. If a password is set, the system will ask for password confirmation from all web sessions every 15 minutes to ensure the session is still active. When set to level 2, the system will include all security parameters within level 1 and will also prevent normal access to the web server. If a password is set, level 2 will time out all active management sessions every 15 minutes, prompting for password input.

SecurityLog Mode: <On/Off>

New in version F8. When enabled, the security log feature will now log all security related events and configuration changes within the event-log file on the endpoint, allowing an administrator to ensure all access to the system is properly logged and can be reviewed at a later point. When enabled, the security log will maintain a record of events.

SIP ICE Mode: <On/Off>

New in version F8. This version supports SIP interactive connectivity establishment (ICE) for SIP traversal. ICE is a client protocol that governs NAT traversal for SIP endpoints through a combination use of Simple Traversal of UDP through NAT (STUN) and Traversal Using Relay NAT (TURN, also known as STUN Relay) by allowing the endpoint to determine the best possible path to the far end system.

SIP MNS Mode: <On/Off>

New in version F8. This version supports Media Network Services mode for SIP traversal functionality that prioritizes the use of TURN, so that all media traffic is relayed, unless sent to an endpoint on the local network.

SIP ForceTurn Mode: <On/Off>

New in version F8. This version supports SIP traversal using relay NAT (TURN) for SIP traversal, allowing endpoints behind a NAT to traverse the firewall through a relay server, such as a TANDBERG VCS.

SIP TURN Server: <S: 0, 60>

New in version F8. Address of the TURN server for data redirection. A fully qualified domain name or an IP address can be used. Default port 3478 is assumed. Optional port can be provided using ":nnnnn" notation.

ThreePartyLayout: <On/Off>

New in version F8. The 3 party layout on the multisite host utilizes the dual monitor setting of the system to display the two far-end sites on individual monitors. This feature is supported when the multisite picture mode is set to Auto Split or 4 split. When a dual stream is started during the conference, the screen will return to a standard 4-split in order to display the dual stream on the second monitor. Upon termination of the dual stream, the layout will return to the 3 party layout.

Video Outputs DVI [1,2] AspectChoice: <Auto/Clip/Letterbox/Fill>

New in version F8. The aspect ratio for the DVI-I outputs can be adjusted to Auto, Clip, Letterbox, and Fill to customize the aspect ratio of the monitor to the preferred configuration.

Video Outputs TV [1,2] AspectChoice: <Auto/Clip/Letterbox/Fill>

New in version F8. The aspect ratio for the TV outputs can be adjusted to Auto, Clip, Letterbox, and Fill to customize the aspect ratio of the monitor to the preferred configuration.

Other updates to the xConfiguration commands

The following xConfiguration settings were new in a previous version and have now been added to this guide.

AutoPIP Timeout: <1..60>

Added to the guide. Controls the timeout for the PIP (Picture-In-Picture) containing the far-end mainstream when dual video stream is activated. To make the PIP disappear automatically after a few seconds set the AutoPIP Mode to Auto and define the AutoPIP Timeout.

Directory SmartSearch: <On/Off>

Added to the guide. Enables/disables Smart Search in the Phone Book.

OSD Menu DisplayWelcomeTime: <On/Off>

Added to the guide. Enables/disables the date and time to be displayed on the welcome menu. Requires the NTP IP settings to be configured to synchronize with the NTP time server.

OSD Menu Simple: <On/Off>

Added to the guide. Enables/disables the Simple Menu mode with some of the menus and buttons hidden.

OSD Menu CodecLabel: <S: 0, 48>

Added to the guide. Specify the text of the codec label.

OSD Menu DisplayLogo: <On/Off>

Added to the guide. Enables/disables the Display Logo on screen.

OSD Icon DuoVideo: <On/Off>

Added to the guide. Enables/Disables the DuoVideo icon.

OSD Icon CameraTracking: <On/Off>

Added to the guide. Enables/Disables the Camera Tracking icon.

OSD CallDuration Mode: <On/Off>

Added to the guide. Enables/Disables the display of the call duration on screen while in a call.

Command Instructions

Observe that the (r) in the Command instructions denotes that the parameter is required. The (r) appears for your information only and is not a part of the instruction.

There are no new xCommand instructions for this version.

Status Information Commands

xStatus H323Gatekeeper

Run this command from the data port to display the alternate gatekeepers.

TANDBERG

Codec 3000 6000 MXP

What's in this User Guide?

Configuration-type Commands

Configuration Storage Levels

Command Information Tables

Status Information Tables

Startup Scripts

Controlling External Cameras

TANDBERG Video Switch

Intellectual Property Rights

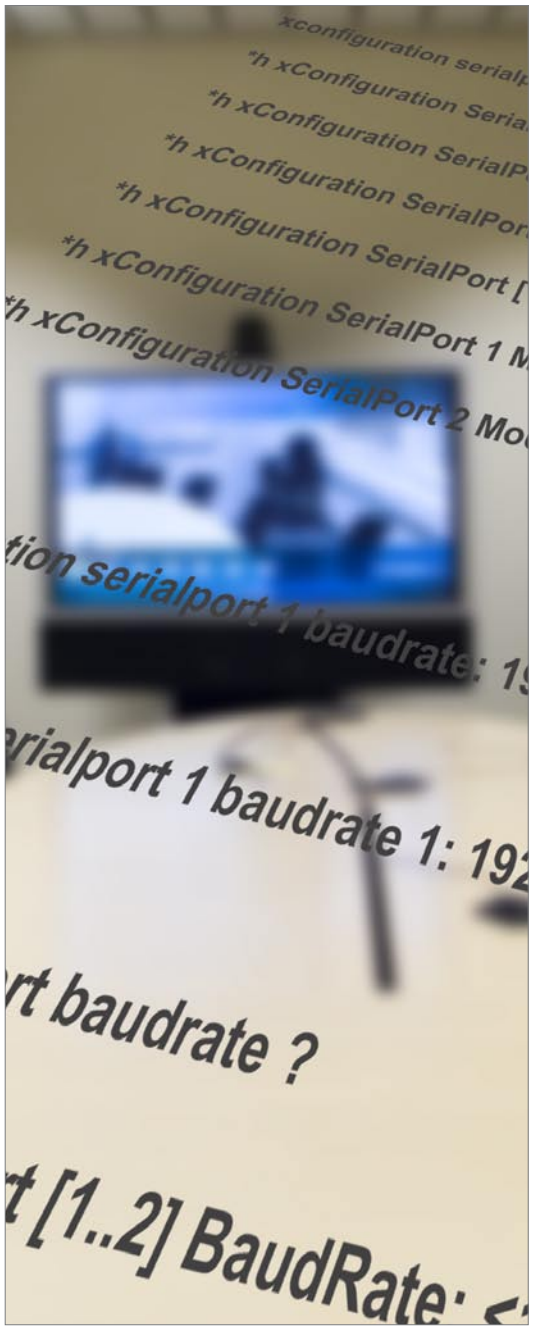
We recommend that you check out the TANDBERG web site regularly for updated versions of this manual:

http://www.tandberg.com/docs

Philip Pedersens vei 20, 1366 Lysaker, Norway

Tel: +47 67 125 125 Fax: +47 67 125 234

E-mail: tandberg@tandberg.com



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Disclaimer

We recommend that you check out the TANDBERG web site regularly for updated versions of this manual:

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The specifications for the Products and the information in this document are subject to change at any time, without notice, by TANDBERG.

Every effort has been made to supply complete and accurate information in this Reference Guide for System Integrators, however, TANDBERG assumes no responsibility or liability for any errors or inaccuracies that may appear in this document.

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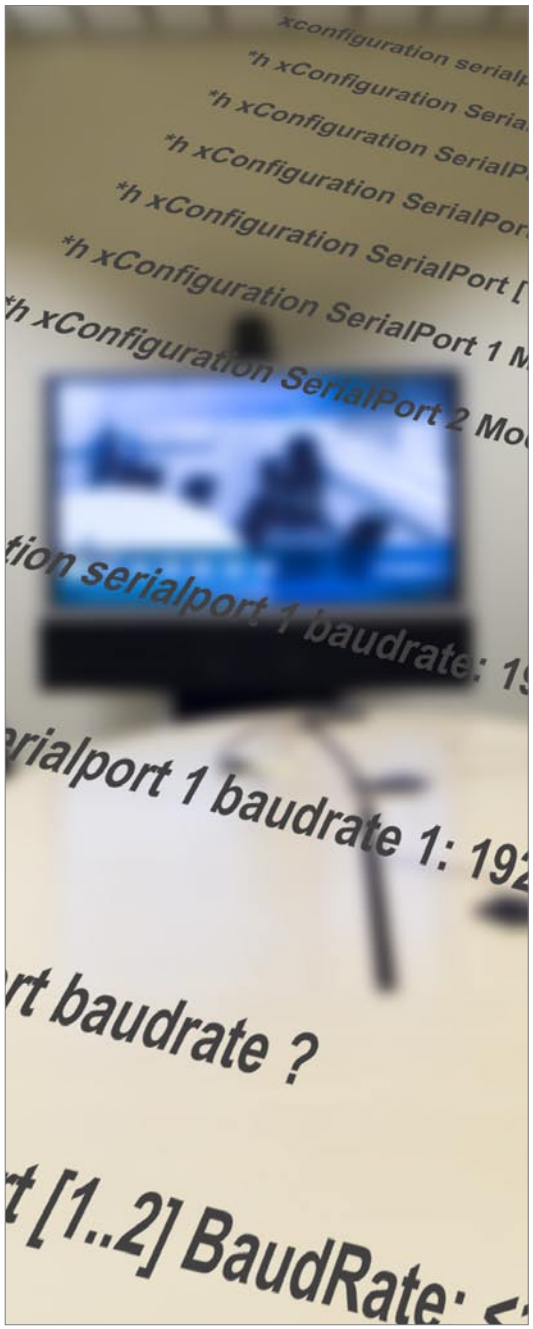
This Product is



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Copyright notices for third-party software on the TANDBERG MXP systems are listed below:

- The non-commercial third party code is distributed in binary form under the terms of non-copyleft style open source licenses such as BSD, Artistic, or MIT/X Consortium.
- The product also contains some binary code distributed in binary form under the terms of the GNU public license with an exemption which allows static links to non-copyleft commercial code.
- In accordance with section (3) of the GNU General Public License, copies of such code will be provided upon request by contacting TANDBERG. Please contact us by using the Online Support section at www.tandberg.com or the "contact us" section of this manual. Please provide USD 10.00 for media and shipping.

Agfa

Contains iType™ from Monotype Imaging Corporation.

CMU-SNMP

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Dropbear - an SSH2 server

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eCos

eCos, the Embedded Configurable Operating System.

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This code is derived from software contributed to Berkeley by Stephen Deering of Stanford University.

ExPat XML Parser

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OpenSSL

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This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit (http://www.openssl.org/)"

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OpenSSL is distributed under the terms of the OpenSSL and SSLeay licenses which are both BSD style open source licenses.

snprintf

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xSupplicant (wpa_supplicant) 802.1x

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xSupplicant is distributed under the terms of the xSupplicant license which is a BSD style open source license.

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
US5,768,263	US5,991,277	US7,034,860
US5.886.734	US5990.933	US7,010,119
US7,283,588	EP01953201	GB1338127

Other patents pending.

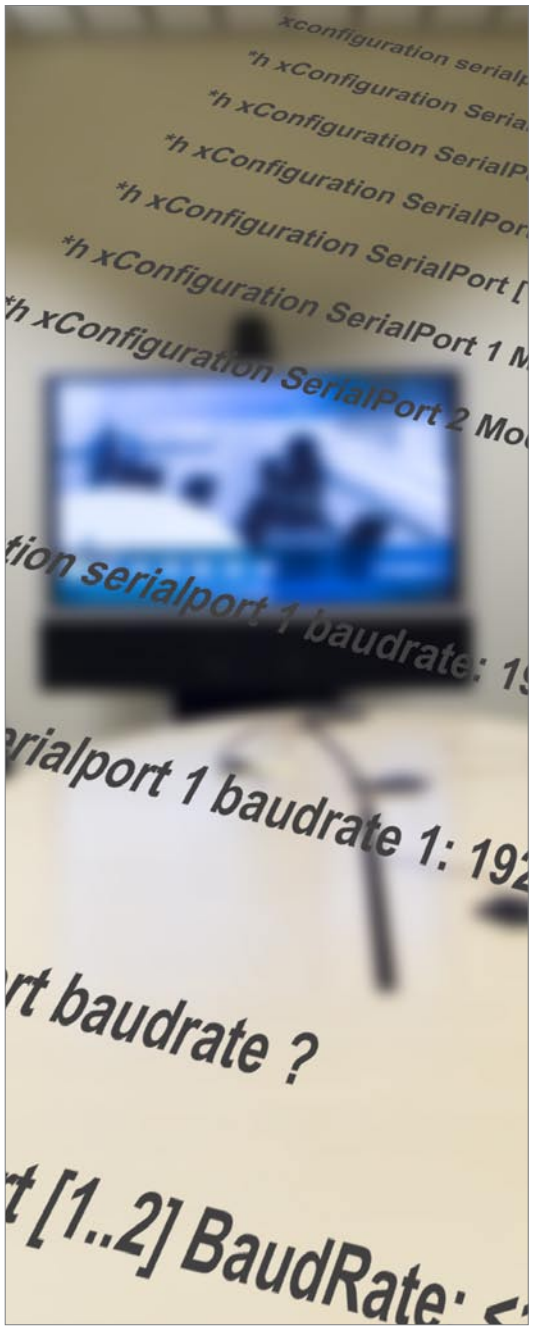
View http://www.tandberg.com/tandberg_pm.jsp for an updated list

Operator Safety / Environmental Issues

We recommend that you check out the TANDBERG web site regularly for updated versions of this manual:

http://www.tandberg.com/docs

For your own protection, please read the overleaf safety instructions completely, before operating the equipment and keep this manual for future reference. The information in this summary is intended for operators. Carefully observe all warnings, precautions and instructions both on the apparatus and in the operating instructions.



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.
- Unplug the apparatus from communication lines 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 mains 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 it's power source.
- Always use the power supply (AC–DC adaptor) provided with this product (adaptor is supplied with 3000 *MXP* only).
- Replace only with power supply (AC–DC adaptor) specified by TANDBERG (adaptor is supplied with 3000 *MXP* only).
- Never connect attached power supply (AC–DC adaptor) to other products (adaptor is supplied with 3000 *MXP* only).

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.

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). Our products are low energy consuming products.

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, CO_2 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.

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) 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 WEEE 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 landfilled or incinerated.

TANDBERG has implemented necessary process changes to comply with the European RoHS Directive (2002/95/EC) and the European WEEE Directive (2002/96/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 take-back systems in your area. Those systems will reuse or recycle most of the materials of your end of life equipment in a sound way.

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

Please contact your local supplier, the regional waste administration or 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.

Digital User Guides

TANDBERG is pleased to announce that we have replaced the printed versions of our User Guides with a digital CD version. Instead of a range of different user manuals, there is now one CD – which can be used with all TANDBERG products – in a variety of languages. The environmental benefits of this are significant. The CDs are recyclable and the savings on paper are huge. A simple web-based search feature helps you directly access the information you need. In addition, the TANDBERG video systems now have an intuitive on-screen help function, which provides a range of useful features and tips. The contents of the CD can still be printed locally, whenever needed.

China RoHS Table

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。

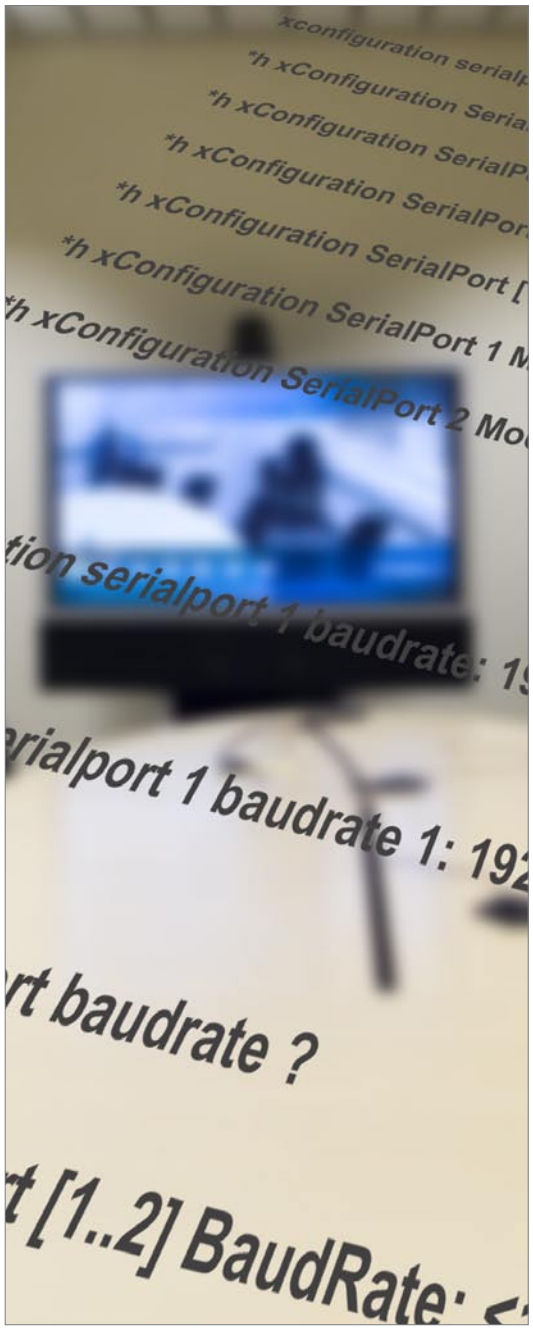
除非在产品上有另外特别的标注，以下标志为针对所涉及产品的环保使用期限标志。环保使用期限只适用于产品在产品手册中所规定的使用条件。

What's in the Shipping Box?

We recommend that you check out the TANDBERG web site regularly for updated versions of this manual:

http://www.tandberg.com/docs

This part of the Reference Guide for System Integrators presents the contents of the shipping box to ease your acceptance test as well as assist you in making sure you've got everything with you if you need to take the codec along for installation etc.



Contents of the 3000 *MXP* Codec Shipping Box

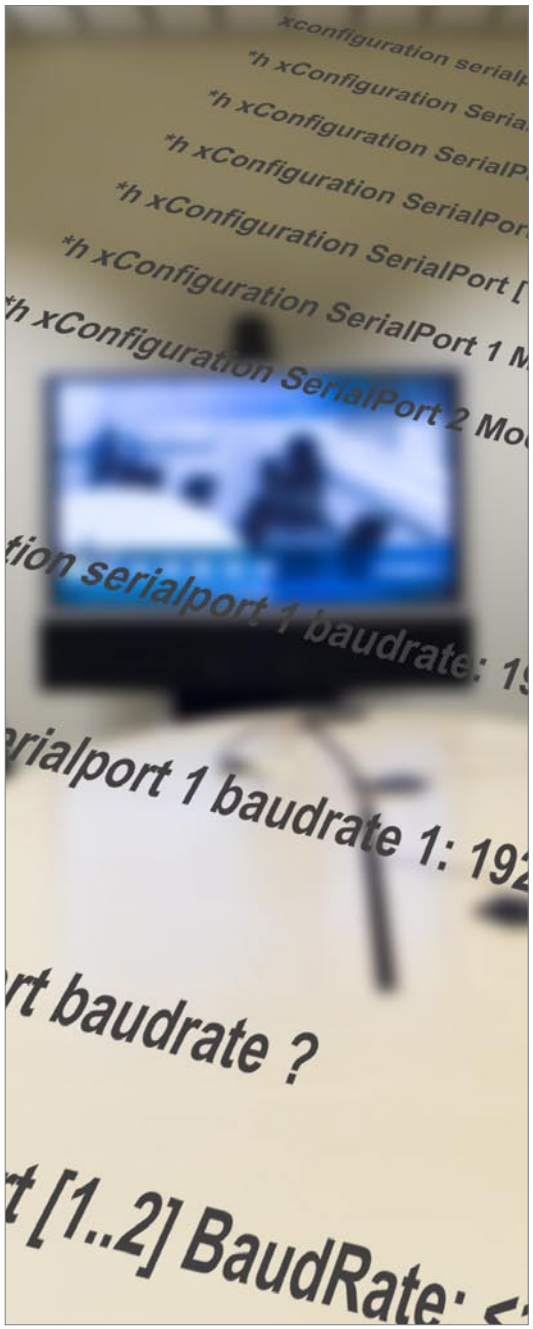
Contents of the 6000 *MXP* Codec Shipping Box

Interfaces and Sockets – Codec 3000 *MXP*

We recommend that you check out the TANDBERG web site regularly for updated versions of this manual:

http://www.tandberg.com/docs

This part of the manual provides an in-depth presentation of the rear panel sockets and interfaces of the Codec 3000 *MXP*, including the audio signal levels and the formats supported.



TANDBERG

Rear Panel Socket– and Interface Groups

The Codec 3000 *MXP* comes in two flavours – with ISDN BRI sockets (upper) or with Net socket (lower).

Codec 3000 *MXP*

Codec 3000 *MXP* Net

Audio Sockets

TIP! Audio signal levels expressed in volts and dBu can be found overleaf.

NOTE! Audio inputs 3 & 4 are referred to as **Line input 1 & 2** in the API.

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

Use **Audio Input No. 3** to connect to external playback devices. This input can also be configured as a microphone input. It will then function *in lieu* of the Mic. 2 input and be connected to Mic. 2's echo canceller (which can be turned on/off).

Use **Audio Input No. 4** to connect a VCR or DVD player to the system. For systems configured with stereo I/O, connect the VCR/DVD right channel to this input. This input should be used when connecting a telephone add-on system.

TIP! Audio Input No. 4 is not equipped with an acoustic echo canceller. Connecting a microphone to this input can therefore not be recommended.

Use **Audio Output No. 1** to provide a mixed signal of audio from far end and local external devices connected to input 3 & 4 in addition to dial tones.

This output should be connected to the local loudspeaker system, which may, or may not, include the TANDBERG Digital Natural Audio Module.

For systems configured with stereo speakers and SPDIF† active, the left and right channel of the loudspeaker signal will both be provided on this output.

For systems configured with stereo speakers and SPDIF† not active, the left channel of the loudspeaker signal will be present on this output. The right loudspeaker channel will be provided on Audio Output No. 2.

RCA pin-out

External view of socket

Use **Audio Output No. 2** (the VCR output) to provide a mixed signal consisting of audio from the local side (VCR not included) and audio from the far end.

This output should be used when connecting a telephone add-on system.

For system configured with stereo I/O and with SPDIF† active on Audio Output No. 1, this output will provide the VCR left channel stereo information.

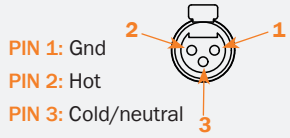
For systems configured with stereo I/O, stereo speakers and SPDIF† not active, this output will provide the right channel of the loudspeaker signal (the left channel will be provided on the Audio Output No. 1).

† SPDIF (Sony/Philips Digital Interface) is used by the Digital Natural Audio module.

Microphone Inputs Nos. 1–2. Two balanced microphone inputs for electret microphones balanced, 24V phantom powered via XLR connectors.

XLR pin-out

External view of socket



Stereo Settings

Settings			Output Response	
Out 1 mode	**Stereo I/O mode**	**Stereo speakers**	**Audio Out 1**	**Audio Out 2**
Analogue	Off	Off	Loudspeaker mono	VCR
Analogue	Off	On	Loudspeaker L	Loudspeaker R
Analogue	On	Off	Loudspeaker mono	VCR
Analogue	On	On	Loudspeaker L	Loudspeaker R
SPDIF	Off	Off	Loudspeaker mono	VCR
SPDIF	Off	On	Loudspeaker L&R	VCR
SPDIF	On	Off	Loudspeaker mono	VCR
SPDIF	On	On	Loudspeaker L&R	VCR

Hardware Information

	Microphone(s)	Audio Input(s)	Audio Outputs
Signal type	Balanced	Unbalanced	
Socket	XLR-F	RCA/phono	
Input impedance	2400Ω (pin 2–3)	10kΩ	
Output impedance			680Ω
Max input level when set to min. input level	83mVpp	15.5Vpp	
Max output level when set to max. output level			15.5Vpp
Max input level when set to max. input level	6.2mVpp	1.2Vpp	
Max output level when set to min. output level			1.2Vpp
Gain range	22.5dB (16 steps of 1.5dB)		
Phantom power	24V±5%		
Phantom power resistor pin 2	1200Ω		
Phantom power resistor pin 3	1200Ω		
Max phantom power current	12mA		

Audio signal levels in Vpp and dBu

Microphone Inputs 1 & 2 Signal levels			
Signal levels	**Clipping levels**		**Nominal level**
Input menu level setting [dB]	**[mVpp]**	**[dBu]**	**[dBu]**
0.0	83.0	–28.4	–46.4
1.5	69.8	–29.9	–47.9
3.0	**58.8**	**–31.4**	**–49.4**
4.5	49.4	–32.9	–50.9
6.0	41.6	–34.4	–52.4
7.5	35.0	–35.9	–53.9
9.0	29.4	–37.4	–55.4
10.5	24.8	–38.9	–56.9
12.0	20.8	–40.4	–58.4
13.5	17.5	–41.9	–59.9
15.0	14.8	–43.4	–61.4
16.5	12.4	–44.9	–62.9
18.0	10.4	–46.4	–64.4
19.5	8.8	–47.9	–65.9
21.0	7.4	–49.4	–67.4
22.5	6.2	–50.9	–68.9

Audio Inputs 3 & 4 Signal levels			
Signal levels	**Clipping levels**		**Nominal level**
Input menu level setting [dB]	**[Vpp]**	**[dBu]**	**[dBu]**
0.0	15.5	17.0	–1.0
1.5	13.0	15.5	–2.5
3.0	11.0	14.0	–4.0
4.5	9.2	12.5	–5.5
6.0	7.8	11.0	–7.0
7.5	6.5	9.5	–8.5
9.0	**5.5**	**8.0**	**–10.0**
10.5	4.6	6.5	–11.5
12.0	3.9	5.0	–13.0
13.5	3.3	3.5	–14.5
15.0	2.8	2.0	–16.0
16.5	2.3	0.5	–17.5
18.0	2.0	-1.0	–19.0
19.5	1.6	-2.5	–20.5
21.0	1.4	-4.0	–22.0
22.5	1.2	-5.5	–23.5

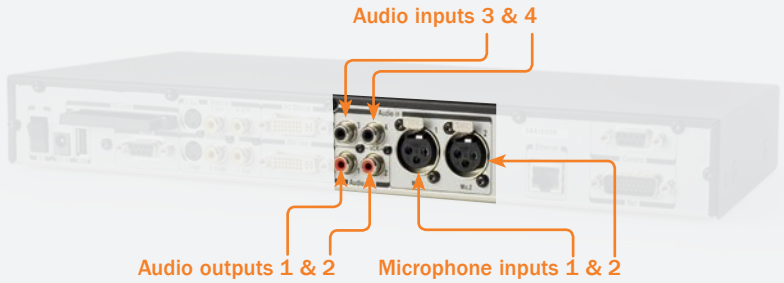
Audio Outputs 1 & 2 Signal levels			
Signal levels	**Absolute max output level**		**Nominal level**
Input menu level setting [dB]	**[Vpp]**	**[dBu]**	**[dBu]**
0.0	1.2	–5.5	–23.5
1.5	1.4	–4.0	–22.0
3.0	1.6	–2.5	–20.5
4.5	1.9	–1.0	–19.0
6.0	2.3	0.5	–17.5
7.5	2.8	2.0	–16.0
9.0	3.3	3.5	–14.5
10.5	3.9	5.0	–13.0
12.0	4.6	6.5	–11.5
13.5	**5.5**	**8.0**	**–10.0**
15.0	6.5	9.5	–8.5
16.5	7.8	11.0	–7.0
18.0	9.2	12.5	–5.5
19.5	11.0	14.0	–4.0
21.0	13.0	15.5	–2.5
22.5	15.5	17.0	–1.0

NOTE! Audio inputs 3 & 4 are referred to as Line input 1 & 2 in the API.

TIP! To convert dBu values to dBV, subtract 2.2 dB from the dBu value.

EXAMPLE: –10 dBu => –12.2 dBV

NOTE! The input clipping levels and the absolute max output levels all assume sinusoidal signals for the dBu values.

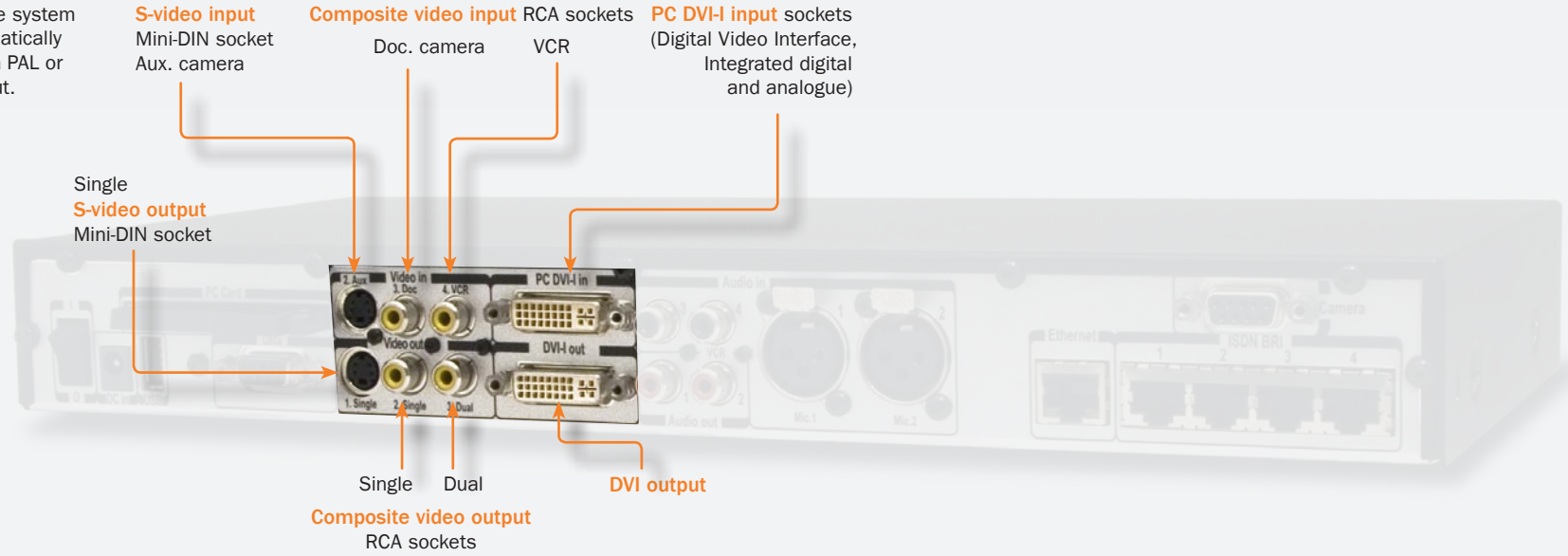


Default levels are denoted as follows:

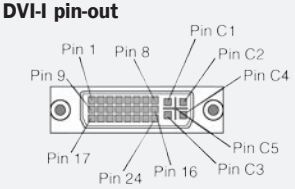
–31.4

Video Sockets

NOTE! The system will automatically adapt to a PAL or NTSC input.



DVI-I pin-out



Note: TANDBERG supports DVI-D Single-Link, DVI-A and DVI-I Single-Link format cables.

DVI-D cables transmit digital T.M.D.S. signals, DVI-A cables transmit analogue VGA signals and DVI-I cables can transmit either digital or analogue signals.

If your DVI cable is not long enough, use extension cables. Observe, however, that the maximum cable length should not exceed 5 m to avoid quality loss.

DVI-I Pin-out

Pin	Assignment	Pin	Assignment	Pin	Assignment
1	T.M.D.S. Data 2–	9	T.M.D.S. Data 1–	17	T.M.D.S. Data 0–
2	T.M.D.S. Data 2+	10	T.M.D.S. Data 1+	18	T.M.D.S. Data 0+
3	T.M.D.S. Data 2/4 Shield	11	T.M.D.S. Data 1/3 Shield	19	T.M.D.S. Data 0/5 Shield
4	T.M.D.S. Data 4–	12	T.M.D.S. Data 3–	20	T.M.D.S. Data 5–
5	T.M.D.S. Data 4+	13	T.M.D.S. Data 3+	21	T.M.D.S. Data 5+
6	DDC Clock	14	+5 V power	22	T.M.D.S. Clock Shield
7	DDC Data	15	GND (return for +5 V, HSync and Vsync)	23	T.M.D.S. Clock+
8	Analogue Vertical Sync	16	Hot plug detect	24	T.M.D.S. Clock–
C1	Analogue Red	C2	Analogue Green	C3	Analogue Blue
C4	Analogue Horizontal Sync	C5	Analogue GND (analogue R, G & B return)		

Formats supported on DVI-I out:

SVGA (800×600) 75 Hz
XGA (1024×768) 60 Hz
SXGA (1280×1024) 60 Hz
HD720p (1280×720) 50 Hz, 60 Hz
WXGA (1280×768) 60 Hz

Formats supported on DVI-I in:

SVGA (800×600) 60 Hz, 72 Hz, 75 Hz, 85 Hz
XGA (1024×768) 60 Hz, 70 Hz, 75 Hz
SXGA (1280×1024) 60 Hz
HD720p (1280×720) 50 Hz, 60 Hz

Do as follows to get WXGA:

1 VGA Out Quality must be set to Auto.
2 VGA Monitor Format must be set to Wide.
3 PC Picture Format must be set to Normal.

If you are using TANDBERG supplied monitors this will give WXGA out when displaying graphics.

If non-TANDBERG provided displays are used, you must in addition execute the command:

```
xConfiguration Video Outputs AllowWXGA: On
```

Levels

Composite: 1 Vpp, 75 Ω
S-Video (Y/C):
Y: 1 Vpp, 75 Ω
C (PAL): 0.3 Vpp, 75 Ω
C (NTSC): 0.28 Vpp, 75 Ω

S-video Mini-DIN pin-out
External view of socket

Pin 1: Ground (Luminance)
Pin 2: Ground (Chrominance)
Pin 3: Luminance (Y)
Pin 4: Chrominance (C)

RCA pin-out
External view of socket

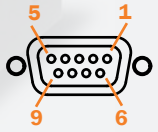
Camera Socket

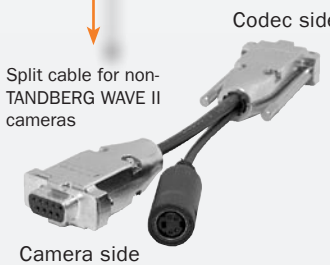
TIP! Wherever applicable, the use of Category 5 cabling or better is strongly recommended! For HD camera applications, however, Category 7.5 is required.

Camera Connect the camera here. Use a TANDBERG 3000 WAVE II Camera cable or similar.

To connect a non-TANDBERG camera use the split cable supplied. This cable has a female D-SUB and an S-video connector in one end and a male D-SUB connector in the other end.

9-pin D-SUB pin-out
External view of socket





S-video Mini-DIN pin-out
External view of socket

Pin 1: Ground (Luminance)
Pin 2: Ground (Chrominance)
Pin 3: Luminance (Y)
Pin 4: Chrominance (C)

RJ-45 Connector pin-out

TANDBERG 3000 WAVE II Camera cable pin-out

SIGNAL NAME	RJ-45	S-VIDEO	DSUB
+12V DC	8	—	4
GND	7	—	5
+12V DC	3	—	4
TXD	4	—	3
RXD	5	—	2
GND	6	—	5
GND	2	—	5
+12V DC	1	—	4
Y-GND	—	1	8
C_GND	—	2	1
Y	—	3	9
C	—	4	6
NC	—	—	7

TANDBERG HD 3000 Camera cable pin-out

SIGNAL NAME	RJ-45		DSUB
+12V DC	1	Twisted pair	4
GND	2		1
Rx	3	Twisted pair	2
TX	4		6
LVDS+	5	Twisted pair	9
LVDS–	6		3
GND	7	Twisted pair	5
+12V DC	8		4

Cable is Category 7.5/ Class F AWG24. Extreme care should be taken if you choose to make your own version of this cable!

Non-TANDBERG Camera cable pin-out

SIGNAL NAME	DSUB Camera	S-VIDEO	DSUB Codec
+12V DC	1	—	4
GND	2	—	5
+12V DC	3	—	4
TXD	4	—	3
RXD	5	—	2
GND	6	—	5
GND	7	—	5
+12V DC	8	—	4
Y-GND	—	1	8
C_GND	—	2	1
Y	—	3	9
C	—	4	6
NC	—	—	7

ISDN BRI sockets (not applicable to 3000 MXP Net)

TIP! Wherever applicable, the use of Category 5 cabling or better is strongly recommended! For HD camera applications, however, Category 7.5 is required.

S/T Interface	
BRI	**Pin out**
Pin 3	TX+
Pin 4	RX+
Pin 5	RX–
Pin 6	TX–

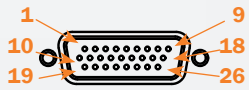
RJ-45 Connector pin-out

ISDN BRI interface. ISDN I.420 (RJ-45 Jack) Basic Rate Interface S/T (2B+D), 128 kbps per ISDN I/F. Use any standard BRI cable to connect the Codec to BRI.

Net socket (applies to 3000 MXP Net only)

Net interface socket. 1×X.21 / V.35 / RS449 with 1×RS366 Call Control up to 2 Mbps

HD D-SUB 26 pin-out
External view of socket



RS366 DTE → DCE

Pin	Signal name	Direction	Description
1	FGND	↔	Frame GND
2	DPR	→	Digit Present
3	ACR	←	Abandon Call & Retry
4	CRQ	→	Call Request
5	PND	←	Present Next Digit
6	DLO	←	Data Line Occupied
7	NB1	→	Digit Bit 1
8	NB2	→	Digit Bit 2
9	NB4	→	Digit Bit 4
10	NB8	→	Digit Bit 8

V35 DTE → DCE

Pin	Signal name	Direction	Description
1	FGND	↔	Frame GND on equipment
11	SD(A)	→	Send Data / Transmit
12	SD(B)	→	Send Data / Transmit
13	RD(A)	←	Receive Data
14	RD(B)	←	Receive Data
15	SCR(A)	←	Signal Clock Receive
16	SCR(B)	←	Signal Clock Receive
17	SCT(A)	←	Signal Clock Transmit
18	SCT(B)	←	Signal Clock Transmit
19	GND[1]	↔	Signal GND
22	RLSD(CD)	←	Received Line Signal Detector / Carrier Detect
23	RLSD(GND)[1]	←	Signal GND
24	RI	←	Ring Indicator
25	LOS	→	Loss of Signal (KG194)
26	DTR	→	Data Terminal Ready

1) This pin is connected to ground for correct operations

RS449 DTE → DCE

Pin	Signal name	Direction	Description
1	FGND	↔	Frame GND
11	SD(A)	→	Send Data
12	SD(B)	→	Send Data
13	RD(A)	←	Receive Data
14	RD(B)	←	Receive Data
15	RT(A)	←	Receive Timing
16	RT(B)	←	Send Timing
17	ST(A)	←	Send Timing
18	ST(B)	←	Send Timing
19	GND[1]	↔	GND
20	TR(A)	→	Terminal Ready
21	TR(B)	→	Terminal Ready
22	RR(A)	←	Carrier Detect / Receiver Ready
23	RR(B)	←	Carrier Detect / Receiver Ready
24	IC	←	Incoming Call
25	LOS	→	Loss of Signal (KG194)

Frame GND is connected to pin 1 on DTE
1) This pin is connected to ground for correct operations

Note the following:

V.10 (RS423). For balanced signals a 0=low voltage, is defined as terminal A positive with respect to terminal B. For unbalanced signals a 0=low voltage, is defined as terminal positive with respect to GND. Cable length for Leased Line Control should not exceed 20 m.

RS366. All balanced inputs and outputs (A and B) use balanced line signals according to V.11 (RS422), while single ended signals are in accordance with V.10 (RS423). The 0=low voltage definitions are the same as for V.10 above. Max cable length, as for V.10 above.

X.21. Signals are as for RS366 above. Cable length should not exceed 50 m.

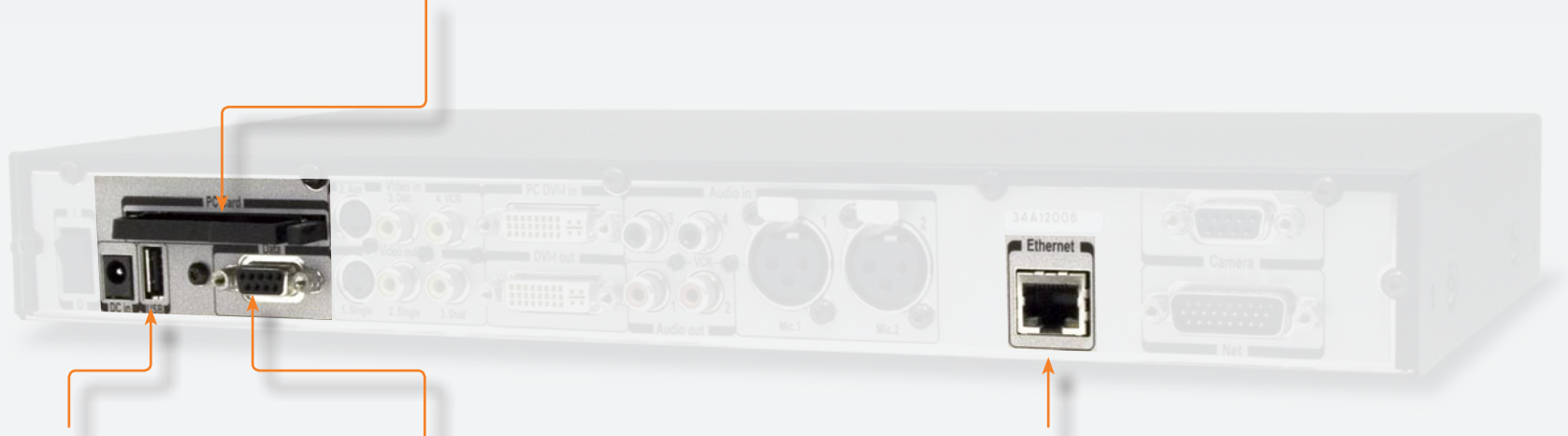
X.21 DTE → DCE

Pin	Signal name	Direction	Description
1	FGND	↔	Frame GND
11	T(A)	→	Send Data / Transmit
12	T(B)	→	Send Data / Transmit
13	R(A)	←	Received Data / Receive
14	R(B)	←	Received Data / Receive
15	S(A)	←	Signal Element Timing
16	S(B)	←	Signal Element Timing
20	C(A)	→	Terminal Ready / Control
21	C(B)	→	Terminal Ready / Control
22	I(A)	←	Carrier Detect
23	I(B)	←	Carrier Detect

Network Interface Sockets

TIP! Wherever applicable, the use of Category 5 cabling or better is strongly recommended! For HD camera applications, however, Category 7.5 is required.

PC card. Wireless LAN PC card may be inserted here.

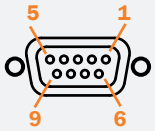


USB interface.
For future use.

Data port. The Data port is implemented as a Digital Circuit Terminating Equipment (DCE).

Data port		
Pin	**Signal name**	**Direction**
1	Carrier detect, CD	From DCE
2	Receive data, RXD	From DCE
3	Transmit data, TXD	To DCE
4	Data terminal ready, DTR	From DCE
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

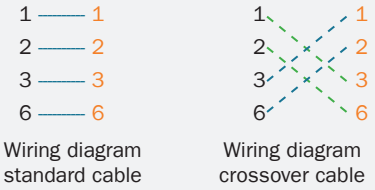
9-pin D-SUB pin-out
External view of socket



Ethernet LAN (RJ-45 Jack) **interface** (10/100 Mb). Up to 4 or 6 Mbps, depending on the bandwidth option installed. Use any standard Ethernet cable to connect the Codec to a LAN.

If no LAN is available and the Codec is connected directly to a computer, use a crossover cable.

Ethernet cable



Wiring diagram standard cable

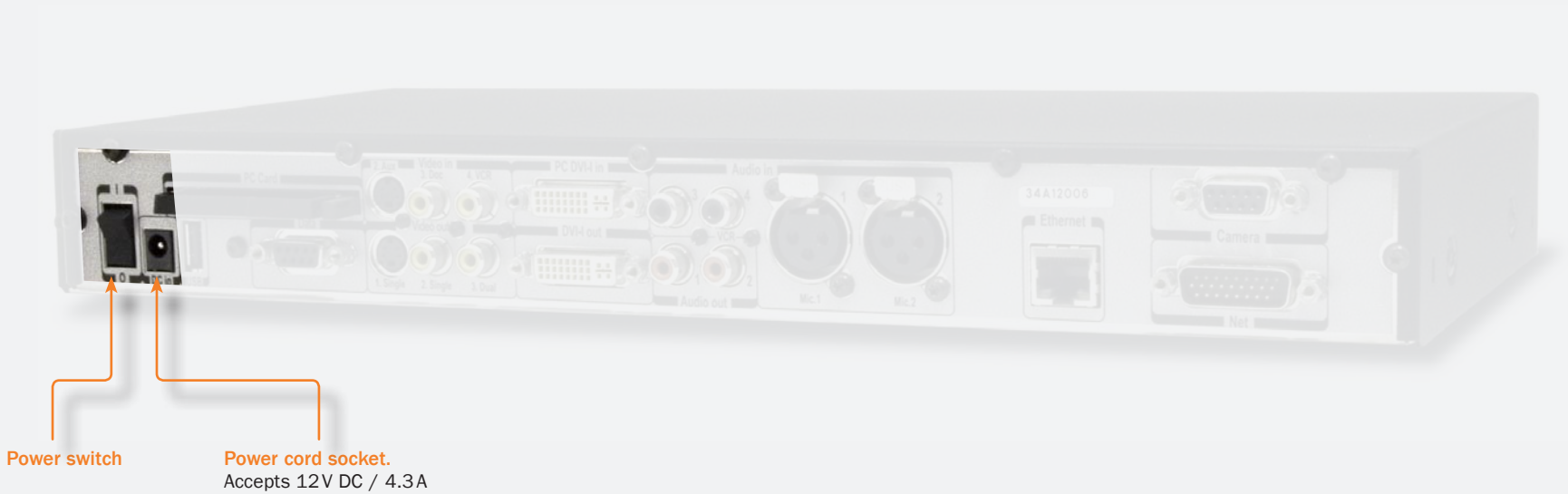
Wiring diagram crossover cable

RJ-45 Connector pin-out

TIP! If you connect your Codec directly to a PC, make sure you set up the system to use static TCP/IP settings. There will be no DHCP server controlling the little LAN created by the computer and the Codec. When configuring a back-to-back connection between the PC and the Codec, make sure both static IP addresses exist on the same subnet.

Power Socket & On/Off Switch

CAUTION! This equipment must be earthed!

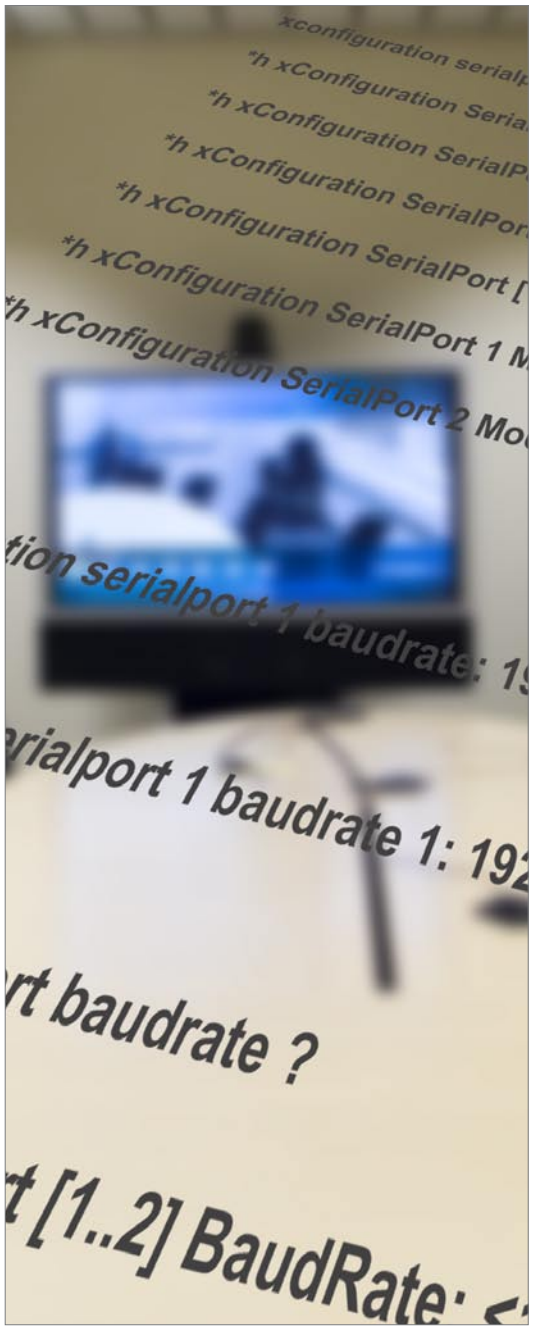


Interfaces and Sockets – Codec 6000 *MXP*

We recommend that you check out the TANDBERG web site regularly for updated versions of this manual:

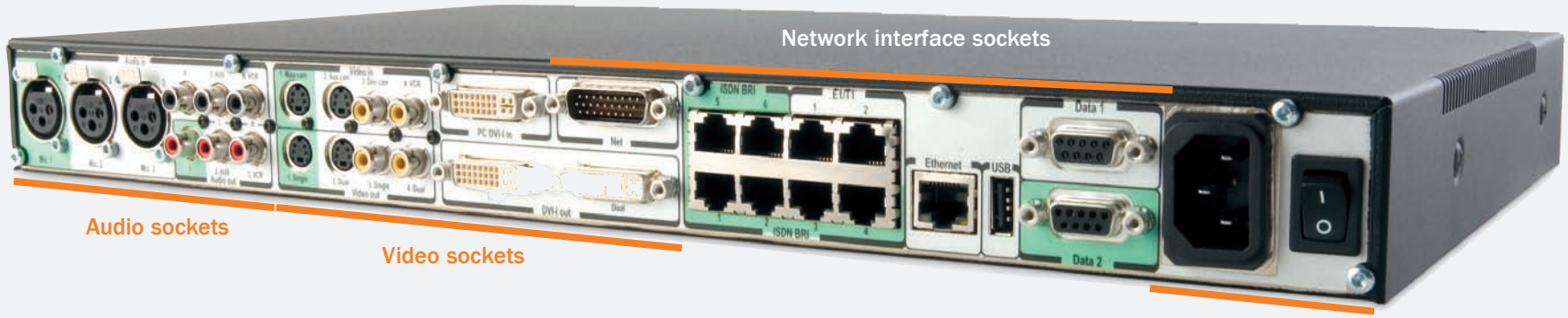
http://www.tandberg.com/docs

This part of the manual provides an in-depth presentation of the rear panel sockets and interfaces of the Codec 6000 *MXP*, including the audio signal levels and the formats supported.



TANDBERG

Rear Panel Socket– and Interface Groups



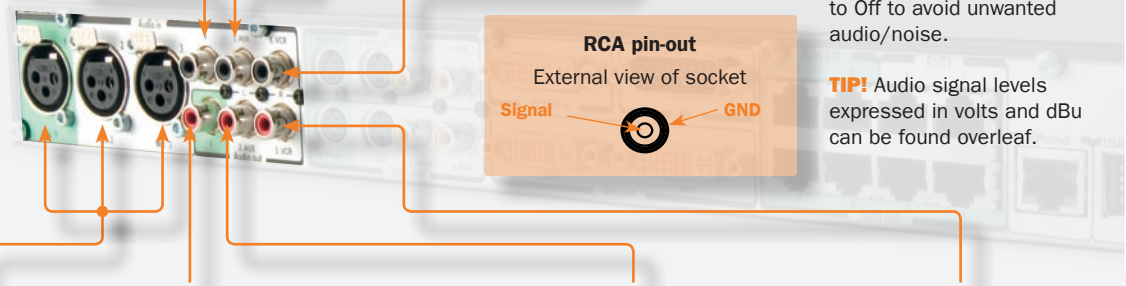
Audio Sockets

Use **Audio Input No. 4** to connect to an external microphone amplifier or to an external mixer.

Use **Audio Input No. 5** to connect to external playback devices or to telephone add-on hybrids. For systems configured with stereo I/O, connect the VCR/DVD left channel to this input.

Use **Audio Input No. 6** to connect a VCR or DVD player to the system. For systems configured with stereo I/O, connect the VCR/DVD right channel to this input.

NOTE! Audio inputs 4–6 are referred to as **Line input 1–3** in the API.



RCA pin-out

External view of socket

TIP! Audio inputs Nos. 5 & 6 are not equipped with acoustic echo canceller. Connecting microphones to these inputs can therefore not be recommended.

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

TIP! Audio signal levels expressed in volts and dBu can be found overleaf.

Microphone Inputs Nos. 1–3.
Three balanced microphone inputs for electret microphones balanced, 24V phantom powered via XLR connectors.

The phantom powering of XLR socket No. 3 can be switched off. The Mic. input No. 3 will then be a balanced line level input.

XLR pin-out

External view of socket

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

Use **Audio Output No. 1** to provide a mixed signal of audio from far end and local external devices connected to input 5 & 6, in addition to dial tones.

This output should be connected to the local loudspeaker system, which may, or may not, include the TANDBERG Digital Natural Audio Module.

For systems configured with stereo speakers and SPDIF† active, the left and right channel of the loudspeaker signal will both be provided on this output.

For systems configured with stereo speakers and SPDIF† not active, the left channel of the loudspeaker signal will be present on this output. The right loudspeaker channel will be provided on Audio Output No. 2.

Use **Audio Output No. 2** (the AUX output) to provide a mixed signal consisting of audio from the local side (AUX input not included) and audio from the far end.

This output should be used when connecting a telephone add-on system.

For system configured with stereo I/O and with SPDIF† active on Audio Output No. 1, this output will provide the VCR left channel stereo information.

For systems configured with stereo I/O, stereo speakers and SPDIF† not active, this output will provide the right channel of the loudspeaker signal (the left channel will be provided on the Audio Output No. 1).

Use **Audio Output No. 3** (the VCR output) to provide a mixed signal consisting of audio from the local side (VCR input not included) and audio from the far end.

This output should be used when connecting a VCR to the system.

For system configured with stereo I/O and with SPDIF† active on Audio Output No. 1, this output will provide the VCR right channel stereo information.

For systems configured with stereo I/O, stereo speakers and SPDIF† not active, this output will provide the mix of left and right channel of the VCR out signal.

† SPDIF (Sony/Philips Digital Interface) is used by the Digital Natural Audio module.

Stereo Settings

Settings			Output Response		
Out 1 mode	**Stereo I/O mode**	**Stereo speakers**	**Audio Out 1**	**Audio Out 2**	**Audio Out 3**
Analogue	Off	Off	Loudspeaker mono	Aux	VCR
Analogue	Off	On	Loudspeaker L	Loudspeaker R	VCR
Analogue	On	Off	Loudspeaker mono	VCR L	VCR R
Analogue	On	On	Loudspeaker L	Loudspeaker R	VCR
SPDIF	Off	Off	Loudspeaker mono	Aux	VCR
SPDIF	Off	On	Loudspeaker L&R	Aux	VCR
SPDIF	On	Off	Loudspeaker mono	VCR L	VCR R
SPDIF	On	On	Loudspeaker L&R	VCR L	VCR R

Hardware Information

	Microphone(s)	Audio Input(s)	Audio Outputs
Signal type	Balanced	Unbalanced	
Socket	XLR-F	RCA/phono	
Input impedance	2400Ω (pin 2–3)	10kΩ	
Output impedance			680Ω
Max input level when set to min. input level	83mVpp	15.5Vpp	
Max output level when set to max. output level			15.5Vpp
Max input level when set to max. input level	6.2mVpp	1.2Vpp	
Max output level when set to min. output level			1.2Vpp
Gain range	22.5dB (16 steps of 1.5dB)		
Phantom power	24V±5%		
Phantom power resistor pin 2	1200Ω		
Phantom power resistor pin 3	1200Ω		
Max phantom power current	12mA		

Audio Signal Levels in Vpp and dBu

Microphone Inputs 1, 2 & 3 Signal levels

Signal levels	Clipping levels		Nominal level
Input menu level setting [dB]	[mVpp]	[dBu]	[dBu]
0.0	83.0	–28.4	–46.4
1.5	69.8	–29.9	–47.9
3.0	**58.8**	**–31.4**	**–49.4**
4.5	49.4	–32.9	–50.9
6.0	41.6	–34.4	–52.4
7.5	35.0	–35.9	–53.9
9.0	29.4	–37.4	–55.4
10.5	24.8	–38.9	–56.9
12.0	20.8	–40.4	–58.4
13.5	17.5	–41.9	–59.9
15.0	14.8	–43.4	–61.4
16.5	12.4	–44.9	–62.9
18.0	10.4	–46.4	–64.4
19.5	8.8	–47.9	–65.9
21.0	7.4	–49.4	–67.4
22.5	6.2	–50.9	–68.9

This specification is always valid for mic 1 and 2, and for mic 3 if mic level setting is selected.

Microphone Input 3 Line level mode signal levels

Signal levels	Clipping levels		Nominal level
Input menu level setting [dB]	[Vpp]	[dBu]	[dBu]
0.0	15.5	17.0	–1.0
1.5	13.0	15.5	–2.5
3.0	11.0	14.0	–4.0
4.5	9.2	12.5	–5.5
6.0	7.8	11.0	–7.0
7.5	6.5	9.5	–8.5
9.0	5.5	8.0	–10.0
10.5	4.6	6.5	–11.5
12.0	3.9	5.0	–13.0
13.5	3.3	3.5	–14.5
15.0	2.8	2.0	–16.0
16.5	2.3	0.5	–17.5
18.0	2.0	–1.0	–19.0
19.5	1.6	–2.5	–20.5
21.0	1.4	–4.0	–22.0
22.5	1.2	–5.5	–23.5

This specification is valid for mic 3 if line level setting is selected.

Audio Inputs 4, 5 & 6 Signal levels

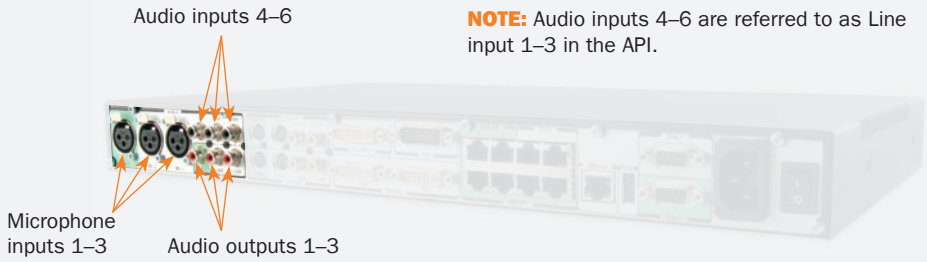
Signal levels	Clipping levels		Nominal level
Input menu level setting [dB]	[Vpp]	[dBu]	[dBu]
0.0	15.5	17.0	–1.0
1.5	13.0	15.5	–2.5
3.0	11.0	14.0	–4.0
4.5	9.2	12.5	–5.5
6.0	7.8	11.0	–7.0
7.5	6.5	9.5	–8.5
9.0	**5.5**	**8.0**	**–10.0**
10.5	4.6	6.5	–11.5
12.0	3.9	5.0	–13.0
13.5	3.3	3.5	–14.5
15.0	2.8	2.0	–16.0
16.5	2.3	0.5	–17.5
18.0	2.0	-1.0	–19.0
19.5	1.6	-2.5	–20.5
21.0	1.4	-4.0	–22.0
22.5	1.2	-5.5	–23.5

Default levels are denoted as follows: **–31.4**

Audio Outputs 1, 2 & 3 Signal levels

Signal levels	Absolute max output level		Nominal level
Input menu level setting [dB]	[Vpp]	[dBu]	[dBu]
0.0	1.2	–5.5	–23.5
1.5	1.4	–4.0	–22.0
3.0	1.6	–2.5	–20.5
4.5	1.9	–1.0	–19.0
6.0	2.3	0.5	–17.5
7.5	2.8	2.0	–16.0
9.0	3.3	3.5	–14.5
10.5	3.9	5.0	–13.0
12.0	4.6	6.5	–11.5
13.5	**5.5**	**8.0**	**–10.0**
15.0	6.5	9.5	–8.5
16.5	7.8	11.0	–7.0
18.0	9.2	12.5	–5.5
19.5	11.0	14.0	–4.0
21.0	13.0	15.5	–2.5
22.5	15.5	17.0	–1.0

This specification is always valid for output 2 and 3, and for output 1 at volume setting 15.



NOTE: Audio inputs 4–6 are referred to as Line input 1–3 in the API.

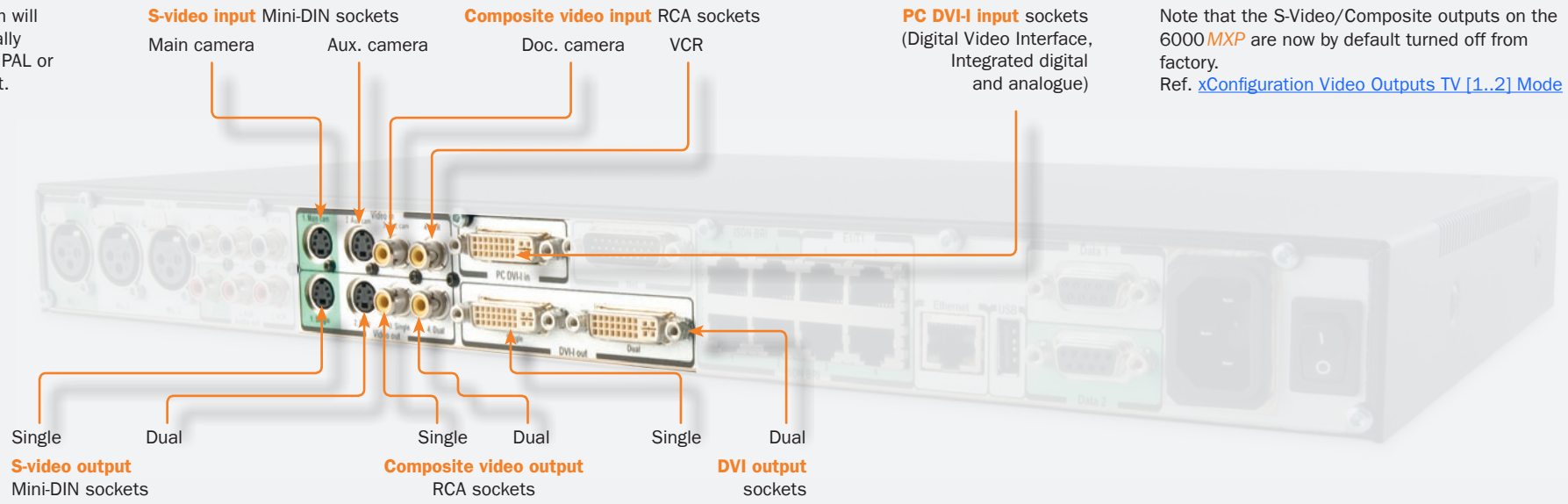
TIP: To convert dBu values to dBV, subtract 2.2 dB from the dBu value.

EXAMPLE: –10 dBu ≡ –12.2 dBV

NOTE: The input clipping levels and the absolute max output levels all assume sinusoidal signals for the dBu values.

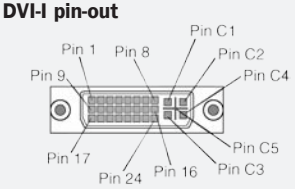
Video Sockets

The system will automatically adapt to a PAL or NTSC input.



Note that the S-Video/Composite outputs on the 6000 *MXP* are now by default turned off from factory.
Ref. xConfiguration Video Outputs TV [1..2] Mode

DVI-I pin-out



Note: TANDBERG supports DVI-D Single-Link, DVI-A and DVI-I Single-Link format cables.

DVI-D cables transmit digital T.M.D.S. signals, DVI-A cables transmit analogue VGA signals and DVI-I cables can transmit either digital or analogue signals.

If your DVI cable is not long enough, use extension cables. Observe, however, that the maximum cable length should not exceed 5 m to avoid quality loss.

DVI-I Pin-out

Pin	Assignment	Pin	Assignment	Pin	Assignment
1	T.M.D.S. Data 2–	9	T.M.D.S. Data 1–	17	T.M.D.S. Data 0–
2	T.M.D.S. Data 2+	10	T.M.D.S. Data 1+	18	T.M.D.S. Data 0+
3	T.M.D.S. Data 2/4 Shield	11	T.M.D.S. Data 1/3 Shield	19	T.M.D.S. Data 0/5 Shield
4	T.M.D.S. Data 4–	12	T.M.D.S. Data 3–	20	T.M.D.S. Data 5–
5	T.M.D.S. Data 4+	13	T.M.D.S. Data 3+	21	T.M.D.S. Data 5+
6	DDC Clock	14	+5 V power	22	T.M.D.S. Clock Shield
7	DDC Data	15	GND (return for +5 V, HSync and Vsync)	23	T.M.D.S. Clock+
8	Analogue Vertical Sync	16	Hot plug detect	24	T.M.D.S. Clock–
C1	Analogue Red	C2	Analogue Green	C3	Analogue Blue
C4	Analogue Horizontal Sync	C5	Analogue GND (analogue R, G & B return)		

Formats supported on DVI-I out:

SVGA (800×600) 75 Hz
XGA (1024×768) 60 Hz
SXGA (1280×1024) 60 Hz
HD720p (1280×720) 50 Hz, 60 Hz
WXGA (1280×768) 60 Hz

Formats supported on DVI-I in:

SVGA (800×600) 60 Hz, 72 Hz, 75 Hz, 85 Hz
XGA (1024×768) 60 Hz, 70 Hz, 75 Hz
SXGA (1280×1024) 60 Hz
HD720p (1280×720) 50 Hz, 60 Hz

Do as follows to get WXGA:

1 VGA Out Quality must be set to Auto.
2 VGA Monitor Format must be set to Wide.
3 PC Picture Format must be set to Normal.

If you are using TANDBERG supplied monitors this will give WXGA out when displaying graphics.

If non-TANDBERG provided displays are used, you must in addition execute the command:

```
xConfiguration Video Outputs AllowWXGA: On
```

Levels

Composite: 1 Vpp, 75 Ω
S-Video (Y/C):
Y: 1 Vpp, 75 Ω
C (PAL): 0.3 Vpp, 75 Ω
C (NTSC): 0.28 Vpp, 75 Ω

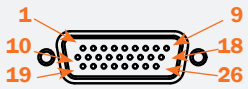
S-video Mini-DIN pin-out
External view of socket

Pin 1: Ground (Luminance)
Pin 2: Ground (Chrominance)
Pin 3: Luminance (Y)
Pin 4: Chrominance (C)

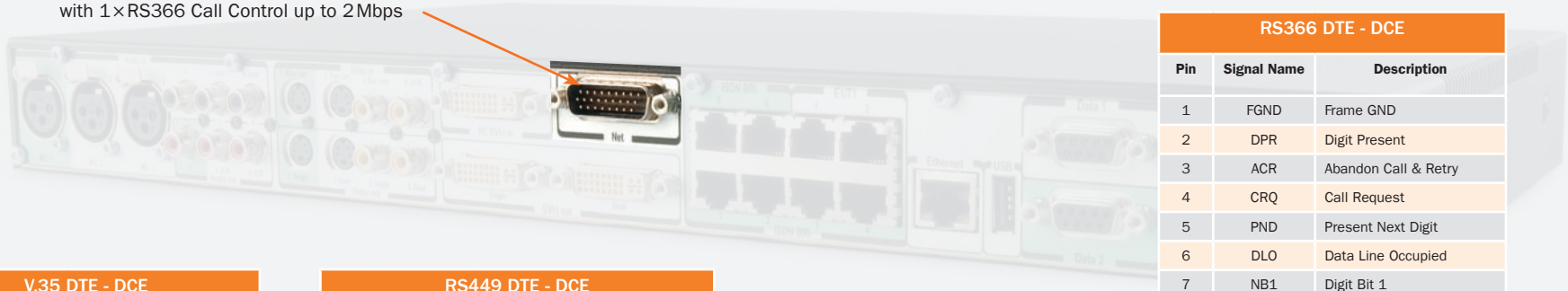
RCA pin-out
External view of socket

Net Interface Socket

HD D-SUB 26 pin-out
External view of socket



Net interface socket. 1×X.21 / V.35 / RS449 with 1×RS366 Call Control up to 2 Mbps



V.35 DTE - DCE		
Pin	**Signal Name**	**Description**
1	FGND	Frame GND on equipment
11	SD(A)	Send Data / Transmit
12	SD(B)	Send Data / Transmit
13	RD(A)	Receive Data
14	RD(B)	Receive Data
15	SCR(A)	Signal Clock Receive
16	SCR(B)	Signal Clock Receive
17	SCT(A)	Signal Clock Transmit
18	SCT(B)	Signal Clock Transmit
19	GND[1]	Signal GND
22	RLSD(CD)	Received Line Signal Detector / Carrier Detect
23	RLSD(GND)[1]	Signal GND
24	RI	Ring Indicator
25	LOS	Loss of Signal (KG194)
26	DTR	Data Terminal Ready

1) This pin is connected to ground for correct operations

RS449 DTE - DCE		
Pin	**Signal Name**	**Description**
1	FGND	Frame GND
11	SD(A)	Send Data
12	SD(B)	Send Data
13	RD(A)	Receive Data
14	RD(B)	Receive Data
15	RT(A)	Receive Timing
16	RT(B)	Send Timing
17	ST(A)	Send Timing
18	ST(B)	Send Timing
19	GND[1]	GND
20	TR(A)	Terminal Ready
21	TR(B)	Terminal Ready
22	RR(A)	Carrier Detect / Receiver Ready
23	RR(B)	Carrier Detect / Receiver Ready
24	IC	Incoming Call
25	LOS	Loss of Signal (KG194)

Frame GND is connected to pin 1 on DTE

1) This pin is connected to ground for correct operations

Note the following:

V.10 (RS423). For balanced signals a "0" = low voltage, is defined as terminal A positive with respect to terminal B. For unbalanced signals a "0" = low voltage, is defined as terminal positive with respect to GND. Cable length for **Leased Line Control** should not exceed 20 m.

RS366. All balanced inputs and outputs (A and B) use balanced line signals according to V.11 (RS422), while single ended signals are in accordance with V.10 (RS423). The "0" = low voltage definitions are the same as for V.10 above. Max cable length, as for V.10 above.

RS366 DTE - DCE		
Pin	**Signal Name**	**Description**
1	FGND	Frame GND
2	DPR	Digit Present
3	ACR	Abandon Call & Retry
4	CRQ	Call Request
5	PND	Present Next Digit
6	DLO	Data Line Occupied
7	NB1	Digit Bit 1
8	NB2	Digit Bit 2
9	NB4	Digit Bit 4
10	NB8	Digit Bit 8

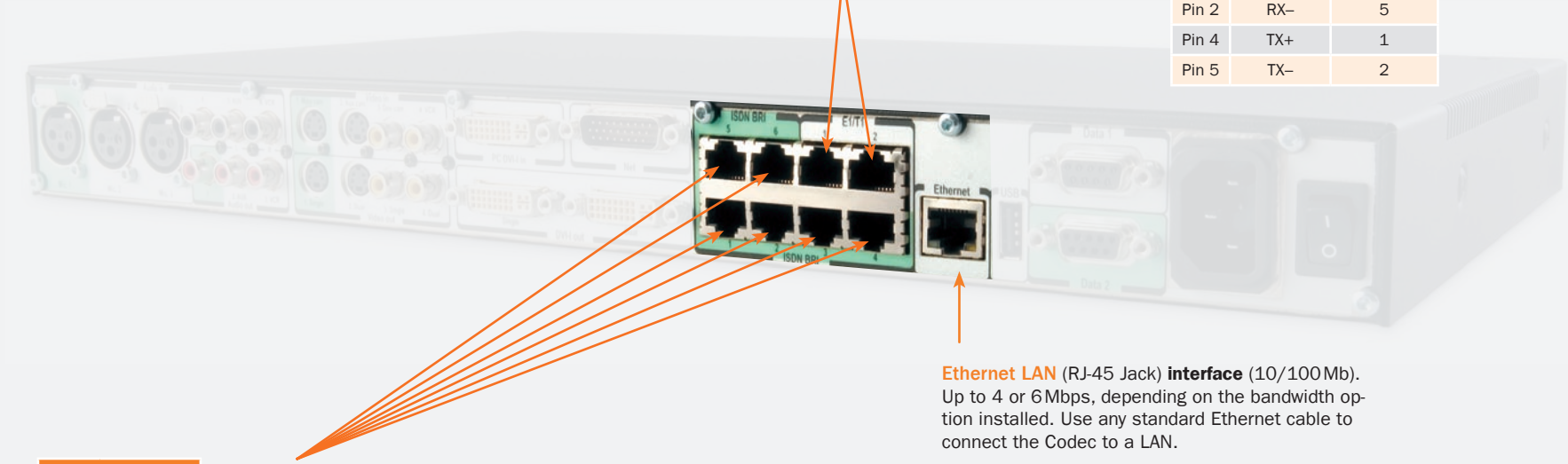
X.21 DTE - DCE		
Pin	**Signal Name**	**Description**
1	FGND	Frame GND
11	T(A)	Send Data / Transmit
12	T(B)	Send Data / Transmit
13	R(A)	Received Data / Receive
14	R(B)	Received Data / Receive
15	S(A)	Signal Element Timing
16	S(B)	Signal Element Timing
20	C(A)	Terminal Ready / Control
21	C(B)	Terminal Ready / Control
22	I(A)	Carrier Detect
23	I(B)	Carrier Detect

Network Interface Sockets

TIP! Wherever applicable, the use of Category 5 cabling or better is strongly recommended! For HD camera applications, however, Category 7.5 is required.

ISDN PRI interface. 1×PRI (RJ-45 Jack) Primary Rate & Leased Line E1/T1 (G.703) Interface up to 2 Mbps. 1×PRI (RJ-45 Jack) Primary Rate (for future use). Use any standard PRI cable to connect the Codec to PRI.

E1/T1 Interface		
PRI	**Pin-Out**	**Crossover PRI cable**
Pin 1	RX+	4
Pin 2	RX–	5
Pin 4	TX+	1
Pin 5	TX–	2



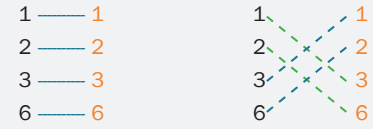
Ethernet LAN (RJ-45 Jack) **interface** (10/100 Mb). Up to 4 or 6 Mbps, depending on the bandwidth option installed. Use any standard Ethernet cable to connect the Codec to a LAN.

If no LAN is available and the Codec is connected directly to a computer, use a crossover cable.

S/T Interface	
BRI	**Pin-Out**
Pin 3	TX+
Pin 4	RX+
Pin 5	RX–
Pin 6	TX–

ISDN BRI interface. ISDN I.420 (RJ-45 Jack) Basic Rate Interface S/T (2B+D), 128 kbps per ISDN I/F. Use any standard BRI cable to connect the Codec to BRI.

Ethernet cable



Wiring diagram standard cable

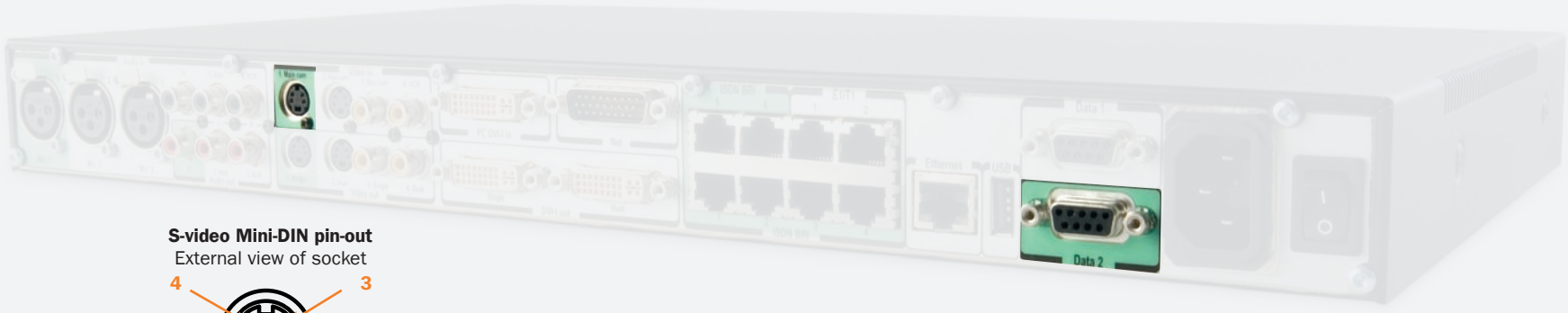
Wiring diagram crossover cable

RJ-45 Connector pin-out

TIP! If you connect your Codec directly to a PC, make sure you set up the system to use static TCP/IP settings. There will be no DHCP server controlling the little LAN created by the computer and the Codec. When configuring a back-to-back connection between the PC and the Codec, make sure both static IP addresses exist on the same subnet.

Camera Sockets

TIP! Wherever applicable, the use of Category 5 cabling or better is strongly recommended! For HD camera applications, however, Category 7.5 is required.



S-video Mini-DIN pin-out
External view of socket

Pin 1: Ground (Luminance)
Pin 2: Ground (Chrominance)
Pin 3: Luminance (Y)
Pin 4: Chrominance (C)

TANDBERG WAVE II Camera cable pin-out

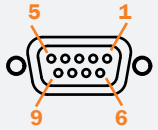
SIGNAL NAME	RJ-45	DSUB
+12V DC	8	4
GND	7	5
+12V DC	3	4
TXD	4	3
RXD	5	2
GND	6	5
GND	2	5
+12V DC	1	4

TANDBERG HD 6000 Camera cable pin-out

SIGNAL NAME	RJ-45		DSUB
+12V DC	1	Twisted pair	4
GND	2		5
Rx	3	Twisted pair	2
TX	6		3
LVDS+	4	Twisted pair	1
LVDS–	5		6
GND	7	Twisted pair	5
+12V DC	8		4

Cable is Category 7.5/ Class F AWG24. Extreme care should be taken if you choose to make your own version of this cable!

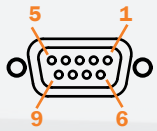
9-pin D-SUB pin-out
External view of socket

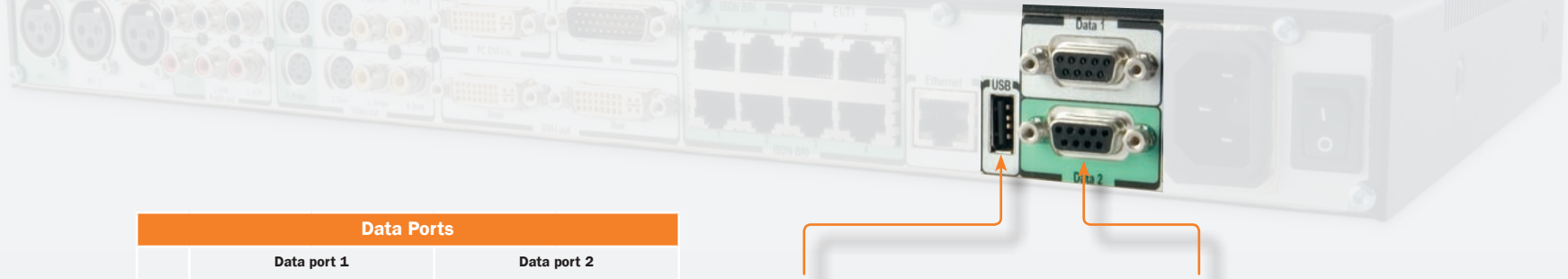


RJ-45 Connector pin-out

Data Ports

9-pin D-SUB pin-out
External view of socket





USB interface.
For future use.

Data port 1 (upper) and 2 (lower). The Data ports are implemented as Digital Circuit Terminating Equipment (DCE).

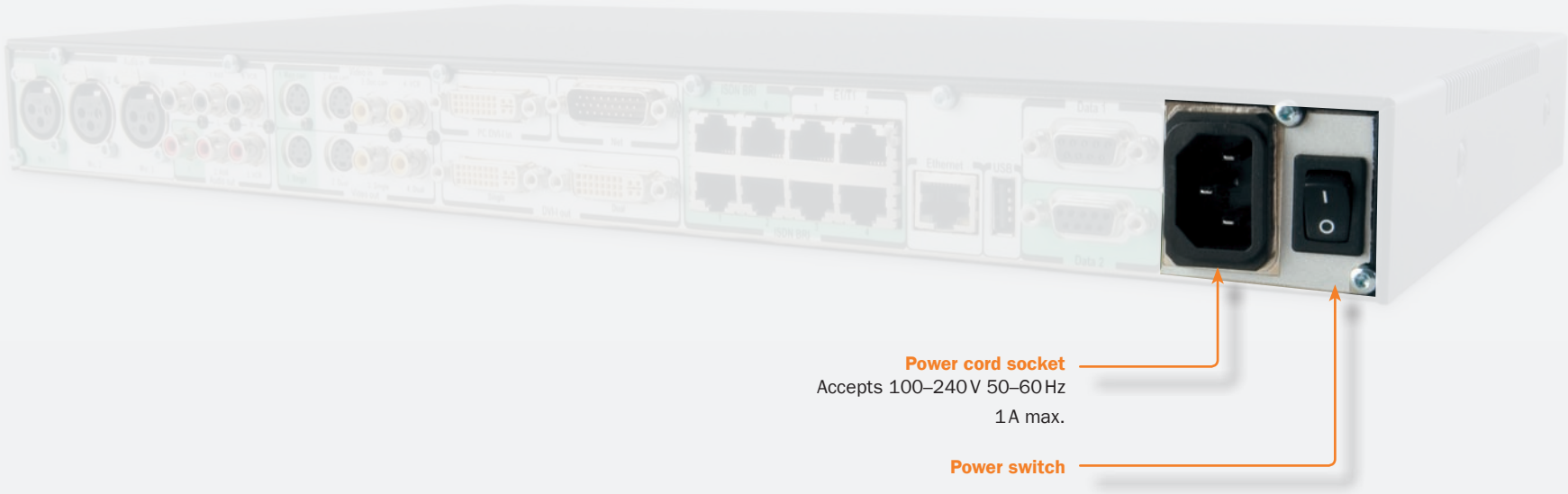
NOTE! The TANDBERG main camera is normally connected to data port 2 and pin No. 4 provides 12 VDC / 1 A to the main camera. Otherwise the pin-outs are the same for the two data ports.

Data Ports				
	Data port 1		Data port 2	
Pin	Signal name	Direction	Signal name	Direction
1	Carrier detect, CD	From DCE	Carrier detect, CD	From DCE
2	Receive data, RXD	From DCE	Receive data, RXD	From DCE
3	Transmit data, TXD	To DCE	Transmit data, TXD	To DCE
4[1]	Data terminal ready, DTR	From DCE	12V / 1A	
5	Signal GND		Signal GND	
6	Data set ready, DSR	From DCE	Data set ready, DSR	From DCE
7	Ready to send, RTS	To DCE	Ready to send, RTS	To DCE
8	Clear to send, CTS	From DCE	Clear to send, CTS	From DCE
9	Ring indicator, RI	From DCE	Ring indicator, RI	From DCE

1) The TANDBERG main camera is normally connected to data port 2 and pin No. 4 provides 12 VDC / 1 A to the main camera. Otherwise the pin-outs are the same for the two data ports.

Power Socket & On/Off Switch

CAUTION! This equipment must be earthed!



Power cord socket
Accepts 100–240 V 50–60 Hz
1 A max.

Power switch

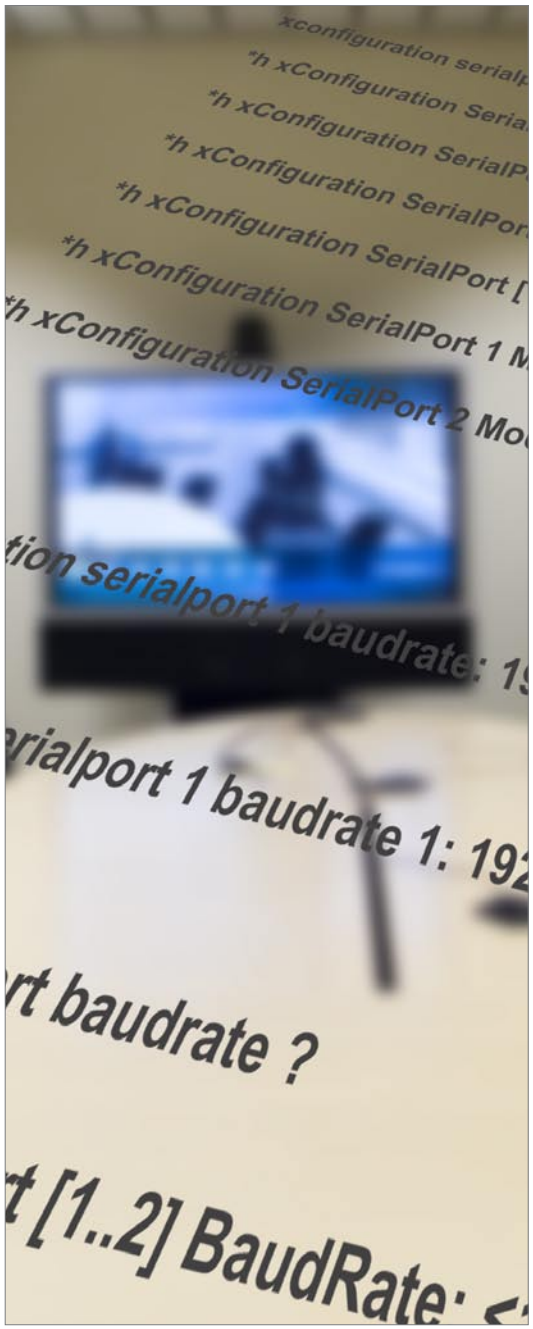
About the TANDBERG API

We recommend that you check out the TANDBERG web site regularly for updated versions of this manual:

http://www.tandberg.com/docs

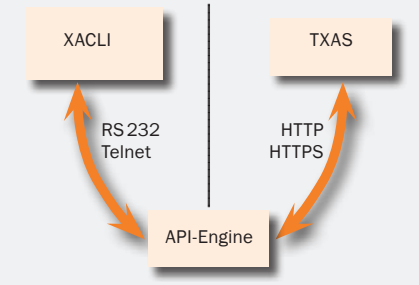
The heart of the API is the TANDBERG API-Engine. This is where all information is stored and processed. The API-engine can be accessed by an easy-to-use Command Line Interface called XACLI using RS 232 or Telnet, or by the TANDBERG XML API Service (TXAS) over HTTP/HTTPS.

Both alternatives are described in detail in this section of the User Guide.



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 or Telnet, 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 or Telnet), 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/SOAP 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.

NOTE! New features on the TANDBERG *MXP* will be supported on XACLI only.

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).

If we now 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).

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 (RS232/Telnet) and TXAS (HTTP/HTTPS) simultaneously.

The system uses TANDBERG SimplePath when presenting configurations.

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

The structuring of information together with XPath and TANDBERG SimplePath for addressing, makes up powerful features like searchability and setting of multiple instances of a configuration.

Examples are provided overleaf.

XACLI and the classic data port commands

What Happened to the RS232/Telnet Dataport Interface Supported on the Classic Systems?

The TANDBERG *MXP* also supports the RS 232/Telnet Dataport Interface that was supported on the Classic systems. You may use any mixture of Classic Dataport commands and XACLI commands on the same RS232/Telnet session. A multitude of the commands overlaps, but XACLI offers more flexibillity and gives access to the latest features supported by the system.

We recommend the use of XACLI commands whenever you write new control system modules and whenever you add new features into existing control modules, but there is no need to to rewrite already existing control modules based on Classic commands.

The XACLI API is described in detail in this section of the User Guide. The Classic Dataport Interface is described in the TANDBERG 770-8000MXP API (Dataport User Guide), which is available separately.

NOTE! New features on the TANDBERG *MXP* will be supported on XACLI only.

EXAMPLE: To configure the baudrate of serial port 1 to 9600:

Classic Dataport: `sport data1 9600`

XACLI: `xconfiguration serialport 1 baudrate: 9600`

Example 1

Example showing Serial Port configurations of a TANDBERG 6000 *MXP* codec, using the standard XACLI formatting for configurations:

```
xconfiguration serialport
*c xConfiguration SerialPort 1 BaudRate: 57600
*c xConfiguration SerialPort 1 Parity: None
*c xConfiguration SerialPort 1 DataBits: 8
*c xConfiguration SerialPort 1 StopBits: 1
*c xConfiguration SerialPort 1 Mode: Control
*c xConfiguration SerialPort 2 BaudRate: 9600
*c xConfiguration SerialPort 2 Parity: None
*c xConfiguration SerialPort 2 DataBits: 8
*c xConfiguration SerialPort 2 StopBits: 1
*c xConfiguration SerialPort 2 Mode: Auto
OK
```

Example 2

Example: To address the BaudRate element of serial port 2:

XPath

Each level is separated with a slash (‘/’). Item numbers are added in brackets after the element name:

SerialPort[2]/BaudRate

Example

```
xconfiguration serialport[2]/baudrate
*c xConfiguration SerialPort 2 BaudRate: 9600
OK
```

TANDBERG SimplePath

Both levels and item numbers are separated with whitespaces:

SerialPort 2 BaudRate

Example

```
xconfiguration serialport 2 baudrate
*c xConfiguration SerialPort 2 BaudRate: 9600
OK
```

Accessing XACLI

XACLI can be accessed through Telnet via the LAN interface or through RS232 by connecting a serial cable to the serial interface connector, referred to as the Dataport. Eight Telnet sessions can be connected to the TANDBERG *MXP* simultaneously, in addition to the RS232 connection.

Connecting to XACLI using the Dataport (RS232)

The RS232 port is a 9-pin, female, D-sub connector located on the back of the TANDBERG MXP. The port is configured as a DCE (Data Communications Equipment). The RS232 port is default set to 9600 baud, 8 data bits, none parity and 1 stop bit from factory. The RS232 port is also referred to as the **DATAPORT**.

The RS232 Dataport on the 6000 *MXP* Codec

The RS232 Dataport on the 3000 *MXP* Codec

See also the pages on the 3000 *MXP* Dataports and the 6000 *MXP* Dataports in this User Guide. Note that one of the RS232 ports of the 6000 *MXP* Codec (the lower) is used as a camera control socket.

Hardware & Cabling (RS232)

The pin outs for the RS232 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.

NOTE! A straight-through cable should be used between the TANDBERG MXP's RS232 port and the DTE.

The lower table shows the recommended cable-wiring scheme when connecting the TANDBERG *MXP* to a PC through RS232.

DTR and RTS are ignored. DSR, CD, and CTS are always asserted, while RI is not used.

Troubleshooting (RS232)

If communication cannot be established between the PC/terminal and the TANDBERG MXP's Dataport, the following should be checked:

- Verify that the serial cable is a straight-through 9-pin to 9-pin cable
- Confirm that the configuration of the PC/terminal's serial RS232 port is identical to the configuration of the TANDBERG MXP RS232 port.
- Verify that the PC/terminal's serial RS232 port is working properly by connecting it back-to-back to another PC/terminal and send characters in both directions.

Data Port (RS232)

Pin	Signal name	Direction
1	Carrier detect, CD	From DCE
2	Receive data, RXD	From DCE
3	Transmit data, TXD	To DCE
4	Data terminal ready, DTR	From DCE
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

Cable wiring TANDBERG MXP ↔ PC via RS232

TANDBERG MXP DCE, 9 pin	Direction	PC DTE, 9 pin
1 CD	→	1 CD
2 RD	→	2 RD
3 TD	←	3 TD
4 DTR	←	4 DTR
5 GND	↔	5 GND
6 DSR	→	6 DSR
7 RTS	←	7 RTS
8 CTS	→	8 CTS
9 RI	→	9 RI

Root Commands

By typing **?** or **help** after connecting to the TANDBERG MXP using RS232/Telnet, the system will list all supported root commands.

All root commands prefixed with an **x** belongs to the XACLI interface. These are shown in **orange** colour in the table to the right. All other root commands belong to the Classic Dataport Interface (described in a separate document).

NOTE! Classic Dataport commands and XACLI commands can be used side by side. However, the use of XACLI commands is recommended whenever writing new control system modules and whenever adding new features into existing control modules, but there is no need to rewrite existing code based on the Classic commands.

NOTE! New features on the TANDBERG *MXP* will be supported on XACLI only.

```
?
        - User Commands -
about                   dumph221            layout-keyboard     prisearch
access                  duovideo            localdn             protect
aim                     echoctrl            los-duration        rinfo
alrtvol                 enable              los-inhibit         rnumber
ansdelay                encmode             los-initial         screensaver
audioagc                encrypt             los-polarity        selfview
audiofeature            encstatus           los-retry           sendnum
audiofeedback           eventlog            maxcall             services
audioin                 extcam              mcucommand          snmp
audiolevel              extcap              mcudirectory        spid
audiomix                extname             mculine             spkr
audiomodule             extswitch           mcustat             sport
audioout                fallback            menupassword        sstring
autoans                 fecc                mic                 statin
automute                feedback            monstat             statout
autopip                 feinfo              msn                 still
beep                    fevidsrc            multisite           streaming
bondingtimer            g703settings        netclock            strictpassword
boot                    globdirectory       netctrl             sub
callstatus              h239                netdtrpulse         syslog
camcenter               h323alias           netisdn             systemname
cammove                 h323callmanager     netpri              telephony
campos                  h323gatekeeper      netprofile          teltone
camsettings             h323mtu             netstat             test
camsleepmode            h323nat             nettype             traceroute
camtrack                h323ports           optionkey           vgaout
chanstat                h323prefix          pardial             vidfeature
chat                    h323qos             ping                vidin
custominfo              h323rate            pip                 vidname
defcall                 h323status          pldownspeed         vidtone
defvalues               h331mode            preset-activate     vnc
delbox                  help                preset-list         vol
dial                    ifconfig            preset-store        websnapshots
directory               ipaddress           pressource          xcommand
disable                 ipassignment        pricable            xconfiguration
disc                    ipconflictcheck     pricrc4             xdirectory
dispbox                 iplr                prihighch           xevent
dispparam               ippassword          prilowch            xfeedback
disptxt                 irctrl              primaxchan          xgetxml
dltxt                   isdntrace           prinsf              xhistory
donotdist               key                 prinumber           xpreferences
downspeed               language            prinumbrange        xstatus
dualmon
OK

All root commands prefixed with an 'x' belong to the XACLI interface.
```

XACLI – Main Types of Commands

About Main Types of Commands

The XACLI is divided into three main types of commands (and a fourth – see below), 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

Commands defining system settings. Configuration-type commands are either supplied or read by the user. E.g. default callrate, baudrate of a serial port, enabling/disabling of various features etc.

All Configurations are structured in a hierarchy making up a database of system settings.

Supported Configuration-type commands:

- xConfiguration
- xDirectory

Status Type Commands

Commands returning information about the system and system processes, i.e. information generated by the system. E.g. 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 system and process changes.

Supported Status-type commands:

- xStatus
- xHistory
- xEvent

Command Type Commands

Commands instructing the system to perform an action. E.g. 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.

Supported Command-type commands:

- xCommand

Special Commands

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

`xfeedback` is a command used to specify what parts of the configuration and status hierarchies to monitor. Feedback will only be issued on the RS232/Telnet for which it is specified. If connecting to the TANDBERG *MXP* with multiple RS232/Telnet sessions, each session can define feedback individually.

More on this can be found in xfeedback.

`xpreferences` is used to set various preferences for the RS232/Telnet 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 *MXP* very simple.

More on this can be found in xpreferences.

`xgetxml` gives access to the exact same information as the Main types of commands (xstatus, xhistory, xconfiguration etc.), but returns the information XML formatted.

More on this can be found in xgetxml.

XACLI – Configuration Type Commands

About Configuration Type Commands

All Configurations are organized in a hierarchic tree structure.

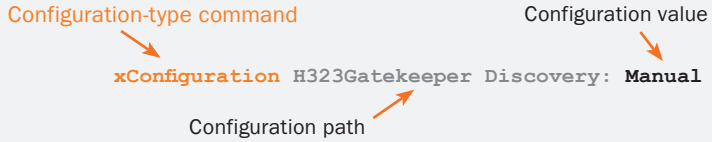
To get an overview of accessible top-level configuration elements within a configuration-type command, type **?** or **help** after the configuration-type commands (xconfiguration/xdirectory), as shown in the example to the right.

TIP! To list all supported configurations with corresponding valuespace:

```
xConfiguration ??
```

Configurations consists of three parts:

1. A Configuration-type command (xConfiguration or xDirectory)
2. A Configuration path (address-expression)
3. A Configuration value




```
xconfiguration ?

 - User Configurations -
 AdditionalCamera            FTP                     PacketlossDownSpeed
 AlertSpeaker                G703                    PictureProgram [1..4]
 AlertTone                   H320                    PresentationSoftkey
 AllowLatency                H323                    PresentationStart
 Audio                       H323CallSetup           Preset [1..15]
 AutoAnswer                  H323Gatekeeper          QoS
 AutoDisplaySnapshot         H323Prefix              RemoteSwUpgrade
 AutoLayout                  HTTP                    Robotron
 AutoPIP                     HTTPS                   RTP
 Bonding                     IdReport                Screensaver
 CallManager                 IEEE802.1x              Security
 CallVideoSource             IMUX                    SecurityLog
 Camera [1..13]              Integrator              SelfViewOnStartup
 CameraDVI                   IP                      SerialPort [1..2]
 CameraReverseControl        IPMedia                 SIP
 CameraSleep                 IPProtocol              SNMP
 CameraSwUpgrade             IRControl               SSH
 CameraTracking              ISDN                    StartupVideoSource
 Conference                  KeepDuoOpen             StillImageSource
 CorporateDirectory          Key                     Streaming
 DefaultPIPPosition          Keyboard                StrictPassword
 Directory                   Kiosk                   Switch
 DoNotDisturb                LocalLayout             SystemUnit
 DualMonitor                 Logo                    T1
 DuoVideoSource              LoS                     Telnet
 DynamicResolution           MainVideoSource         TelnetChallenge
 E1                          MaxBandwidth            ThreePartyLayout
 Ethernet                    Multipoint              Time
 ExternalManager             NAT                     TURN
 ExternalNetwork             NetProfile [1..7]       UseAsLocalPCMonitor
 ExternalServices            NTP                     Video
 FECC                        OptionKey               VNC
 FeedbackFilter              OSD

OK


xdirectory ?

 - Directory -
 GlobalEntry [1..400] LocalEntry [1..200]
 GroupEntry [1..50]
OK
```

XACLI – Configuration Type Operation

About Configuration Operations

Three operations can be performed on configurations:

- Configuration Help
- Configuration Read
- Configuration Set (Write)

Configuration Help

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

<configuration-type command> <address expression> ?

EXAMPLE:

```
xconfiguration h323gatekeeper discovery ?
*h xConfiguration H323Gatekeeper Discovery: <Manual/Auto>
OK
```

Configuration Read

To read configurations from the system just type the root command (**xConfiguration**/**xDirectory**) followed by the path (address expression):

<configuration-type command> <address expression>

EXAMPLE:

```
xconfiguration h323gatekeeper discovery
*c xConfiguration H323Gatekeeper Discovery: Manual
OK
```

Note!

- *h is used when returning the result of a help query
- *c is used when returning the result of a read query
- Nothing is used for configuration set
- *d is used when returning the result of an xdirectory read query.

Configuration Set (Write)

Type a root command (**xConfiguration**/**xDirectory**) followed by a valid path (address expression). The path must be terminated with a colon before the value is added.

<configuration-type command> <address expression>: <value>

EXAMPLE:

```
xConfiguration H323Gatekeeper Discovery: Manual
```

XACLI – Configuration Types

About Configuration Types

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

Format for Value 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>
```

XACLI – Command-type Commands – xcommands/xdirectory

Getting an Overview

To get an overview of the supported command-type commands, type `?` or `help` after the command-type command (`xcommand`) .

TIP! To list all supported configurations with corresponding valuespace:

```
xcommand ??
```

Command help

To get help on a specific command, type the command-type command (xcommand) – then a command name followed by `?` or `help`:

```
<command-type command> <command name> ?
```

EXAMPLE:

```
xcommand dial ?

*h xCommand Dial
             Number: <S: 0, 60>
             SecondNumber: <S: 0, 60>
             SubAddress: <S: 0, 20>
             CallRate: <Tlph/1xh221/2xh221/64/128/…/4096/Max/Auto>
             Restrict: <On/Off>
             NetProfile: <1..7>
             BillingCode: <S: 0, 16>
```

NOTE! Required parameters are identified by an (r) behind the parameter name.

EXAMPLE:

```
xcommand cameramove ?

*h xCommand CameraMove
             Camera(r): <1..4>
             Direction(r): <Up/Down/Right/Left/In/Out>

OK
```

Example Showing How to Get an Overview of Supported Commands

```
xcommand ?

 - User Commands -
AlertToneTest            DefaultValueSet          LocalEntryAdd
AudioTestSignal          Dial                     LocalEntryDelete
Boot                     DialGlobalEntry          MessageBoxDelete
CallAccept               DialGroupEntry           MessageBoxDisplay
CallHold                 DialLocalEntry           PIPHide
CallJoin                 DisconnectCall           PIPShow
CallMute                 DTMFSend                 PresenceForce
CallMuteOutgoing         DuoVideoStart            PresetActivate
CallResume               DuoVideoStop             PresetClear
CallSetAudioTP           FECCFocus                PresetStore
CallTransfer             FECCMove                 ProfileActivate
CameraFocus              FECCPresetActivate       ProfileCreate
CameraForceUpgrade       FECCPresetStore          ProfileDelete
CameraHalt               FECCRequestStill         ProfileList
CameraMove               FECCSelectSource         ScreensaverActivate
CameraPosition           FeedbackDeregister       ScreensaverDeactivate
CameraReConfigure        FeedbackRegister         ScreensaverReset
CameraTrackingStart      FIPSMode                 SiteDisconnect
CameraTrackingStop       FloorRelease             SiteView
CameraUpgrade            FloorRequest             SiteViewEnd
CameraWhitebalance       FloorToSite              SPIDAutoConfigure
ChairRelease             FloorToSiteEnd           SStringSend
ChairTake                GroupAddEntry            StillImageSend
ConferenceDisconnect     GroupEntryDelete         StreamingStart
ConferenceMoveToMCU      KeyDisable               StreamingStop
ConferenceTerminate      KeyDown                  TextDelete
CorpDirGetNext           KeyEnable                TextDisplay
CorpDirGetPrevious       KeyPress                 VirtualMonitorReset
CorpDirSearch            KeyRelease               VirtualMonitorSet

OK
```

XACLI – Command-type Commands – Issuing a Command

Issuing a Command

A command must start with the command-type command (`xcommand`), followed by a command name, followed by a set of parameters. Parameters values are identified by specifying the parameter name followed by a ':'

```
<command-type command> <command name> <parameter:value> <parameter:value>...
```

EXAMPLE:

```
xcommand dial number:558458 restrict:on callrate:128 subaddress:10
```

If there are multiple instances of a parameter, the item number is added after the tag separated with a dot:

```
<command-type command> <command> <parameter.item:value> <parameter.item:value>...
```

EXAMPLE:

```
xcommand groupentryadd name:TANDBERG localentryid.1:15 localentryid.2:57
```

Sequence Notation (Optional)

<command-type root command> <command> <value> <value>...

When using this notation the parameter values must be entered in the sequence as stated in the help text:

EXAMPLE:

```
*h xCommand Dial
             Number: <S: 0, 60>
             SecondNumber: <S: 0, 60>
             SubAddress: <S: 0, 20>
             CallRate: <Tlph/1xh221/2xh221/64/128/192/256/320/384/H0/512/768/1152/1472/1
920/2560/3072/4096/Max/Auto>
             Restrict: <On/Off>
             NetProfile: <1..7>
             BillingCode: <S: 0, 16>
```

To dial a participant with the following properties: Number: 666, SecondNumber:777, SubAddress: 8, CallRate: 128, Restrict: On

```
xcommand dial 666 777 8 128 on
```

Command Response

When issuing a command, the system will return a set of return values. The response will by default be on the same format as the standard XACLI Status format. The other supported status formats (completepath/XML) are also supported – ref. xpreferences.

EXAMPLE

```
xcommand dial 558458

*r Result (status=OK):
     CallRef: 1
     LogTag: 6
*r/end
OK
```

If complete path is enabled for the RS-232/Telnet session ("`xpreferences completepath on`"):

EXAMPLE

```
xcom dial 558458

*r Result (status=OK):
*r Result CallRef: 1
*r Result LogTag: 4

OK
```

Combination of Markup Notation and Sequence (Optional)

A combination of markup notation and sequence is also supported. The marked parameters will be assigned the user entered values first, then the system will assign the sequence entered parameters for the parameters not yet having been assigned a value:

EXAMPLE:

xcommand dial 666 restrict:on 777 8 128

NOTE! When using XACLI as a machine-machine interface we recommend that you use markup notation and always supply complete tag names.

XACLI – Command-type Commands – Parameter Value Types

Command Parameter Value Types

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

Format for Value 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>
```

XACLI – Status Type Commands

About Status Type Commands

All Status information is organized in a hierarchic tree structure.

To get an overview of accessible top-level status elements within a status-type command, type **?** or **help** after the status-type commands (xstatus/xhistory/xevent).

Understanding Status Information Structuring

All Status information is organized in a hierarchic tree structure, very much like files and folders on a computer. The tree structure consists of container-elements (folders) and value elements (files). Container-elements contains sub-elements, while value elements contain values. All elements have an element name and an element item number. There can exist multiple instances of an element.

An element can also have various attributes. Attributes are used to add meta information to an element. The sub-structure of a container-element may vary depending on the attribute values. The relationship between attribute values of a given element and its underlying sub-structure can be read from the sections documenting the various status elements.

E.g. a call that is disconnected does not contain any data (except a disconnect cause value), while an active call contains information about bandwidths, protocols, channels etc.

EXAMPLE

Defining Element names, Values, Attributes, and Item No.:

```
xstatus call 1
*s Call 1 (status=Synced, type=Vtlph, protocol=H323, direction=Outgoing, logTag=1):
     CallRate: 768
     RemoteNumber: "558458"
     Mute: Off
     Microphone: Off
     Duration: 20
     MuteOutgoing: Off
     Channels 1 (type=Incoming):
                .
                . (some lines have been removed for clarity)
                .
       Video 2 (status=Inactive): /
       Data (status=Inactive): /
*s/end
OK
```

In the above example. Element names are shown in **orange.** Values are shown in **green.** Attributes are shown in **magenta.** Item No. is shown in **cyan**

EXAMPLE

```
xstatus ?
 - Status -

Audio                FarEndInformation    SIP
BRI [1..6]           Feedback [1..3]      SoftwareUpgrade
Call [1..11]         G703                 Switch
Camera [1..13]       H323Gatekeeper       SystemUnit
CameraSwUpgrade      ICE [1..11]          Video
CameraTracking       IP                   VirtualMonitor [1..4]
Conference           NTP                  VNC
Ethernet [1..2]      PRI                  Warnings [1..10]
ExternalManager      RemoteSwUpgrade
ExternalNetwork      ScreenSaver

OK
```

EXAMPLE

```
xhistory ?

 - History -

 Call [1..20]

OK
xevent ?

 - Event -
 AuthenticationFailure    MessageBoxResult
 CallDisconnected         PacketlossDownSpeed
 CallStatisticsIP [1..11] SString
 CallSuccessful           SystemActivity
 DownspeedingFinished

OK
```

XACLI – Status Type Commands – Default Formatting

About Status Type Commands Formatting

XACLI supports three different formattings for status information:

- Default XACLI formatting, provides good human readability, compact format. However, a custom parser must be used
- Complete Path formatting. Recommended when parsing the information line by line.
- XML formatting – to be used when using an XML-parser.

Default XACLI Formatting

- The root-element is prefixed with `*s` (for status), `*e` (for event), or `*l` (for history log)
- Root-element end is designated by a `*s/end` (`*e/end` or `*l/end` respectively)
- To write a parser for this format, the parser must keep track of the levels by counting white spaces. The indent is increased by two whitespaces for each level. Unless link throughput is an issue, we recommend the use of Complete Path Formatting instead of Default XACLI formatting when parsing information sent from the codec.

About the Examples Provided Here

From the example showing status for a disconnected call (upper right), we can see that the call element now only contains one element; the value-element Cause. The sub-elements that were present when the call was active (lower right example) are no longer valid (i.e. it makes no sense to ask for outgoing video resolution for a disconnected call).

EXAMPLE showing status for a disconnected call.

```
xstatus call 1
*s Call 1 (status=Disconnected, type=NA, protocol=NA, direction=NA, logTag=NA):
     Cause: 16
*s/end
OK
```

EXAMPLE showing status for an active call.

```
xstatus call 1
*s Call 1 (status=Synced, type=Vtlph, protocol=H323, direction=Outgoing, logTag=2):
     CallRate: 768
     RemoteNumber: "558458"
     Mute: Off
     Microphone: Off
     Duration: 10
     MuteOutgoing: Off
     Channels 1 (type=Incoming):
       Rate: 768
       Restrict: Off
       Encryption (status=Off): /
       Audio (status=Active):
         Protocol: G722
         Rate: 64
       Video 1 (status=Active):
         Protocol: H264
         Resolution: CIF
         Rate: 704
       Video 2 (status=Inactive): /
       Data (status=Inactive): /
     Channels 2 (type=Outgoing):
       Rate: 768
       Restrict: Off
       Encryption (status=Off): /
       Audio (status=Active):
         Protocol: G722
         Rate: 64
       Video 1 (status=Active):
         Protocol: H264
         Resolution: CIF
         Rate: 704
       Video 2 (status=Inactive): /
       Data (status=Inactive): /
*s/end
```

XACLI – Status Type Commands – Complete Path Formatting

About Status Type Commands Formatting

XACLI supports three different formattings for status information:

- Default XACLI formatting, provides good human readability, compact format. However, a custom parser must be used
- Complete Path formatting. Recommended when parsing the information line by line.
- XML formatting – to be used when using an XML-parser.

About Complete Path formatting

The following should be observed:

- Complete Path formatting is recommended for easy parsing
- All lines are prefixed with `*s` (for status), `*e` (for event), or `*l` (for historylog)
- The complete path to an element is supplied on all lines
- The parser can work line by line
- Root-element end is designated by a *s/end (*e/end or *l/end respectively).

NOTE! Complete Path formatting is enabled by: "xpreferences completepath on", described later in this section of the User Guide.

NOTE! the xpreferences is a session specific command and must be issued every time the control application connects to the codec.

EXAMPLE

```
xpreferences completepath on

OK
xstatus call 1

*s Call 1 (status=Synced, type=Vtlph, protocol=H323, direction=Outgoing, logTag=2):
*s Call 1 CallRate: 768
*s Call 1 RemoteNumber: "558458"
*s Call 1 Mute: Off
*s Call 1 Microphone: Off
*s Call 1 Duration: 527
*s Call 1 MuteOutgoing: Off
*s Call 1 Channels 1 (type=Incoming):
*s Call 1 Channels 1 Rate: 768
*s Call 1 Channels 1 Restrict: Off
*s Call 1 Channels 1 Encryption (status=Off): /
*s Call 1 Channels 1 Audio (status=Active):
*s Call 1 Channels 1 Audio Protocol: G722
*s Call 1 Channels 1 Audio Rate: 64
*s Call 1 Channels 1 Video 1 (status=Active):
*s Call 1 Channels 1 Video 1 Protocol: H264
*s Call 1 Channels 1 Video 1 Resolution: CIF
*s Call 1 Channels 1 Video 1 Rate: 704
*s Call 1 Channels 1 Video 2 (status=Inactive): /
*s Call 1 Channels 1 Data (status=Inactive): /
*s Call 1 Channels 2 (type=Outgoing):
*s Call 1 Channels 2 Rate: 768
*s Call 1 Channels 2 Restrict: Off
*s Call 1 Channels 2 Encryption (status=Off): /
*s Call 1 Channels 2 Audio (status=Active):
*s Call 1 Channels 2 Audio Protocol: G722
*s Call 1 Channels 2 Audio Rate: 64
*s Call 1 Channels 2 Video 1 (status=Active):
*s Call 1 Channels 2 Video 1 Protocol: H264
*s Call 1 Channels 2 Video 1 Resolution: CIF
*s Call 1 Channels 2 Video 1 Rate: 704
*s Call 1 Channels 2 Video 2 (status=Inactive): /
*s Call 1 Channels 2 Data (status=Inactive): /
*s/end

OK
```

XACLI – Status Type Commands – XML Formatting

About Status Type Commands Formatting

XACLI supports three different formattings for status information:

- Default XACLI formatting, provides good human readability, compact format. However, a custom parser must be used
- Complete Path formatting. Recommended when parsing the information line by line.
- XML formatting – to be used when using an XML-parser.

About XML Formatting

The following should be observed:

- To be used when the control application is using an XML parser
- XML formatting is used when polling for information using the special command xgetxml, described later in this section of the manual.
- To enable XML formatting on feedback issued from the codec, the special command xpreferences should be used.

EXAMPLE

```
xgetxml status/call[1]
<Status>
  <Call item="1" status="Synced" type="Vtlph" protocol="H323" direction="Outgoing" logTag="2">
    <CallRate item="1">768</CallRate>
    <RemoteNumber item="1">558458</RemoteNumber>
    <Mute item="1">Off</Mute>
    <Microphone item="1">Off</Microphone>
    <Duration item="1">887</Duration>
    <MuteOutgoing item="1">Off</MuteOutgoing>
    <Channels item="1" type="Incoming">
      <Rate item="1">768</Rate>
      <Restrict item="1">Off</Restrict>
      <Encryption item="1" status="Off"/>
      <Audio item="1" status="Active">
        <Protocol item="1">G722</Protocol>
        <Rate item="1">64</Rate>
      </Audio>
      <Video item="1" status="Active">
        <Protocol item="1">H264</Protocol>
        <Resolution item="1">CIF</Resolution>
        <Rate item="1">704</Rate>
      </Video>
      <Video item="2" status="Inactive"/>
      <Data item="1" status="Inactive"/>
    </Channels>
    <Channels item="2" type="Outgoing">
      <Rate item="1">768</Rate>
      <Restrict item="1">Off</Restrict>
      <Encryption item="1" status="Off"/>
      <Audio item="1" status="Active">
        <Protocol item="1">G722</Protocol>
        <Rate item="1">64</Rate>
      </Audio>
      <Video item="1" status="Active">
        <Protocol item="1">H264</Protocol>
        <Resolution item="1">CIF</Resolution>
        <Rate item="1">704</Rate>
      </Video>
      <Video item="2" status="Inactive"/>
      <Data item="1" status="Inactive"/>
    </Channels>
  </Call>
</Status>

OK
```

XACLI – Status Type Commands – Addressing Status Information

About Addressing Status Information

You address status information by supplying a status-type command followed by an address-expression (XPath or TANDBERG SimplePath):

<status-type command> <address expression>

See example 1 a) for an illustration.

If complete path is enabled for the RS 232/Telnet session (**`xpreferences completepath on`**), it will look like example 1 b).

As a second set of examples let us consider a situation where the user wants to know Audio status for both incoming and outgoing channels for Call 1. This is shown in examples 2 a) and 2 b).

EXAMPLE 1 a) Addressing status information, user wants to know callrate of call 1:

```
xstatus call 1 callrate
*s Call 1 (status=Synced, type=Vtlph, protocol=H323, direction=Outgoing, logTag=3):
     CallRate: 768
*s/end
OK
```

EXAMPLE 1 b) xpreferences completepath set to on:

```
xstatus call 1 callrate

*s Call 1 (status=Synced, type=Vtlph, protocol=H323, direction=Outgoing, logTag=3):
*s Call 1 CallRate: 768
OK
```

EXAMPLE 2 a) the user wants to know Audio status for both incoming and outgoing channels for Call 1.

```
xstatus call 1 channels audio
*s Call 1 (status=Synced, type=Vtlph, protocol=H323, direction=Outgoing, logTag=3):
     Channels 1 (type=Incoming):
       Audio (status=Active):
         Protocol: G722
         Rate: 64
     Channels 2 (type=Outgoing):
       Audio (status=Active):
         Protocol: G722
         Rate: 64
*s/end
OK
```

EXAMPLE 2 b) xpreferences completepath set to on:

```
xstatus call 1 channels audio
*s Call 1 (status=Synced, type=Vtlph, protocol=H323, direction=Outgoing, logTag=3):
*s Call 1 Channels 1 (type=Incoming):
*s Call 1 Channels 1 Audio (status=Active):
*s Call 1 Channels 1 Audio Protocol: G722
*s Call 1 Channels 1 Audio Rate: 64
*s Call 1 Channels 2 (type=Outgoing):
*s Call 1 Channels 2 Audio (status=Active):
*s Call 1 Channels 2 Audio Protocol: G722
*s Call 1 Channels 2 Audio Rate: 64
OK
```

XACLI – Status Type Commands – Exposure Options

About Exposure Options

Exposure options should be used to limit the amount of information returned. By adding an exposure option after the address expression (XPath or TANDBERG SimplePath), the system can be instructed to return parts of the information within an element structure only.

<status-type command> <address expression> <exposure option>

Supported exposure options:

- – hides all value elements
- –– hides all sub-elements

Request for Call 1 element with exposure option –:

```
xstatus call 1 -

*s Call 1 (status=Synced, type=Vtlph, protocol=H323, direction=Outgoing, logTag=3):
     Channels 1 (type=Incoming):
       Encryption (status=Off): /
       Audio (status=Active):
       Video 1 (status=Active):
       Video 2 (status=Inactive): /
       Data (status=Inactive): /
     Channels 2 (type=Outgoing):
       Encryption (status=Off): /
       Audio (status=Active):
       Video 1 (status=Active):
       Video 2 (status=Inactive): /
       Data (status=Inactive): /
*s/end
OK
```

Request for Call 1 element with exposure option ––:

```
xstatus call 1 --

*s Call 1 (status=Synced, type=Vtlph, protocol=H323, direction=Outgoing, logTag=3):
*s/end

OK
```

Request for Call 1 element with no exposure option

```
xstatus call 1

*s Call 1 (status=Synced, type=Vtlph, protocol=H323, direction=Outgoing, logTag=3):
     CallRate: 768
     RemoteNumber: "558458"
     Mute: Off
     Microphone: Off
     Duration: 10
     MuteOutgoing: Off
     Channels 1 (type=Incoming):
       Rate: 768
       Restrict: Off
       Encryption (status=Off): /
       Audio (status=Active):
         Protocol: G722
         Rate: 64
       Video 1 (status=Active):
         Protocol: H264
         Resolution: CIF
         Rate: 704
       Video 2 (status=Inactive): /
       Data (status=Inactive): /
     Channels 2 (type=Outgoing):
       Rate: 768
       Restrict: Off
       Encryption (status=Off): /
       Audio (status=Active):
         Protocol: G722
         Rate: 64
       Video 1 (status=Active):
         Protocol: H264
         Resolution: CIF
         Rate: 704
       Video 2 (status=Inactive): /
       Data (status=Inactive): /
*s/end

OK
```

XACLI – Special Commands – xfeedback (I)

About the xfeedback Command

The special command xfeedback lets the user register user defined XPath expressions (with possible exposure options) to monitor changes in the XML/XACLI data. Whenever there is a change in one or more elements addressed by a registered XPath expression, the part of the element structure containing these changes will be returned.

The system supports a total of 20 registered expressions, with a total of 15 expressions for one RS 232/Telnet session.

The xfeedback is a session specific command, i.e. different RS 232/Telnet session can define feedback individually.

This also implies that the feedback expressions must be set each time the control application connects to the codec, i.e. the control application should always set the necessary feedback expressions when connecting to the system (or after system reboot when using RS 232).

EXAMPLE

User wants to monitor all changes to the Call status elements, the Conference status element and all Configurations:

```
xfeedback register status/call
OK
xfeedback register status/conference
OK
xfeedback register configuration
OK
```

EXAMPLE

To list the registered expression the sub-command list should be used:

```
xfeedback list
Registered XPath feedback expressions:
*xf 1 status/call
*xf 2 status/conference
*xf 3 configuration

OK
```

EXAMPLE

User wants to deregister expression 2 in the left example:

```
xfeedback deregister 2

OK
xfeedback list
Registered XPath feedback expressions:
*xf 1 status/call
*xf 3 configuration
OK
```

EXAMPLE

User only wants to monitor call state changes. This can be done by adding the double hyphen exposure option (--), after the XPath expression, status/call:

```
xfeedback register status/call--
OK
xcommand dial number:558458
*s Call 1 (status=EstablOut, type=Vtlph, protocol=H323, direction=Outgoing, logTag=6):
*s/end
*r Result (status=OK):
     CallRef: 1
     LogTag: 6
*r/end
OK
*s Call 1 (status=Syncing, type=Vtlph, protocol=H323, direction=Outgoing, logTag=6):
*s/end
CONNECT
*s Call 1 (status=Synced, type=Vtlph, protocol=H323, direction=Outgoing, logTag=6):
*s/end
```

EXAMPLE

```
xfeedback ?
usage: xfeedback register <XPathExpression>
or:    xfeedback deregister <index>
or:    xfeedback list
-
(note: deregistration with index=0 will deregister all registered expressions)
OK
```

EXAMPLE. User wants to know when calls are connected and when calls are disconnected, without monitoring any call data changes when the call is active:

This can be done by registering feedback on the events:

- CallSuccessful
- CallDisconnected

```
xfeedback register event/callsuccessful
OK
xfeedback register event/calldisconnected
OK
xcommand dial number:558458
*r Result (status=OK):
     CallRef: 1
     LogTag: 8
*r/end

OK
CONNECT
*e CallSuccessful:
     CallRef: 1
     LogTag: 8
     Protocol: H323
     Direction: Outgoing
     CallRate: 768
     RemoteNumber: "558458"
     Encryption:
       Incoming: Off
       Outgoing: Off
*e/end

xcommand disconnectcall call:1
*r Result (status=OK): /
*r/end

OK
NO CARRIER

*e CallDisconnected:
     CallRef: 1
     LogTag: 8
*e/end
```

NOTE! If sub-elements are removed from a status structure between transitions, the removed elements will be notified with an attribute `ghost=True` when feedback is issued. This allows for an external control system to be completely synchronised with the codec.

EXAMPLE. This example shows status for a call that is beeing disconnected. The user has registered a feedback expression to monitor all call changes (xfeedback register status/call).

When the call is active the Call element contains a large sub-structure. When the call is disconnected this status tree collapses, i.e. the only information availible for a disconnected call is a Cause element. All sub-elements that are being removed in this transition are marked with a `ghost=True` attribute when feedback is issued, see below.

```
xstatus call 1
*s Call 1 (status=Synced, type=Vtlph,
protocol=H323, direction=Outgoing, logTag=30):
     CallRate: 768
     RemoteNumber: "558458"
     Mute: Off
     Microphone: Off
     Duration: 62
     MuteOutgoing: Off
     Channels 1 (type=Incoming):
       Rate: 768
       Restrict: Off
       Encryption (status=On):
         Type: AES-128
         CheckCode: "C6D478F231E09A04"
       Audio (status=Active):
         Protocol: G722
         Rate: 64
       Video 1 (status=Active):
         Protocol: H264
         Resolution: CIF
         Rate: 704
       Video 2 (status=Inactive): /
       Data (status=Inactive): /
     Channels 2 (type=Outgoing):
       Rate: 768
       Restrict: Off
       Encryption (status=On):
         Type: AES-128
         CheckCode: "C6D478F231E09A04"
       Audio (status=Active):
         Protocol: G722
         Rate: 64
       Video 1 (status=Active):
         Protocol: H264
         Resolution: CIF
         Rate: 704
       Video 2 (status=Inactive): /
       Data (status=Inactive): /
*s/end
OK
xcommand disconnect
*r Result (status=OK): /
*r/end
OK
*s Call 1 (status=ClearOut, type=Vtlph,
protocol=H323, direction=Outgoing, logTag=30):
*s/end
NO CARRIER

*s Call 1 (status=Disconnected, type=NA,
protocol=NA, direction=NA, logTag=NA):
     Cause: 16
     CallRate (ghost=True): /
     RemoteNumber (ghost=True): /
     Mute (ghost=True): /
     Microphone (ghost=True): /
     Duration (ghost=True): /
     MuteOutgoing (ghost=True): /
     Channels 1 (ghost=True): /
     Channels 2 (ghost=True): /
*s/end
xstatus call 1
*s Call 1 (status=Disconnected, type=NA,
protocol=NA, direction=NA, logTag=NA):
     Cause: 16
*s/end
OK
```

XACLI – Special Commands – xpreferences (I)

About xpreferences

A command of great importance, xpreferences lets the user/control application individually configure the Telnet/RS232 session in use. When parsing data sent from the codec using a control system it is important to set preferences to match the parser in use.

The xpreferences is a session specific command, i.e. different RS232/Telnet sessions can define preferences individually. This also implies that the preferences must be set each time the control application connects to the codec, i.e. the control application should always set the necessary preferences when connecting to the system (or after system reboot when using RS232).

The xpreferences Options

```
xpreferences ?

usage: xpreferences xpathwrite <on/off>
or:    xpreferences detaillevel <1..2>
or:    xpreferences xmlconfigfeedback <on/off>
or:    xpreferences xmlstatusfeedback <on/off>
or:    xpreferences xmlcommandresult <on/off>
or:    xpreferences itemnumber <on/off>
or:    xpreferences completepath <on/off>

OK
```

xpreferences xpathwrite

xpreferences xpathwrite <on/off>

Disables/enables the XPath search engine when issuing configurations. When the XPath search engine is disabled, the user/control application must supply the complete path to the configurations to be set (no “double slashes” allowed). This will improve the performance of the system when issuing many consecutive configurations.

NOTE! It is always recommended to supply the complete path for configurations to be set when issuing commands from an external control application.

xpreferences detaillevel

xpreferences detaillevel <1..2>

Most information elements accessible by the status-type commands are defined to be level 1 information. However there are some information elements defined to be level 2 information. When reading status information, only the information elements with a detail level equal to or less than the detaillevel defined for the interface will be listed.

The detaillevel is by default set to 1 when connecting to an RS232/Telnet session.

xpreferences xmlcommandresult

xpreferences xmlcommandresult <on/off>

If xmlcommandresult is set to on, response for commands will be returned in XML-format.

EXAMPLE

XACLI-format:

```
xcom dial 10.47.15.127

*r Result (status=OK):
     CallRef: 1
     LogTag: 8
*r/end
```

XML format

```
xcom dial 10.47.15.127

<Result item=”1” status=”OK”>
  <CallRef item=”1”>1</CallRef>
  <LogTag item=”1”>8</LogTag>
</Result>
```

xpreferences xmlconfigfeedback

xpreferences xmlconfigfeedback <on/off>

If xmlconfigfeedback is set to on, feedback on configurations will be returned in XML-format instead of the standard XACLI configuration format.

EXAMPLE

XACLI-format:

```
*c xConfiguration SerialPort 1 BaudRate: 2400
```

XML format

```
<Configuration>
  <SerialPort item=”1”>
    <BaudRate item=”1”>2400</BaudRate>
  </SerialPort>
</Configuration>
```

xpreferences xmlstatusfeedback

xpreferences xmlstatusfeedback <on/off>

If xmlstatusfeedback is set to on, all status feedback will be returned in XML-format instead of the default XACLI status format (or complete path formatting).

EXAMPLE

XACLI-format:

```
*s Call 1 (status=Synced, type=Vtlph, protocol=H323, direction=Outgoing, logTag=78):
     Channels 1 (type=Incoming):
       Rate: 768
       Audio (status=Active):
         Protocol: G722
         Rate: 64
*s/end
```

XML format

```
<Status>
  <Call item="1" status="Synced" type="Vtlph" protocol="H323" direction="Outgoing" logtag="78">
    <Channels item="1" type="Incoming">
      <Rate item="1">768</Rate>
      <Audio item="1" status="Active">
        <Protocol item="1">G722</Protocol>
        <Rate item="1">64</Rate>
      </Audio>
    </Channels>
  </Call>
</Status>
```

xpreferences itemnumber

xpreferences itemnumber <on/off>

All Status and Configuration elements consist of an element name and an element item number. However, XACLI hides the item number for an element if there only exist one item of the given element.

If xpreferences itemnumber is set to on, XACLI will display item numbers for all elements. This is to make it easier to parse the information sent from the codec. By setting "**xpreferences itemnumber on**", the parser can always expect an item number to follow an element name.

EXAMPLE: Reading configurations of Serial Port 1 with xpreferences itemnumber is set to **OFF**:

```
xconfiguration serialport 1
*c xConfiguration SerialPort 1 BaudRate: 9600
*c xConfiguration SerialPort 1 Parity: None
*c xConfiguration SerialPort 1 DataBits: 8
*c xConfiguration SerialPort 1 StopBits: 1
*c xConfiguration SerialPort 1 Mode: Control
OK
```

EXAMPLE: Reading configurations of Serial Port 1 with xpreferences itemnumber is set to **ON**:

```
xpreferences itemnumber on

OK
xconfiguration serialport 1
*c xConfiguration SerialPort 1 BaudRate 1: 9600
*c xConfiguration SerialPort 1 Parity 1: None
*c xConfiguration SerialPort 1 DataBits 1: 8
*c xConfiguration SerialPort 1 StopBits 1: 1
*c xConfiguration SerialPort 1 Mode 1: Control
OK
```

XACLI – Special Commands – xpreferences (III)

xpreferences completepath

xpreferences completepath <on/off>

Used to enable Complete Path formatting for all Status-type data. If set to on, the complete path to a status element will be supplied on all lines. RECOMMENDED to be used when parsing status information sent from the codec line by line.The specified formatting will also apply all feedback sent from the codec on this RS232/Telnet session.

EXAMPLE. Reading status for Call 1 with **xpreferences completepath on**:

```
xstatus call 1
*s Call 1 (status=Synced, type=Vtlph, protocol=H323, direction=Outgoing, logTag=2):
*s Call 1 CallRate: 768
*s Call 1 RemoteNumber: "558458"
*s Call 1 Mute: Off
*s Call 1 Microphone: Off
*s Call 1 Duration: 527
*s Call 1 MuteOutgoing: Off
*s Call 1 Channels 1 (type=Incoming):
*s Call 1 Channels 1 Rate: 768
*s Call 1 Channels 1 Restrict: Off
*s Call 1 Channels 1 Encryption (status=Off): /
*s Call 1 Channels 1 Audio (status=Active):
*s Call 1 Channels 1 Audio Protocol: G722
*s Call 1 Channels 1 Audio Rate: 64
*s Call 1 Channels 1 Video 1 (status=Active):
*s Call 1 Channels 1 Video 1 Protocol: H264
*s Call 1 Channels 1 Video 1 Resolution: CIF
*s Call 1 Channels 1 Video 1 Rate: 704
*s Call 1 Channels 1 Video 2 (status=Inactive): /
*s Call 1 Channels 1 Data (status=Inactive): /
*s Call 1 Channels 2 (type=Outgoing):
*s Call 1 Channels 2 Rate: 768
*s Call 1 Channels 2 Restrict: Off
*s Call 1 Channels 2 Encryption (status=Off): /
*s Call 1 Channels 2 Audio (status=Active):
*s Call 1 Channels 2 Audio Protocol: G722
*s Call 1 Channels 2 Audio Rate: 64
*s Call 1 Channels 2 Video 1 (status=Active):
*s Call 1 Channels 2 Video 1 Protocol: H264
*s Call 1 Channels 2 Video 1 Resolution: CIF
*s Call 1 Channels 2 Video 1 Rate: 704
*s Call 1 Channels 2 Video 2 (status=Inactive): /
*s Call 1 Channels 2 Data (status=Inactive): /
*s/end
OK
```

EXAMPLE. Reading status for Call 1 with **xpreferences completepath off**:

```
xstatus call 1
*s Call 1 (status=Synced, type=Vtlph, protocol=H323, direction=Outgoing, logTag=2):
    CallRate: 768
    RemoteNumber: "558458"
    Mute: Off
    Microphone: Off
    Duration: 10
    MuteOutgoing: Off
    Channels 1 (type=Incoming):
      Rate: 768
      Restrict: Off
      Encryption (status=Off): /
      Audio (status=Active):
        Protocol: G722
        Rate: 64
      Video 1 (status=Active):
        Protocol: H264
        Resolution: CIF
        Rate: 704
      Video 2 (status=Inactive): /
      Data (status=Inactive): /
    Channels 2 (type=Outgoing):
      Rate: 768
      Restrict: Off
      Encryption (status=Off): /
      Audio (status=Active):
        Protocol: G722
        Rate: 64
      Video 1 (status=Active):
        Protocol: H264
        Resolution: CIF
        Rate: 704
      Video 2 (status=Inactive): /
      Data (status=Inactive): /
*s/end
OK
```

XACLI – Special Commands – xgetxml

About xgetxml

As an alternative to the XACLI output format, XML format is supported through the root command xgetxml. The xgetxml takes an XPath expression as parameter and the elements (or complete document) matching the expression will be returned.

EXAMPLE

```
xgetxml status/ip

<Status>
  <IP item="1">
    <Address item="1">10.47.11.179</Address>
    <SubnetMask item="1">255.255.248.0</SubnetMask>
    <Gateway item="1">10.47.8.1</Gateway>
    <V6 item="1">
      <Address item="1" type="NA"></Address>
      <Address item="2" type="NA"></Address>
    </V6>
    <DNS item="1">
      <Server item="1">
        <Address item="1">10.0.0.10</Address>
      </Server>
      <Server item="2">
        <Address item="1">10.0.0.2</Address>
      </Server>
      <Server item="3">
        <Address item="1"></Address>
      </Server>
      <Server item="4">
        <Address item="1"></Address>
      </Server>
      <Server item="5">
        <Address item="1"></Address>
      </Server>
      <Domain item="1">
        <Name item="1">eu.tandberg.int</Name>
      </Domain>
    </DNS>
  </IP>
</Status>

OK
```

TXAS - TANDBERG XML API Service

About 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 in two ways; bare-bone HTTP requests where URL's uniquely identifies the request, and SOAP where a single URI is used but the request itself is encoded with XML.

Bare-bone HTTP(S) 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
REQUEST:
  /getxml
PARAM:
  location = XPath expression
```

/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.

```
formputxml
REQUEST:
  /formputxml
PARAM:
  xmldoc   = "an XML document of Configuration, Directory or Command"
```

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>).

```
putxml
REQUEST:
  /putxml
PARAM:
  HTTP BODY as argument
```

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-url encoded which will cause a failure).

Configuration-type Commands

We recommend that you check out the TANDBERG web site regularly for updated versions of this manual:

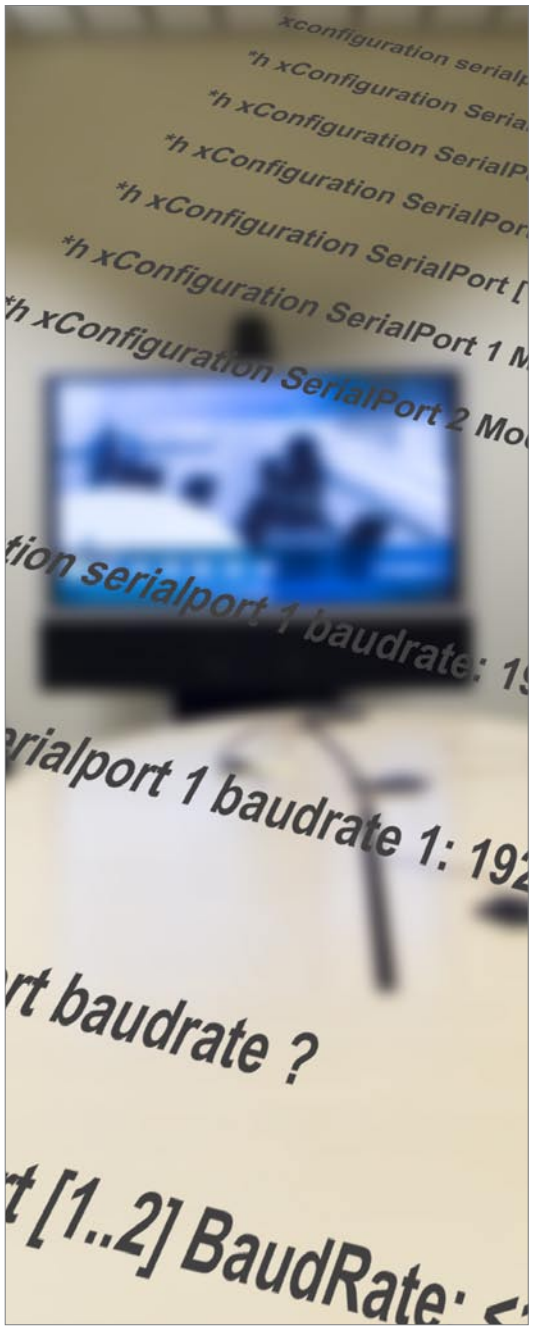
http://www.tandberg.com/docs

This part of the manual describes the Configuration information available.

There are two types of configuration-type commands available:

- xconfiguration / configuration.xml
- xdirectory / directory.xml

Both types are covered in this section.



Understanding the Table Layout

Valid settings available (here: On/Off)

Valid range of Configuration values (from..to)

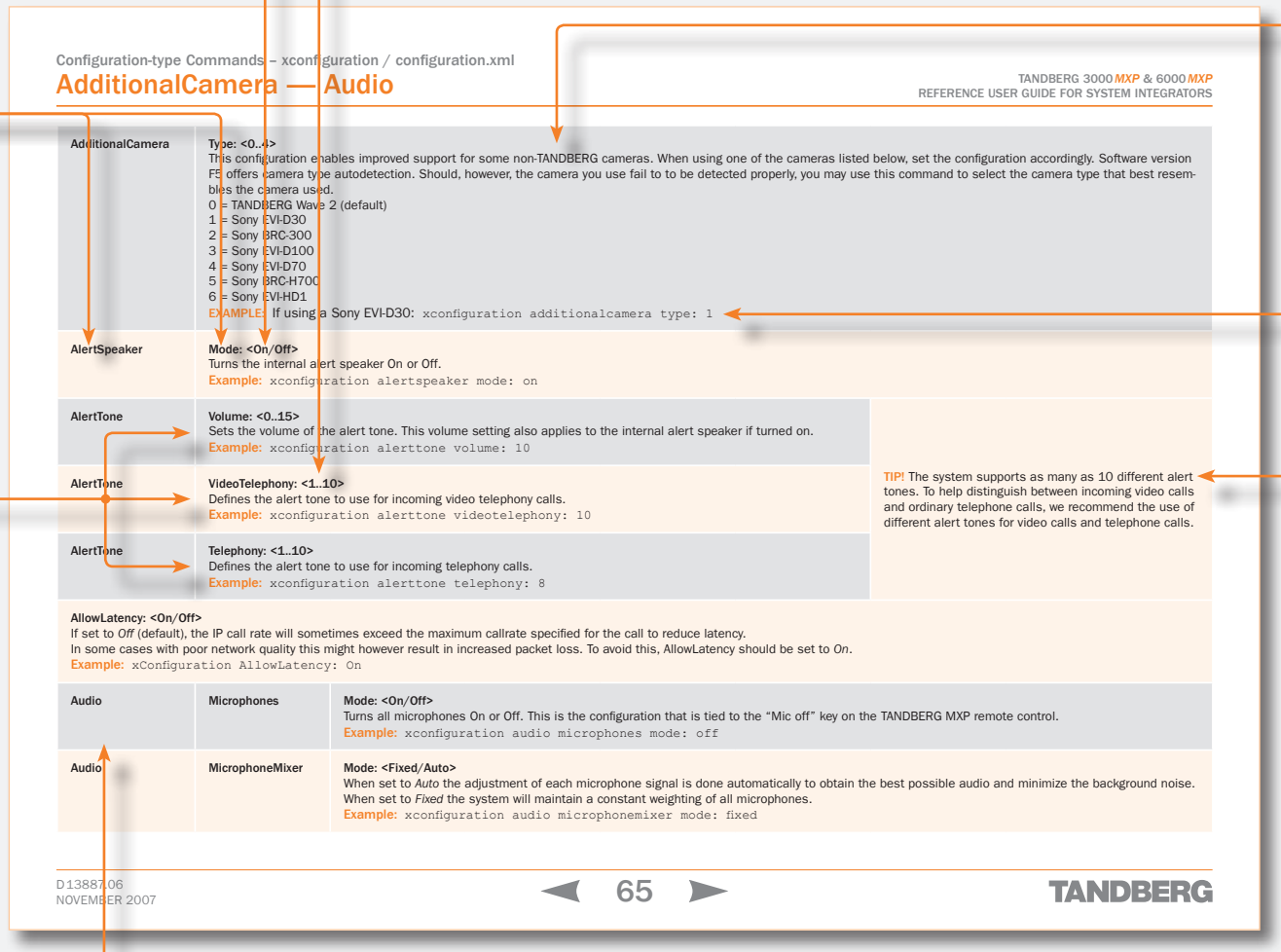
Description

Configuration path

Syntax example

Some configurations share a common part of the configuration path, as can be seen from these examples

Tip or restrictions applying



Configuration-type Commands – xconfiguration / configuration.xml

AdditionalCamera — Audio

TANDBERG 3000 *MXP* & 6000 *MXP*
REFERENCE USER GUIDE FOR SYSTEM INTEGRATORS

AdditionalCamera		**Type: <0..4>** This configuration enables improved support for some non-TANDBERG cameras. When using one of the cameras listed below, set the configuration accordingly. Software version F5 offers camera type autodetection. Should, however, the camera you use fail to to be detected properly, you may use this command to select the camera type that best resembles the camera used. 0 = TANDBERG Wave 2 (default) 1 = Sony EVI-D30 2 = Sony BRC-300 3 = Sony EVI-D100 4 = Sony EVI-D70 5 = Sony BRC-H700 6 = Sony EVI-HD1 EXAMPLE: If using a Sony EVI-D30: `xconfiguration additionalcamera type: 1`
AlertSpeaker		**Mode: <On/Off>** Turns the internal alert speaker On or Off. Example: `xconfiguration alertspeaker mode: on`
AlertTone		**Volume: <0..15>** Sets the volume of the alert tone. This volume setting also applies to the internal alert speaker if turned on. Example: `xconfiguration alerttone volume: 10`
AlertTone		**VideoTelephony: <1..10>** Defines the alert tone to use for incoming video telephony calls. Example: `xconfiguration alerttone videotelephony: 10`
AlertTone		**Telephony: <1..10>** Defines the alert tone to use for incoming telephony calls. Example: `xconfiguration alerttone telephony: 8`
		AllowLatency: <On/Off> If set to *Off* (default), the IP call rate will sometimes exceed the maximum callrate specified for the call to reduce latency. In some cases with poor network quality this might however result in increased packet loss. To avoid this, AllowLatency should be set to *On*. Example: `xConfiguration AllowLatency: On`
Audio	Microphones	**Mode: <On/Off>** Turns all microphones On or Off. This is the configuration that is tied to the "Mic off" key on the TANDBERG MXP remote control. Example: `xconfiguration audio microphones mode: off`
Audio	MicrophoneMixer	**Mode: <Fixed/Auto>** When set to *Auto* the adjustment of each microphone signal is done automatically to obtain the best possible audio and minimize the background noise. When set to *Fixed* the system will maintain a constant weighting of all microphones. Example: `xconfiguration audio microphonemixer mode: fixed`

TIP! The system supports as many as 10 different alert tones. To help distinguish between incoming video calls and ordinary telephone calls, we recommend the use of different alert tones for video calls and telephone calls.

D13887.06
NOVEMBER 2007

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TANDBERG

TIP! An exhaustive description of the API structure can be found in the section The TANDBERG API

Contents of this column is sorted alphabetically

AdditionalCamera — Audio

AdditionalCamera		**Type: <0..6>** This configuration enables improved support for some non-TANDBERG cameras. When using one of the cameras listed below, set the configuration accordingly. Software version F5 offers camera type auto-detection. Should, however, the camera you use fail to to be detected properly, you may use this command to select the camera type that best resembles the camera used. 0 = TANDBERG Wave 2 (default) 1 = Sony EVI-D30 2 = Sony BRC-300 3 = Sony EVI-D100 4 = Sony EVI-D70 5 = Sony BRC-H700 6 = Sony EVI-HD1 Example: `xconfiguration additionalcamera type: 1`
AlertSpeaker		**Mode: <On/Off>** Turns the internal alert speaker On or Off. Example: `xconfiguration alertspeaker mode: on`
AlertTone		**Volume: <0..15>** Sets the volume of the alert tone. This volume setting also applies to the internal alert speaker if turned on. Example: `xconfiguration alerttone volume: 10`
AlertTone		**VideoTelephony: <1..10>** Defines the alert tone to use for incoming video telephony calls. Example: `xconfiguration alerttone videotelephony: 10`
AlertTone		**Telephony: <1..10>** Defines the alert tone to use for incoming telephony calls. Example: `xconfiguration alerttone telephony: 8`
		AllowLatency: <On/Off> If set to *Off* (default), the IP call rate will sometimes exceed the maximum call rate specified for the call to reduce latency. In some cases with poor network quality this might however result in increased packet loss. To avoid this, AllowLatency should be set to *On*. Example: `xconfiguration AllowLatency: On`
Audio	**Microphones**	**Mode: <On/Off>** Turns all microphones On or Off. This is the configuration that is tied to the “Mic off” key on the TANDBERG MXP remote control. Example: `xconfiguration audio microphones mode: off`
Audio	**MicrophoneMixer**	**Mode: <Fixed/Auto>** When set to *Auto* the adjustment of each microphone signal is done automatically to obtain the best possible audio and minimize the background noise. When set to *Fixed* the system will maintain a constant weighting of all microphones. Example: `xconfiguration audio microphonemixer mode: fixed`

TIP! The system supports as many as 10 different alert tones. To help distinguish between incoming video calls and ordinary telephone calls, we recommend the use of different alert tones for video calls and telephone calls.

Audio	**AutoMute: <On/Off/Unmute>** When automute is set to *On*, the microphones will be turned off (muted) automatically at boot and at end of calls. When automute is set to *Unmute*, the microphones will be turned on (unmuted) automatically at boot and at end of calls. Example: `xconfiguration audio automute: on`	
Audio	**AudioModule: <NAMII-6000/NAMII-7000/NAMII-8000/Digital NAM/None>** Select Audio Module according to the type of Audio Module installed, if this is not automatically detected. The Audio Module setting will only take effect if the audio module of the system is unidentified. Example: `xconfiguration audio audiomodule: NAMII-6000`	
Audio	**Volume: <0..21>** Sets the volume level output. Example: `xconfiguration audio volume: 10`	
Audio	AGC	**Microphones: <On/Off>** Turns the AGC connected to the microphone mixer On or Off. On a 6000 MXP, Line input 1 (denoted Audio input 4 on the rear panel) is also connected to this AGC. Example: `xconfiguration audio agc microphones: on`
Audio	AGC	**AUX: <On/Off>** Turns the AGC connected to the AUX input On or Off. **NOTE!** The AUX input is also sometimes referred to as *Line Input 2* or *AUX / Audio in 5* (6000 MXP) and *Line Input 1* or *Audio In 3* (3000 MXP). Example: `xconfiguration audio agc aux: on`
Audio	AGC	**VCR: <On/Off>** Turns the AGC connected to the VCR input On or Off. **NOTE!** On the 6000MXP, the VCR input is also sometimes referred to as *Line Input 3* or *Audio in 6*, while on the 3000MXP the VCR input is referred to as *Line Input 2* or *Audio In 4*. When Stereo I/O is set to *On*, the VCR input will be *Line input 1 & 2* or *Audio 5 & 6* (6000 MXP), and *Line input 1 & 2* or *Audio 3 & 4* (3000 MXP) Example: `xconfiguration audio agc vcr: off`
Audio	AGC	**Received: <On/Off>** Turns AGC for received audio On or Off. Example: `xconfiguration audio agc received: on`
Audio	**EchoControl [1..x]: <On/Off/NoiseReduction>** 6000 MXP: x=4 3000 MXP: x=2 Turns echo control On or Off for the various microphone inputs. Microphone 1 is connected to EchoControl 1, Microphone 2 is connected to EchoControl 2 etc. Line input 1 (Audio input 4 on 6000 MXP) is connected to EchoControl 4 on a 6000 MXP. Example: `xconfiguration audio echocontrol 2: On`	

Audio	**Stereo: <On/Off>** Turns stereo I/O mode On or Off. Example: `xconfiguration audio stereo: on`		
Audio	**StereoSpeakers: <On/Off>** Turns stereo speakers On or Off. Example: `xconfiguration audio stereospeakers: on`		

Stereo Settings			Output Response Codec 3000 MXP		Output Response Codec 6000 MXP		
Out 1 mode	**Stereo I/O mode**	**Stereo speakers**	**Audio Out 1**	**Audio Out 2**	**Audio Out 1**	**Audio Out 2**	**Audio Out 3**
Analogue	Off	Off	Loudspeaker mono	VCR	Loudspeaker mono	Aux	VCR
Analogue	Off	On	Loudspeaker L	Loudspeaker R	Loudspeaker L	Loudspeaker R	VCR
Analogue	On	Off	Loudspeaker mono	VCR	Loudspeaker mono	VCR L	VCR R
Analogue	On	On	Loudspeaker L	Loudspeaker R	Loudspeaker L	Loudspeaker R	VCR
SPDIF	Off	Off	Loudspeaker mono	VCR	Loudspeaker mono	Aux	VCR
SPDIF	Off	On	Loudspeaker L&R	VCR	Loudspeaker L&R	Aux	VCR
SPDIF	On	Off	Loudspeaker mono	VCR	Loudspeaker mono	VCR L	VCR R
SPDIF	On	On	Loudspeaker L&R	VCR	Loudspeaker L&R	VCR L	VCR R

Out 1 mode is controlled through the `xconfiguration audio outputs line` type command (overleaf)

Audio	**VCRDucking: <On/Off>** If VCR Ducking is set to *On*, the VCR audio level will be attenuated if someone talks into the microphone or at the far end. Example: `xconfiguration audio vcrducking: on`			
Audio	**KeyTones: <On/Off>** If set to *On* there will be a sound indicator when pressing keys on the remote control. Example: `xconfiguration audio keytones: on`			
Audio	**Inputs**	**Microphone [1..x]** 6000 MXP: x=3 3000 MXP: x=2	**Level: <1..16>** Defines the input levels for the different microphones. Example: `xconfiguration audio inputs microphone 2 level: 10`	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. Select *Off* to prevent audio/noise from connected but unused inputs. The microphone inputs are intended for electret type microphones. The microphone inputs are balanced with 24 V phantom power.
Audio	**Inputs**	**Microphone [1..x]** 6000 MXP: x=3 3000 MXP: x=2	**Mode: <On/Off>** Turns On or Off the different microphone inputs. Example: `xconfiguration audio inputs microphone 2 mode: off` Turns microphone 2 off.	
Audio	**Inputs**	**Microphone [1..x]** 6000 MXP: x=3 3000 MXP: x=2	**Mode: <Line>** NOTE! Applies to 6000 MXP only! Here the Microphone 3 Mode can be set to Line. It then becomes a balanced line level input. The gain will be reduced accordingly. Example: `xconfiguration audio inputs microphone 3 mode: line` Sets microphone input 3 on a 6000 MXP to a balanced line level input.	
Audio	**Inputs**	**Line [1..x]** 6000 MXP: x=3 3000 MXP: x=2	**Level: <1..16>** Defines the input levels for the different line inputs. Example: `xconfiguration audio inputs line 2 level: 10`	

Audio	**Inputs**	**Line [1..x]** 6000 MXP: x=3 3000 MXP: x=2	**For 3000 MXP, Line 1:** **Mode: <On/Off/Microphone>** Turns the input On or Off. If set to Microphone, the audio on this input will not be outputted locally. Microphone input 2 will be disabled and this Line input will use the Echo canceller of Mic. input 2. To be used when using an external microphone mixer. **For 3000 MXP, Line 2:** **Mode: <On/Off/Auto>** Turns the input On or Off. If set to Auto the input will be active when VCR is selected as video input source. **For 6000 MXP, Line 1 & 2:** **Mode: <On/Off>** Turns the input On or Off. **For 6000 MXP, Line 3:** **Mode: <On/Off/Auto>** Turns the input On or Off. If set to Auto the input will be active when VCR is selected as video input source. Example: `xconfiguration audio inputs line 2 mode: off`
Audio	**Outputs**	**Line [1..x]** 6000 MXP: x=3 3000 MXP: x=2	**Level: <1..16>** Defines the output level of the specified output line Example: `xconfiguration audio outputs line 2 level: 10`
Audio	**Outputs**	**Line [1..x]** 6000 MXP: x=3 3000 MXP: x=2	**Mode: <On/Off>** Enables or disables the specified output line. Example: `xconfiguration audio outputs line 2 mode: off`
Audio	**Outputs**	**Line [1]** 6000 MXP: x=3 3000 MXP: x=2	**Type: <Analog/SPDIF/Auto>** NOTE! Applies to Line 1 only! This configuration is also referred to as Out 1 Mode. If Out 1 Mode is set to Auto, the system will select analogue or digital (SPDIF) mode depending on the detected Audio Module. If a TANDBERG Digital NAM is detected, SPDIF mode will be selected, otherwise analogue mode will be selected. Setting the Out 1 Mode to either Analogue or SPDIF will override the auto-detected mode. Example: `xconfiguration audio outputs line 1 type: SPDIF`
Audio	**LocalDetection**	**Mode: <On/Off>** The Local Detection is a feature to detect possible eavesdropping activity. If such activity is detected it will be stopped. The system will disconnect the ongoing call and start an alarm / warning signal on the internal alert speaker on the codec. This will prevent audio and video to be sent from a TANDBERG system without the user noticing. Local Detection is based on a detection of an acoustical connection between the loudspeaker system and the microphone(s). If there is no such connection, and the loudspeaker is disconnected or switched off, it may indicate that the system is configured with the intention of listening into a confidential conversation/meeting without the meeting participants noticing. Example: `xconfiguration audio localdetection mode: On`	

Audio	**Feedback**	**Mode: <Normal/Fast>** This configuration alters how fast the audio feedback will react. Set to *Normal* to allow for some distortion before the feedback response. When set to *Fast*, the audio feedback response will be faster but also more nervous. **Example:** `xconfiguration audio feedback mode: normal`
Audio	**Delay**	**AUX: <On/Off>** Enables/disables the AUX delay. `Example: xconfiguration audio delay aux: off`
Audio	**Delay**	**VCR: <On/Off>** Enables/disables the VCR delay. `Example: xconfiguration audio delay vcr: off`
Audio	**HearingImpaired**	**Mode: <On/Off>** If set to *On* the Hearing Impaired Mode reduces the delay on **audio output 3** from 100 ms to 23 ms, allowing an assisted listening device (ALD) to be installed in conjunction with this output and still maintain a high level of lip synchronization. Set to *Off* when there is no assisted listening device (ALD) connected to audio output 3. `Example: xconfiguration audio hearingimpaired mode: off`
Audio	**HearingImpaired**	**NoiseReduction: <On/Off>** If set to *On* the Noise reduction will be added to the output used for hearing impaired devices installed on **audio output 3**. Set to *Off* when there is no assisted listening device (ALD) connected to audio output 3. `Example: xconfiguration audio hearingimpaired noisereduction: off`
Audio	**HearingImpaired**	**EQ: <On/Off>** If set to *On* an equalizer is enabled on the system, adding more amplification to the higher frequencies typically found in voices. The setting is by default set to *On*. Set to *Off* to disable the equalizer. `Example: xconfiguration audio hearingimpaired eq: on`
AutoAnswer	**Mode: <On/Off/Mute>** Turns autoanswer On or Off. If set to *Mute*, incoming calls will be answered automatically, but the microphones will be muted. **Example:** `xconfiguration autoanswer mode: mute`	
AutoAnswer	**Delay: <1..50>** Defines how long (in seconds) an incoming call has to wait before it is answered automatically by the system (autoanswer must be enabled). **Example:** `xconfiguration autoanswer delay: 10`	

AutoPIP	**Mode: <On/Off/Auto>** This configuration only applies if LocalLayout Toggle is set to PIP. If set to On, the system will display a PIP containing the far-end mainstream when dual video stream is activated. If set to Auto, the system will display a PIP containing the far-end mainstream when dual video stream is activated. This PIP will disappear automatically after a few seconds, set byt the AutoPIP Timeout setting. If set to Off, no PIP will be displayed when dual video stream is activated. Requires AutoLayout Mode set to Off. Example: `xconfiguration autopip mode: on`
AutoPIP	**Timeout: <1..60>** If the AutoPIP Mode setting is set to Auto, the system will display a PIP containing the far-end mainstream when dual video stream is activated. This PIP will disappear automatically after a few seconds. The time out is set by the AutoPIP Timeout setting. Example: `xconfiguration autopip mode: on`
AutoLayout	**Mode: <On/Off>** If set to *On* the system will change the local picture layout automatically depending on the number of participants in the conference and wether or not dual stream is active. If set to *Off* there will be no automatic change of the local picture layout during the conference. All desired layout changes must be done manually, ref. LocalLayout. Example: `xconfiguration autolayout mode: off`
AutoDisplaySnapshot: <On/Off> If set to On the system will automatically display snapshots (still images) when received from the other side. Example: `xconfiguration autodisplaysnapshot: on`	
Bonding	**Timer: <Normal/Relaxed>** Relaxed bonding timing should be used with applications where the B channels use some additional time before they become transparent, like external encryption devices etc. Example: `xconfiguration bonding timer: relaxed`
Bonding	**Rebonding: <On/Off>** The default value is On. Rebonding is used to re-establish H.320 calls if corrupted data is received for a longer period (10 - 15s). Some manufactures don't support this, and by setting Rebonding to Off this functionality will be disabled. Example: `xconfiguration bonding rebonding: off`
CallManager	**Address: <S: 0, 64>** Defines the address of the call manager to use (if any). Example: `xconfiguration callmanager address: 10.47.9.1`
CallVideoSource: <0/1/5/6> The Call Video Source is the default call video source you would prefer to use in a call.. Example: `xconfiguration callvideosource: 0`	

Camera [1..13]	**Brightness**	**Mode: <Manual/Auto>** Sets whether to control camera brightness of the different cameras manually or to have it automatically set by the system. Example: `xconfiguration camera 1 brightness mode: manual`	
Camera [1..13]	**Brightness**	**Level: <0..31>** Defines the brightness level to use if Brightness Mode is set to *Manual*. Example: `xconfiguration camera 1 brightness level: 10`	
Camera [1..13]	**Whitebalance**	**Mode: <Auto/Manual/Indoor/Outdoor/Gain>** If set to *Auto* the camera will continuously adjust the white balance depending on the camera view. If set to *Indoor* the camera will adjust the whitebalance for in-door lighting conditions. If set to *Outdoor* the camera will adjust the whitebalance for out-door lighting conditions. When set to *Manual* the white balance can be calibrated manually by the instruction xcommand `camerawhite-balance camera:<1..13>`. The whitebalance of the camera will then remain constant until a new calibration is performed. Example: `xconfiguration camera 1 whitebalance mode: auto`	
Camera [1..13]	**Whitebalance**	**Level: <0..16>** Specifies the camera whitebalance level. Applies to TANDBERG Precision HD cameras only. Example: `xconfiguration camera 1 whitebalance level: 10`	
Camera [1..13]	**Whitebalance**	**Gain**	**Red: <0..255>** Adjust the red white balance gain. Example: `xconfiguration camera 1 whitebalance gain red: 128`
Camera [1..13]	**Whitebalance**	**Gain**	**Blue: <0..255>** Adjust the blue white balance gain. Example: `xconfiguration camera 1 whitebalance gain blue: 128`
Camera [1..13]	**Focus**	**Mode: <Manual/Auto>** If set to *Manual* autofocus will never be turned on automatically. Example: `xconfiguration camera 1 focus mode: manual`	
Camera [1..13]	**Backlight: <On/Off>** Turns backlight compensation of camera On/Off. Not applicable to TANDBERG WAVE I cameras. Example: `xconfiguration camera 1 backlight: on`		
Camera [1..13]	**DualVisca: <Off/On>** Enables or disables dual visca mode. If enabled, visca control will be available on the RJ11 connector on the camera. If disabled, the RJ11 connector will work as a normal daisy chain port. Applies to TANDBERG Precision HD cameras only. Example: `xconfiguration camera 1 dualvisca: on`		

If a TANDBERG Video Switch is connected, the camera ranges will behave as follows:

- Camera 1 will be the video switch.
- Camera range 2..7 will be cameras connected to secondary chain (the chain originating from Data port 2 of the switch).
- Camera range 8..13 will be cameras connected to the primary chain (the chain originating from Data port 1 of the switch).

Go to the TANDBERG Video Switch section to read more.

Camera[1..13] *cont..* — CameraSleep

Camera [1..13]	**Mirror: <Off/On>** Turns mirror mode on/off. Not applicable to TANDBERG WAVE I cameras. **Example:** `xConfiguration camera 1 mirror: on`		See the comment about camera ranges on the previous page.
Camera [1..13]	**Gamma**	**Mode: <Auto/Manual>** Auto is the default and the recommended setting. However, in severe light conditions, you may switch mode to manual and specify explicitly which gamma table to use by setting the level. Applies to TANDBERG Precision HD cameras only. **Example:** `xConfiguration camera 1 gamma mode: auto`	
Camera [1..13]	**Gamma**	**Level: <0..7>** Selects which gamma correction table to use. This setting may be useful in difficult lighting conditions, where changes to the brightness setting does not provide satisfactory results. Applies to TANDBERG Precision HD cameras only. **Example:** `xConfiguration camera 1 gamma level: 5`	
Camera [1..13]	**IR: <Off/On>** Default is *On* for camera 1 and 8. Default is *Off* for cameras 2 - 7 and 9 - 13. Enables or disables the IR receiver of the camera. Only supported on WAVE, WAVE II and Precision HD cameras **Example:** `xConfiguration camera 1 ir: on`		
CameraDVI	**Mode: <On/Off/Auto>** Lets you control cameras connected to the PC Input. The *Auto* mode, which is the default, will detect if you connect two PrecisionHD cameras, where one is first and the other is last in the chain. If that's the case, control of the 2nd PrecisionHD camera is automatic when the PC Input is selected. If you have any other type of camera with a VGA/DVI/HDMI output, you must put it last in the chain, and manually turn this configuration. When you select the PC Input, you will gain control of the last camera. This configuration may be useful when using the VGA output on a Sony BRC-H700 camera. **Important: If you set this configuration to on with a single PrecisionHD camera connected, the system will assume that it is connected to the PC Input and avoid configuring the THSI interface. This may or may not be what you intended.** When set to *Off* the system assumes all cameras are connected to the normal video inputs, and/or THSI. May be useful if you connect a 2nd PrecisionHD camera to the codec via an HDMI to s-video/composite converter. **Important: Changing any of these options may require a hard boot of connected PrecisionHD cameras and a soft boot of the codec. If you experience problems, like no video or get the message "unsupported video format", make sure that all connected PrecisionHD cameras are turned off, reboot the codec, and turn cameras back on.** **Example:** `xConfiguration cameradvi mode: auto`		
CameraSleep	**Mode: <On/Off>** If turned *On*, the main camera will go into sleep position (maximum right panning) when screensaver is activated. In addition, video source 1 (maincam) will be selected (if not allready active). **Example:** `xconfiguration camerasleep mode: on`		

CameraSwUpgrade — Conference

CameraSwUpgrade: <Auto/Off>
If set to *Auto* the Camera software will be automatically upgraded by the codec. If set to *Off*, camera software upgrade must be initiated manually by the command CameraForceUpgrade.
NOTE! If codec software is downgraded the camera software must be downgraded manually by the command CameraForceUpgrade. Applies to TANDBERG Precision HD camera only!
Example: `xconfiguration cameraswupgrade: Auto`

CameraReverseControl: <On/Off>
Set to *On* to enable the reverse camera control, allowing the local camera to more naturally mimic the directional arrows of the remote control. The setting does not affect the camera sleep pan.
Set to *Off* to disable the camera reverse control
Example: `xconfiguration camerareversecontrol: off`

CameraTracking	Speed: <Slow/Normal/Fast> Sets the camera tracking speed. Camera tracking is enabled/disabled by the commands CameraTrackingStart and CameraTrackingStop. Example: `xconfiguration cameratracking speed: normal`		
Conference	DefaultCall	CallRate: <Tlph/1xh221/2xh221/64/128/192/256/320/384/H0/512/768/1152/1472/1920/2560/3072/4096/Max/Auto> Defines the default call rate to use when placing calls from the system. **NOTE!** The supported call rates will depend on product type and software options. **NOTE!** Auto: 384 kbps on ISDN/768 kbps on LAN Example: `xconfiguration conference defaultcall callrate: 320`	The DefaultCall settings specify call properties to use if properties are not specified directly when placing the call.
Conference	DefaultCall	Restrict: <On/Off> A restricted call uses 56kbps channels rather than the default unrestricted 64kbps channels. Some older networks (primarily in the USA) do not support 64kbps channels and require the use of restricted 56kbps calls. By default, the system will dial an unrestricted call and downspeed to 56kbps if necessary. To force a restricted call, choose Restrict (56k) On. Example: `xconfiguration conference defaultcall restrict: off`	
Conference	DefaultCall	NetProfile: <1..7> Selects default NetProfile. Please refer to the NetProfile configuration for further details on the supported NetProfiles. Example: `xconfiguration conference defaultcall netprofile: 3`	
Conference	H323Alias	E164: <E164: 0, 30> Defines the E164 alias for the system. Valid characters are 0-9, * and #. Example: `xconfiguration conference h323alias e164: 666666`	The aliases define the telephone numbers for the unit, i.e. numbers to call to reach the unit. The system can register both an E164 alias, which can only contain digits (including *, #) and an ID, which can also contain letters.
Conference	H323Alias	ID: <S: 0, 49> Defines the H323Alias ID for the system. If no ID is specified the system will use the SystemUnit Name as H323Alias ID. Example: `xconfiguration conference h323alias id: MyH323AliasId`	

Conference	**PeriodicIntra: <0..1000>** Use this setting to generate a new intra frame with a configure-able interval. Use this setting with caution since it in a normal network will decrease the video quality. The default value is set to 0 which means off. If you configure it to 10 it will send an intra every 10th second. **Example:** `xconfiguration conference periodicintra: 0`	
Conference	**SIP**	**URI: <S: 0, 60>** The SIP URI is the address to use when calling the system using SIP. **Example:** `xconfiguration conference sip uri: MySIP_URI`
Conference	**H263: <On/Off>** Enables/disables H.263 for both transmit and receive. **Example:** `xconfiguration conference h263: off`	
Conference	**H264: <On/Off>** Enables/disables H.264 for both transmit and receive. **Example:** `xconfiguration conference h264: on`	
Conference	**H264RCDO: <On/Off>** Enables/disables H.264 RCDO for both transmit and receive. **Example:** `xconfiguration conference h264rcdo: off`	
Conference	**G722: <On/Off>** Enables/disables G.722 for both transmit and receive. **Example:** `xconfiguration conference g722: on`	
Conference	**G722.1: <On/Off>** Enables/disables G.722.1 for both transmit and receive. **Example:** `xconfiguration conference g722.1: on`	
Conference	**G728: <On/Off>** Enables/disables G.728 for both transmit and receive. **Example:** `xconfiguration conference g728: on`	
Conference	**AAC-LD: <On/Off>** Enables/disables AAC-LD for both transmit and receive. **Example:** `xconfiguration conference aac-ld: on`	
Conference	**H331: <On/Off>** Turns broadcast mode on or off. When set to on it is possible to make an outgoing call without any capability exchange. **Example:** `xconfiguration conference h331: on`	

Conference	**H239: <On/Off>** Enables/disables H.239 for both transmit and receive. Example: `xconfiguration conference h239: on`
Conference	**AAC-LD-128-Threshold: <384/512/768/1152/1472/1920/2560/3072/4096>** The system will not transmit AAC-LD-128 unless the call rate is equal to or above the specified threshold. Example: `xconfiguration conference aac-ld-128-threshold: 768`
Conference	**AAC-LD-128-Mono: <On/Off>** If set to *Off* and the system is transmitting mono, the system will not use AAC-LD-128 even though the call rate is above the AAC-LD-128 Threshold. Example: `xconfiguration conference aac-ld-128-mono: off`
Conference	**NaturalVideo: <Off/Auto/384/512/768/1152/1472/1920>** Enabling Natural Video will enable 60 (50 on PAL) fields per second true interlaced picture for high motion video. The use of Natural Video requires that H.263+ or H.263++ video protocols are being used. Natural video will be disabled in H.323 MultiSite calls and in H.320 Continuous Presence MultiSite calls. When set to *Off*, Natural Video will be disabled for both transmit and receive. When set to *Auto*, the system will enable transmission of Natural Video from 768 kbps and above. Reception of Natural Video is in this case always enabled. However, when set to *Auto* the unit will still prioritize the 448p and w448p format over Natural Video. Natural Video can also be configured to be enabled for call rates above a specified threshold value. Example: `xconfiguration conference naturalvideo: 768` This will enable NaturalVideo for callrate 768 kbps and above
Conference	**PictureMode: <4Split/5+1Split/VS/Auto>** Sets the picture layout to be used in a MultiSite conference. If set to *Auto* the system will change the picture layout depending on the number of participants in the conference. Example: `xconfiguration conference picturemode: auto`
Conference	**VideoQualityCP: <Motion/Sharpness/Auto>** Sets the video quality to be used in continuous presence mode (*4Split/5+1Split*). Example: `xconfiguration conference videoqualitycp: sharpness`
Conference	**VideoFormatCP: <4:3/16:9>** Sets the video format to be used in continuous presence mode (*4Split/5+1Split*). If set to normal CP which is 4:3, the host will transmit all CP layouts using 4CIF (704x576). If set to wide CP which is 16:9, the host will transmit all CP layouts using w576p (1024x576). Example: `xconfiguration conference videoformatcp: 16:9`
Conference	**FloorToFull: <On/Off>** If *PictureMode* is set to *5+1Split*, and one of the participants in a MultiSite conference is granted floor this setting determines whether to display the participant having floor in full screen or just in the main window of the *5+1Split*. Example: `xconfiguration conference floortofull: on`

Conference	**MaxCallLength: <0..999>** Sets the maximum allowed call length in minutes (0 = Disabled). Example: `xconfiguration conference maxcalllength: 0`	
Conference	**AllowIncomingTlphCall: <On/Off>** If set to *Off*, the system will not accept incoming telephone calls to an already active conference. Example: `xconfiguration conference allowincomingtlphcall: off`	
Conference	**AllowIncomingMSCall: <On/Off>** If set to *Off*, the system will not accept incoming calls to an already active multisite conference. Example: `xconfiguration conference allowincomingmscall: off`	
Conference	**Downspeed: <On/Off>** Determines whether or not to allow down speeding. Example: `xconfiguration conference downspeed: on`	
Conference	**FallbackToTelephony: <On/Off>** If set to On, the system will try to establish a telephone call if a video telephone call failed to connect. Example: `xconfiguration conference fallbacktotelephony: on`	
Conference	Encryption	**Mode: <On/Off/Auto>** If set to *On*, the system will not allow un-encrypted calls. If set to *Auto*, the system will use encryption whenever possible. If set to *Off*, encryption will not be used. Example: `xconfiguration conference encryption mode: auto`
Conference	Encryption	**Type: <Auto/DES/AES-128>** Defines the encryption algorithm to use. If set to *Auto*, the system will try to use the most secure encryption - AES, dependent on the capabilities of the other sites. For sites that do not support AES encryption, DES encryption will be tried. If set to *AES-128*, the system will try to use AES with 128 bits encryption when setting up calls. If AES is not supported by the other site(s), no other type of encryption will be initiated. If set to *DES*, the system will always try to set up the call using DES with 56 bits encryption ISDN and IP. If all other sites do not support DES, no other type of encryption will be initiated. Example: `xconfiguration conference encryption type: AES-128`
Conference	**AIM: <On/Off>** Enables/disables *Auto Indicate Mute*. If disabled, the system will not signal to the other side that the microphone is turned off. Example: `xconfiguration conference aim: on`	

Conference	IPLR	**Transmit: <On/Off>** Enables/disables Intelligent Packetloss Recovery Example: `xconfiguration conference iplr transmit: on`
Conference	**WebSnapshots: <On/Off>** If set to *On*, snapshots of the conference can be viewed from the systems web interface and also accessed through the units file system. **NOTE!** This configuration can only be set using the RS232 port. Example: `xconfiguration conference websnapshots: on`	
Conference	**BillingCode: <On/Off>** This configuration is only relevant when placing calls using the TANDBERG remote control and the on screen menu. If set to on, all users must enter a code to identify themselves before dialling. The billing code will be attached to the call when the call is placed in the call log after it is disconnected. When placing calls using the command Dial, a billing code can be added to identify the call in the call log regardless of this setting. Example: `xconfiguration conference billingcode: on`	
Conference	**IPDualstreamRate: <25Percent/50Percent/75Percent>** When setting up an ip call the bandwidth can be controlled by the user. The IPDualstreamRate is expressed in percent of the Call Rate and shall reflect the IP Dualstream Rate settings of the sender. The settings are 25%, 50% and 75% of the total available video stream. Example: `xconfiguration conference ipdualstreamrate: 50percent`	
Conference	**FarTlphEchoSupression: <Off/Normal/High>** Analogue telephone lines, speaker phones and telephone headsets may all cause echoes. The FarTlphEchoSupression function eliminates some – or all – of the experienced echo. Weak echoes are removed with the *Normal* setting enabled and strong echoes are removed with the *High* setting enabled. Example: `xconfiguration conference FarTlphEchoSupression: Normal`	
Conference	**VideoText: <On/Off/Auto>** In MultiSite calls you can display the names of the participants on screen. By setting the Video Text Time-out setting, the system is configured to display the names for a period of time or as long as you are connected. Example: `xconfiguration conference videotext: on`	
Conference	**VideoTextTimeout: <0..30>** Sets the timer for the On-screen name of participants in MultiSite calls. Set the timer to display the names for a period of time or as long as you are connected. Requires the VideoText setting to be enabled. Example: `xconfiguration conference videotext: 0`	
CorporateDirectory	**Mode: <On/Off>** Enables/disables use of a CorporateDirectory stored on a remote server. Example: `xconfiguration corporatedirectory mode: on`	
CorporateDirectory	**Address: <S: 0, 64>** Specifies the address to the server where the CorporateDirectory is located. Example: `xconfiguration corporatedirectory address: 10.47.6.75`	

CorporateDirectory	**Path: <S: 0, 255>** Specifies the path to the CorporateDirectory on the server. Example: `xconfiguration corporatedirectory path: TMS/Public/external/phonebook/PhoneBookService.asmx`
CorporateDirectory	**Protocol: <HTTP/HTTPS>** TANDBERG MXP systems now support secure management when communicating with the TMS (TANDBERG Management Suite). Example: `xconfiguration corporatedirectory protocol:`
DefaultPIPPosition: <BottomLeft/BottomRight/TopLeft/TopRight> Specifies the default positioning of the PIP (Picture In Picture). Example: `xconfiguration defaultpipposition: bottomleft`	
Directory	**CallLog: <On/Off>** Enable/disable Call Logs for Placed calls, Missed calls and Received calls in the Phone Book. Example: `xconfiguration directory calllog: on`
Directory	**SmartSearch: <On/Off>** Enable/disable Smart Search in the Phone Book. Example: `xconfiguration directory smartsearch: off`
DoNotDisturb	**Mode: <On/Off>** When DoNotDisturb Mode is set to On, the codec will not alert the user to incoming calls. The calling side will receive a busy signal when trying to call the codec. DoNotDisturb will be turned off if the codec receives any IR signal from the handheld remote control. Example: `xconfiguration donotdisturb mode: off`
DualMonitor	**Mode: <On/Off>** Sets the codec's monitor mode. It allows the user to set up the codec so it can utilize two displays. Example: `xconfiguration dualmonitor mode: on`
DuoVideoSource: <0/1/2/3/4/5/6> Defines which video input to be used as the default Dual Stream source. NOTE! **0 means None** Example: `xconfiguration duovideosource: 1`	
DynamicResolution	**Mode: <Auto/Off>** With Dynamic Resolution the system will use the optimal video resolution for the chosen bandwidth. This feature is only applicable to HD (high definition) calls. If set to Auto and in a HD call: the resolution will differ between the bandwidths 720p, 576p and 448p, dependent on how much motion it is in the picture. The call will start with 720p and change to a lower resolution when there is a lot motion. It will go back to 720p with less motion. If set to Off: Disables the Dynamic Resolution feature (the default setting). Example: `xconfiguration dynamicresolution mode: off`

E1 — ExternalNetwork

E1	**Interface**	**CRC4: <On/Off>** E1 CRC-4 is used for most E1-PRI configurations. You can turn it off if not supported by the E1 network equipment. **Example:** `xconfiguration e1 interface crc4: on`	
Ethernet [1..2]	**Speed: <Auto/10half/10full/100half/100full>** Sets the Ethernet speed. When set to Auto the codec will automatically negotiate with the network and use the best available setting. **Example:** `xconfiguration ethernet 1 speed: auto`		
ExternalManager	**Address: <S: 0, 64>** Specifies the address to the External Manager/Management system. **Example:** `xconfiguration externalmanager address: "10.47.6.75"`		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.
ExternalManager	**Path: <S: 0, 255>** Specifies the path to the External Manager/Management system. **Example:** `xconfiguration externalmanager path: tms/public/external/management/SystemManagementService.asmx`		
ExternalManager	**Protocol: <HTTP/HTTPS>** Enables/disables secure management. **Example:** `xconfiguration externalmanager protocol: http`		
ExternalNetwork	**Clocking: <Dual/Single>** *Dual*: (RS449/V35 Compatible) Use this setting when the external equipment provides two clock signals, one for transmit and one for receive. (The difference between RS449 and V35 lies solely in the cable). *Single*: (X21 Compatible) Use this setting when the external equipment provides a common clock signal for both transmit and receive. **Example:** `xconfiguration externalnetwork clocking: dual`		
ExternalNetwork	**Callcontrol: <RS366/RS366AdtranIMUX/RS366CustomIMUX/LeasedLine/DataTriggered/Manual>** *RS366*: This is the only dialling protocol supported and would normally be used together with Dual network clocking when the external equipment uses RS366 ports. *RS366AdtranIMUX*: This setting offers extra usability when dialing RS366 via an ADTRAN IMUX. This dialling scheme will map the call type and bandwidth selection to ADTRAN IMUX specific suffixes to the dialled number. Should only be used when connected to an ADTRAN IMUX. The Adtran IMUX uses the following suffixes <Number>#C#R #C = Call Type #2 = audio #3 = 56kbps #4 = 64kbps #R = Channel Rate #0 = 2xh221 (2x56\64kbps) #1 to 8 = the Call Rate. *RS366CustomIMUX*: Uses a custom prefix/suffix table which describes the available bandwidths. The prefixes/suffixes are set from the Web Interface or Command Line interface. The user (administrator) shall be able to specify a IMUX prefix/suffix table for the following bandwidths (kbps): 64, 64 Restrict, 128, 128 Restrict, 192, 192 Restrict, 256, 256 Restrict, 320, 320 Restrict, 384, 384 Restrict, 512, 512 Restrict, 768, 768 Restrict, 1152, 1152 Restrict, 1472, 1472 Restrict, 1920, 1920 Restrict. *LeasedLine*: Leased Line is a non-dialling protocol and should be used when two codecs are connected in a point-to-point connection. Use Leased Line when the handshaking signals DTR and CD are available. DTR and CD correspond to the X.21 network's C and I signals. *DataTriggered*: Data Triggered mode uses TxData (transmit data), RxData (receive data) and clock signals only. Use Data Triggered when no handshake signals are available. *Manual*: Manual should be used when no handshake signals are available and the external equipment requires a constantly connected line. **Example:** `xconfiguration externalnetwork callcontrol: rs366`		

ExternalNetwork	**DTRPulse: <On/Off>** Configures the DTR signal on the External Network port (V.35). *On:* The DTR signal will give a low pulse lasting for 5 seconds *Off:* The DTR pulse will stay low. **Example:** `xconfiguration externalnetwork dtrpulse: on`	
ExternalServices	**Mode: <On/Off>** Enables/disables External Services **Example:** `xconfiguration externalservices mode: on`	External Services allows a third party integrator to present services on the unit using XHTML 1.0 strict and HTTP. If turned on, a menu choice will appear in the services menu, and on entering this the TANDBERG unit will retrieve a default XHTML page as specified in the External Services configuration menu.
ExternalServices	**Address: <S: 0, 64>** Configures the External Services address. **Example:** `xconfiguration externalservices address: 10.47.6.75`	
ExternalServices	**Path: <S: 0, 255>** Configures the External Services path. **Example:** `xconfiguration externalservices path: "tms/public/EndpointService/"`	
ExternalServices	**Protocol: <HTTP/HTTPS>** Enables/disables secure management. **Example:** `xconfiguration externalservices protocol: http`	
FECC	**Mode: <On/Off>** Sets whether or not to allow the remote site to control the cameras connected to the system. FECC = Far End Camera Control **Example:** `xconfiguration fecc mode: on`	
FeedbackFilter	**Conference: <0..10>** Defines the Feedback filter (in seconds) for the Conference status element. **Example:** `xconfiguration feedbackfilter conference: 4`	Only relevant if using feedback (xfeedback over RS-232/Telnet or feedback over HTTP). The feedback filter lets the user configure the maximum frequency between feedback updates. That means if data changes very rapidly, the control application will not receive feedback more frequent than every xth second. This will help reducing the load on both the link and the control system, but some transition information might be lost.
FeedbackFilter	**Call: <0..10>** Defines the Feedback filter (in seconds) for the Call status element. **Example:** `xconfiguration feedbackfilter call: 2`	
FTP	**Mode: <On/Off>** Enables or disables the systems embedded FTP server. **Example:** `xconfiguration ftp mode: on`	
G703	**PhysicalLayer: <E1/T1>** Selects whether the leased line is E1 or T1. **Example:** `xconfiguration g703 physicallayer: e1`	

G703		**Linecoding: <b8zsRestrict/b8zsNoRestrict>** Selects whether the Leased line is a 56kb network (restricted) or a 64kb network. Example: `xconfiguration g703 linecoding: b8zsrestrict`
G703		**Callcontrol: <Manual/Auto>** When *Auto* is selected, the system will automatically initiate a connection as soon as it detects that the far end tries to make a call. This mode is also commonly known as "data triggered" mode, because the existence of certain data patterns on the line triggers a connection. When *Manual* is selected, you must explicitly issue a dial command to make the system connect to the far end system. Receiving an incoming call is not possible. Example: `xconfiguration g703 callcontrol: auto`
G703	Interface	**StartChannel: <1..31>** Indicates the first E1/T1 channel the codec is allowed to use. This setting might be used if the E1/T1 line is shared with other equipment. Example: `xconfiguration g703 interface startchannel: 6`
G703	Interface	**MaxChannels: <1..30/23>** Indicates the maximum number of channels the codec is allowed to use on the E1/T1 interface. When E1 is selected, maximum is 30 channels. When T1 is selected, maximum is 24 channels. Example: `xconfiguration g703 interface maxchannels: 12`
H320		**NetType: <BRI/PRI/External/G703/None> (Codec 6000)** **NetType: <BRI/None> (Codec 3000)** **NetType: <External/None> (Codec 3000NET)** Defines the network type to use for H.320 calls. Example: `xconfiguration h320 nettype: bri`
H323		**Mode: <On/Off>** Enables/disables the possibility to place and receive H.323 calls. Example: `xconfiguration h323 mode: on`
H323CallSetup		**Mode: <Direct/Gatekeeper/CallManager>** Defines how to establish H.323 calls. *Direct:* An IP-address must be used in order to make a H.323 call. The system will not use a gatekeeper or CallManager. *Gatekeeper:* The system will use a gatekeeper to make a H.323 call. *CallManager:* The system will use a CallManager to make a H.323 call. **NOTE!** Direct H.323calls can be made even though the H323CallSetup Mode is set to Gatekeeper or Callmanager. Example: `xConfiguration h323callsetup mode: gatekeeper`

H323Gatekeeper		**Discovery: <Manual/Auto>** *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 auto discovery on the gatekeeper 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. *Manual:* The system will use a specific gatekeeper identified by H323Gatekeeper Address. Example: `xconfiguration h323gatekeeper discovery: manual`
H323Gatekeeper		**Address: <S: 0, 64>** Specifies the address of the gatekeeper to use if Discovery is set to *Manual*. Example: `xconfiguration h323gatekeeper address: 10.47.9.1`
H323Gatekeeper		**MultipleAlias: <On/Off>** If set to *On*, the system will register multiple H.323-IDs on the Gatekeeper based on the values of the parameters: System Name, International Name and H.323 ID. Up to 3 aliases are possible. If set to *Off*, the system will register a single H.323-IDs on the Gatekeeper based on the following priority: 1. H.323 ID 2. International Name 3. System Name Example: `xconfiguration h323gatekeeper multiplealias: On`
H323Gatekeeper	Authentication	**Mode: <Auto/Off>** If Authentication Mode is set to *Auto* and the gatekeeper indicates that it requires authentication, the endpoint will automatically try to authenticate itself to the Gatekeeper. If Authentication Mode is set to *Off* the system will not try to authenticate itself to a Gatekeeper, but will still try a normal registration. Example: `xconfiguration h323gatekeeper authentication mode: auto`
H323Gatekeeper	Authentication	**ID: <S: 0, 49>** The system sends the Authentication ID and Password to a Gatekeeper for authentication. The authentication is a one way authentication from the endpoint system to a Gatekeeper, i.e. the endpoint is authenticated to the Gatekeeper. If the Gatekeeper indicates that no authentication is required, the endpoint will still try to register. Example: `xconfiguration h323gatekeeper authentication id: TANDBERG`
H323Gatekeeper	Authentication	**Password: <S: 0, 49>** Please see above. NOTE! **The password will not be listed when polling.** Example: `xconfiguration h323gatekeeper authentication password: xxx`
H323Gatekeeper	Avaya	**Mode: <On/Off>** **NOTE!** The Mode setting is the main switch to the rest of the options. If Mode is set to Off the other Avaya options will be ignored by the system. Set to *On* when the specified gatekeeper (`xconfiguration H323Gatekeeper Address`) is an Avaya gatekeeper. This enables Avaya-specific behavior. An Avaya gatekeeper is called Avaya Communication Manager - Avaya CM for short). Example: `xconfiguration h323gatekeeper avaya mode: off`

H323Gatekeeper	**Avaya**	**AnnexH: <On/Off>** Set AnnexH to *On* to enable Avaya strongest level of encryption (H.235.5 with Avaya extensions). When set to *Off*, the Avaya CM needs to have a "green license" installed to support non-encrypted endpoints. Example: `xconfiguration h323gatekeeper avaya annexh: off`
H323Gatekeeper	**Avaya**	**MultipointCount: <0..9>** The Avaya MultipointCount decides how many simultaneous calls the endpoint will be able to handle. If it is non-zero, that value will be used (there is a maximum to what the Avaya CM can handle depending on its software version. Change this value only if you know what you're doing). If set to "0", default safe values will be used. The default safe values are: 4 if AnnexH is turned on. 6 if AnnexH is turned off. **NOTE!** The MultiPointCount setting is only used when in an Avaya environment. Example: `xconfiguration h323gatekeeper avaya multipointcount: 0`
H323Gatekeeper	**Avaya**	**Password: <S: 0, 49>** The Avaya password is a hidden write-only parameter that sets the PIN code to use for AnnexH encryption. Example: `xconfiguration h323gatekeeper avaya password: 123`
H323Prefix: <S: 0, 4> When dialling a number prefixed with digits specified by H.323 Prefix, and with Net: Auto, an H.323 call will be placed. Example: `xconfiguration h323prefix: 5`		
HTTP	**Mode: <On/Off>** Enables/disables HTTP. Example: `xconfiguration http mode: on`	
HTTPS	**Mode: <On/Off>** Enables/disables HTTPS. Example: `xconfiguration https mode: on`	
HTTPS	**VerifyServerCertificate: <On/Off>** TANDBERG MXP systems now support secure management when communicating with the TMS. For more information see the TANDBERG White Paper "Implementing Secure Management" which describes how to configure secure HTTPS between TANDBERG products. To find the document, follow the link: http://www.tandberg.com/support/documentation.php and select White Papers. Example: `xconfiguration https verifyservercertificate: on`	
IdReport	**H323: <H323Id/E164Alias/IPAddress>** Selects what identifier to present as remote number for incoming H.323 calls. Example: `xconfiguration idreport h323: h323id`	

IEEE802.1x — IMUX

IEEE802.1x	**Mode: <On/Off>** Enables/disables 802.1x authentication Example: `xconfiguration ieee802.1x mode: on`			The system may be connected to an IEEE 802.1x LAN network. Supported 802.1x protocols are EAP-MD5, EAP-PEAP and EAP-TTLS.
IEEE802.1x	**AnonymousIdentity: <S: 0, 64>** The 802.1x Anonymous ID string is to be used as un-encrypted identity with EAP types that support different tunneled identity, EAP-PEAP and EAP-TTLS. The anonymous ID, if set, will be used for the initial (un-encrypted) EAP Identity Request Example: `xconfiguration ieee802.1x anonymousidentity:`			
IEEE802.1x	**Identity: <S: 0, 64>** The 802.1x Identity is the user name needed for 802.1x authentication. Example: `xconfiguration ieee802.1.x identity: MyString`			
IEEE802.1x	**Password: <S: 0, 64>** The 802.1x Password is the password needed for 802.1x authentication. Example: `xconfiguration ieee802.1x password: MyPassword`			
IEEE802.1x	**EAP-MD5: <On/Off>** Enables/disables the EAP-MD5 protocol Example: `xconfiguration ieee802.1.x eap-md5: on`			
IEEE802.1x	**EAP-TTLS: <On/Off>** Enables/disables the EAP-TTLS protocol Example: `xconfiguration ieee802.1.x eap-ttls: on`			
IEEE802.1x	**EAP-PEAP: <On/Off>** Enables/disables the EAP-PEAP protocol Example: `xconfiguration ieee802.1.x eap-peap: on`			
IMUX	Custom	BW64	**Prefix: <S: 0, 12>** **Defines the prefix to be used with the RS366 Custom IMUX at this bandwidth.** Example: `xconfiguration imux custom bw64 prefix: xxx`	
IMUX	Custom	BW64	**Suffix: <S: 0, 12>** **Defines the suffix to be used with the RS366 Custom IMUX at this bandwidth.** Example: `xconfiguration imux custom bw64 suffix: xxx`	
IMUX	Custom	BW64R	**Prefix: <S: 0, 12>** **Defines the prefix to be used with the RS366 Custom IMUX at this restricted bandwidth.** Example: `xconfiguration imux custom bw64r prefix: xxx`	

IMUX	Custom	BW64R	Suffix: <S: 0, 12> Defines the suffix to be used with the RS366 Custom IMUX at this restricted bandwidth. Example: `xconfiguration imux custom bw64r suffix: xxx`
IMUX	Custom	BW128	Prefix: <S: 0, 12> Defines the prefix to be used with the RS366 Custom IMUX at this bandwidth. Example: `xconfiguration imux custom bw128 prefix: xxx`
IMUX	Custom	BW128	Suffix: <S: 0, 12> Defines the suffix to be used with the RS366 Custom IMUX at this bandwidth. Example: `xconfiguration imux custom bw128 suffix: xxx`
IMUX	Custom	BW128R	Prefix: <S: 0, 12> Defines the prefix to be used with the RS366 Custom IMUX at this restricted bandwidth. Example: `xconfiguration imux custom bw128r prefix: xxx`
IMUX	Custom	BW128R	Suffix: <S: 0, 12> Defines the suffix to be used with the RS366 Custom IMUX at this restricted bandwidth. Example: `xconfiguration imux custom bw128r suffix: xxx`
IMUX	Custom	BW192	Prefix: <S: 0, 12> Defines the prefix to be used with the RS366 Custom IMUX at this bandwidth. Example: `xconfiguration imux custom bw192 prefix: xxx`
IMUX	Custom	BW192	Suffix: <S: 0, 12> Defines the suffix to be used with the RS366 Custom IMUX at this bandwidth. Example: `xconfiguration imux custom bw192 suffix: xxx`
IMUX	Custom	BW192R	Prefix: <S: 0, 12> Defines the prefix to be used with the RS366 Custom IMUX at this restricted bandwidth. Example: `xconfiguration imux custom bw192r prefix: xxx`
IMUX	Custom	BW192R	Suffix: <S: 0, 12> Defines the suffix to be used with the RS366 Custom IMUX at this restricted bandwidth. Example: `xconfiguration imux custom bw128r suffix: xxx`
IMUX	Custom	BW256	Prefix: <S: 0, 12> Defines the prefix to be used with the RS366 Custom IMUX at this bandwidth. Example: `xconfiguration imux custom bw256 prefix: xxx`

IMUX	Custom	BW256	Suffix: <S: 0, 12> Defines the suffix to be used with the RS366 Custom IMUX at this bandwidth. Example: `xconfiguration imux custom bw256 suffix: xxx`
IMUX	Custom	BW256R	Prefix: <S: 0, 12> Defines the prefix to be used with the RS366 Custom IMUX at this restricted bandwidth. Example: `xconfiguration imux custom bw256r prefix: xxx`
IMUX	Custom	BW256R	Suffix: <S: 0, 12> Defines the suffix to be used with the RS366 Custom IMUX at this restricted bandwidth. Example: `xconfiguration imux custom bw256r suffix: xxx`
IMUX	Custom	BW320	Prefix: <S: 0, 12> Defines the prefix to be used with the RS366 Custom IMUX at this bandwidth. Example: `xconfiguration imux custom bw320 prefix: xxx`
IMUX	Custom	BW320	Suffix: <S: 0, 12> Defines the suffix to be used with the RS366 Custom IMUX at this bandwidth. Example: `xconfiguration imux custom bw320 suffix: xxx`
IMUX	Custom	BW320R	Prefix: <S: 0, 12> Defines the prefix to be used with the RS366 Custom IMUX at this restricted bandwidth. Example: `xconfiguration imux custom bw320r prefix: xxx`
IMUX	Custom	BW320R	Suffix: <S: 0, 12> Defines the suffix to be used with the RS366 Custom IMUX at this restricted bandwidth. Example: `xconfiguration imux custom bw320r suffix: xxx`
IMUX	Custom	BW384	Prefix: <S: 0, 12> Defines the prefix to be used with the RS366 Custom IMUX at this bandwidth. Example: `xconfiguration imux custom bw384 prefix: xxx`
IMUX	Custom	BW384	Suffix: <S: 0, 12> Defines the suffix to be used with the RS366 Custom IMUX at this bandwidth. Example: `xconfiguration imux custom bw384 suffix: xxx`
IMUX	Custom	BW384R	Prefix: <S: 0, 12> Defines the prefix to be used with the RS366 Custom IMUX at this restricted bandwidth. Example: `xconfiguration imux custom bw384r prefix: xxx`

IMUX	Custom	BW384R	Suffix: <S: 0, 12> Defines the suffix to be used with the RS366 Custom IMUX at this restricted bandwidth. Example: `xconfiguration imux custom bw384r suffix: xxx`
IMUX	Custom	BW512	Prefix: <S: 0, 12> Defines the prefix to be used with the RS366 Custom IMUX at this bandwidth. Example: `xconfiguration imux custom bw512 prefix: xxx`
IMUX	Custom	BW512	Suffix: <S: 0, 12> Defines the suffix to be used with the RS366 Custom IMUX at this bandwidth. Example: `xconfiguration imux custom bw512 suffix: xxx`
IMUX	Custom	BW512R	Prefix: <S: 0, 12> Defines the prefix to be used with the RS366 Custom IMUX at this restricted bandwidth. Example: `xconfiguration imux custom bw512r prefix: xxx`
IMUX	Custom	BW512R	Suffix: <S: 0, 12> Defines the suffix to be used with the RS366 Custom IMUX at this restricted bandwidth. Example: `xconfiguration imux custom bw512r suffix: xxx`
IMUX	Custom	BW768	Prefix: <S: 0, 12> Defines the prefix to be used with the RS366 Custom IMUX at this bandwidth. Example: `xconfiguration imux custom bw768 prefix: xxx`
IMUX	Custom	BW768	Suffix: <S: 0, 12> Defines the suffix to be used with the RS366 Custom IMUX at this bandwidth. Example: `xconfiguration imux custom bw768 suffix: xxx`
IMUX	Custom	BW768R	Prefix: <S: 0, 12> Defines the prefix to be used with the RS366 Custom IMUX at this restricted bandwidth. Example: `xconfiguration imux custom bw768r prefix: xxx`
IMUX	Custom	BW768R	Suffix: <S: 0, 12> Defines the suffix to be used with the RS366 Custom IMUX at this restricted bandwidth. Example: `xconfiguration imux custom bw768r suffix: xxx`
IMUX	Custom	BW1152	Prefix: <S: 0, 12> Defines the prefix to be used with the RS366 Custom IMUX at this bandwidth. Example: `xconfiguration imux custom bw1152 prefix: xxx`

IMUX	Custom	BW1152	Suffix: <S: 0, 12> Defines the suffix to be used with the RS366 Custom IMUX at this bandwidth. Example: `xconfiguration imux custom bw1152 suffix: xxx`
IMUX	Custom	BW1152R	Prefix: <S: 0, 12> Defines the prefix to be used with the RS366 Custom IMUX at this restricted bandwidth. Example: `xconfiguration imux custom bw1152r prefix: xxx`
IMUX	Custom	BW1152R	Suffix: <S: 0, 12> Defines the suffix to be used with the RS366 Custom IMUX at this restricted bandwidth. Example: `xconfiguration imux custom bw1152r suffix: xxx`
IMUX	Custom	BW1472	Prefix: <S: 0, 12> Defines the prefix to be used with the RS366 Custom IMUX at this bandwidth. Example: `xconfiguration imux custom bw1472 prefix: xxx`
IMUX	Custom	BW1472	Suffix: <S: 0, 12> Defines the suffix to be used with the RS366 Custom IMUX at this bandwidth. Example: `xconfiguration imux custom bw1472 suffix: xxx`
IMUX	Custom	BW1472R	Prefix: <S: 0, 12> Defines the prefix to be used with the RS366 Custom IMUX at this restricted bandwidth. Example: `xconfiguration imux custom bw1472r prefix: xxx`
IMUX	Custom	BW1472R	Suffix: <S: 0, 12> Defines the suffix to be used with the RS366 Custom IMUX at this restricted bandwidth. Example: `xconfiguration imux custom bw1472r suffix: xxx`
IMUX	Custom	BW1920	Prefix: <S: 0, 12> Defines the prefix to be used with the RS366 Custom IMUX at this bandwidth. Example: `xconfiguration imux custom bw1920 prefix: xxx`
IMUX	Custom	BW1920	Suffix: <S: 0, 12> Defines the suffix to be used with the RS366 Custom IMUX at this bandwidth. Example: `xconfiguration imux custom bw1920 suffix: xxx`
IMUX	Custom	BW1920R	Prefix: <S: 0, 12> Defines the prefix to be used with the RS366 Custom IMUX at this restricted bandwidth. Example: `xconfiguration imux custom bw1920r prefix: xxx`

IMUX	Custom	BW1920R	**Suffix: <S: 0, 12>** **Defines the suffix to be used with the RS366 Custom IMUX at this restricted bandwidth.** Example: `xconfiguration imux custom bw1920r suffix: xxx`
Integrator	AMXBeacon	**Mode: <On/Off>** If set to *On*, the system will start transmitting beacon messages to support AMX's Dynamic Device Discovery Protocol (DDDP). The beacon string is transmitted as a UDP packet to 239.255.250.250 on port 9131 at random intervals between 30 and 60 seconds. The transmission of the Beacon message is by default set to *Off*. Example: `xconfiguration integrator amxbeacon mode: off`	
Integrator	Telepresence	**Mode: <Off/Point2Point/MultiPoint/Briefer>** Only in use with TANDBERG Experia. Example: `xconfiguration integrator telepresence mode: off`	
IPProtocol: <IPv4/IPv6/Both> Defines what IP protocol to use. If set to *Both* the system will support both *IPv4* and *IPv6*. Example: `xconfiguration ipprotocol: both`			
IP	**Assignment: <DHCP/Static>** Defines whether to use DHCP or Static IP assignment. **NOTE!** This configuration only applies to IPv4. Example: `xconfiguration ip assignment: dhcp`		
IP	**Address: <IPAddr>** Defines the IPv4 address to use. Only applicable if Static IP assignment is being used. Example: `xconfiguration ip address:`		
IP	**SubnetMask: <IPAddr>** Defines the subnet mask. Only applicable if Static IP assignment is being used. Example: `xconfiguration ip subnetmask:`		
IP	**Gateway: <IPAddr>** Defines the gateway address. Only applicable if Static IP assignment is being used. Example: `xconfiguration ip gateway:`		
IP	V6	**Address: <IPv6Addr: 0, 43>** Allows static configuration of IP v6 Address. Example: `xConfiguration ip v6 address:`	
IP	DNS	Server [1..5]	**Address: <IPv4v6Addr: 0, 43>** 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. Example: `xconfiguration ip dns server:`

IP	DNS	Domain	**Name: <S: 0, 64>** DNS Domain Name is the default domain name suffix which is added to unqualified names. **Example:** DNS Domain Name is "`example.com`", and the name to lookup is "`videosystem`" will result in a "`videosystem.example.com`" DNS lookup.
IPMedia	**MaxVideoTXRate: <64..4096>** The MaxVideoTXRate (kbps) defines the desired maximum transmitted call rate for IP calls. This is to be able to limit the outgoing bandwidth whilst keeping the maximum incoming bandwidth, especially useful for home offices with different upstream and downstream rates, typically ADSL. **Example:** `xconfiguration ipmedia maxvideotxrate: 384`		
IRControl	**Mode: <On/Off>** Enables/disables the TANDBERG Remote Control. **Example:** `xconfiguration ircontrol mode: off`		
IRControl	**NumberKeyMode: <AddCall/DTMF/Presets/Manual>** When pressing a number key on the remote control, while in a call, the user can decide what shall happen. The system can be configured to act automatically or manually. Please refer to the MXP Administrator Guide and MXP User Guide for further details. **Example:** `xconfiguration ircontrol numberkeymode: DTMF`		
ISDN	**CliNumbSpec: <On/Off>** Explicitely specify Calling Party Number fields Type/Plan to be used in outgoing calls in the ISDN setup message. Using default values if set to *Off*. When set to on, the system will use the values set by "ISDN ClinNumPlan" and "ISDN ClinNumbType". **Example:** `xConfiguration isdn clinumbspec: Off`		
ISDN	**CliNumbType: <0..6>** Value to be used for Calling Party Number field Type. If the value is set to 2, the number type in the setup message will be set to National. This is required in the UAE. **Example:** `xConfiguration isdn clinumbtype: 5`		
ISDN	**CliNumbPlan: <0..14>** Value to be used for Calling Party Number field Plan in the ISDN setup message. If the value is set to 1, the numbering plan in the setup message will signal ISDN. This is required in UAE. **Example:** `xConfiguration isdn clinumbplan: 12`		
ISDN	**SendComplete: <On/Off>** If set to *On* the system will send the ISDN message information element Sending Complete. If set to *Off* The system will not send Sending Complete. Default is Off. **Example:** `xconfiguration isdn sendcomplete: on`		
ISDN	**SendNumber: <On/Off>** When set to *On*, the system will send its own numbers to the far end. When set to *Off*, the system will not send its own numbers to the far end, but please note that the network may still send your numbers to the far end. **Example:** `xconfiguration isdn sendnumber: on`		

ISDN	**ParallelDial: <On/Off>** When set to *On*, channels will be dialed and connected in parallel when setting up a BONDING call. When set to *Off*, channels will be dialled one by one, which may increase the dialling time. **Example:** `xconfiguration isdn paralleldial: on`		
ISDN	**HLC: <On/Off>** Turns sending of HLC information element in setup message on or off (video calls only). When HLC (Higher Level Capability) is set to *On* the system will signal, type of call i.e. video call, telephony or data. HLC must be set to on to work with some PRIs in Italy. **Example:** `xconfiguration isdn hlc: on`		
ISDN	**SpeechTimers: <On/Off>** ISDN Layer 3, telephony calls. When set to *Off*, there will be no T310, T304, T301 **Example:** `xconfiguration isdn speechtimers: on`		
ISDN	**MSN: <On/Off>** The use of MSN (Multiple Subscriber Number) enables you to attach different ISDN terminals, with different numbers, to the same physical ISDN telephone line. If MSN is set to *On*ly calls to numbers specified for the specific ISDN interfaces will be answered. This service can be ordered from your telephone company. **Example:** `xconfiguration isdn msn: on`		
ISDN	**SubAddress: <S: 0, 20>** Using a sub address enables you to connect up to eight ISDN terminals to the same ISDN telephone number and line. The terminals are addressed by using different sub addresses. To call a terminal with a sub address, separate the ISDN telephone number and the sub address with a ∗. Note that this service has limited access on some ISDN networks. **Example:** `xconfiguration isdn subaddress: 15`		
ISDN	**PRI**	**NSFTelephony**	**Mode: <On/Off>** Enables/disables use of NSF for telephony. NSF = Network Service Facility **Example:** `xconfiguration isdn pri nsftelephony mode: on`

ISDN	PRI	NSFTelephony	**Number: <0..31>** Defines what Service Facility to use for telephony if the NSFTelephony Mode is set to *On*. **Example:** `xconfiguration isdn pri nsftelephony number: 8`	**Service profiles for Sprint (ref. 2):** NSF Service 0 Reserved 1 Private 2 Inwatts 3 Outwatts 4 FX 5 TieTrunk **Service profiles for MCI (ref. 3):** NSF Service 1 VNET/Vision 2 800 3 PRISM1, PRISMII, WATS 4 900 5 DAL
			Service profiles for AT&T (ref.1): NSF Service 0 Disable 1 SDN (including GSDN) 2 Toll Free Megacom (800) 3 Megacom 6 ACCUNET Switched Digital Service (including Switched Digital International) 7 Long Distance Service (including AT&T World Connect) 8 International Toll Free Service (I800) 16 AT&T MultiQuest 23 Call Redirection Service	
ISDN	PRI	NSFVideoTelephony	**Mode: <On/Off>** Enables/disables use of NSF for video telephony. NSF = Network Service Facility **Example:** `xconfiguration isdn pri nsfvideotelephony mode: on`	
ISDN	PRI	NSFVideoTelephony	**Number: <0..31>** Defines what Service Facility to use for video telephony if NSFVideoTelephony Mode is set to *On*. **Example:** `xconfiguration isdn pri nsfvideotelephony number: 8`	
ISDN	PRI	**SwitchType: <NI/ATT/Euro/Japan>** Selects the type of PRI switch the system is connected to. **Example:** `xconfiguration isdn pri switchtype: ni`		
ISDN	PRI	**InitialRestart: <On/Off>** When restart is set to on the PRI interfaces will be re-initialized after boot. **Example:** `xconfiguration isdn pri initialrestart: on`		
ISDN	PRI	**Alert: <On/Off>** If set to *On*, the system will respond with an alert message to all incoming setup messages. If set to *Off* (default) the system will respond with an alert message only to the incoming setup message related to the initial channel. If, in addition, the PBX requires this signalling you will only get connected on the first incoming channel. **Example:** `xconfiguration isdn pri alert: on`		
ISDN	PRI	**ChanId: <On/Off>** Can be used to force sending of channel id information. When set to “on”, the system will signal to the PBX which PRI channels is used for the call. Default setting is *Off*. Note: This setting must be set to *On*, to work with an Ericsson MD110 PBX. **Example:** `xconfiguration isdn pri chanid: on`		

ISDN	PRI	**L2WindowSize: <1..7>** Max. No. of outstanding Iframes (ISDN Layer 2) Example: `xconfiguration isdn pri L2windowsize:`	
ISDN	PRI	Interface	**MaxChannels: <1..30>** Maximum number of channels the system may use at any given time. Example: `xconfiguration isdn pri interface maxchannels: 23`
ISDN	PRI	Interface	**HighChannel: <1..31>** The highest numbered B-channel that may be used by the system when selecting channels for outgoing calls. Example: `xconfiguration isdn pri interface highchannel:31`
ISDN	PRI	Interface	**LowChannel: <1..31>** The lowest numbered B-channel that may be used by the system when selecting channels for outgoing calls. Example: `xconfiguration isdn pri interface lowchannel:1`
ISDN	PRI	Interface	**Search: <High/Low>** Selects whether to start searching for available B-channels from the highest numbered channel or from the lowest numbered channel. Example: `xconfiguration isdn pri interface search: high`
ISDN	PRI	Interface	**NumberRangeStart: <S: 0, 24>** Defines the number range start, supported by the PRI interface. Example: `xconfiguration isdn pri interface numberrangestart: 1`
ISDN	PRI	Interface	**NumberRangeStop: <S: 0, 24>** Defines the number range stop, supported by the PRI interface. Example: `xconfiguration isdn pri interface numberrangestop: 8`
ISDN	BRI	**SwitchType: <NI/ATT/Euro/1TR6/Japan/Australia/FETEX>** Selects BRI network type. Example: `xconfiguration isdn bri switchtype: att`	
ISDN	BRI	**AutoActivation: <Off/Selected/All>** (ISDN Layer 1) Auto activation of the BRI interface. *Selected* will activate those already On, *All* will activate all interfaces regardless of status. Example: `xconfiguration isdn bri autoactivation: all`	
ISDN	BRI	**MaxDeactiveTime: <1..60>** Max duration for Layer 1 in de-active state before auto activation (re)starts Example: `xconfiguration isdn bri maxdeactivetime:`	

ISDN	BRI	**Alert: <On/Off>** If set to *On*, the system will respond with an alert message to all incoming setup messages. If set to *Off* (default) the system will respond with an alert message only to the incoming setup message related to the initial channel. If, in addition, the PBX requires this signalling you will only get connected on the first incoming channel. **Example:** `xconfiguration isdn bri alert: on`	
ISDN	BRI	**ChanId: <On/Off>** Can be used to force sending of channel id information. When set to "on", the system will signal to the PBX which PRI channels is used for the call. Default setting is *Off*. Note: This setting must be set to *On*, to work with an Ericsson MD110 PBX. **Example:** `xconfiguration isdn bri chanid: on`	
ISDN	BRI	**InterfaceSearch: <High/Low>** Selects whether to start searching for available B-channels from the highest numbered interface or from the lowest numbered interface. **Example:** `xconfiguration isdn bri interfacesearch: high`	
ISDN	BRI	Interface [1..6]	**Mode: <On/Off>** Enables/disables the various BRI interfaces. **Example:** `xconfiguration isdn bri interface 4 mode: off`
ISDN	BRI	Interface [1..6]	**DirectoryNumber [1..2]: <S: 0, 24>** Specifies the Directory Numbers for the various BRI interfaces. **Example:** `xconfiguration isdn bri interface 4 directorynumber 2: 6623`
ISDN	BRI	Interface [1..6]	**SPID [1..2]: <S: 0, 20>** If the network supports automatically retrieval of SPIDs, the command SPIDAutoConfigure should be used. **Example:** `xconfiguration isdn bri interface 4 spid 2: 55`
KeepDuoOpen <On/Off> Keeps the dual channel open even when there is no presentation video source connected to the endpoint. Requires the optional Natural Presenter Package to be installed. **Example:** `xconfiguration keepduoopen: off`			
Key	**Number0: <On/Off>** Enable or disable the given key on the TANDBERG Remote Control, and using configuration instead of commands. **Example:** `xconfiguration key number0: on`		
Key	**Number1: <On/Off>** Enable or disable the given key on the TANDBERG Remote Control, and using configuration instead of commands. **Example:** `xconfiguration key number1: on`		
Key	**Number2: <On/Off>** Enable or disable the given key on the TANDBERG Remote Control, and using configuration instead of commands. **Example:** `xconfiguration key number2: on`		

Key	**Number3: <On/Off>** Enable or disable the given key on the TANDBERG Remote Control, and using configuration instead of commands. Example: `xconfiguration key number3: on`
Key	**Number4: <On/Off>** Enable or disable the given key on the TANDBERG Remote Control, and using configuration instead of commands. Example: `xconfiguration key number4: on`
Key	**Number5: <On/Off>** Enable or disable the given key on the TANDBERG Remote Control, and using configuration instead of commands. Example: `xconfiguration key number5: on`
Key	**Number6: <On/Off>** Enable or disable the given key on the TANDBERG Remote Control, and using configuration instead of commands. Example: `xconfiguration key number6: on`
Key	**Number7: <On/Off>** Enable or disable the given key on the TANDBERG Remote Control, and using configuration instead of commands. Example: `xconfiguration key number7: on`
Key	**Number8: <On/Off>** Enable or disable the given key on the TANDBERG Remote Control, and using configuration instead of commands. Example: `xconfiguration key number8: on`
Key	**Number9: <On/Off>** Enable or disable the given key on the TANDBERG Remote Control, and using configuration instead of commands. Example: `xconfiguration key number9: on`
Key	**Star: <On/Off>** Enable or disable the given key (*) on the TANDBERG Remote Control, and using configuration instead of commands. Example: `xconfiguration key star: on`
Key	**Square: <On/Off>** Enable or disable the given key (#) on the TANDBERG Remote Control, and using configuration instead of commands. Example: `xconfiguration key square: on`
Key	**Connect: <On/Off>** Enable or disable the given key (green Call key) on the TANDBERG Remote Control, and using configuration instead of commands. Example: `xconfiguration key connect: on`

Key	**Disconnect: <On/Off>** Enable or disable the given key (red End Call key) on the TANDBERG Remote Control, and using configuration instead of commands. Example: `xconfiguration key disconnect: on`
Key	**Up: <On/Off>** Enable or disable the given key (arrow up) on the TANDBERG Remote Control, and using configuration instead of commands. Example: `xconfiguration key up: on`
Key	**Down: <On/Off>** Enable or disable the given key (arrow down) on the TANDBERG Remote Control, and using configuration instead of commands. Example: `xconfiguration key down: on`
Key	**Right: <On/Off>** Enable or disable the given key (arrow right) on the TANDBERG Remote Control, and using configuration instead of commands. Example: `xconfiguration key right: on`
Key	**Left: <On/Off>** Enable or disable the given key (arrow left) on the TANDBERG Remote Control, and using configuration instead of commands. Example: `xconfiguration key left: on`
Key	**Selfview: <On/Off>** Enable or disable the given key (Selfview) on the TANDBERG Remote Control, and using configuration instead of commands. Example: `xconfiguration key selfview: on`
Key	**Layout: <On/Off>** Enable or disable the given key (Layout) on the TANDBERG Remote Control, and using configuration instead of commands. Example: `xconfiguration key layout: on`
Key	**Phonebook: <On/Off>** Enable or disable the given key (Phonebook) on the TANDBERG Remote Control, and using configuration instead of commands. Example: `xconfiguration key phonebook: on`
Key	**Cancel: <On/Off>** Enable or disable the given key (x - Cancel) on the TANDBERG Remote Control, and using configuration instead of commands. Example: `xconfiguration key cancel: on`
Key	**MicOff: <On/Off>** Enable or disable the given key (yellow Mic Off key) on the TANDBERG Remote Control, and using configuration instead of commands. Example: `xconfiguration key micoff: on`

Key	**Presentation: <On/Off>** Enable or disable the given key (blue Presentation key) on the TANDBERG Remote Control, and using configuration instead of commands. Example: `xconfiguration key presentation: on`
Key	**VolumeUp: <On/Off>** Enable or disable the given key (Volume +) on the TANDBERG Remote Control, and using configuration instead of commands. Example: `xconfiguration key volumeup: on`
Key	**VolumeDown: <On/Off>** Enable or disable the given key (Volume –) on the TANDBERG Remote Control, and using configuration instead of commands. Example: `xconfiguration key volumedown: on`
Key	**Ok: <On/Off>** Enable or disable the given key (OK - Menu key) on the TANDBERG Remote Control, and using configuration instead of commands. Example: `xconfiguration key ok: on`
Key	**ZoomIn: <On/Off>** Enable or disable the given key (Zoom +) on the TANDBERG Remote Control, and using configuration instead of commands. Example: `xconfiguration key zoomin: on`
Key	**ZoomOut: <On/Off>** Enable or disable the given key (Zoom –) on the TANDBERG Remote Control, and using configuration instead of commands. Example: `xconfiguration key zoomout: on`
Key	**Grab: <On/Off>** Enables/disables the signal which is sent to the codec when grabbing and touching the rubber lines on each side of the TANDBERG Remote Control. Example: `xconfiguration key grab: on`
Key	**Cabinet: <On/Off>** Enables/disables the headset key in front of the cabinet. Applies to TANDBERG 1000 MXP only. Example: `xconfiguration key cabinet: on`
Key	**Presets: <On/Off>** Enable or disable the given key on the TANDBERG Remote Control (TRC4), and using configuration instead of commands. Example: `xconfiguration key presets: on`
Key	**FarEnd: <On/Off>** Enable or disable the given key on the TANDBERG Remote Control (TRC4), and using configuration instead of commands. Example: `xconfiguration key farend: on`

Key	**Services: <On/Off>** Enable or disable the given key on the TANDBERG Remote Control (TRC4), and using configuration instead of commands. Example: `xconfiguration key services: on`
Key	**Help: <On/Off>** Enable or disable the given key on the TANDBERG Remote Control (TRC4), and using configuration instead of commands. Example: `xconfiguration key help: on`
Key	**MainCam: <On/Off>** Enable or disable the given key on the TANDBERG Remote Control (TRC4), and using configuration instead of commands. Example: `xconfiguration key maincam: on`
Key	**PC: <On/Off>** Enable or disable the given key on the TANDBERG Remote Control (TRC4), and using configuration instead of commands. Example: `xconfiguration key pc: on`
Key	**DocCam: <On/Off>** Enable or disable the given key on the TANDBERG Remote Control (TRC4), and using configuration instead of commands. Example: `xconfiguration key doccam: on`
Key	**VCR: <On/Off>** Enable or disable the given key on the TANDBERG Remote Control (TRC4), and using configuration instead of commands. Example: `xconfiguration key vcr: on`
Key	**AUX: <On/Off>** Enable or disable the given key on the TANDBERG Remote Control (TRC4), and using configuration instead of commands. Example: `xconfiguration key aux: on`
Keyboard	**Layout: <English/US/Norwegian/Swedish/German/French/User>** Defines the layout of the keyboard, if connected. Example: `xconfiguration keyboard layout: us`
Kiosk	**AllowIRControl: <On/Off>** Enables (*On*) or disables (*Off*) the use of all keys on the remote control. Example: `xconfiguration kiosk allowircontrol: on`
Kiosk	**AutoDial: <On/Off>** Enables (*On*) or disables (*Off*) auto dial. The system will automatically dial to the first contact in the Phone Book when the handset is lifted. If this contact is busy, the system will call the second number in the Phone Book and so on. If the user places the handset in the cradle, the system will switch to Speaker Mode. Only the Far End system can end the call. Example: `xconfiguration kiosk autodial: on`

Kiosk	LanguageMenu	**Mode: <On/Off>** Enables (*On*) or disables (*Off*) language menu in Kiosk mode. Example: `xconfiguration kiosk languagemenu mode: on`
Kiosk	LanguageMenu	**English: <On/Off>** Enables (*On*) or disables (*Off*) language menu in English. Example: `xconfiguration kiosk languagemenu english: on`
Kiosk	LanguageMenu	**German: <On/Off>** Enables (*On*) or disables (*Off*) language menu in German Example: `xconfiguration kiosk languagemenu german: on`
Kiosk	LanguageMenu	**French: <On/Off>** Enables (*On*) or disables (*Off*) language menu in French Example: `xconfiguration kiosk languagemenu french: on`
Kiosk	LanguageMenu	**Italian: <On/Off>** Enables (*On*) or disables (*Off*) language menu in Italian Example: `xconfiguration kiosk languagemenu italian: on`
Kiosk	LanguageMenu	**Norwegian: <On/Off>** Enables (*On*) or disables (*Off*) language menu in Norwegian Example: `xconfiguration kiosk languagemenu norwegian: on`
Kiosk	LanguageMenu	**Swedish: <On/Off>** Enables (*On*) or disables (*Off*) language menu in Swedish Example: `xconfiguration kiosk languagemenu swedish: on`
Kiosk	LanguageMenu	**Spanish: <On/Off>** Enables (*On*) or disables (*Off*) language menu in Spanish Example: `xconfiguration kiosk languagemenu spanish: on`
Kiosk	**Menu: <On/Off>** Enables (*On*) or disables (*Off*) Kiosk menu to appear on screen. Example: `xconfiguration kiosk menu: on`	
Kiosk	**Mode: <On/Off>** Enables (*On*) or disables (*Off*) Kiosk mode. Example: `xconfiguration kiosk mode: on`	

Kiosk	**OneClickConnect: <On/Off>** If turned On, you can make a call with a single click on the green call button the remote control. The system will call the first entry in "My Contacts" in the Phone Book. **NOTE!** The one-click-connect functionality will only work in Kiosk Mode. If set to Off: Does not allow for one click connect in Kiosk mode. **Example:** `xconfiguration kiosk oneclickconnect: off`			
Kiosk	**Phonebook: <Local/CorporateDirectory>** *Local:* The system will use the Local Phone Book in Kiosk Mode. *CorporateDirectory:* The system will use the Corporate Directory in Kiosk Mode. **Example:** `xconfiguration kiosk phonebook: local`			
LocalLayout	**Mode: <Full/2Split/POP/POPwide>** Defines the picture layout to use on the local main monitor. POP and POPWide should only be used on wide screen monitors. **Example:** `xconfiguration locallayout mode: full`			
LocalLayout	**Toggle: <PIP/POP>** Defines the behaviour of the Layout button the remote control. If set to *POP* the system will toggle through the different LocalLayout modes when pressing the Layout button. If set to *PIP*, the system will display a PIP when pressing the Layout button. **Example:** `xconfiguration locallayout toggle: pip`			
Logo: <On/Off> If set to *On* the system will display a company logo will appear in the background of the welcome menu. **NOTE!** The TANDBERG logo will be displayed if no other company logo is uploaded. **Example:** `xconfiguration logo: on`				
LoS	**Duration**	**Exponent: <10..30>** **Example:** `xconfiguration los duration exponent: 15`	The duration of the LoS-pulse can be calculated from: $\text{Duration} = \frac{\text{Offset} + 2^{\text{Exponent}}}{\text{bit rate}}$	LoS configurations are relevant for systems with NET interface (External Network) only.
LoS	**Duration**	**Offset: <0..65534>** Offset is specified in milliseconds **Example:** `xconfiguration los duration offset: 100`		
LoS	**Inhibit: <0..65534>** Specifies the number of seconds to wait before issuing a new LOS pulse if the codec regains and subsequently loses H.221 frame alignment. **Example:** `xconfiguration los inhibit: 15`			

LoS	**Initial: <0..65534>** Specifies the maximum number of seconds to wait for H.221 frame alignment during call setup before asserting the LOS signal. Example: `xconfiguration los initial: 5`	LoS configurations are relevant for systems with NET interface (External Network) only.
LoS	**Polarity: <Positive/Negative>** Set LOS pulse polarity. Example: `xconfiguration los polarity: positive`	
LoS	**Retry: <0..65534>** Specifies the number of seconds to wait before issuing a new LOS pulse in case the codec does not regain H.221 frame alignment. Example: `xconfiguration los retry: 25`	
MainVideoSource: <1/2/3/4/5/6> Defines which video input to be used as the main video source. Example: `xconfiguration mainvideosource: 2`		
MaxBandwidth: <128..6144> Limit max bandwidth usage for the system. Related to IPMedia MaxVideoTXRate, which only controls upstream bandwidth. Example: `xconfiguration maxbandwidth: 6144`		
Multipoint	**Mode: <Off/Multisite/Multiway>** Set to *MultiSite* if you have the optional feature MultiSite installed. Set to *Multiway* to enable this feature. TANDBERG Multiway™ will extend point to point calls to conferences on MCU's hosted on the network over H.323 and SIP. The new participant will be consulted before he is added to the conference. The Multiway feature requires the uses of the TANDBERG Vide Communications Server (VCS) software Ver. X4.1 or higher, and the uses of the TANDBERG/Codian MCU software Ver. 3.0 or higher. Set to *Off* if none of the above features are being used. Example: `xconfiguration multipoint mode: off`	
Multipoint	**MultiwayURI: <S: 0, 60>** Specify the Multiway URI. When calling Multiway on SIP the SIP prefix must be added to the URI for the endpoint who initiates the Multiway call Example: `xconfiguration multipoint multiwayuri: "firstname.lastname@company.com"` Example with SIP prefix: `xconfiguration multipoint multiwayuri: "sip:firstname.lastname@company.com"`	
Multipoint	**MultiwayMultiprotocol: <On/Off>** Enable/disable the Multiway multi-protocol. Example: `xconfiguration multipoint multiwaymultiprotocol: off`	
Multipoint	**MultiwayStartupPeriod: <0..21>** Specify the startup period (in seconds) for the Multiway call. Example: `xconfiguration multipoint multiwaystartupperiod: 10`	

NAT	**Mode: <On/Off/Auto>** When set to *On* the system will signal the configured "NAT Address" in place of its own IP-address within Q.931 and H.245. When set to *Off* the system will signal the real IP Address. When set to *Auto* the system will try to determine if the "NAT Address" or the real IP-address should be used within signalling. This is done to make it possible to place calls to endpoints on the LAN as well as endpoints on the WAN. **Example:** `xconfiguration nat mode: on`	Configuration of NAT (Network Address Translation) router.
NAT	**Address: <IPAddr>** This must be the external/global IP-address to the router with NAT support. Packets sent to the router will then be routed to the system. In the router, the following ports must be routed to the system's IP-address: Port 1720, Port 5555-5574, Port 2326-2373. **Example:** `xconfiguration nat address: 127.0.0.1`	
NetProfile [1..7]	**Name: <S: 0, 8>** Defines the name of the NetProfile. **Example:** `xconfiguration netprofile 4 name: MyProfile`	
NetProfile [1..7]	**CallPrefix: <S: 0, 9>** A call prefix can be added to each NetProfile. If a call prefix is added, this prefix will automatically be added in front of the number being dialled. This is useful if you have a fixed prefix for a specific service provider. **Example:** `xconfiguration netprofile 4 callprefix: 50`	
NetProfile [1..7]	**CallSuffix: <S: 0, 30>** A call suffix can be added to each NetProfile. If a call suffix is added, the suffix will automatically be appended to the number being dialled. **Example:** `xconfiguration netprofile 2 CallSuffix: 24`	
NetProfile [1..7]	**Network: <H320/H323/SIP/Auto>** Defines what type of Network the NetProfile will use. The NetProfile 4, 5 and 6 can be configured, the other ones are predefined and cannot be changed by the user. NetProfile 1 is Auto; NetProfile 2 is H320; NetProfile 3 is H323; NetProfile 7 is SIP; If set to *Auto* the system will parse the number to dial and decide what network to use based on this. **Example:** `xconfiguration netprofile 4 network: h323`	
NTP	**Mode: <Manual/Auto>** If set to 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. If set to Manual the system will always use the static defined NTP server address specified by the user. **Example:** `xconfiguration ntp mode: 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 system will use the time to timestamp messages transmitted to Gatekeepers or Border Controllers requiring H.235 authentication.
NTP	**Address: <S: 0, 64>** Defines the NTP server address. Will be used if NTP Mode is set to *Manual* or if set to *Auto* and no address is supplied by a DHCP server. **Example:** `xconfiguration ntp address:`	

OptionKey	**Features: <S: 0, 16>** The system requires a valid option key to activate MultiSite and/or Presenter functionality. Example: `xconfiguration optionkey features: 5952754234583129`	
OptionKey	**Bandwidth: <S: 0, 16>** The system requires a valid option key to define the maximum bandwidth to use. Example: `xconfiguration optionkey bandwidth: 9952754234483329`	
OSD	**CallDuration**	**Mode: <On/Off>** The call duration can be displayed on screen. The timer showing the duration of the call is displayed in the bottom right corner of the screen. Example: `xconfiguration osd callduration mode: on`
OSD	**Mode: <On/Off>** Enables/disables the On Screen Display (OSD). If set to Off there will be no graphics displayed on the monitors. Example: `xconfiguration osd mode: on`	
OSD	**Menu**	**Mode: <On/Off>** Enabled/disables the navigation menu on the system. If set to *Off* no system menus may be entered, but the system will still display icons, call progress information boxes etc. We recommend that you to set this to Off when controlling the system from an external control system. Example: `xconfiguration osd menu mode: off`
OSD	**Menu**	**Password: <S: 0, 5>** If a Menu Password is defined, the user has to enter this password when accessing the Administrator Settings page in the menu. Example: `xconfiguration osd menu password: 123`
OSD	**Menu**	**Language: <English/German/Norwegian/French/Swedish/Italian/Portuguese/Japanese/Chinese/TraditionalChinese/Russian/Spanish/Korean/Finnish/Thai/Arabic/Polish/Czech/Hungarian/Turkish/Danish/Romanian/Welsh>** Defines the menu language. Example: `xconfiguration osd menu language: english`
OSD	**Menu**	**WelcomeMenu: <On/Off>** The Welcome Menu contains the *Main Menu, System Status, System Name* and *Dial in numbers*. If set to *On*, the Welcome Menu is shown when the system wakes up from standby mode. If set to *Off*, the Welcome Menu is not shown when the system wakes up from standby mode. However, pressing the OK button the remote control will display the Welcome Menu. Example: `xconfiguration osd menu welcomemenu: on`
OSD	**Menu**	**DisplayWelcomeTime: <On/Off>** If set to *On* the welcome date and time is displayed on the welcome menu. Requires the NTP IP settings to be configured to synchronize with the NTP time server. If set to *Off* the welcome date and time is hidden from the welcome menu. Example: `xconfiguration osd menu displaywelcometime: on`

OSD	Menu	**DisplayWelcomeText: <On/Off>** If set to *Off*, the system will use the system name and dial in numbers as default Welcome Text. If set to *On* the system will display the Welcome Text defined by the user. **Example:** `xconfiguration osd menu displaywelcometext: on`	
OSD	Menu	**WelcomeText: <S: 0, 30>** Defines the welcome text to be displayed if DisplayWelcomeText is set to On. **Example:** `xconfiguration osd menu welcometext: "Welcome to MyTANDBERG"`	
OSD	Menu	**DisableTimeout: <On/Off>** If set to *On*, the menu will not time out automatically. Press Cancel on the remote control to hide the main menu manually. If set to *Off*, the menu will time out automatically after 15 seconds if there is no activity on the remote control. The time-out applies when the system is in a call only. Outside a call, the menu will not time out. **Example:** `xconfiguration osd menu disabletimeout: off`	
OSD	Menu	**BalloonHelp: <On/Off>** Enables/Disables the Balloon Help window. **Example:** `xconfiguration osd menu balloonhelp: on`	
OSD	Menu	InputEditor	**Language: <Off/Japanese/Chinese/Korean/Russian>** When the Input Editor Language is set to *Chinese*, *Korean, Japanese or Russian* the user will be able to enter Chinese/Korean/Japanese/Russian characters into an input field like the System Name or Phone Book, using the remote control. When set to *Off* the user will only be able to enter ASCII characters into an input field like the System Name or Phone Book, using the remote control. **Example:** `xconfiguration osd menu inputeditor language: off`
OSD	Menu	**Simple: <On/Off>** Set to *On* to enable the Simple Menu mode with some of the buttons hidden. The menus affected and the visible buttons are: • Make a Call - Make a Call (green), Standby (red), Presentation, Control Panel and Back. • Presentation - PC and Back. • Control Panel - Diagnostics, Restart, Administrator Settings and Back. • Control Panel (Administrator Settings) - Diagnostics, Restart and Back Set to *Off* to enable normal menu mode. **Example:** `xconfiguration osd menu simple: off`	
OSD	Menu	**IconPlacement: <Left/Right>** Applies to the following icon indicators: Microphone Off, Volume Off, On Air, Encryption, Bad Network, Telephone, Duo Video and Camera Tracking. Places the icons in the top left corner or the top right corner of the screen. **Example:** `xconfiguration osd menu iconplacement: right`	
OSD	Menu	**CodecLabel: <S: 0, 48>** Specify the text of the codec label. **Example:** `xconfiguration osd menu codeclabel:`	

OSD	**Menu**	**DisplayLogo: <On/Off>** Enables/disables the Display Logo on screen. Example: `xconfiguration osd menu displaylogo: on`
OSD	**Icon**	**MicOff: <On/Off>** Enables/Disables the Microphone Off icon. Example: `xconfiguration osd icon micoff: on`
OSD	**Icon**	**VolumeOff: <On/Off>** Enables/Disables the Volume Off icon. Example: `xconfiguration osd icon volumeoff: on`
OSD	**Icon**	**OnAir: <On/Off>** Enables/Disables the On Air icon. Example: `xconfiguration osd iconair: on`
OSD	**Icon**	**Encryption: <On/Off>** Enables/Disables the Encryption icon. Example: `xconfiguration osd icon encryption: on`
OSD	**Icon**	**BadNetwork: <On/Off>** Enables/Disables the Bad Network icon. Example: `xconfiguration osd icon warning: on`
OSD	**Icon**	**Telephone: <On/Off>** Enables/Disables the Telephone icon. Example: `xconfiguration osd icon telephone: on`
OSD	**Icon**	**DuoVideo: <On/Off>** Enables/Disables the DuoVideo icon. Example: `xconfiguration osd icon duovideo: on`
OSD	**Icon**	**CameraTracking: <On/Off>** Enables/Disables the Camera Tracking icon. Example: `xconfiguration osd icon cameratracking: on`
OSD	**Icon**	**Headset: <On/Off>** Enables/Disables the Headset icon. Applies to systems with headset. Example: `xconfiguration osd icon headset: on`

OSD	MCUStatusLine	**Mode: <On/Off/Auto>** If set to *On* the MultiSite/MCU/DuoVideo indicators will be displayed and provide information about the conference. If set to *Off* the MultiSite/MCU/DuoVideo indicators will not be displayed. If set to *Auto* the MultiSite/MCU/DuoVideo indicators will be displayed for a few seconds and then timed out. When grabbing the remote control, the indicators will be shown again. Example: `xconfiguration osd mcustatusline mode: on`	
OSD	Offset	**Mode: <On/Off>** Set Offset Mode to *On* to add extra margins for the on screen menu. If you experience problems viewing all text or buttons on the screen you can try to set Offset Mode to *Off*. This problem can occur on some 720p screens. Example: `xconfiguration osd offset mode: off`	
OSD	CallDuration	**Mode: <On/Off>** Set to *On* to display the call duration on screen while in a call. Set to *Off* to not display the call duration. Example: `xconfiguration osd callduration mode: off`	
OSD	**PasswordViewAdminSettings: <On/Off>** When set to *On*, you will need to enter the menu password to view the administrator settings. Example: `xconfiguration osd passwordviewadminsettings: off`		
PictureProgram [1..4]	**Layout: <Full/2Split/4Split/2+1Split/3+1Split/5+1Split>** Example: `xconfiguration pictureprogram 1 layout: full`		The Picture Programs are used to define custom picture layouts to be displayed locally.
PictureProgram [1..4]	Window [1..6]	**Picture: <LocalMain/LocalDuo/Current/Previous/Duo/RemoteMain/RemoteDuo/JPEG/TandbergMonitor1/TandbergMonitor2/None>** Example: `xconfiguration pictureprogram 1 window 2 picture: localmain`	
PictureProgram [1..4]	Window [1..6]	**Call: <1..11>** Example: `xconfiguration pictureprogram 1 window 2 call: 4`	
PresentationStart: <Manual/Auto> If set to *Auto*, the Dual Stream is started automatically when a presentation is initiated from the menu or directly from the remote control (requires that the system has Presenter option installed and the far end side also supports Dual Stream). If set to *Manual*, the Dual Stream must be started manually. Example: `xconfiguration presentationstart: auto`			
PacketlossDownSpeed	**Mode: <Auto/Off>** If set to *Auto*, the system will attempt to down speed the video channel from the sender by sending flow control messages if packet loss is encountered. If set to *Off*, the system will not request down speeding based on packet loss. Example: `xconfiguration packetlossdownspeed mode: auto`		

PresentationSoftKey — Preset [1..15]

PresentationSoftkey: <DuoScr/MainScr>
You can configure the Presentation key on the remote control to either select dual source or main source when in a call, Default is DuoSrc (dual source).
Example: `xconfiguration presentationsoftkey: mainscr`

Preset [1..15]	**Name: <S: 0, 20>** Defines the Preset Name. Example: `xconfiguration preset 1 name: AnyName`			
Preset [1..15]	Audio	Inputs	Microphone [1..3]	**Mode: <On/Off>** Example: `xconfiguration preset 1 audio inputs microphone 2: on`
Preset [1..15]	Audio	Inputs	Line [1..3]	**Mode: <On/Off>** Example: `xconfiguration preset 1 audio inputs line 2: on`
Preset [1..15]	**MainVideoSource: <1/2/3/4/5/6>** Example: `xconfiguration preset 1 mainvideosource: 1`			
Preset [1..15]	**DuoVideoSource: <0/1/2/3/4/5/6>** Example: `xconfiguration preset 1 duovideosource: 1`			
Preset [1..15]	Switch**VideoSource: <0/1/2/3/4/5/6>** Will switch the TANDBERG Video Switch to the given input when the preset is activated. Example: `xconfiguration preset 1 switchvideosource: 1`			
Preset [1..15]	Camera	Brightness	**Mode: <Manual/Auto>** Interpretation of the settings chosen will depend on the camera type you use. If in doubt, consult your camera's user documentation. Example: `xconfiguration preset 1 camera brightness mode: auto`	
Preset [1..15]	Camera	Brightness	**Level: <0..31>** Interpretation of the settings chosen will depend on the camera type you use. If in doubt, consult your camera's user documentation. Example: `xconfiguration preset 1 camera brightness level: 12`	

Presets should never be modified manually, except for the Preset Name.

Please refer to the xcommands:

- PresetStore
- PresetClear

NOTE! The preset configurations are numbered from 1 to 15, whilst the PresetStore/ PresetClear commands are referring presets from 0 to 14, i.e. the configurations are offset by 1.

Preset [1..15]	Camera	**Autofocus: <On/Off>** Enables or disables auto focus when activating a preset. If enabled, auto focus will be turned on for 5 seconds. If disabled, the preset's focus value will be used. Default is *Off*. Example: `xconfiguration preset 1 camera autofocus: off`		Presets should never be modified manually, except for the Preset Name. Please refer to the xcommands: - PresetStore - PresetClear **NOTE!** The preset configurations are numbered from 1 to 15, whilst the PresetStore/ PresetClear commands are referring presets from 0 to 14, i.e. the configurations are offset by 1.
Preset [1..15]	Camera	**Focus: <0..65534>** Interpretation of the settings chosen will depend on the camera type you use. If in doubt, consult your camera's user documentation. Example: `xconfiguration preset 1 camera focus: 32768`		
Preset [1..15]	Camera	**Pan: <-32768..32766 >** Interpretation of the settings chosen will depend on the camera type you use. If in doubt, consult your camera's user documentation. Example: `xconfiguration preset 1 camera pan: 0`		
Preset [1..15]	Camera	**Tilt: <-32768..32766>** Interpretation of the settings chosen will depend on the camera type you use. If in doubt, consult your camera's user documentation. Example: `xconfiguration preset 1 camera tilt: 0`		
Preset [1..15]	Camera	**Zoom: <0..65534>** Interpretation of the settings chosen will depend on the camera type you use. If in doubt, consult your camera's user documentation. Example: `xconfiguration preset 1 camera zoom: 32768`		
QoS	Precedence	Telephony	**Audio: <0/1/2/3/4/5/6/7/Auto/Off>** Example: `xconfiguration qos precedence telephony audio: auto`	Configures the different Quality of Service (QoS) algorithms supported by the system. QoS are used to set priority on QoS enabled IP networks.
QoS	Precedence	Telephony	**Signalling: <0/1/2/3/4/5/6/7/Auto/Off>** Example: `xconfiguration qos precedence telephony signalling: auto`	
QoS	Precedence	VideoTelephony	**Audio: <0/1/2/3/4/5/6/7/Auto/Off>** Example: `xconfiguration qos precedence videotelephony audio: auto`	
QoS	Precedence	VideoTelephony	**Signalling: <0/1/2/3/4/5/6/7/Auto/Off>** Example: `xconfiguration qos precedence videotelephony signalling: auto`	

QoS	Precedence	VideoTelephony	Video: <0/1/2/3/4/5/6/7/Auto/Off> Example: `xconfiguration qos precedence videotelephony video: auto`	Configures the different Quality of Service (QoS) algorithms supported by the system. QoS are used to set priority on QoS enabled IP networks
QoS	Precedence	VideoTelephony	Data: <0/1/2/3/4/5/6/7/Auto/Off> Example: `xconfiguration qos precedence videotelephony data: auto`	
QoS	Diffserv	Telephony	Audio: <0..63> Example: `xconfiguration qos diffserv telephony audio: 15`	
QoS	DiffServ	Telephony	Signalling: <0..63> Example: `xconfiguration qos diffserv telephony signalling: 25`	
QoS	DiffServ	VideoTelephony	Audio: <0..63> Example: `xconfiguration qos diffserv videotelephony audio: 15`	
QoS	DiffServ	VideoTelephony	Signalling: <0..63> Example: `xconfiguration qos diffserv videotelephony signalling: 15`	
QoS	DiffServ	VideoTelephony	Video: <0..63> Example: `xconfiguration qos diffserv videotelephony video: 15`	
QoS	DiffServ	VideoTelephony	Data: <0..63> Example: `xconfiguration qos diffserv videotelephony data: 15`	
QoS	Mode: <Precedence/Diffserv/Off> Example: `xconfiguration qos mode: precedence`			
QoS	ToS: <MinDelay/MaxThrough/MaxReliable/MinCost/Off> Example: `xconfiguration qos tos: mindelay`			

QoS	**RSVP: <Auto/Off>** Example: `xconfiguration qos rsvp: auto`	
RemoteSwUpgrade	**Mode: <On/Off>** If set to *On*, software can be upgraded from a far end system. Example: `xconfiguration remoteswupgrade mode: on`	
RemoteSwUpgrade	**Password: <S: 0, 16>** If RemoteSwUpgrade Mode is set to *On* and a Password is defined, the remote system must supply this Password in order to upload new software to the unit. Example: `xconfiguration remoteswupgrade password: 123`	
RTP	**Ports: <Static/Dynamic>** Affects the port numbers used for H.323 call signalling. *Dynamic* will give random ports. Static will give ports within a static predefined range [5555–5574]. Dynamic should be used during firewall traversal. Example: `xconfiguration rtp ports: dynamic`	
RTP	**MTU: <400..1400>** Maximum Transfer Unit is the number of bytes of video payload per packet. Example: `xconfiguration rtp mtu: 1200`	
Screensaver	**Mode: <On/Off>** Enables/disables if screen saver is to be activated if there is no system activity. Example: `xconfiguration screensaver mode: on`	
Screensaver	**Delay: <1..480>** Specifies how long (in minutes) the system shall wait before activating screen saver when there is now system activity. Example: `xconfiguration screensaver delay: 15`	

SecurityLog — SelfViewOnStartup

SecurityLog

Mode: <On/Off>
When enabled, the security log feature will now log all security related events and configuration changes within the eventlog file on the endpoint, allowing an administrator to ensure all access to the system is properly logged and can be reviewed at a later point. When enabled, the security log will maintain a record of the following events:

Failed password attempts

- Successful logins
- Software upgrades
- System restarts

The following configuration changes will also be logged:

- System Unit name
- International Name Display Name
- Option Keys, Feature Keys, Bandwidth
- IP Protocol
- Telnet Challenge Port
- Auto Answer Mode
- Far End Camera Control Mode
- Strict Password
- Corporate Directory Protocol
- External Services Mode and Protocol
- External Manager Protocol
- SNMP Community Name, System Contact, System Location, Host IP Address
- H.323 Call Setup Mode
- H.323 Gatekeeper Discovery, Address, Authentication Mode
- IP Assignment, IP Address, Subnet Mask, Default Gateway, DNS Domain Name
- IPv6 Address
- DNS Server [1..5] Address
- VNC Password
- Streaming Password
- Remote Software Upgrade Password
- IEEE 802.1x Password
- On Screen Display Menu Password
- Serial Port Mode
- Security Level
- Security Log

Enabling/Disabling the following services:

- Telnet, SSH, HTTP, H.323, Remote Software Upgrade, SNMP, FTP, Remote Parameter, Telnet Challenge, HTTPS, SIP, HTTPSVerify.

Example: `xconfiguration securitylog mode: on`

Security

Level: <0..2>
The Security level parameter restricts the access to the system:

When configured for *level 0*, the system will have a similar security regime as F7.x. Password storage, encryption, logging etc. will not be influenced by setting this to 0.

When configured for *level 1*, the system password can only be changed once every 24 hours and three failed attempts to log into the system will lock the interface for 30 minutes. If a password is set, the system will ask for password confirmation from all web sessions every 15 minutes to ensure the session is still active.

When set to *level 2*, the system will include all security parameters within level 1 and will also prevent normal access to the web server. If a password is set, level 2 will time out all active management sessions every 15 minutes, prompting for password input.

Example: `xconfiguration security level: 0`

SelfViewOnStartup: <On/Off>
If set to On the system will display the local main video source on the main monitor when the system is started.

Example: `xconfiguration selfviewonstartup: on`

SerialPort — SIP

SerialPort [1]		**Mode: <Control/Transparent/Direct/Off>** NOTE! **Port 1 Only** Control: Gives access to the Command Line Interface. Transparent: Enables transmission of text during call on a line by line basis. Direct: Enables transmission binary data during call. Off: Disables any of the options above. Example: `xconfiguration serialport 1 mode: control`
SerialPort [2]		**Mode: <VISCA/Auto/Off>** NOTE! **Port 2 Only** Defines Camera control mode. Example: `xconfiguration serialport 2 mode: auto`
SerialPort [1]	Direct	**Buffer: <0..16384>** NOTE! **Port 1 Only** Specifies the size of the buffer used in direct mode. Try setting this value higher if you need a continuous stream of data on the receiving end. Higher values introduces more delay. Example: `xconfiguration serialport 1 direct buffer: 5120`
SerialPort [1..2]		**BaudRate: <1200/2400/4800/9600/19200/38400/57600/115200>** Specify the baud rate on a serial port. Example: `xconfiguration serialport 1 baudrate: 9600`
SerialPort [1..2]		**Parity: <None/Odd/Even>** Specify the Parity on a Serial Port Example: `xconfiguration serialport 1 parity: odd`
SerialPort [1..2]		**DataBits: <7/8>** Specify the number of databits on a Serial Port Example: `txconfiguration serialport 1 databits: 7`
SerialPort [1..2]		**StopBits: <1/2>** Specify the number of stopbits on a Serial Port Example: `xconfiguration serialport 1 stopbits: 2`
SIP		**Mode: <On/Off>** *On:* Setting the SIP mode to on will enable the system for incoming and outgoing SIP calls. *Off:* Setting the SIP mode to off will disable incoming and outgoing SIP calls from the system. Example: `xconfiguration sip mode: on`
SIP	Server	**Discovery: <Manual/Auto>** *Manual:* When Manual is selected, the manually configured SIP Server address will be used *Auto:* When Auto is selected, the SIP Server address is obtained using Dynamic Host Configuration Protocol (DHCP). Example: `xconfiguration sip server discovery: manual`

SIP	**Server**	**Address: <S: 0, 255>** The Server Address is the manually configured address for the outbound proxy and registrar. 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 **Example:** `xconfiguration sip server address:`
SIP	**Server**	**Type: <Auto/Nortel/Microsoft/Cisco/Siemens/Alcatel/Experimental>** Enables SIP extensions and special behavior for a SIP Server vendor. Auto: Should be used when registering to standard SIP servers 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 server type: microsoft`
SIP	**Authentication**	**UserName: <S: 0, 80>** This is the user name part of the credentials used to authenticate towards the SIP Server. **Example:** `xconfiguration sip authentication username:`
SIP	**Authentication**	**Password: <S: 0, 60>** This is the password part of the credentials used to authenticate towards the SIP Server. **Example:** `xconfiguration sip authentication password:`
SIP	**Transport**	**Default: <Auto/TCP/UDP/TLS>** Select the default transport type to be used for SIP signalling. **Example:** `xconfiguration sip transport default: tcp`
SIP	**TLS**	**Verify: <On/Off>** For TLS connections a CA-list can be uploaded from the web interface. 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. 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 tls verify: off`
SIP	**ICE**	**Mode: <On/Off>** The system support ICE (“Interactive Connectivity Establishment”) NAT traversal, and TURN (“Traversal Using Relays around NAT”) media relays. When set to *On*, the system will choose between the available servers in the following order: 1. Local 2. STUN / public IP 3. TURN / Media redirection Off : Set to Off to disable ICE. **Example:** `xconfiguration sip ice mode: off`

SIP	**MNS**	**Mode: <On/Off>** The MNS ("Media Network Services") mode operates similarly to the ICE mode, but the system will prioritize use of the TURN server: 1. Local 2. TURN / Media redirection Media packets will be sent directly only to endpoints determined to be on the local LAN. Media packets to all other destinations will be sent through the TURN server. The MNS mode is typically used to improve the network transport quality. There are commercial services available providing dedicated wide-area video networks, see e.g. "http://www.medianetworkservices.com" On: Setting the MNS mode to On will enable and prioritize media redirection through the dedicated network identified by the TURN server. Off : Normal operation mode (standard ICE) **Example:** `xconfiguration sip mns mode: off`
SIP	**ForceTurn**	**Mode: <On/Off>** In this mode media is always sent using the TURN relay. One usage for this mode is media relaying from installations on a public IP network. On: Setting the Force TURN mode to On will force media redirection through the dedicated network identified by the TURN server. Off : Normal operation mode (standard ICE or MNS). **Example:** `xconfiguration sip forceturn mode: off`
SIP	**TURN**	**Server: <S: 0, 60>** Address of the TURN server for data redirection. A fully qualified domain name or an IP address can be used. Default port 3478 is assumed. Optional port can be provided using ":nnnnn" notation. Examples: "93.93.102.102:7000", "turn.mnsbone.net". **Example:** `xconfiguration sip turn address:`
SIP	**ReplyTo**	**URI: <S: 0, 60>** If configured it is this URI that will be displayed in the call lists. **Example:** `xconfiguration sip replyto uri:`
SNMP	**Mode: <On/Off/ReadOnly/TrapsOnly>** If set to *On*, both Read and sending of Traps will be enabled. If set to *Off*, all SNMP functionality will be disabled. *ReadOnly:* The system will not send SNMP traps, but it will be possible to read data from the SNMP MIB. *TrapsOnly:* The system will send SNMP traps, but it will not be possible to read data from the SNMP MIB. **Example:** `xconfiguration snmp mode: readonly`	
SNMP	**CommunityName: <S: 0, 16>** Defines the SNMP community name. **Example:** `xconfiguration snmp communityname:`	
SNMP	**SystemContact: <S: 0, 70>** Defines the SNMP system contact. **Example:** `xconfiguration snmp systemcontact:`	

SNMP	**SystemLocation: <S: 0, 70>** Defines the SNMP system location. Example: `xconfiguration snmp systemlocation:`
SNMP	**HostIPAddr [1..3]: <IPAddr>** Defines SNMP host addresses. Example: `xconfiguration snmp hostipaddr:`

StartupVideoSource: <0/1/2/3/4/5/6>
Defines the video source the system will use as default after a reboot, and after the system goes out from screen saver mode.
If set to *0*, the system will use the video source that was selected before reboot.
Example: `xconfiguration startupvideosource: 1`

StillImageSource: <0/1/2/3/4/5/6>
Defines the default still image source. If set to 0, the system will use the current main video source as still image source.
Example: `xconfiguration stillimagesource: 4`

SSH	**Mode: <On/Off>** If set to *Off*, it will not be possible to connect to the system using SSH. The Command Line Interface can be accessed using SSH (Secure Shell), which allows for secure control of the TANDBERG MXP. `Example: xconfiguration SSH Mode: On`

Streaming	**Port: <0..65534>** Specifies the port, which the codec shall stream to. If several codec's are streaming to the same IP-address, different ports have to be used in order for the client to know which stream to receive. If the first codec streams on port 2240 and the second codec on port 2250, the client has to specify which port to listen to. Video is transmitted on the specified port; audio is transmitted on the port number 4 greater than the specified video port, in this case 2244 and 2254. Example: `xconfiguration streaming port: 2240`	You can stream in a MCU call for systems with MS installed. Streaming will count as 1 site. However, you cannot stream when Dual Stream/H.239 is activated. Dual Stream = Tandberg specific method of sending Dual Images. H.239 = ITU ratified way of sending Dual Images. TANDBERG uses Dual Stream to cover both these two technologies.
Streaming	**Hops: <0..255>** Number of router hops you want the codec to stream to. The default value 1 will normally allow the streaming data to pass one router. Example: `xconfiguration streaming hops: 1`	
Streaming	**Address: <S: 0, 64>** The address, which you want the codec to stream to. This address could be a multicast address, broadcast address or a uni-cast address. Example: `xconfiguration streaming address:`	
Streaming	**VideoRate: <16/32/64/128/192/256/320>** Selects the video rate in kbps to stream out on the network. Example: `xconfiguration streaming videorate: 128`	
Streaming	**Announcements: <On/Off>** Turn On or Off Streaming Announcement Protocol. Example: `xconfiguration streaming announcements: on`	
Streaming	**Source: <Local/Remote/Auto>** Select streaming source as Local, Remote or Auto. If set to Auto the streaming will be voice switched. The site currently speaking will be streamed. Example: `xconfiguration streaming source: auto`	
Streaming	**Password: <S: 0, 16>** Streaming password. This password and the ip password will give access to the streaming page in he internal web browser. By using this password the more sensitive ip password can be reserved to the administrator. Example: `xconfiguration streaming password: xxx`	
Streaming	**Quality: <Motion/Sharpness>** When set to *Motion* the video is optimized for smooth motion video. When set to *Sharpness* the video is optimized for sharp video. Example: `xconfiguration streaming quality: motion`	
Streaming	**AllowRemoteStart: <On/Off>** If set to *Off*, streaming can only be started locally from the menu interface or from the dataport (RS-232). If set to *On*, streaming can also be started from the Web interface, the XML interface and from Telnet. Example: `xconfiguration streaming allowremotestart: off`	See comment on previous page

StrictPassword: <On/Off>
When enabled, strict password now requires the following restrictions to be met for all newly configured passwords on the system:

- Password cannot be the same as any of the previous 10 passwords used.
- Password must be 15 characters or more.
- Password must have at least 2 lower case letters, 2 upper case letters, 2 numeric characters and 2 special characters (e.g. #, *, &, %, etc).
- Three (3) consecutive characters cannot be the same..

Example: `xconfiguration strictpassword: on`

Switch	**Source: <1..6>** Select a physical input on the TANDBERG Video Switch. Example: `xconfiguration switch source: 1`	
Switch	**Configuration**	**Primary: <On/Off>** Default is on. If off, the codec will only do a basic setup of the primary chain and report what kind of cameras are connected. The codec will not set up brightness, white balance, gamma etc. for each camera. Turn it off if an external control system handles all the configuration. Example: `xconfiguration switch configuration primary: on`
Switch	**Configuration**	**Secondary: <On/Off>** Default is on. If off, the codec will only do a basic setup of the secondary chain and report what kind of cameras are connected. The codec will not set up brightness, white balance, gamma etc. for each camera. Turn it off if an external control system handles all the configuration. Example: `xconfiguration switch configuration secondary: on`
Switch	**LogicalInput [1..5]** 1 MainCam 2 AUX 3 Doc Cam 4 VCR 5 PC	**Mode: <On/Off>** Logical inputs are used when accessing inputs from the menu, remote control and FECC. There are five input buttons on the top of the TRC4 remote control, and these can be remapped to any switch input you wish. The same five buttons are visible in the Presentation/Main Video menu, and these will be remapped in the same manner. If the switch is connected with no special configuration, selecting “main cam” in the menu will give the current input on the switch. Default value is Off. Will set the logical input on the TANDBERG Video Switch to the given mode. Example: `xconfiguration switch logicalinput 1 mode: On`
Switch	**LogicalInput [1..5]** 1 MainCam 2 AUX 3 Doc Cam 4 VCR 5 PC	**Map: <1..6>** The Map [1..6] represents the switch inputs. Remaps the five source buttons on top of the extended remote control to any switch input you wish. Will also remap inputs selected from the menu, and change FECC accordingly. If mode for a key is on, the table entry will be used to specify which input on the switch to activate. Example: `xconfiguration switch logicalinput 1 map: 1`
SystemUnit	**Name: <S: 0, 49>** Defines the name of the system unit. Example: `xconfiguration systemunit name: MySystem`	

SystemUnit	**InternationalName: <S: 0, 49>** Defines the international name of the system unit – ASCII characters only! Example: `xconfiguration systemunit internationalname: MySystem`		
SystemUnit	**DisplayName: <S: 0, 50>** The Display Name part of the SIP Address (URI) Example: `xconfiguration systemunit displayname: MyDisplayNmae`		
SystemUnit	**Password: <S: 0, 16>** Defines the system unit password. Example: `xconfiguration systemunit password: xxx`		
T1	Interface	**CableLength: <Range1/Range2/Range3/Range4/Range5>** Specifies the length of the cable connected to the T1 interface. Range1: 0–133 ft (0–40 m) Range2: 133–266 ft (40–81 m) Range3: 266–399 ft (81–122 m) Range4: 399–533 ft (122–162 m) Range5: 533–655 ft (162–200 m) Example: `xconfiguration t1 interface cablelength: range4`	
Telnet	**Mode: <On/Off>** If set to Off, it will not be possible to connect to the system using Telnet. Example: `xconfiguration telnet mode: on`		
TelnetChallenge	**Mode: <On/Off>** Enables/disables TelnetChallenge. Example: `xconfiguration telnetchallenge mode: on`		TelnetChallenge can be enabled on either ip port 23 or ip port 57. When connecting to an ip port that has telnetChallenge set to *On*, an MD5 encryption challenge string are being issued instead of a password prompt. An encrypted password based on the challenge string must then be generated by an MD5 encryptor and sent back to the system as a response in order to get access to the system. **NOTE!** Regular Telnet are using ip port 23. When TelnetChallenge is set to ip port 23, this will override regular Telnet.
TelnetChallenge	**Port: <23/57>** Specifies whether to port 23 or port 57 for TelnetChallenge. Example: `xconfiguration telnetchallenge port: 57`		
Time	**Zone: <GMT-1200/GMT-1100/GMT-1000/GMT-0930/GMT-0900/GMT-0800/GMT-0700/GMT-0600/GMT-0500/GMT-0400/GMT-0330/GMT-0300/GMT-0200/GMT-0100/GMT/GMT+0100/GMT+0200/GMT+0300/GMT+0330/GMT+0400/GMT+0430/GMT+0500/GMT+0530/GMT+0545/GMT+0600/GMT+0630/GMT+0700/GMT+0800/GMT+0845/GMT+0900/GMT+0930/GMT+1000/GMT+1030/GMT+1100/GMT+1130/GMT+1200/GMT+1245/GMT+1300/GMT+1400>** Specifies the time zone where the system is located. Example: `xconfiguration time zone: GMT+0100`		

Time			**DateFormat: <DD_MM_YY/MM_DD_YY/YY_MM_DD>** Species the date format to use when presenting dates on the system. **Example:** `xconfiguration time dateformat: dd_mm_yy`
Time			**TimeFormat: <24H/12H>** Specifies the time format to use. **Example:** `xconfiguration time timeformat: 24h`
Time			**DaylightSavings: <On/Off>** Enables/Disables Daylight Savings. **Example:** `xconfiguration time daylightsavings: on`
ThreePartyLayout: <On/Off> 3 party layout on the multisite host utilizes the dual monitor setting of the system to display the two far-end sites on individual monitors. This feature is supported when the MultiSite Picture mode is set to *Auto* split or *4Split,* and the Dual Monitor setting is enabled. When a dual stream is started during the conference, the screen will return to a standard 4-split in order to display the dual stream on the second monitor. Upon termination of the dual stream, the layout will return to the 3 party layout. **NOTE!** 3 Party Mode will not function if the MultiSite Picture mode is set to *5+1Split* or *VoiceSwitched*. **Example:** `xconfiguration threepartylayout: on`			
UseAsLocalPCMonitor: <On/Off> If the main monitor is used as a local PC display, UseAsLocalPCMonitor should be set to *On*. This will avoid transmitting the local PC image while the system is in a video conference. **Example:** `xconfiguration useaslocalpcmonitor: on`			
Video	**Inputs**	**Source [1..6]**	**Name: <S: 0, 16>** Defines the name of the video source. **Example:** `xconfiguration video inputs source 5 name: MyPCInput`
Video	**Inputs**	**Source [1..6]**	**ForceAnalog: <On/Off>** This setting corresponds to the Presentation > Force Mac Input setting in the menu (GUI). On: If set to On, the system will only provide analog EDID information, and thus will only work with analog devices. Off : If set to Off, the system will provide both analog and digital EDID information. **Example:** `xconfiguration video inputs source 5 forceanalog: off`
Video	**Inputs**	**Source 5**	**HorizAdjust: <0..255>** NOTE! **Only Video Input Source 5** Gives you the possibility to adjust the placement of the PC image on screen. Much like the setting you find on a regular PC screen. **Example:** `xconfiguration video inputs source 5 horizadjust: 0`

Video	**Inputs**	**Source [1..6]**	**Quality: <Motion/Sharpness>** When encoding and transmitting video there will be a trade-off between high resolution and high frame rate. For some video sources it is more important to transmit high frame rate 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. **Motion:** 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. **At low bit rate the following resolution will be transmitted:** • CIF will be used from a PAL video input • SIF from NTSC • w288p from wide format (HD720p) input • VGA/SVGA/XGA from PC, Digital Clarity **At high bit rate the following resolution will be transmitted:** • 448p will be used from a PAL video input if Natural Video is 'Off' or 'Auto' or if Natural Video is 'x kbps' and the bit rate is lower than x kbps • 400p from NTSC if Natural Video is 'Off' or 'Auto' or if Natural Video is 'x kbps' and the bit rate is lower than x kbps • iCIF will be used from a PAL video input, if Natural Video is 'x kbps' and the bit rate is higher than or equal to x kbps • iSIF from NTSC, if Natural Video is 'x kbps' and the bit rate is higher than or equal to x kbps • w448p will be used from a wide format (HD720p) input • VGA/SVGA/XGA from PC, Digital Clarity **Sharpness: Improved quality of detailed images and graphics:** • 4xCIF will be used from a PAL video input, Digital Clarity • 4xSIF will be used from a NTSC video input, Digital Clarity • w720p will be used from a wide format (HD720p) input • VGA/SVGA/XGA will be used from a PC input, Digital Clarity Example: `xconfiguration video inputs source 5 quality: sharpness`
Video	**Outputs**		**Animation: <On/Off>** The new PiP/PoP animation makes the windows fade or slide into position when changing the picture layout. PiP means Picture in Picture layout and PoP means Picture outside Picture layout. Example: `xconfiguration video outputs animation: on`
Video	**Outputs**		**ScreenFormatTV: <4:3/16:9>** Specifies whether the monitors connected to the TV (S-video/Composite) outputs are 4:3 or 16:9 monitors. If this configuration is not set according to the monitors in use, the images will either be over-stretch or compressed. Example: `xconfiguration video outputs screenformattv: 4:3`
Video	**Outputs**		**ScreenFormatPC: <4:3/16:9>** Specifies whether the monitors connected to the PC (DVI) outputs are 4:3 or 16:9 monitors. If this configuration is not set according to the monitors in use, the images will either be stretched or compressed. See FormatPCWideScreen for more on this. Example: `xconfiguration video outputs screenformatpc: 16:9`

Video	**Outputs**	**DVIResolution [1..x]: <Auto/SVGA/XGA/w720p/WXGA>** x = 2 on 6000 MXP x = 1 on 3000 MXP Defines resolution for the supported DVI outputs. *Auto*: VGA output format will be optimized depending on the video source format, refresh rate and of the EDID information available. **Example:** `xconfiguration video outputs dviresolution 1: auto`	**Supported formats:** • SVGA (800x600) 75Hz • XGA (1024x768) 60Hz / 75Hz • WXGA (1280x768) 60Hz • SVGA: VGA output format is forced to SVGA format (800x600) 75Hz • XGA: VGA output format is forced to XGA format (1024x768) 60Hz • VGA Out Quality for Wide XGA: If ScreenFormatPC is set to Wide, Format-PCWideScreen is set to Normal, VGA Out Quality is set to Auto, the layout on the monitor is either fullscreen or POP, and the input source to the largest window is PC with resolution 1024x768, the system will use WideXGA (1280x768) instead of XGA, when the monitor supports this.
Video	**Outputs**	**Letterbox: <On/Off>** This setting will only take effect on video displayed in full screen. When set to *On*, the system will use horizontal black bars to compensate for aspect ratio mismatch between a wide output and a narrow input. When set to *Off*, the system will crop vertically to compensate. **Example:** `xconfiguration video outputs letterbox: on`	
Video	**Outputs**	**TestPattern: <0..10>** The system has a selection of test patterns on the displays. TestPattern = 0 is normal operation without any pattern. TestPattern = <1..10> will turn on the given pattern. **Example:** `xconfiguration video outputs testpattern: 0`	
Video	**Outputs**	**TV [1..2]**	**VirtualMonitor: <1..4>** The system supports 4 Virtual Monitors. To see pictures displayed on Virtual Monitors on physical monitors connected to video outputs, the different video outputs must make connections to the Virtual Monitors. Virtual Monitor 1 displays by default the Main Monitor picture, while Virtual Monitor 2 displays by default the Second Monitor picture (Virtual Monitor 3 and 4 are not in use by default). TV output 1 shows by default Virtual Monitor 1 (Main Monitor), while TV output 2 shows by default Virtual Monitor 2 (Second Monitor). To make TV output 2 also show Virtual Monitor 1: **Example:** `xconfiguration video outputs tv 1 virtualmonitor: 1`
Video	**Outputs**	**TV [1..2]**	**OSD: <On/Off>** Specifies whether or not to display On Screen Display on the supported TV outputs. **Example:** `xconfiguration video outputs tv 1 osd: on`
Video	**Outputs**	**TV [1..2]**	**Mode: <On/Off>** Turns On/Off the TV (Composite/S-Video) outputs. On 6000MXP, the TV 1 and TV 2 Mode are default set to to *Off*. **NOTE!** We recommend that you turn off video on all unused video outputs. **Example:** `xconfiguration video outputs tv 1 mode: on`

Video	**Outputs**	**TV [1..2]**	**AspectChoice: <Auto/Clip/Letterbox/Fill>** You can adjust the aspect ratio for the TV and DVI-I outputs to customize the aspect ratio of the monitor to the preferred configuration. *Auto*: The endpoint determines the best aspect ratio to display by combining Clip, Fill, and Letter Box. *Clip*: Adjusts the source by clipping, to match the aspect ratio of the display window. *Letterbox*: Adjusts the source by adding black bars, to match the aspect ratio of the display window. *Fill*: Stretch or shrink the source to fill the display window. The aspect ratio of the source does not match the display. **Example:** `xconfiguration video outputs tv 1 aspectchoice: auto`
Video	**Outputs**	**DVI [1..x]** x = 2 on 6000 MXP x = 1 on 3000 MXP	**VirtualMonitor: <1..4>** Defines the connections between the DVI outputs and the Virtual Monitors (see above). **6000 MXP**: DVI output 1 shows by default Virtual Monitor 1 (Main Monitor), while DVI output 2 shows by default Virtual Monitor 2 (Second Monitor). **3000 MXP**: DVI output 1 shows by default Virtual Monitor 2 (Second Monitor). To have DVI output 2 to also show Virtual Monitor 1: **Example:** `xconfiguration video outputs dvi 1 virtualmonitor: 1`
Video	**Outputs**	**DVI [1..x]** x = 2 on 6000 MXP x = 1 on 3000 MXP	**OSD: <On/Off>** Specifies whether or not to display On Screen Display on the supported TV outputs. **Example:** `xconfiguration video outputs dvi 1 osd: on`
Video	**Outputs**	**DVI [1..x]** x = 2 on 6000 MXP x = 1 on 3000 MXP	**Mode: <On/Off>** Turns On/Off the DVI outputs. **NOTE!** We recommend that you turn off video all unused video outputs. **Example:** `xconfiguration video outputs dvi 1 mode: On`
Video	**Outputs**	**DVI [1..x]** x = 2 on 6000 MXP x = 1 on 3000 MXP	**AspectChoice: <Auto/Clip/Letterbox/Fill>** You can adjust the aspect ratio for the TV and DVI-I outputs to customize the aspect ratio of the monitor to the preferred configuration. *Auto*: The endpoint determines the best aspect ratio to display by combining Clip, Fill, and Letter Box. *Clip*: Adjusts the source by clipping, to match the aspect ratio of the display window. *Letterbox*: Adjusts the source by adding black bars, to match the aspect ratio of the display window. *Fill*: Stretch or shrink the source to fill the display window. The aspect ratio of the source does not match the display. **Example:** `xconfiguration video outputs dvi 1 aspectchoice: auto`

VNC	**IPAddress: <S: 0, 64>** Defines the IP address of the VNC server. Example: `xconfiguration vnc ipaddress: 10.47.15.49`
VNC	**DisplayNumber: <S: 0, 5>** The display number of the VNC service must match the display number of the VNC server. Example: `xconfiguration vnc displaynumber: 2`
VNC	**Password: <S: 0, 8>** Defines the password to use when connecting to the VNC service. Example: `xconfiguration vnc password: xxx`

LocalEntry [1..200]	**Name: <S: 0, 48>** The local entry's name. Example: `xdirectory localentry 26 name: john doe`	Defines entries stored on the codec. **NOTE!** To add new entries and remove existing entries, the commands LocalEntryAdd / LocalEntryDelete should be used.
LocalEntry [1..200]	**Number: <S: 0, 60>** The local entry's number. Example: `xdirectory localentry 26 number: 5566`	
LocalEntry [1..200]	**SecondNumber: <S: 0, 60>** 2Xh221 second number. Example: `xdirectory localentry 26 secondnumber: 5566`	
LocalEntry [1..200]	**SubAddress: <S: 0, 20>** Example: `xdirectory localentry 26 subaddress: 5436`	
LocalEntry [1..200]	**CallRate: <Tlph/1xh221/2xh221/64/128/192/256/320/384/512/768/1152/1472/1920/2560/3072**/4096/Max/Auto> Specifies the callrate to use when calling this entry. Example: `xdirectory localentry 26 callrate: 64`	
LocalEntry [1..200]	**Restrict: <On/Off>** Specifies wether or not to use Restrict when calling this entry. A restricted call uses 56kbps channels rather than the default unrestricted 64kbps channels. Some older networks (primarily in the USA) do not support 64kbps channels and require the use of restricted 56kbps calls. By default the system will dial an unrestricted call and downspeed to 56kbps if necessary. Example: `xdirectory localentry 26 restrict: on`	
LocalEntry [1..200]	**NetProfile: <1..7>** Defines the NetProfile to use when calling this entry. A NetProfile defines network type and a possible prefix, ref. configuration Netprofile. Example: `xdirectory localentry 26 netprofile: 5`	
GroupEntry [1..50]	**Name: <S: 0, 48>** The Group entry's name. Example: `xdirectory groupentry 22 number: 5566`	Defines group entries (MultiSite entries) stored on the codec. **NOTE!** To add new entries and remove existing entries, the commands GroupEntryAdd / GroupEntryDelete should be used.
GroupEntry [1..50]	**LocalEntryId [1..10]: <0..200>** References to the local entries to be included in the group entry. Example: `directory groupentry 45 localentryid 7 number: 167`	

GlobalEntry

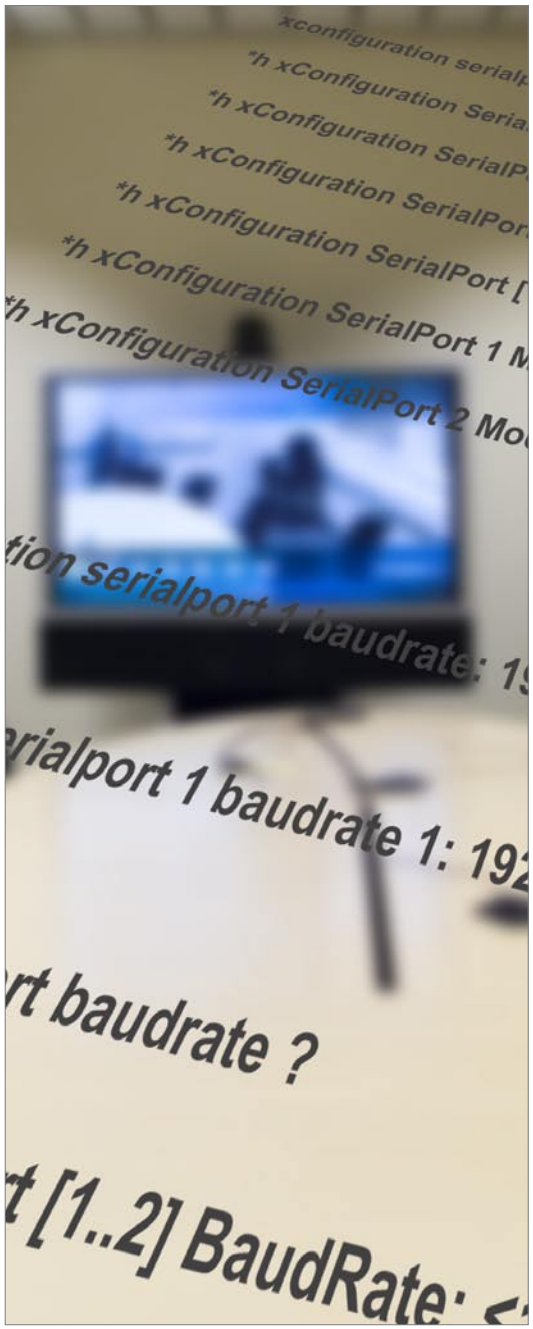
GlobalEntry [1..400]	**Name: <S: 0, 48>** The global entry's name. Example: `xdirectory globalentry 26 name: john doe`	Defines global entries to be stored on the codec. Global entries should be used by an centralized directory server to update the systems phone book.
GlobalEntry [1..400]	**Number: <S: 0, 60>** The global entry's number. Example: `xdirectory globalentry 26 number: 5566`	
GlobalEntry [1..400]	**SecondNumber: <S: 0, 60>** 2Xh221 second number. Example: `xdirectory globalentry 26 secondnumber: 4563`	
GlobalEntry [1..400]	**SubAddress: <S: 0, 20>** Example: `xdirectory globalentry 26 subaddress: 2233`	
GlobalEntry [1..400]	**CallRate: <Tlph/1xh221/2xh221/64/128/192/256/320/384/512/768/1152/1472/1920/2560/3072**/4096/Max/Auto> Specifies the callrate to use when calling this entry. Example: `xdirectory globalentry 26 callrate: 1xh221`	
GlobalEntry [1..400]	**Restrict: <On/Off>** Specifies wether or not to use Restrict when calling this entry. A restricted call uses 56kbps channels rather than the default unrestricted 64kbps channels. Some older networks (primarily in the USA) do not support 64kbps channels and require the use of restricted 56kbps calls. By default the system will dial an unrestricted call and down speed to 56kbps if necessary. Example: `xdirectory globalentry 26 restrict: off`	
GlobalEntry [1..400]	**NetProfile: <1..7>** Defines the NetProfile to use when calling this entry. A NetProfile defines network type and a possible prefix, ref. configuration Netprofile. Example: `xdirectory globalentry 26 netprofile: 3`	

Configuration Storage Levels

We recommend that you check out the TANDBERG web site regularly for updated versions of this manual:

http://www.tandberg.com/docs

You may reset configuration settings to their default values. Whether a specific configuration command will be affected by the reset command depends on two things; which class(es) of configuration commands you want to reset and which class the specific configuration command belongs to.



Configuration Commands shown on this page.

By use of the command DefaultValuesSet you may reset configurations to their default settings. To be able to discriminate between the different Configuration commands (without having to specify each one of them), the Configuration commands have been grouped into **3 different storage levels**, denoted 1, 2 and 3.

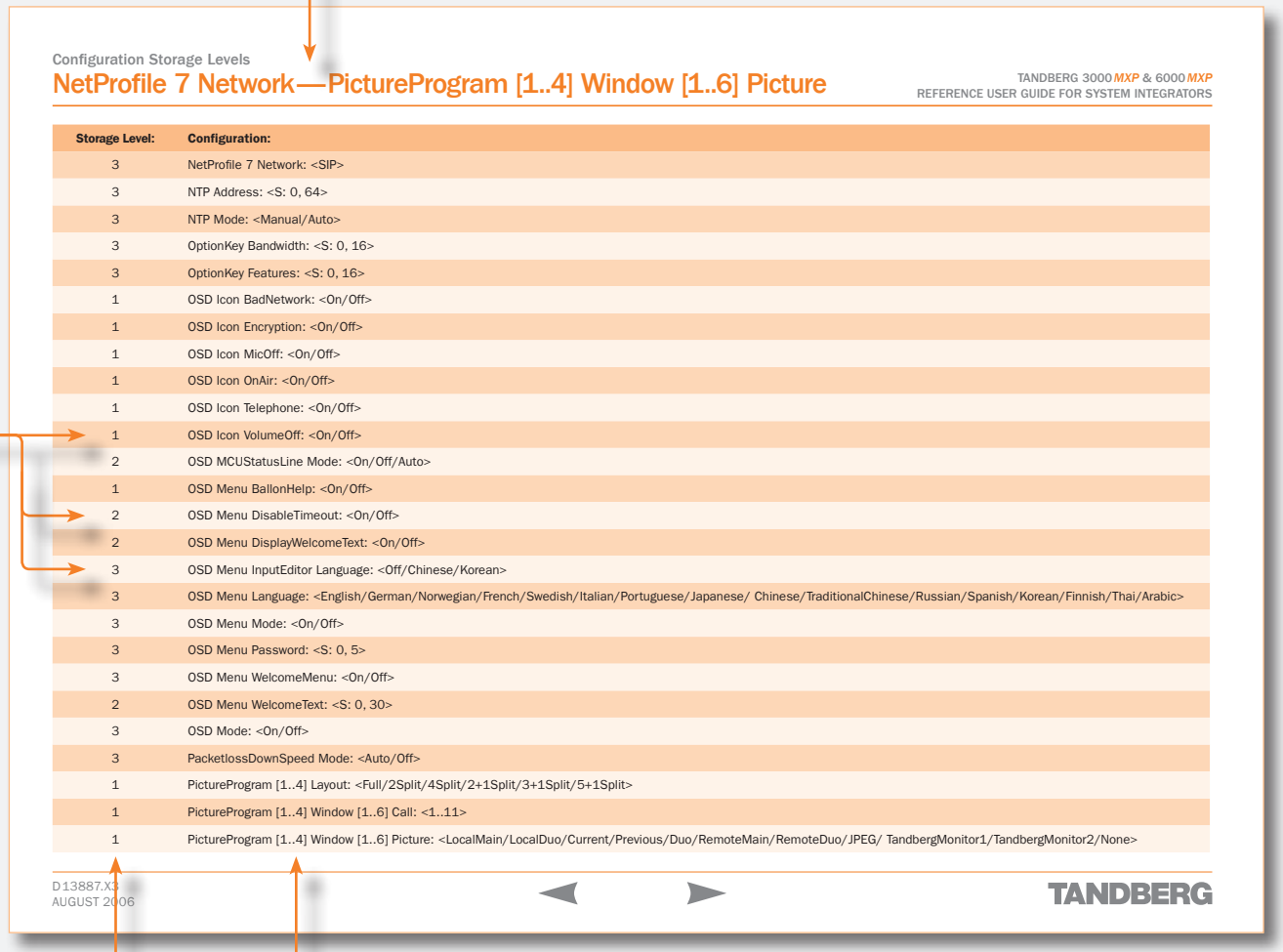
The command *DefaultValuesSet* is thus followed by a level parameter (1, 2, or 3).

If you specify the use of level parameter 1, only level 1 Configuration commands will be reset.

If you specify the use of level parameter 2, level 1 *and* level 2 Configuration commands will be reset.

If you specify the use of level parameter 3, all Configuration commands will be reset (1, 2, *and* 3).

TIP! An exhaustive description of the API structure can be found in the section The TANDBERG API



Configuration Storage Levels

NetProfile 7 Network—PictureProgram [1..4] Window [1..6] Picture

TANDBERG 3000 *MXP* & 6000 *MXP*
REFERENCE USER GUIDE FOR SYSTEM INTEGRATORS

Storage Level:	Configuration:
3	NetProfile 7 Network: <SIP>
3	NTP Address: <S: 0, 64>
3	NTP Mode: <Manual/Auto>
3	OptionKey Bandwidth: <S: 0, 16>
3	OptionKey Features: <S: 0, 16>
1	OSD Icon BadNetwork: <On/Off>
1	OSD Icon Encryption: <On/Off>
1	OSD Icon MicOff: <On/Off>
1	OSD Icon OnAir: <On/Off>
1	OSD Icon Telephone: <On/Off>
1	OSD Icon VolumeOff: <On/Off>
2	OSD MCUStatusLine Mode: <On/Off/Auto>
1	OSD Menu BallonHelp: <On/Off>
2	OSD Menu DisableTimeout: <On/Off>
2	OSD Menu DisplayWelcomeText: <On/Off>
3	OSD Menu InputEditor Language: <Off/Chinese/Korean>
3	OSD Menu Language: <English/German/Norwegian/French/Swedish/Italian/Portuguese/Japanese/ Chinese/TraditionalChinese/Russian/Spanish/Korean/Finnish/Thai/Arabic>
3	OSD Menu Mode: <On/Off>
3	OSD Menu Password: <S: 0, 5>
3	OSD Menu WelcomeMenu: <On/Off>
2	OSD Menu WelcomeText: <S: 0, 30>
3	OSD Mode: <On/Off>
3	PacketlossDownSpeed Mode: <Auto/Off>
1	PictureProgram [1..4] Layout: <Full/2Split/4Split/2+1Split/3+1Split/5+1Split>
1	PictureProgram [1..4] Window [1..6] Call: <1..11>
1	PictureProgram [1..4] Window [1..6] Picture: <LocalMain/LocalDuo/Current/Previous/Duo/RemoteMain/RemoteDuo/JPEG/ TandbergMonitor1/TandbergMonitor2/None>

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AUGUST 2006

TANDBERG

Configuration Command

Corresponding Storage Level

AdditionalCamera — Audio MicrophoneMixer Mode

Storage Level:	Configuration:
3	AdditionalCamera Type: <0..4>
1	AlertSpeaker Mode: <On/Off>
1	AlertTone Telephony: <1..10>
1	AlertTone VideoTelephony: <1..10>
1	AlertTone Volume: <0..15>
1	AllowLatency: <On/Off>
1	Audio AGC AUX: <On/Off>
1	Audio AGC Microphones: <On/Off>
1	Audio AGC Received: <On/Off>
1	Audio AGC VCR: <On/Off>
1	Audio AudioModule: <NAMII-6000/NAMII-7000/NAMII-8000/Digital NAM/None>
1	Audio AutoMute: <On/Off/Unmute>
1	Audio EchoControl [1..4]: <On/Off/NoiseReduction>
1	Audio Feedback Mode: <Normal/Fast>
1	Audio Inputs Line [1..3] Level: <1..16>
1	Audio Inputs Line 1 Mode: <On/Off/Microphone> (3000 MXP)
1	Audio Inputs Line 2 Mode: <On/Off/Auto> (3000 MXP)
1	Audio Inputs Line [1..2] Mode: <On/Off> (6000 MXP)
1	Audio Inputs Line 3 Mode: <On/Off/Auto> (6000 MXP)
1	Audio Inputs Microphone [1..3] Level: <1..16>
1	Audio Inputs Microphone 1 Mode: <On/Off>
1	Audio Inputs Microphone 2 Mode: <On/Off>
1	Audio Inputs Microphone 3 Mode: <On/Off/Line>
1	Audio KeyTones: <On/Off>
1	Audio LocalDetection Mode: <On/Off>
1	Audio MicrophoneMixer Mode: <Fixed/Auto>

Audio Microphones Mode—Camera [1..13] WhiteBalance Level

Storage Level:	Configuration:
1	Audio Microphones Mode: <On/Off>
1	Audio Outputs Line [1..3] Level: <1..16>
1	Audio Outputs Line [1..3] Mode: <On/Off>
1	Audio Outputs Line 1 Type: <Analog/SPDIF/Auto>
1	Audio Stereo: <On/Off>
1	Audio StereoSpeakers: <On/Off>
1	Audio VCRDucking: <On/Off>
1	Audio Volume: <0..21>
1	AutoAnswer Delay: <1..50>
1	AutoAnswer Mode: <On/Off/Mute>
1	AutoDisplaySnapshot: <On/Off>
1	AutoLayout Mode: <On/Off>
1	AutoPIP Mode: <On/Off/Auto>
3	Bonding Timer: <Normal/Relaxed>
3	CallManager Address: <S: 0, 64>
1	Camera [1..13] Backlight: <On/Off>
1	Camera [1..13] Brightness Level: <0..16>
1	Camera [1..13] Brightness Mode: <Manual/Auto>
1	Camera [1..13] DualVisca <Off/On>
1	Camera [1..13] Focus Mode: <Manual/Auto>
1	Camera [1..13] Gamma Level <0..7>
1	Camera [1..13] Gamma Mode <Auto/Manual>
1	Camera [1..13] IR <Off/On>
1	Camera [1..13] Mirror <Off/On>
1	Camera [1..13] Whitebalance Level: <0..16>

Camera [1..13] WhiteBalance Mode — Conference H263

Storage Level:	Configuration:
1	Camera [1..13] Whitebalance Mode: <Manual/Auto>
1	CameraDVI Mode: <On/Off/Auto>
1	CameraSleep Mode: <On/Off>
1	CameraSwUpgrade: <Auto/Off>
1	CameraTracking Speed: <Slow/Normal/Fast>
2	Conference AAC-LD: <On/Off>
2	Conference AAC-LD-128-Mono: <On/Off>
2	Conference AAC-LD-128-Threshold: <384/512/768/1152/1472/1920/2560/3072/4096>
3	Conference AIM: <On/Off>
1	Conference AllowIncomingMSCall: <On/Off>
1	Conference AllowIncomingTIphCall: <On/Off>
1	Conference BillingCode: <On/Off>
1	Conference DefaultCall CallRate: <Tlph/1xh221/2xh221/64/128/192/256/320/384/H0/512/768/1152/1472/1920/2560/3072/4096/Max/Auto>
1	Conference DefaultCall NetProfile: <1..7>
1	Conference DefaultCall Restrict: <On/Off>
2	Conference Downspeed: <On/Off>
3	Conference Encryption Mode: <On/Off/Auto>
3	Conference Encryption Type: <Auto/DES/AES-128>
2	Conference FallbackToTelephony: <On/Off>
1	Conference FarTIphEchoSupression: <Off/Normal/High>
1	Conference FloorToFull: <On/Off>
2	Conference G722.1: <On/Off>
2	Conference G722: <On/Off>
2	Conference G728: <On/Off>
2	Conference H239: <On/Off>
2	Conference H263: <On/Off>

Conference H264 — ExternalNetwork Clocking

Storage Level:	Configuration:
2	Conference H264: <On/Off>
2	Conference H264RCDO: <On/Off>
3	Conference H323Alias E164: <E164: 0, 30>
3	Conference H323Alias ID: <S: 0, 49>
1	Conference H331: <On/Off>
2	Conference IPDualstreamRate <25percent/50percent/75percent>
1	Conference IPLR Transmit: <On/Off>
1	Conference MaxCallLength: <0..999>
2	Conference NaturalVideo: <Off/Auto/384/512/768/1152/1472/1920>
1	Conference PictureMode: <4Split/5+1Split/VS/Auto>
3	Conference SIP URI: <S: 0, 60>
2	Conference VideoQualityCP: <Motion/Sharpness/Auto>
1	Conference WebSnapshots: <On/Off>
3	CorporateDirectory Address: <S: 0, 64>
3	CorporateDirectory Mode: <On/Off>
3	CorporateDirectory Path: <S: 0, 255>
1	DefaultPIPPosition: <BottomLeft/BottomRight/TopLeft/TopRight>
1	DoNotDisturb Mode: <On/Off>
3	DualMonitor Mode: <On/Off>
1	DuoVideoSource: <0/1/2/3/4/5/6>
3	E1 Interface CRC4: <On/Off>
3	Ethernet [1..2] Speed: <Auto/10half/10full/100half/100full>
3	ExternalManager Address: <S: 0, 64>
3	ExternalManager Path: <S: 0, 255>
3	ExternalNetwork Callcontrol: <RS366/RS366AdtranIMUX/ RS366CustomIMUX/LeasedLine/DataTriggered/Manual>
3	ExternalNetwork Clocking: <Dual/Single>

Storage Level:	Configuration:
3	ExternalNetwork DTRPulse: <On/Off>
3	ExternalServices Address: <S: 0, 64>
3	ExternalServices Mode: <On/Off>
3	ExternalServices Path: <S: 0, 255>
1	FECC Mode: <On/Off>
1	FeedbackFilter Call: <0..10>
1	FeedbackFilter Conference: <0..10>
1	FTP Mode: <On/Off>
3	G703 Callcontrol: <Manual/Auto>
3	G703 Interface MaxChannels: <1..30>
3	G703 Interface StartChannel: <1..31>
3	G703 Linecoding: <b8zsRestrict/b8zsNoRestrict>
3	G703 PhysicalLayer: <E1/T1>
3	H320 NetType: <BRI/PRI/External/G703/None>
3	H323 Mode: <On/Off>
3	H323CallSetup Mode: <Direct/Gatekeeper/CallManager>
3	H323Gatekeeper Address: <S: 0, 64>
3	H323Gatekeeper Authentication ID: <S: 0, 49>
3	H323Gatekeeper Authentication Mode: <Auto/Off>
3	H323Gatekeeper Authentication Password: <S: 0, 49>
3	H323Gatekeeper Avaya AnnexH: <On/Off>
3	H323Gatekeeper Avaya Mode: <On/Off>
3	H323Gatekeeper Avaya MultipointCount: <0..9>
3	H323Gatekeeper Discovery: <Manual/Auto>
3	H323Gatekeeper MultipleAlias: <On/Off>
3	H323Prefix: <S: 0, 4>

HTTP Mode — IPProtocol

Storage Level:	Configuration:
1	HTTP Mode: <On/Off>
1	HTTPS Mode: <On/Off>
1	IdReport H323: <H323Id/E164Alias/IPAddress>
3	IEEE802.1x AnonymousIdentity: <S: 0, 64>
3	IEEE802.1x EAP-MD5: <On/Off>
3	IEEE802.1x EAP-PEAP: <On/Off>
3	IEEE802.1x EAP-TTLS: <On/Off>
3	IEEE802.1x Identity: <S: 0, 64>
3	IEEE802.1x Mode: <On/Off>
3	IEEE802.1x Password: <S: 0, 64>
3	Integrator AMXBeacon Mode: <On/Off>
3	Integrator Telepresence Mode: <Off/Point2Point/MultiPoint/Briefer>
3	IMUX Custom [BW64/BW128/BW192/BW256/BW320/BW384/BW512/BW768/BW1152/BW1472/BW1920] Prefix <S: 0, 12>
3	IMUX Custom [BW64/BW128/BW192/BW256/BW320/BW384/BW512/BW768/BW1152/BW1472/BW1920] Suffix <S: 0, 12>
3	IMUX Custom [BW64R/BW128R/BW192R/BW256R/BW320R/BW384R/BW512R/BW768R/BW1152R/BW1472R/BW1920R] Prefix <S: 0, 12>
3	IMUX Custom [BW64R/BW128R/BW192R/BW256R/BW320R/BW384R/BW512R/BW768R/BW1152R/BW1472R/BW1920R] Suffix <S: 0, 12>
3	IP Address: <IPAddr>
3	IP Assignment: <DHCP/Static>
3	IP DNS Domain Name: <S: 0, 64>
3	IP DNS Server [1..5] Address: <IPv4v6Addr: 0, 43>
2	IPDualstreamRate: <25Percent/50Percent/75Percent>
3	IP Gateway: <IPAddr>
3	IP SubnetMask: <IPAddr>
3	IP V6 Address: <IPv6Addr: 0, 43>
1	IPMedia MaxVideoTXRate: <64..4096>
3	IPProtocol: <IPv4/IPv6/Both>

IRControl NumberKeyMode — ISDN PRI Interface Search

Storage Level:	Configuration:
1	IRControl NumberKeyMode: <AddCall/DTMF/Presets/Manual>
1	IRControl Mode: <On/Off>
3	ISDN BRI Alert: <On/Off>
3	ISDN BRI AutoActivation: <Off/Selected/All>
3	ISDN BRI ChanId: <On/Off>
3	ISDN BRI Interface [1..6] DirectoryNumber [1..2]: <S: 0, 24>
3	ISDN BRI Interface [1..6] Mode: <On/Off>
3	ISDN BRI Interface [1..6] SPID [1..2]: <S: 0, 20>
1	ISDN BRI InterfaceSearch: <High/Low>
3	ISDN BRI MaxDeactiveTime: <1..60>
3	ISDN BRI SwitchType: <NI/ATT/Euro/1TR6/Japan/Australia/FETEX>
1	ISDN CliNumbPlan: <0..14>
1	ISDN CliNumbSpec: <On/Off>
1	ISDN CliNumbType: <0..6>
3	ISDN HLC: <On/Off>
3	ISDN MSN: <On/Off>
3	ISDN ParallelDial: <On/Off>
3	ISDN PRI Alert: <On/Off>
3	ISDN PRI ChanId: <On/Off>
3	ISDN PRI InitialRestart: <On/Off>
3	ISDN PRI Interface HighChannel: <1..31>
3	ISDN PRI Interface LowChannel: <1..31>
3	ISDN PRI Interface MaxChannels: <1..30>
3	ISDN PRI Interface NumberRangeStart: <S: 0, 24>
3	ISDN PRI Interface NumberRangeStop: <S: 0, 24>
3	ISDN PRI Interface Search: <High/Low>

ISDN PRI L2WindowSize—LocalLayout Toggle

Storage Level:	Configuration:
3	ISDN PRI L2WindowSize: <1..7>
3	ISDN PRI NSFTelephony Mode: <On/Off>
3	ISDN PRI NSFTelephony Number: <0..31>
3	ISDN PRI NSFVideoTelephony Mode: <On/Off>
3	ISDN PRI NSFVideoTelephony Number: <0..31>
3	ISDN PRI SwitchType: <NI/ATT/Euro/Japan>
3	ISDN SendComplete: <On/Off>
3	ISDN SendNumber: <On/Off>
3	ISDN SpeechTimers: <On/Off>
3	ISDN SubAddress: <S: 0, 20>
1	Keyboard Layout: <English/US/Norwegian/Swedish/German/French/User>
1	Kiosk AllowIRControl: <On/Off>
1	Kiosk AutoDial: <On/Off>
1	Kiosk LanguageMenu English: <On/Off>
1	Kiosk LanguageMenu French: <On/Off>
1	Kiosk LanguageMenu German: <On/Off>
1	Kiosk LanguageMenu Italian: <On/Off>
1	Kiosk LanguageMenu Mode: <On/Off>
1	Kiosk LanguageMenu Norwegian: <On/Off>
1	Kiosk LanguageMenu Spanish: <On/Off>
1	Kiosk LanguageMenu Swedish: <On/Off>
1	Kiosk Menu: <On/Off>
1	Kiosk Mode: <On/Off>
1	Kiosk Phonebook: <Local/CorporateDirectory>
1	LocalLayout Mode: <Full/2Split/POP/POPwide>
1	LocalLayout Toggle: <PIP/POP>

Logo — OptionKey Features

Storage Level:	Configuration:
1	Logo: <On/Off>
1	LoS Duration Exponent: <10..30>
1	LoS Duration Offset: <0..65534>
1	LoS Inhibit: <0..65534>
1	LoS Initial: <0..65534>
1	LoS Polarity: <Positive/Negative>
1	LoS Retry: <0..65534>
1	MainVideoSource: <1/2/3/4/5/6>
3	MCU MultiSite <On/Off>
3	MCU MultiWay <On/Off>
3	NAT Address: <IPAddr>
3	NAT Mode: <On/Off/Auto>
3	NetProfile [1..7] CallPrefix: <S: 0, 9>
3	NetProfile [1..7] CallSuffix: <S: 0, 30>
3	NetProfile [1..7] Name: <S: 0, 8>
3	NetProfile 1 Network: <Auto>
3	NetProfile 2 Network: <H320>
3	NetProfile 3 Network: <H323>
3	NetProfile 4 Network: <H320/H323/SIP/Auto>
3	NetProfile 5 Network: <H320/H323/SIP/Auto>
3	NetProfile 6 Network: <H320/H323/SIP/Auto>
3	NetProfile 7 Network: <SIP>
3	NTP Address: <S: 0, 64>
3	NTP Mode: <Manual/Auto>
3	OptionKey Bandwidth: <S: 0, 16>
3	OptionKey Features: <S: 0, 16>

OSD Icon BadNetwork—Preset [1..15] Camera Autofocus

Storage Level:	Configuration:
1	OSD Icon BadNetwork: <On/Off>
1	OSD Icon Encryption: <On/Off>
1	OSD Icon MicOff: <On/Off>
1	OSD Icon OnAir: <On/Off>
1	OSD Icon Telephone: <On/Off>
1	OSD Icon VolumeOff: <On/Off>
2	OSD MCUStatusLine Mode: <On/Off/Auto>
1	OSD Menu BallonHelp: <On/Off>
2	OSD Menu DisableTimeout: <On/Off>
2	OSD Menu DisplayWelcomeText: <On/Off>
3	OSD Menu InputEditor Language: <Off/Chinese/Korean/Japanese>
3	OSD Menu Language: <English/German/Norwegian/French/Swedish/Italian/Portuguese/Japanese/ Chinese/TraditionalChinese/Russian/Spanish/Korean/Finnish/Thai/Arabic>
3	OSD Menu Mode: <On/Off>
3	OSD Menu Password: <S: 0, 5>
3	OSD Menu WelcomeMenu: <On/Off>
2	OSD Menu WelcomeText: <S: 0, 30>
3	OSD Mode: <On/Off>
1	OSD Offset Mode: <On/Off>
3	PacketlossDownSpeed Mode: <Auto/Off>
1	PictureProgram [1..4] Layout: <Full/2Split/4Split/2+1Split/3+1Split/5+1Split>
1	PictureProgram [1..4] Window [1..6] Call: <1..11>
1	PictureProgram [1..4] Window [1..6] Picture: <LocalMain/LocalDuo/Current/Previous/Duo/RemoteMain/RemoteDuo/JPEG/ TandbergMonitor1/TandbergMonitor2/None>
1	PresentationStart: <Manual/Auto>
1	Preset [1..15] Audio Inputs Line [1..3] Mode: <On/Off>
1	Preset [1..15] Audio Inputs Microphone [1..3] Mode: <On/Off>
1	Preset [1..15] Camera Autofocus: <On/Off>

Preset [1..15] Camera Brightness—RemoteSwUpgrade Password

Storage Level:	Configuration:
1	Preset [1..15] Camera Brightness Level: <0..16>
1	Preset [1..15] Camera Brightness Mode: <Manual/Auto>
1	Preset [1..15] Camera Focus: <0..65534>
1	Preset [1..15] Camera Pan: <-32768..32767>
1	Preset [1..15] Camera Tilt: <-32768..32767>
1	Preset [1..15] Camera Zoom: <0..65534>
1	Preset [1..15] DuoVideoSource: <0/1/2/3/4/5/6>
1	Preset [1..15] MainVideoSource: <1/2/3/4/5/6>
1	Preset [1..15] Name: <S: 0, 20>
3	QoS Diffserv Telephony Audio: <0..63>
3	QoS Diffserv Telephony Signalling: <0..63>
3	QoS Diffserv VideoTelephony Audio: <0..63>
3	QoS Diffserv VideoTelephony Data: <0..63>
3	QoS Diffserv VideoTelephony Signalling: <0..63>
3	QoS Diffserv VideoTelephony Video: <0..63>
3	QoS Mode: <Precedence/Diffserv/Off>
3	QoS Precedence Telephony Audio: <0/1/2/3/4/5/6/7/Auto/Off>
3	QoS Precedence Telephony Signalling: <0/1/2/3/4/5/6/7/Auto/Off>
3	QoS Precedence VideoTelephony Audio: <0/1/2/3/4/5/6/7/Auto/Off>
3	QoS Precedence VideoTelephony Data: <0/1/2/3/4/5/6/7/Auto/Off>
3	QoS Precedence VideoTelephony Signalling: <0/1/2/3/4/5/6/7/Auto/Off>
3	QoS Precedence VideoTelephony Video: <0/1/2/3/4/5/6/7/Auto/Off>
3	QoS RSVP: <Auto/Off>
3	QoS ToS: <MinDelay/MaxThrough/MaxReliable/MinCost/Off>
1	RemoteSwUpgrade Mode: <On/Off>
1	RemoteSwUpgrade Password: <S: 0, 16>

RTP MTU — SSH Mode

Storage Level:	Configuration:
1	RTP MTU: <400..1400>
1	RTP Ports: <Static/Dynamic>
1	Screensaver Delay: <1..480>
1	Screensaver Mode: <On/Off>
1	SelfViewOnStartup: <On/Off>
3	SerialPort [1..2] BaudRate: <1200/2400/4800/9600/19200/38400/57600/115200>
3	SerialPort [1..2] DataBits: <7/8>
3	SerialPort [1..2] Parity: <None/Odd/Even>
3	SerialPort [1..2] StopBits: <1/2>
3	SerialPort 1 Mode: <Control/Transparent>
3	SerialPort 2 Mode: <VISCA/Auto>
3	SIP Authentication Password: <S: 0, 60>
3	SIP Authentication UserName: <S: 0, 80>
3	SIP Mode: <On/Off>
3	SIP Server Address: <S: 0, 255>
3	SIP Server Discovery: <Manual/Auto>
3	SIP Server Type: <Auto/Nortel/Microsoft/Cisco/Alcatel/Experimental>
3	SIP TLS Verify <On/Off>
3	SIP Transport Default: <Auto/TCP/UDP/TLS>
3	SNMP CommunityName: <S: 0, 16>
3	SNMP HostIPAddr [1..3]: <S: 0, 64>
3	SNMP Mode: <On/Off/ReadOnly/TrapsOnly>
3	SNMP SystemContact: <S: 0, 70>
3	SNMP SystemLocation: <S: 0, 70>
1	SSH Mode: <On/Off>

StartupVideoSource — UseAsLocalPCMonitor

Storage Level:	Configuration:
1	StartupVideoSource: <0/1/2/3/4/5/6>
1	StillImageSource: <0/1/2/3/4/5/6>
3	Streaming Address: <S: 0, 64>
3	Streaming AllowRemoteStart: <On/Off>
3	Streaming Announcements: <On/Off>
3	Streaming Hops: <0..255>
3	Streaming Password: <S: 0, 16>
3	Streaming Port: <0..65534>
3	Streaming Quality <Motion/Sharpness>
3	Streaming Source: <Local/Remote/Auto>
3	Streaming VideoRate: <16/32/64/128/192/256/320>
1	StrictPassword: <On/Off>
3	SystemUnit DisplayName: <S: 0, 50>
3	SystemUnit InternationalName: <S: 0, 49>
3	SystemUnit Name: <S: 0, 49>
3	SystemUnit Password: <S: 0, 16>
3	T1 Interface CableLength: <Range1/Range2/Range3/Range4/Range5>
1	Telnet Mode: <On/Off>
1	TelnetChallenge Mode: <On/Off>
1	TelnetChallenge Port: <23/57>
1	Time DateFormat: <DD_MM_YY/MM_DD_YY/YY_MM_DD>
1	Time DaylightSavings: <On/Off>
1	Time TimeFormat: <24H/12H>
1	Time Zone: <GMT-1200/.../GMT+1400>
1	UseAsLocalPCMonitor: <On/Off>

Video Inputs Source [1..6] Name — VNC Password

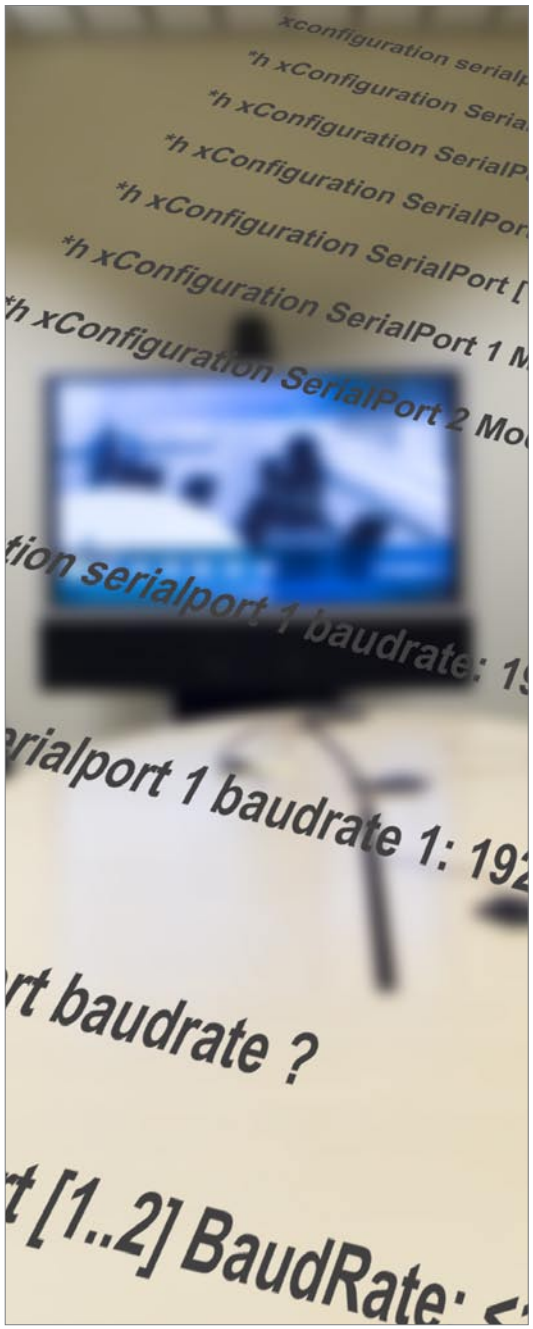
Storage Level:	Configuration:
1	Video Inputs Source [1..6] Name: <S: 0, 16>
2	Video Inputs Source [1..6] Quality: <Motion/Sharpness>
1	Video Outputs AllowHD720p: <On/Off>
1	Video Outputs AllowWXGA: <On/Off>
1	Video Outputs DVI [1..2] Mode: <On/Off>
1	Video Outputs DVI [1..2] OSD: <On/Off>
1	Video Outputs DVI [1..2] VirtualMonitor: <1..4>
1	Video Outputs DVIResolution [1..2]: <Auto/SVGA/XGA>
3	Video Outputs FormatPCWideScreen: <Normal/Wide>
3	Video Outputs Letterbox <On/Off>
1	Video Outputs TestPattern <0..10>
1	Video Outputs TV [1..2] Mode: <On/Off>
1	Video Outputs TV [1..2] OSD: <On/Off>
1	Video Outputs TV [1..2] VirtualMonitor: <1..4>
3	Video Outputs ScreenFormatPC: <4:3/16:9>
3	Video Outputs ScreenFormatTV: <4:3/16:9>
3	VNC DisplayNumber: <S: 0, 5>
3	VNC IPAddress: <S: 0, 64>
3	VNC Password: <S: 0, 8>

Command Information Tables

We recommend that you check out the TANDBERG web site regularly for updated versions of this manual:

http://www.tandberg.com/docs

This part of the manual describes the Command Information available.



Understanding the Table Layout

Command

Brief description of what the command is used to.

Parameters used with this command. If there is an **(r)** appearing, this indicates a required parameter (i.e. a parameter that always must be specified. The **(r)** is not to be written – it appears for your information only.

Status Information

AlertToneTest — CallMute

TANDBERG 3000 *MXP* & 6000 *MXP*
REFERENCE USER GUIDE FOR SYSTEM INTEGRATORS

Command	Description	Parameters	Result parameters when OK	Result parameters when error	Example

AlertToneTest	Command used to test the supported alert tones. When the command is issued the system will playback the specified alert tone.	**Tone(r): <1..10>**
		The tone to test.
			None	**Cause: <1...>**
				Cause code specifying why the command was not accepted by the system
				Description:
				Textual description of the cause code.
					`xcommand alerttonetest tone:5`
					`*r Result (status=OK):`
					`*r/end`
					`OK`

Boot	Command used to reboot the system.	**ParameterRestore: <On/Off>**
		When rebooting the system after software upgrade, all configurations will be restored.
		By setting **ParameterRestore** to *Off*, the system configurations prior to software upgrade will be lost.
			None	As above.	`xcommand boot parameterrestore: on`
					`*r Result (status=OK):`
					`*r/end`
					`OK`

CallAccept	Command used to answer an incoming call if autoanswer is disabled.	None	None	As above	`xcommand callaccept`
					`*r Result (status=OK): /`
					`*r/end`
					`OK`

CallMute	Command used to mute incoming audio from a specific call in a Multi-Site conference.	**Call(r): <1..11>**
		Reference to the call to be muted or unmuted.
		Mode(r): <On/Off>
		Denotes whether the call is to be muted or unmuted.
			None	As above	`xcommand callmute call:2 mode:on`
					`*r Result (status=OK):`
					`*r/end`
					`OK`

Required parameters are identified by an (r) behind the parameter name. The (r) appears in this table for your information only and shall not be included when writing the commands – see the column **Example** for an illustration of this. Empty lines in the examples provided may have been removed to save space in the tables.

Example of the command when executed succesfully.

If the command was not executed succesfully, a description telling why will be provided. Details are found in this column.

If the command is executed succesfully, any result parameter returned will be stated here.

TIP! An exhaustive description of the API structure can be found in the section The TANDBERG API

AlertToneTest — AudioTestSignal

Command	Description	Parameters	Result parameters when OK	Result parameters when error	Example

AlertToneTest	Command used to test the supported alert tones. When the command is issued the system will playback the specified alert tone.	**Tone(r): <1..10>**
		The tone to test.
			None	**Cause: <1...>**
				Cause code specifying why the command was not accepted by the system
				Description:
				Textual description of the cause code.
					`xcommand alerttonetest tone:5`
					`*r Result (status=OK):`
					`*r/end`
					`OK`

AudioTestSignal	Command used to test an audio channel with a specific test signal; sine, white noise or pink noise. When the command is issued the system will send out the specified test signal to the specified output channel.	**Type(r):<None/Sine/White/Pink>**
		The test signal.
		Level: <-60..0>
		Level in dB. The level is dependent on the output level settings on the system. When the output levels are set to default level settings, 0 dB will correspond to 1 Vrms.
		If not specified, 0 dB will be selected.
		Output: <FarEnd/Speaker/AUX/ VCR>
		The output channel where the audio test signal will be activated. If not specified, the FarEnd output will be selected
		Frq: <100..20000>
		The frequency, in Hz, of the sine-tone. If not specified, 1 kHz will be selected. This setting does only apply to the sine test signal.
			None	As above	`Example #1:`
					`Sine wave of 3kHz with level -20dB on local speakers:`
					
					`xcommand audiotestsignal type:sine level:-20 output:speaker frq:3000`
					`*r Result (status=OK): /`
					`*r/end`
					
					`OK`
					
					`Example #2:`
					`White noise with level -10 dB to FarEnd:`
					
					`xcommand audiotestsignal white -10`
					`*r Result (status=OK): /`
					`*r/end`
					
					`OK`

Required parameters are identified by an (r) appended to the parameter name. The (r) appears in this table for your information only and shall not be included when writing the commands – see the column **Example** for an illustration of this. Empty lines in the examples provided may have been removed to save space in the tables.

Boot — CallMuteOutgoing

Command	Description	Parameters	Result parameters when OK	Result parameters when error	Example

Boot	Command used to reboot the system.	**ParameterRestore: <On/Off>**
		When rebooting the system after software upgrade, all configurations will be restored.
		By setting **ParameterRestore** to *Off*, the system configurations prior to software upgrade will be lost.
			None	As above.	`xcommand boot parameterrestore: on`
					`*r Result (status=OK):`
					`*r/end`
					`OK`

CallAccept	Command used to answer an incoming call if autoanswer is disabled.	None	None	As above	`xcommand callaccept`
					`*r Result (status=OK): /`
					`*r/end`
					`OK`

CallMute	Command used to mute incoming audio from a specific call in a Multi-Site conference.	**Call**(r)**: <1..11>**
		Reference to the call to be muted or unmuted.
		Mode(r)**: <On/Off>**
		Denotes whether the call is to be muted or unmuted.
			None	As above	`xcommand callmute call:2 mode:on`
					`*r Result (status=OK):`
					`*r/end`
					`OK`

CallMuteOutgoing	Command used to mute outgoing audio to a specific call in a MultiSite conference.
	Typical user scenario for this command is a three-part conference where two of the participants are from the same company discussing an issue with a sub-contractor.
	During the conference the participants from the same company want to share some thoughts in private before making the final decision.
		Call(r)**: <1..11>**
		Reference to the call to be muted or unmuted.
		Mode(r)**: <On/Off>**
		Denotes whether the call is to be muted or unmuted.
			None	As above	`xcommand callmuteoutgoing call:2 mode:on`
					`*r Result (status=OK):`
					`*r/end`
					`OK`

Required parameters are identified by an (r) appended to the parameter name. The (r) appears in this table for your information only and shall not be included when writing the commands – see the column **Example** for an illustration of this. Empty lines in the examples provided may have been removed to save space in the tables.

Command	Description	Parameters	Result parameters when OK	Result parameters when error	Example

CallSetAudioTP	Command used with TANDBERG Experia.	**Call(r): <1..11>**
		Mode(r): <On/Off>
			None	As above	`xcommand callsetaudiotp call:2 mode:on`
					`*r Result (status=OK):`
					`*r/end`
					`OK`

CameraFocus	Command used to change focus of a specific camera.	**Camera(r): <1..13>**
		Addresses which camera to have its focus changed.
		Value(r): <Auto/Manual/+/->
		Specifies the wanted operation.
			None	As above	`xcommand camerafocus camera:1 value:+`
					`*r Result (status=OK):`
					`*r/end`
					`OK`

CameraForceUpgrade	Command used to initiate software upgarde of the TANDBERG Precision HD Camera. Should only be used after **downgrade** of the TANDBERG MXP Codec software or if the configuration CameraSwUpgrade is set to Off. When the TANDBERG MXP Codec software is upgraded, the TANDBERG Precision HD Camera will be upgraded automatically if the configuration CameraSwUpgrade is set to Auto.	**Camera(r): <1..13>**	None	As above	`xcommand cameraforceupgrade camera:1`
					`*r Result (status=OK):`
					`*r/end`
					`OK`

CameraHalt	Command used to stop moving a specific camera.	None	None	As above	`xcommand camerahalt`
					`*r Result (status=OK):`
					`*r/end`
					`OK`

Required parameters are identified by an (r) appended to the parameter name. The (r) appears in this table for your information only and shall not be included when writing the commands – see the column **Example** for an illustration of this. Empty lines in the examples provided may have been removed to save space in the tables.

CameraMove — CameraReconfigure

Command	Description	Parameters	Result parameters when OK	Result parameters when error	Example

CameraMove	Command used to instruct the camera to move in a specified direction. The camera will continue moving until the **CameraHalt** command is issued.	**Camera(r): <1..13>**
		Addresses the camera to move.
		Direction(r): <Up/Down/Right/Left/In/Out/FocusIn/FocusOut >
		Specifies the direction to move.
			None	As above	`xcommand cameramove camera:1 direction: right`
					`*r Result (status=OK):`
					`*r/end`
					`OK`

CameraPosition	Command used to instruct the camera to move to a specific position.	**Camera(r): <1..13>**
		Addresses the camera to position.
		Pan: <-32768..32767>
		Pan value.
		Tilt: <-32768..32767>
		Tilt value.
		Zoom: <0..65534>
		Zoom value.
		Focus: <0..65534>
		Focus value.
		NOTE! The supported values for pan, tilt, zoom, focus will depend on the type of camera in use. For example: Sony cameras have value ranges different from TANDBERG cameras.
			None	As above	`xcommand cameraposition camera:1 pan:1700 tilt:1700`
					`*r Result (status=OK):`
					`*r/end`
					`OK`

CameraReconfigure	Re-configures all cameras connected to the switch or codec. This may be useful if you connect new cameras without turning the power off, since the switch does not auto detect such changes.	None	None	As above	`xcommand camerareconfigure`
					`*r Result (status=OK):`
					`*r/end`
					`OK`

Required parameters are identified by an (r) appended to the parameter name. The (r) appears in this table for your information only and shall not be included when writing the commands – see the column **Example** for an illustration of this. Empty lines in the examples provided may have been removed to save space in the tables.

CameraTrackingStart — ChairTake

Command	Description	Parameters	Result parameters when OK	Result parameters when error	Example

CameraTrackingStart	Command used to turn camera tracking on.	None	None	As above	`xcommand cameratrackingstart`
					`*r Result (status=OK):`
					`*r/end`
					`OK`

CameraTrackingStop	Command used to turn cameratracking off.	None	None	As above	`xcommand cameratrackingstop`
					`*r Result (status=OK):`
					`*r/end`
					`OK`

CameraUpgrade	Upgrade camera or video switch with new software. The software must be put on a folder named either /tmp or /user.
	Currently only upgrading of the first camera or video switch is supported.
		(r)**: <1..13> <filename>**
		Addresses the specific camera or TANDBERG Video Switch.
		Camera software files are named s01692.pkg.
		Video Switch software files are named s51200.pkg.
			None	As above	`xcommand cameraupgrade:1 s01692.pkg`
					`*r Result (status=OK):`
					`*r/end`
					`OK`

CameraWhiteBalance	Command used to initiate calibration of the whitebalance of the camera. The command is valid only when the Camera Whitebalance Mode is configured to Manual.	**Camera**(r)**: <1..13>**
		Addresses the specific camera.
			None	As above	`xcommand camerawhitebalance camera:1`
					`*r Result (status=OK):`
					`*r/end`
					`OK`

ChairRelease	Command used to release chair in a conference supporting chair control.	None	None	As above	`xcommand chairrelease`
					`*r Result (status=OK):`
					`*r/end`
					`OK`

ChairTake	Command used to take chair in a conference supporting chair control.	None	None	As above	`xcommand chairtake`
					`*r Result (status=OK):`
					`*r/end`
					`OK`

Required parameters are identified by an (r) appended to the parameter name. The (r) appears in this table for your information only and shall not be included when writing the commands – see the column **Example** for an illustration of this. Empty lines in the examples provided may have been removed to save space in the tables.

ConferenceDisconnect — ConferenceTerminate

Command	Description	Parameters	Result parameters when OK	Result parameters when error	Example

ConferenceDisconnect	Command used to disconnect all calls connected to the system.	None	None	As above	`xcommand ConferenceDisconnect`
					`*r Result (status=OK):`
					`*r/end`
					`OK`

ConferenceTerminate	ConferenceTerminate is only valid if the system is participant in a MultiSite conference supporting Chair Control, and for the system granted chair. The command will disconnect all participants in the conference (not only the calls connected locally to the system).	None	None	As above	`xcommand ConferenceTerminate`
					`*r Result (status=OK):`
					`*r/end`
					`OK`

Required parameters are identified by an (r) appended to the parameter name. The (r) appears in this table for your information only and shall not be included when writing the commands – see the column **Example** for an illustration of this. Empty lines in the examples provided may have been removed to save space in the tables.

CorpDirSearch

Command	Description	Parameters	Result parameters when OK	Result parameters when error	Example

CorpDirSearch	Command to search for contacts in the corporate directory phone book.
	Use the **CorpDirGetNext** and the ID of the last entity to search for the next contacts.
	Use the **CorpDirGetPrevious** and the ID of the first entity to search for the previous contacts.
		With no parameters specified the result will show the first 40 catalogs.
		Path: <S: 0, 256>
		Enter the path, which is the ID of the folder or subfolder, to search in. The result will show the first 40 entries in the given catalog. If no catalog specified by Path, then the root catalog is used.
		Query: <S: 0, 81>
		Enter the query to search for.
		StartsWith: <S: 0, 81>
		The search string should start with.
		Hits: <1..40>
		Specify the number of hits to show.
		SubFolders: <On/Off>
		Define if the search should also include subfolders.
		IsFirst: <True/False>
		True indicates that this is the first hit matching the search criteria.
		False indicates that this is not the first hit matching the search criteria. CorpDirGetPrevious can be used to search for more contacts.
		IsLast: <True/False>
		True indicates that this is the last hit matching the search criteria.
		False indicates that this is not the last hit matching the search criteria. CorpDirGetNext can be used to search for more contacts.
			None	As above	`xcommand corpdirsearch`
					`*r Result (status=OK):`
					`Entity 1 <type:Catalog>:`
					`Name: "0.1 - Personal Systems"`
					`Path: ""`
					`ID: "138"`
					`IsFirst: True`
					`IsLast: False`
					`Entity 2 <type:Catalog>:`
					`Name: "0.2 - Meeting Rooms"`
					`Path: ""`
					`ID: "140"`
					`IsFirst: False`
					`IsLast: True`
					`*r/end`
					`OK`
					
					`xcommand corpdirsearch query:charlie hits:1`
					`*r Result (status=OK):`
					`Entity 1 <type:Entry>:`
					`Name: "charlie.brown"`
					`Path: ""`
					`ID: "29"`
					`IsFirst: True`
					`IsLast: False`
					`ContactInfo 1:`
					`Protocol: H323`
					`CallRate: 384`
					`Restrict: Off`
					`DialString: "123@tandberg.net"`
					`Description: "123@tandberg.net <H323>"`
					`ContactInfo 2:`
					`Protocol: H320`
					`CallRate: 384`
					`Restrict: Off`
					`DialString: "791"`
					`Description: "791 <ISDN>"`
					`*r/end`
					`OK`

Required parameters are identified by an (r) appended to the parameter name. The (r) appears in this table for your information only and shall not be included when writing the commands – see the column **Example** for an illustration of this. Empty lines in the examples provided may have been removed to save space in the tables.

CorpDirGetNext

Command	Description	Parameters	Result parameters when OK	Result parameters when error	Example

CorpDirGetNext	After having used the CorpDirSearch, this command is used when you want to search for the next contacts in the corporate directory phone book.
	
	The ID is found in the **CorpDirSearch** result.
		With no parameters specified the result will show first 40 catalogs.
		
		Path: <S: 0, 256>
		Enter the path, which is the ID of the folder or subfolder, to search in. The result will show the first 40 entries in the given catalog. If no catalog specified by Path, then the root catalog is used.
		
		Query: <S: 0, 81>
		Enter the query to search for.
		
		StartsWith: <S: 0, 81>
		The search string should start with.
		
		Hits: <1..40>
		Specify the number of hits to show.
		
		ID: <S: 0, 21>
		Define the ID of an entity. The ID is relative to a specific search. When using the CorpDirGetNext command you need to specify the same Query and StartsWith strings as in the CorpDirSearch command.
		
		SubFolders: <On/Off>
		Define if the search should also include subfolders
			None	As above	`xcommand corpdirgetnext path:138 query: charlie id:29 hits:5`
					`*r Result (status=OK):`
					...
					<The next 5 entries, from id 29 for the given search will show>
					...
					`*r/end`
					`OK`
					
					`xcommand corpdirgetnext path:138 query: charlie id:34 hits:5`
					`*r Result (status=OK):`
					...
					<The next 5 entries, from id 34 for the given search will show>
					...
					`*r/end`
					`OK`

Required parameters are identified by an (r) appended to the parameter name. The (r) appears in this table for your information only and shall not be included when writing the commands – see the column **Example** for an illustration of this. Empty lines in the examples provided may have been removed to save space in the tables.

CorpDirGetPrevious

Command	Description	Parameters	Result parameters when OK	Result parameters when error	Example

CorpDirGetPrevious	After having used the CorpDirSearch, this command is used when you want to search for the previous contacts in the corporate directory phone book.
	
	The ID is found in the **CorpDirSearch** result.
		With no parameters specified the result will show first 40 catalogs.
		
		Path: <S: 0, 256>
		Enter the path, which is the ID of the folder or subfolder, to search in. The result will show the first 40 entries in the given catalog. If no catalog specified by Path, then the root catalog is used.
		Query: <S: 0, 81>
		Enter the query to search for.
		StartsWith: <S: 0, 81>
		The search string should start with.
		Hits: <1..40>
		Specify the number of hits to show.
		ID: <S: 0, 21>
		Define the ID of an entity. The ID is relative to a specific search. When using the CorpDirGetPrevious command you need to specify the same Query and StartsWith strings as in the CorpDirSearch command
		SubFolders: <On/Off>
		Define if the search should also include subfolders
			None	As above	`xcommand corpdirgetprevious path:138 query:charlie id:29 hits:5`
					`*r Result (status=OK):`
					...
					<The previous 5 entries, from id 29 for the given search will show>
					...
					`*r/end`
					`OK`
					
					`xcommand corpdirgetprevious path:138 query:charlie id:34 hits:5`
					`*r Result (status=OK):`
					...
					<The previous 5 entries, from id 34 for the given search will show>
					...
					`*r/end`
					`OK`

Required parameters are identified by an (r) appended to the parameter name. The (r) appears in this table for your information only and shall not be included when writing the commands – see the column **Example** for an illustration of this. Empty lines in the examples provided may have been removed to save space in the tables.

DefaultValueSet

Command	Description	Parameters	Result parameters when OK	Result parameters when error	Example

DefaultValuesSet	Command used to reset configurations to factory default values.	**Level: <1..3>**
		Configurations are divided into three different storage levels. The level parameter denotes that configurations on this level and all levels below (lower value) are to be reset.
		The complete list of Storage Levels can be found in Configuration Storage Levels.
			None	As above	`xcommand defaultvaluesset level:2`
					`*r Result (status=OK):`
					`*r/end`
					`OK`

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Command	Description	Parameters	Result parameters when OK	Result parameters when error	Example

Dial	Command used to dial out from the system.	**Number: <S: 0, 60>**
		Number to dial.
		SecondNumber: <S: 0, 60>
		2Xh221 second number.
		SubAddress: <S: 0, 20>
		Sub address.
		CallRate: <Tlph/1xh221/xh221/64/128/192/256/320/384/512/768/1152/1472/1920/2560/3072/4096/H0/Max/Auto>
		Specifies the callrate to use. The CallRates supported for a system will depend on model and software options.
		Restrict: <On/Off>
		A restricted call uses 56kbps channels rather than the default unrestricted 64kbps channels. Some older networks (primarily in the USA) do not support 64kbps channels and require the use of restricted 56kbps calls. By default the system will dial an unrestricted call and downspeed to 56kbps if necessary.
		NetProfile: <1..7>
		Defines the NetProfile to use. A NetProfile defines network type and a possible prefix, ref. configuration Netprofile.
		BillingCode: <S: 0, 16>
		By adding a Billing Code when placing a call, the call can be identified in the call log (xhistory/history.xml) after it is disconnected.
			CallRef: <1..11>
			Reference to the call. To be used as reference when monitoring the call.
			LogTag: <1...>
			Unique reference to call. Identifies the call in the call log.
				As above	`xcommand dial number:123 callrate:256 netprofile:3`
					`*r Result (status=OK):`
					`CallRef: 1`
					`LogTag: 312`
					`*r/end`
					`OK`

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DialGlobalEntry — DialLocalEntry

Command	Description	Parameters	Result parameters when OK	Result parameters when error	Example

DialGlobalEntry	Command used to dial a number from the global directory (the Global Directory is downloaded to the system by an external application).	**GlobalEntryId**(r)**: <1..400>**
		Reference to the directory entry to be dialed.
			CallRef: <1..11>
			Reference to the call. To be used as reference when monitoring the call.
			LogTag: <1...>
			Unique reference to call. Identifies the call in the call log.
				As above	`xcommand dialglobalentry globalentry-id:19`
					`*r Result (status=OK):`
					`CallRef: 1`
					`LogTag: 312`
					`*r/end`
					`OK`

DialGroupEntry	Command used to dial an entry from the Group Directory. Dialling from the Group Directory makes it possible to set up a MultiSite conference in one operation.	**GroupEntryId**(r)**: <1..50 >**
		Reference to the directory entry to be dialed.
			The system will return the following elements for each call initiated.
			CallRef: <1..11>
			Reference to the call. To be used as reference when monitoring the call.
			LogTag: <1...>
			Unique reference to call. Identifies the call in the call log.
				As above	`xcommand dialgroupentry groupentryid:19`
					`*r Result (status=OK):`
					`CallRef: 2`
					`LogTag: 313`
					`CallRef: 1`
					`LogTag: 312`
					`CallRef:`
					`*r/end`
					`OK`

DialLocalEntry	Command used to dial a number from the locally stored directory.	**LocalEntryId**(r)**: <1..200>**
		Reference to the directory entry to be dialed.
			CallRef: <1..11>
			Reference to the call. To be used as reference when monitoring the call.
			LogTag: <1...>
			Unique reference to call. Identifies the call in the call log.
				As above	`xcommand diallocalentry localentryid:15`
					`*r Result (status=OK):`
					`CallRef: 1`
					`LogTag: 312`
					`*r/end`
					`OK`

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Command	Description	Parameters	Result parameters when OK	Result parameters when error	Example

DisconnectCall	Command used to disconnect a call.	**Call: <1..11>**
		Reference to the call to be disconnected. If this parameter is omitted, all active calls in the system will be disconnected.
			None	As above	`xcommand disconnectcall call:9`
					`*r Result (status=OK):`
					`*r/end`
					`OK`

DuoVideoStart	Command used to initiate DuoVideo/H.239 from the system.	**VideoSource: <1..6>**
		Specifies which video source to be used for the additional video stream. If this parameter is omitted, the system will use the default DuoVideo source configured for the system, ref. configuration DuoVideoSource
			None	As above	`xcommand duovideostart videosource:5`
					`*r Result (status=OK):`
					`*r/end`
					`OK`

DuoVideoStop	Command used to stop DuoVideo/H.239.	None	None	As above	`xcommand duovideostop`
					`*r Result (status=OK):`
					`*r/end`
					`OK`

DTMFSend	Command used to send DTMF tones to the far end.
	NOTE! The DTMF tones are also played back locally.
	NOTE! This command is also supported when the system is not in a call (the tones will only be played back locally).
		Value(r): <E164: 1, 1>
		The DTMF tone to send.
			None	As above	`xcommand dtmfsend value:5`
					`*r Result (status=OK):`
					`*r/end`
					`OK`

FECCFocus	Command used to change focus of a far end camera.	**Value(r): <+/->**
		Specifies whether to increase or decrease focus.
			None	As above	`xcommand feccfocus value:+`
					`*r Result (status=OK):`
					`*r/end`
					`OK`

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FECCMove — FeedbackDeregister

Command	Description	Parameters	Result parameters when OK	Result parameters when error	Example

FECCMove	Command used to issue a Far End Camera Control – Move command.	**Direction**(r)**: <Up/Down/Right/Left/In/Out/FocusIn/FocusOut>**
		Specifies the direction to move.
			None	As above	`xcommand feccmove direction:right`
					`*r Result (status=OK):`
					`*r/end`
					`OK`

FECCPresetActivate	Command used to activate a far end preset.	**Number**(r)**: <0..15>**
		The preset number to activate.
			None	As above	`xcommand feccpresetactivate number:4`
					`*r Result (status=OK):`
					`*r/end`
					`OK`

FECCPresetStore	Command used to store a far end preset.	**Number**(r)**: <0..15>**
		The preset number to store.
			None	As above	`xcommand feccpresetstore number:4`
					`*r Result (status=OK):`
					`*r/end`
					`OK`

FECCRequestStill	Command used to request a still image from a specific source on the far end side.	**Source**(r)**: <0..15>**
		The far end source to select.
			None	As above	`xcommand requeststill source:4`
					`*r Result (status=OK):`
					`*r/end`
					`OK`

FECCSelectSource	Command used to select a far end source.	**Source**(r)**: <0..15>**
		The far end source to select.
			None	As above	`xcommand feccselectsource source:4`
					`*r Result (status=OK):`
					`*r/end`
					`OK`

FeedbackDeregister	Command used to deregister XML feedback over HTTP(S).	**ID: <1..3>**
		ID for the registration to deregister.
			None	As above	`xcommand feedbackderegister id:1`
					`*r Result (status=OK):`
					`  ID: 2`
					`*r/end`
					`OK`

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FeedbackRegister — FloorRequest

Command	Description	Parameters	Result parameters when OK	Result parameters when error	Example

FeedbackRegister	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.
	
	The system supports issuing feedback to 3 different URLs.
	
	The system allows a total of 20 XPath expressions to be registered, with a maximum of 15 for a single URL.
		ID: <1..3>
		ID for the registration. If this parameter is omitted the system uses the first vacant ID.
		
		URL(r): <S: 0, 256>
		The URL to post feedback to.
		
		Expression.1..15: <S: 0, 256>
		XPath expression
			ID: <1..3>	As above	`xcommand feedbackregister url:http://10.47.14.185:8000`
					`expression.1:status/call`
					`expression.2:status/conference`
					`*r Result (status=OK):`
					`ID: 2`
					`*r/end`
					`OK`

FIPSMode	Command to activate and deactivate FIPS mode.	**Mode(r): <On/Off>**
		Denotes whether the video system is to be in FIPS mode or not.
			On: "Entering FIPS mode, restart required."
			
			Off: "Exiting FIPS mode, restart required."
			The codec wil restart.
				As above	`xcommand fipsmode:off`
					`*r Result (status=OK):`
					`*r/end`
					`OK`

FloorRelease	Command used to release floor in a MultiSite conference.	None	None	As above	`xcommand floorrelease`
					`*r Result (status=OK):`
					`*r/end`
					`OK`

FloorRequest	Command used to request floor in a MultiSite conference.	None	None	As above	`xcommand floorrequest`
					`*r Result (status=OK):`
					`*r/end`
					`OK`

Required parameters are identified by an (r) appended to the parameter name. The (r) appears in this table for your information only and shall not be included when writing the commands – see the column **Example** for an illustration of this. Empty lines in the examples provided may have been removed to save space in the tables.

Command	Description	Parameters	Result parameters when OK	Result parameters when error	Example

FloorToSite	Command used to assign floor to a specific site in a MultiSite conference supporting H.243.	**MCUID(r): <1..191>**
		MCUID to the MultiSite the site is connected to.
		TerminalID(r): <1..191>
		The site's terimnal id, referenced to the MultiSite it is connected to.
			None	As above	`xcommand floortosite mcuid:85 terminal-id:2`
					`*r Result (status=OK):`
					`*r/end`
					`OK`

FloorToSiteEnd	Command used to end the assignment of floor to a specific site in a MultiSite conference supporting H.243. Requires that the command FloorToSite has been issued in advance	None	None	As above	`xcommand floortositeend`
					`*r Result (status=OK):`
					`*r/end`
					`OK`

GroupEntryAdd	Command used to add a new Group entry to the locally stored Group Directory (or MultiSite Directory). The entry is stored in the first vacant position in the Group Directory.	**Name: <S: 0, 48>**
		The entry's name.
		LocalEntryId.1..10: <1..200>
		References to local entry ids to be included in this Group entry.
			GroupEntryId: <1..50>
			Reference to the Group Directory position the entry is stored.
				As above	`xcommand groupentryadd name:"My Group Entry" localentryid.1:1 localentryid.2:7 localentryid.3:9`
					`*r Result (status=OK):`
					`GroupEntryId: 17`
					`*r/end`
					`OK`

GroupEntryDelete	Command used to delete an entry in the locally stored Group Directory.	**GroupEntryId(r): <1..50>**
		Reference to the entry to delete.
			None	As above	`xcommand groupentrydelete groupentryid:30`
					`*r Result (status=OK):`
					`*r/end`
					`OK`

KeyDown	Command used to emulate pressing a key on the TANDBERG MXP remote control without releasing it. The KeyDown command should be followed by a KeyRelease command to emulate releasing the key.	**Key(r): <0/1/2/3/4/5/6/7/8/9/*/#/Connect/Disconnect/Up/Down/Right/Left/Selfview/Layout/Phonebook/Cancel/MicOff/Presentation/VolumeUp/VolumeDown/OK/ZoomIn/ZoomOut/Grab>**	None	As above	`xcommand keydown key: phonebook`
					`*r Result (status=OK):`
					`*r/end`
					`OK`

Required parameters are identified by an (r) appended to the parameter name. The (r) appears in this table for your information only and shall not be included when writing the commands – see the column **Example** for an illustration of this. Empty lines in the examples provided may have been removed to save space in the tables.

KeyRelease — KeyEnable

Command	Description	Parameters	Result parameters when OK	Result parameters when error	Example

KeyRelease	Command used to emulate release an already pressed key on the TANDBERG MXP remote control. The KeyRelease command should be preceded by a KeyDown command to emulate pressing the key.	**Key(r): <0/1/2/3/4/5/6/7/8/9/*/#/Connect/Disconnect/Up/Down/Right/Left/Selfview/Layout/Phonebook/Cancel/MicOff/Presentation/VolumeUp/VolumeDown/OK/ZoomIn/ZoomOut/Grab>**	None	As above	`xcommand keyrelease key: phonebook`
					`*r Result (status=OK):`
					`*r/end`
					`OK`

KeyPress	Command used to emulate pressing a key on the TANDBERG MXP remote control for a short while. This command needs no release command.	**Key(r): <0/1/2/3/4/5/6/7/8/9/*/#/Connect/Disconnect/Up/Down/Right/Left/Selfview/Layout/Phonebook/Cancel/MicOff/Presentation/VolumeUp/VolumeDown/OK/ZoomIn/ZoomOut/Grab>**	None	As above	`xcommand keypress key: phonebook`
					`*r Result (status=OK):`
					`*r/end`
					`OK`

KeyDisable	Command used to disable a key on the TANDBERG MXP remote control.	**Key(r): <0/1/2/3/4/5/6/7/8/9/*/#/Connect/Disconnect/Up/Down/Right/Left/Selfview/Layout/Phonebook/Cancel/MicOff/Presentation/VolumeUp/VolumeDown/OK/ZoomIn/ZoomOut/Grab>**	None	As above	`xcommand keydisable key: micoff`
					`*r Result (status=OK):`
					`*r/end`
					`OK`

KeyEnable	Command used to enable a key on the TANDBERG MXP remote control.	**Key(r): <0/1/2/3/4/5/6/7/8/9/*/#/Connect/Disconnect/Up/Down/Right/Left/Selfview/Layout/Phonebook/Cancel/MicOff/Presentation/VolumeUp/VolumeDown/OK/ZoomIn/ZoomOut/Grab>**	None	As above	`xcommand keyenable key: micoff`
					`*r Result (status=OK):`
					`*r/end`
					`OK`

Required parameters are identified by an (r) appended to the parameter name. The (r) appears in this table for your information only and shall not be included when writing the commands – see the column **Example** for an illustration of this. Empty lines in the examples provided may have been removed to save space in the tables.

Command	Description	Parameters	Result parameters when OK	Result parameters when error	Example

LocalEntryAdd	Command used to add a new entry to the Directory stored locally. The entry is stored in the first vacant position in the Directory.	**Name: <S: 0, 48>**
		The entry's name.
		Number: <S: 0, 60>
		The entry's number.
		SecondNumber: <S: 0, 60>
		The entry's second number (2XH221 number).
		SubAddress: <S: 0, 10>
		The entry's sub address.
		CallRate: <Tlph/1xh221/2xh221/64/128/192/256/320/384/512/768/1152/1472/1920/2560/3072/4096/H0/Max/Auto>
		The callrate to use when calling this entry.
		Restrict: <On/Off>
		Whether to use restrict or not when calling this entry.
		NetProfile: <1..7>
		The Net Profile to use when calling this entry.
			LocalEntryId: <1..200>
			Reference to the Directory position the entry is stored.
				As above	`xcommand localentryadd name:"John Galt" number:123`
					`*r Result (status=OK):`
					`LocalEntryId: 17`
					`*r/end`
					`OK`

LocalEntryDelete	Command used to delete an entry in the locally stored Directory.	**LocalEntryId(r): <1..200>**
		Reference to the entry to delete.
			None	As above	`xcommand localentrydelete localentryid:66`
					`*r Result (status=OK):`
					`*r/end`
					`OK`

MessageBoxDelete	Command used to delete a message box on the screen.	None	None	As above	`xcommand messageboxdelete`
					`*r Result (status=OK):`
					`*r/end`
					`OK`

Required parameters are identified by an (r) appended to the parameter name. The (r) appears in this table for your information only and shall not be included when writing the commands – see the column **Example** for an illustration of this. Empty lines in the examples provided may have been removed to save space in the tables.

MessageBoxDisplay — PresetActivate

Command	Description	Parameters	Result parameters when OK	Result parameters when error	Example

MessageBoxDisplay	Command used to add a graphical message box on the screen.	**Title(r): <S: 0, 40>**
		Message box title.
		Line.1..3: <S: 0, 40>
		Text to be displayed on the lines within the box.
		Key.1..3: <S: 0, 15>
		Text to be displayed on the keys
			None	As above	`xcommand messageboxdisplay title:Welcome line.1:"How are you?" key.1:Good key.2:Bad`
					`*r Result (status=OK):`
					`*r/end`
					`OK`

PIPHide	Command used to hide a PIP on a specific VirtualMonitor.	**VirtualMonitor(r): <1..4>**
		Addresses which VirtualMonitor to apply the command.
			None	As above	`xcommand piphide virtualmonitor:1`
					`*r Result (status=OK):`
					`*r/end`
					`OK`

PIPShow	Command used to display a specific picture in a PIP on a selected VirtualMonitor	**VirtualMonitor(r): <1..4>**
		Addresses which VirtualMonitor to apply the command.
		Picture(r): <LocalMain/LocalDuo/ RemoteMain/RemoteDuo/ JPEG/TandbergMonitor1/ TandbergMonitor2/None>
		Specifies which of the supported pictures to display in the PIP on the addressed VirtualMonitor.
		Call: <1..11>
		If RemoteMain or RemoteDuo is selected, this parameter must be supplied to select the correct remote call.
		Position: <BottomLeft/ BottomRight/TopLeft/TopRight>
		Specifies where to postion the PIP.
			None	As above	`xcommand pipshow virtualmonitor:1 picture:remoteduo call:5 postion:topright`
					`*r Result (status=OK):`
					`*r/end`
					`OK`

PresetActivate	Command used to activate a stored preset.	**Number(r): <0..14>**
		The preset to activate.
			None	As above	`xcommand presetactivate number:4`
					`*r Result (status=OK):`
					`*r/end`
					`OK`

Required parameters are identified by an (r) appended to the parameter name. The (r) appears in this table for your information only and shall not be included when writing the commands – see the column **Example** for an illustration of this. Empty lines in the examples provided may have been removed to save space in the tables.

PresetClear — ScreensaverActivate

Command	Description	Parameters	Result parameters when OK	Result parameters when error	Example

PresetClear	Command used to clear a preset previously stored.	**Number**(r): **<0..14>**
		The preset to clear.
			None	As above	`xcommand presetclear number:4`
					`*r Result (status=OK):`
					`*r/end`
					`OK`

PresetStore	Command used to store a preset.	**Number**(r): **<0..14>**
		The number where to store the preset.
			None	As above	`xcommand presetstore number:4`
					`*r Result (status=OK):`
					`*r/end`
					`OK`

ProfileActivate	Command to activate an existing user profile.	**Name**(r): **<S: 0, 16>**
		The name of the user profile to activate.
			None	As above	`xcommand profileactivate:profilename`
					`*r Result (status=OK):`
					`*r/end`
					`OK`

ProfileCreate	Configure the video system and use this command to create a new user profile.	**Name**(r): **<S: 0, 16>**
		The name of the user profile to create.
			None	As above	`xcommand profilecreate:profilename`
					`*r Result (status=OK):`
					`*r/end`
					`OK`

ProfileDelete	Command to delete an user profile.	**Name**(r): **<S: 0, 16>**
		The name of the user profile to delete.
			None	As above	`xcommand profiledelete:profilename`
					`*r Result (status=OK):`
					`*r/end`
					`OK`

ProfileList	Command to list user profiles.	None	None	As above	`xcommand profilelist`
					`*r Result (status=OK):`
					`  Available 1: "Office"`
					`  Available 2: "Home"`
					`*r/end`
					`OK`

ScreensaverActivate	Command used to activate screensaver.	None	None	As above	`xcommand screensaveractivate`
					`*r Result (status=OK):`
					`*r/end`
					`OK`

Required parameters are identified by an (r) appended to the parameter name. The (r) appears in this table for your information only and shall not be included when writing the commands – see the column **Example** for an illustration of this. Empty lines in the examples provided may have been removed to save space in the tables.

ScreensaverDeactivate — SiteViewEnd

Command	Description	Parameters	Result parameters when OK	Result parameters when error	Example

ScreensaverDeactivate	Command used to deactivate screensaver. NOTE: Warranty will be void if used with TANDBERG systems shipped with Plasma monitors.	None	None	As above	`xcommand screensaverdeactivate`
					`*r Result (status=OK):`
					`*r/end`
					`OK`

ScreensaverReset	Command used to reset the screensaver timer.	**Delay**(r)**: <1..480>**
		Specifies the screensaver delay in minutes.
			None	As above	`xcommand screensaverreset delay:90`
					`*r Result (status=OK):`
					`*r/end`
					`OK`

SiteDisconnect	Command used to disconnect a specific site from a MultiSite conference supporting H.243.	**MCUID**(r)**: <1..191>**
		MCUID to the MultiSite the site is connected to.
		TerminalID(r)**: <1..191>**
		The site's terimnal id, referenced to the MultiSite it is connected to.
			None	As above	`xcommand sitedisconnect mcuid:85 termi-`
					`nalid:2`
					`*r Result (status=OK):`
					`*r/end`
					`OK`

SiteView	Command used to request view of a specific site in a MultiSite conference supporting H.243.	**MCUID**(r)**: <1..191>**
		MCUID to the MultiSite the site is connected to.
		TerminalID(r)**: <1..191>**
		The site's terimnal id, referenced to the MultiSite it is connected to.
			None	As above	`xcommand siteview mcuid:85 terminalid:2`
					`*r Result (status=OK):`
					`*r/end`
					`OK`

SiteViewEnd	Command used to end viewing of a specific site in a MultiSite conference supporting H.243. Requires that the SiteView command has been issued in advance.	None	None	As above	`xcommand siteviewend`
					`*r Result (status=OK):`
					`*r/end`
					`OK`

Required parameters are identified by an (r) appended to the parameter name. The (r) appears in this table for your information only and shall not be included when writing the commands – see the column **Example** for an illustration of this. Empty lines in the examples provided may have been removed to save space in the tables.

SPIDAutoConfigure — TextDisplay

Command	Description	Parameters	Result parameters when OK	Result parameters when error	Example

SPIDAutoConfigure	Command used to initiate automatic configuration of SPIDs.	None	None	As above	`xcommand spidautoconfigure`
					`*r Result (status=OK):`
					`*r/end`
					`OK`

StillImageSend	Command used to send a still image.	**VideoSource: <1..6>**
		Specifies from which video source to send a still image. If this parameter is omitted, the system will use the default still image source configured for the system.
			None	As above	`xcommand stillimagesend videosource:5`
					`*r Result (status=OK):`
					`*r/end`
					`OK`

StreamingStart	Command used to start streaming from the system.	None	None	As above	`xcommand streamingstart`
					`*r Result (status=OK):`
					`*r/end`
					`OK`

StreamingStop	Command used to stop streaming from the system.	None	None	As above	`xcommand streamingstop`
					`*r Result (status=OK):`
					`*r/end`
					`OK`

TextDelete	Command used to delete a text line added by the TextDisplay command.	**Layer(r): <1..3>**
		The layer to delete.
			None	As above	`xcommand textdelete layer:1`
					`*r Result (status=OK):`
					`*r/end`
					`OK`

TextDisplay	Command used add a text line on screen.	**Layer(r): <1..3>**
		Defines the lines position.
		Text: <S: 0, 38>
		The text to display.
		TimeOut: <0..999>
		Sets the timeout value for the text line.
			None	As above	`xcommand textdisplay layer:1 text:TAND-`
					`BERG timeout:100`
					`*r Result (status=OK):`
					`*r/end`
					`OK`

Required parameters are identified by an (r) appended to the parameter name. The (r) appears in this table for your information only and shall not be included when writing the commands – see the column **Example** for an illustration of this. Empty lines in the examples provided may have been removed to save space in the tables.

VirtualMonitorReset — VirtualMonitorSet

Command	Description	Parameters	Result parameters when OK	Result parameters when error	Example

VirtualMonitorReset	Command used to reset a VirtualMonitor. By resetting a VirtualMonitor the system itself retakes control over what to be displayed on the VirtualMonitor.	**VirtualMonitor(r): <1..4>**
		Addresses which VirtualMonitor to apply the command.
			None	As above	`xcommand virtualmonitorreset virtual-monitor:2`
					`*r Result (status=OK):`
					`*r/end`
					`OK`

VirtualMonitorSet	Command used to instruct the system to display a specific picture on a specific VirtualMonitor. A VirtualMonitor can be displayed on one or more of the local video outputs (which VirtualMonitor a specific video output is to display is configurable).
	
	When this command is issued for a specific VirtualMonitor the picture displayed on this monitor will not change until the VirtualMonitor is reset or set to display another picture.
		VirtualMonitor(r): <1..4>
		Addresses the VirtualMonitor to which the command is to be applied.
		
		Picture(r): <LocalMain/LocalDuo/ Still/RemoteMain/RemoteDuo/ JPEG/TandbergMonitor1/ TandbergMonitor2/ PictureProgram1/PictureProgram2/ PictureProgram3/ PictureProgram4/None>
		Specifies which of the supported pictures to display on the addressed VirtualMonitor.
		
		Call: <1..11>
		If *RemoteMain* or *RemoteDuo* is selected, this parameter must be supplied to select the correct remote call.
			None	As above	`xcommand virtualmonitorset virtualmoni-tor:2 picture:still`
					`*r Result (status=OK):`
					`*r/end`
					`OK`

Required parameters are identified by an (r) appended to the parameter name. The (r) appears in this table for your information only and shall not be included when writing the commands – see the column **Example** for an illustration of this. Empty lines in the examples provided may have been removed to save space in the tables.

Status Information Tables

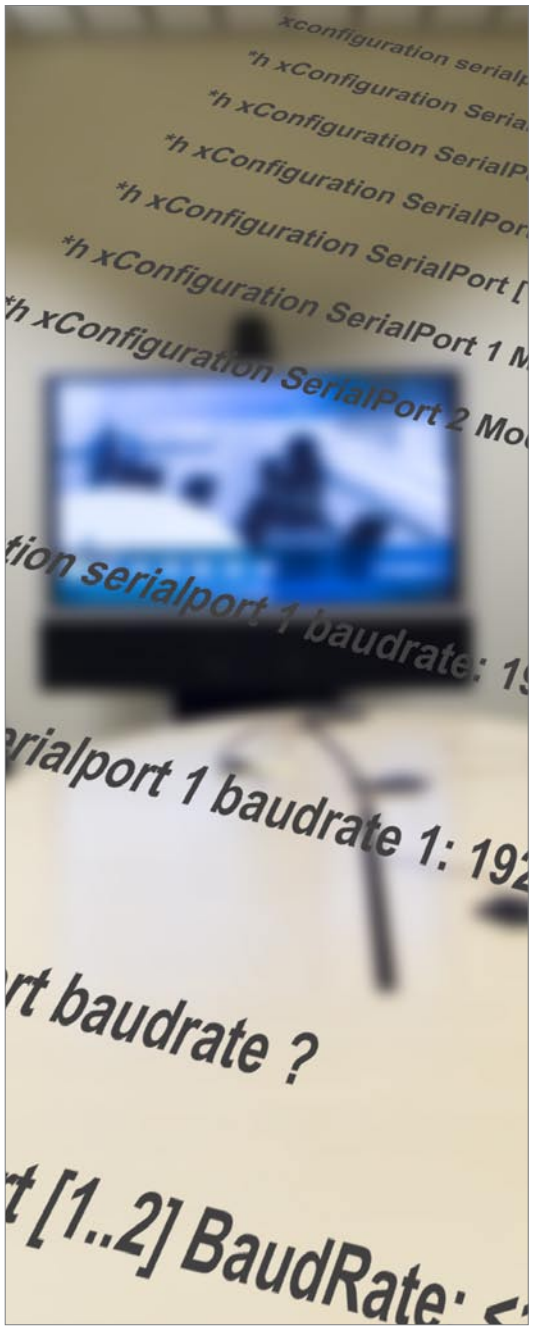
We recommend that you check out the TANDBERG web site regularly for updated versions of this manual:

http://www.tandberg.com/docs

This part of the manual describes the Status information available.

There are three types of status information available:

- xstatus / status.xml
- xhistory / history.xml
- xevent / event.xml



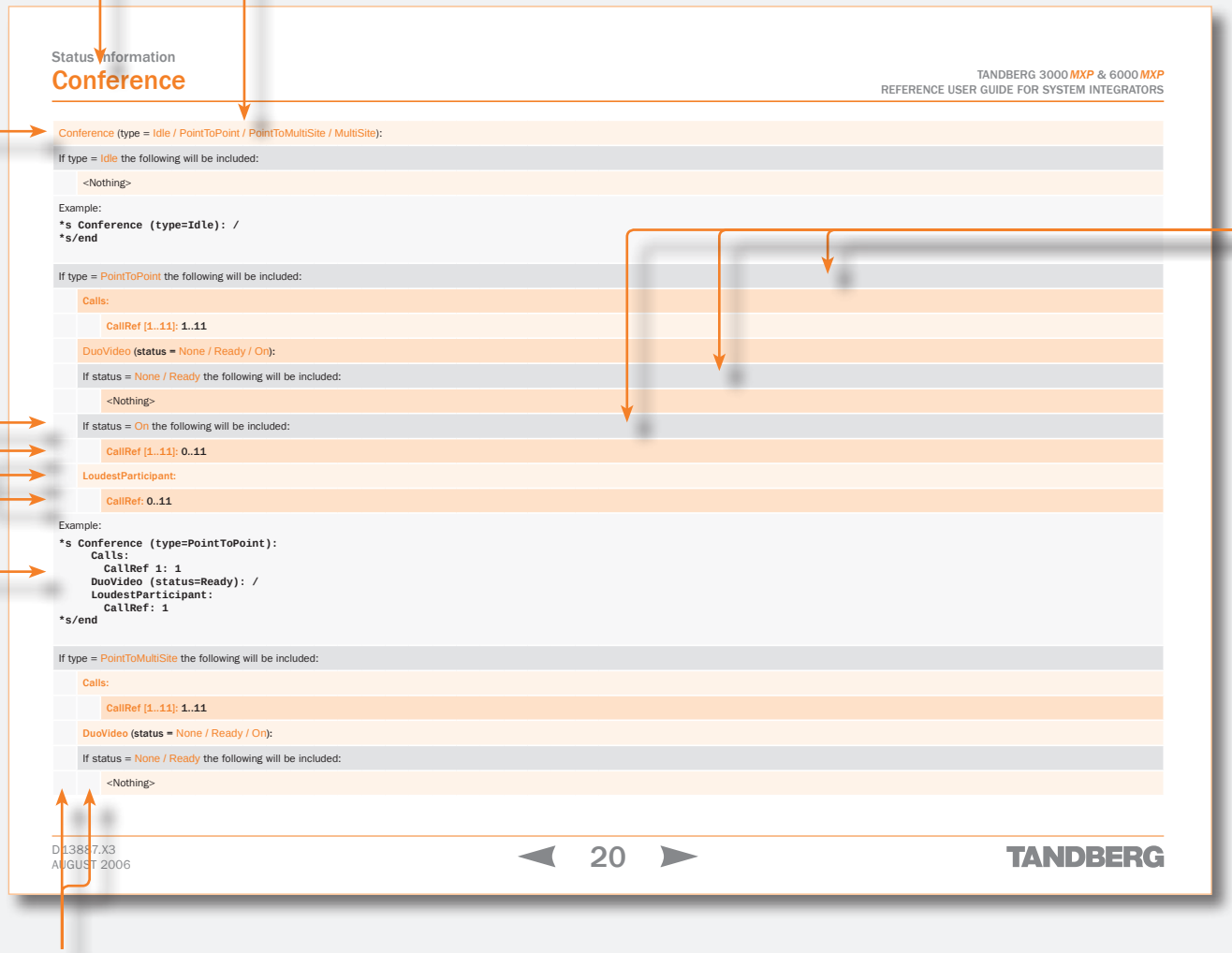
The status element listed on this page

The / means logical OR.

The status element listing starts here

This condition causes this to appear

Example showing status of a real case.



Status Information
Conference

TANDBERG 3000 MXP & 6000 MXP
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Conference (type = Idle / PointToPoint / PointToMultiSite / MultiSite):

If type = Idle the following will be included:

<Nothing>

Example:

```
*s Conference (type=Idle): /
*s/end
```

If type = PointToPoint the following will be included:

Calls:

CallRef [1..11]: 1..11

DuoVideo (status = None / Ready / On):

If status = None / Ready the following will be included:

<Nothing>

If status = On the following will be included:

CallRef [1..11]: 0..11

LoudestParticipant:

CallRef: 0..11

Example:

```
*s Conference (type=PointToPoint):
    Calls:
      CallRef 1: 1
    DuoVideo (status=Ready): /
    LoudestParticipant:
      CallRef: 1
*s/end
```

If type = PointToMultiSite the following will be included:

Calls:

CallRef [1..11]: 1..11

DuoVideo (status = None / Ready / On):

If status = None / Ready the following will be included:

<Nothing>

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Which status elements to show in a given situation is context dependent. The context is reflected in the attribute values. Certain conditions will cause some status elements to be shown, while other conditions will produce other status elements. The conditions are always shown on grey background and start with an If statement.

Indenting is used to keep track of the levels. In the tables one light grey square is used per level.

TIP! For easy line-by-line parser, use the complete path formatter, described in XACLI – Status-type commands – complete path formatting

Audio

- Audio
  - AudioModule: None / NAMI / NAMII / Digital NAM / mDNAM
  - Inputs
    - Microphone [1..3]:
      - Active: True / False
    - Line [1..3]:
      - Active: True / False

Example:

```
*s Audio:
     AudioModule: None
     Inputs:
       Microphone 1:
         Active: True
       Microphone 2:
         Active: False
       Microphone 3:
         Active: False
       Line 1:
         Active: False
       Line 2:
         Active: False
       Line 3:
         Active: False
*s/end
```

BRI [1..6] (ready= Unknown / True / False)
If ready = Unknown / True, the following will be included:
Channel [1..2] (**type =** BChannel , status=Idle / Calling / Answering / Proceeding / Connect / Disconnecting / Disconnected)
If type = Bchannel and status=Idle, the following will be included:
<Nothing>
If type = Bchannel and status = Calling / Answering / Proceeding / Connect the following will be included:
CallingNumber:
ConnectionTime:
If type = Bchannel and status = Disconnecting / Disconnected the following will be included:
CallingNumber:
CauseLocation:
ChannelCause:
ConnectionTime:
If ready = False the following will be included:
Layer1Alarm: <NA>
Layer2Alarm: <NA>
Example – see overleaf.

Example:

```
*s BRI 1 (ready=True):
     Channel 1 (type=BChannel, status=Idle): /
     Channel 2 (type=BChannel, status=Disconnected):
       CallingNumber: "8770"
       CauseLocation: 0
       ChannelCause: 41
       ConnectionTime: 258
*s/end

*s BRI 2 (ready=True):
     Channel 1 (type=BChannel, status=Connect):
       CallingNumber: "8770"
       ConnectionTime: 346
     Channel 2 (type=BChannel, status=Connect):
       CallingNumber: "8770"
       ConnectionTime: 346
*s/end

*s BRI 3 (ready=True):
     Channel 1 (type=BChannel, status=Connect):
       CallingNumber: "8770"
       ConnectionTime: 345
     Channel 2 (type=BChannel, status=Connect):
       CallingNumber: "8770"
       ConnectionTime: 345
*s/end
```

Status information followed by a * will not be shown unless Detailed Level has been set to 2 – see XACLI – Special commands – xpreferences

Call

Call [1..10] (status=Disconnected / CallIDLE / Dialing / Alerting / Proceeding / EstablOut / EstablIn / AwaitInCnf / Connected / Disconnecting / Await2ndnr / ClearOut / ClearIn / Syncing / Capex / Synced / Unframed,
type = NA / Tlph / Vtlph,
protocol = NA / ISDN / H320 / H323 / SIP,
direction = NA / Incoming / Outgoing,
logTag = 1..x)

If status = Disconnected
and type = NA
and protocol = NA
and direction = NA
and logtag = x
the following will be included:

- **Cause:**

If status = Dialing / Alerting / Proceeding / EstablOut / EstablIn / AwaitInCnf / Connected / Disconnecting / Await2ndnr / ClearOut / ClearIn / Syncing / Capex / Synced / Unframed
and type = Tlph
and protocol = ISDN
and direction = Incoming / Outgoing
and logTag = x
the following will be included:

- **CallRate:** 64
- **RemoteNumber [1..2]:**
- **RemoteSubAddress:**
- **IncomingNumber:** — Appears for incoming calls only
- **IncomingSubAddress:**
- **Mute:** On/Off
- **Microphone:** On/Off
- **Duration:** 0...
- **MuteOutgoing:** On/Off
- **Channels [1..2]** (**type =** Incoming / Outgoing):

If type = incoming / outgoing the following will be included:

- **Rate:** 64
- **Restrict:** On/Off
- **Audio** (**status =** Active / Inactive):

Status information followed by a * will not be shown unless Detailed Level has been set to 2 – see XACLI – Special commands – xpreferences

If status = Inactive the following will be included	
<Nothing>	
If status = Active the following will be included	
Protocol: **G711 / G722 / G722.1 / G728 / AAC-LD**	
Rate: **16...**	

Example:

```
*s Call 1 (status=Synced, type=Tlph, protocol=ISDN, direction=Incoming, logTag=5944):
     CallRate: 64
     RemoteNumber 1: "8733"
     RemoteNumber 2: ""
     RemoteSubAddress: ""
     IncomingNumber: "8770"
     IncomingSubAddress: ""
     Mute: Off
     Microphone: On
     Duration: 127
     MuteOutgoing: Off
     Channels 1 (type=Incoming):
       Rate: 64
       Restrict: Off
       Audio (status=Active):
         Protocol: G711
         Rate: 64
     Channels 2 (type=Outgoing):
       Rate: 64
       Restrict: Off
       Audio (status=Active):
         Protocol: G711
         Rate: 64
*s/end
```

If status = Dialing / Alerting / Proceeding / EstablOut / EstablIn / AwaitInCnf / Connected / Disconnecting / Await2ndnr / ClearOut / ClearIn / Syncing / Capex / Synced / Unframed
and type = Vtlph
and protocol = H320
and direction = Incoming / Outgoing
and logTag = x
the following will be included:

- **CallRate:** 64/128/../4096
- **RemoteNumber [1..2]:**
- **RemoteSubAddress:**
- **IncomingNumber:**
- **IncomingSubAddress:**

  Appears for incoming calls only
- **Mute:** On / Off
- **Microphone:** On / Off
- **Duration:** 0...
- **MuteOutgoing:** On / Off
- Channels [1..2] **(type =** Incoming / Outgoing**):**

  If type = Incoming / Outgoing the following will be included:
  - **Rate:** 64 / .. / 4096
  - **Restrict:** On / Off
  - Encryption **(status =** Off / Negotiate / On**):**

    If status = Off / Negotiate the following will be included:
    - <Nothing>

    If status = On the following will be included:
    - **Type:** DES / AES-128
    - **CheckCode:**
  - Audio **(status =** Active / Inactive**):**

    If status = Inactive the following will be included:
    - <Nothing>

    If status = Active the following will be included:

Status information followed by a * will not be shown unless Detailed Level has been set to 2 – see XACLI – Special commands – xpreferences

			Protocol: **G711 / G722 / G722.1 / G728 /AAC-LD**
			Rate:
		Video [1..2] (**status =** Active / Inactive):	
		If status = Inactive the following will be included:	
			<Nothing>
		If status = Active the following will be included:	
			Protocol: **H261 / H263 / H263+ / H264**
			Resolution: **QCIF / SQCIF / CIF / 2CIF / 4CIF / ICIF / SIF / 4SIF /ISIF /VGA / SVGA / XGA / QVGA / 448p / 400p / w288p / w448p / w576p / w720p**
			Rate:
		Data (**status =** Active / Inactive):	
		If status = Inactive the following will be included:	
			<Nothing>
		If status = Active the following will be included:	
			Type: **LSD / MLP**
			Protocol: **FECC**
			Rate:

Example (see previous page for the status information applicable):

```
*s Call 1 (status=Synced, type=Vtlph, protocol=H320, direction=Outgoing, logTag=3):
     CallRate: 384
     Bonding: On
     RemoteNumber 1: "8776"
     RemoteNumber 2: ""
     RemoteSubAddress: ""
     Mute: Off
     Microphone: On
     Duration: 32
     MuteOutgoing: Off
     Channels 1 (type=Incoming):
       Rate: 384
       Restrict: Off
       Encryption (status=On):
         Type: AES-128
         CheckCode: "BA8C78DAD933C3DD"
       Audio (status=Active):
         Protocol: AAC-LD
         Rate: 64
       Video 1 (status=Active):
         Protocol: H264
         Resolution: 2.5SIF
         Rate: 317
       Video 2 (status=Inactive): /
       Data (status=Inactive): /
     Channels 2 (type=Outgoing):
       Rate: 384
       Restrict: Off
       Encryption (status=On):
         Type: AES-128
         CheckCode: "BA8C78DAD933C3DD"
       Audio (status=Active):
         Protocol: AAC-LD
         Rate: 64
       Video 1 (status=Active):
         Protocol: H264
         Resolution: 4CIF
         Rate: 317
       Video 2 (status=Inactive): /
       Data (status=Inactive): /
*s/end
```

Status information followed by a * will not be shown unless Detailed Level has been set to 2 – see XACLI – Special commands – xpreferences

If status = Dialing / Alerting / Proceeding / EstablOut / EstablIn / AwaitInCnf / Connected / Disconnecting / Await2ndnr / ClearOut / ClearIn / Syncing / Capex / Synced / Unframed
and type = Tlph
and protocol = H323 / SIP
and direction = Incoming / Outgoing
and logTag = x
the following will be included:

- **CallRate:** 64
- **RemoteNumber:**
- **RemoteSubAddress:**
- **IncomingNumber:**
- **IncomingSubAddress:**

  Appears for incoming calls only
- **Mute:** On / Off
- **Microphone:** On / Off
- **Duration:** 0...
- **MuteOutgoing:** On / Off
- Channels [1..2] (**type =** Incoming / Outgoing):
  - If type = Incoming / Outgoing the following will be included:
    - **Rate:** 64 / .. / 4096
    - **Restrict:** On / Off
    - Encryption (**status =** Off / Negotiate / On):
      - If status = Off / Negotiate the following will be included:
        - <Nothing>
      - If status = On the following will be included:
        - **Type:** DES / AES-128
    - **RSVP*:** On/Off
    - **RSVPRate*:**
    - **DynamicRate*:**
    - **TotalPackets*:**
    - **PacketLoss*:**
    - **Jitter*:**

Status information followed by a * will not be shown unless Detailed Level has been set to 2 – see XACLI – Special commands – xpreferences

PacketsDropped*:	Appears with incoming calls only

Example:

```
*s Call 1 (status=Synced, type=Tlph, protocol=H323, direction=Incoming, logTag=5):
     CallRate: 64
     RemoteNumber: "5020019"
     IncomingNumber: "5020059"
     IncomingSubAddress: ""
     Mute: Off
     Microphone: On
     Duration: 16
     MuteOutgoing: Off
     Channels 1 (type=Incoming):
       Rate: 64
       Restrict: Off
       Encryption (status=On):
         Type: AES-128
         CheckCode: "E2957C90C5DF0649"
       Audio (status=Active):
         Protocol: G711
         Rate: 64
         RemoteIPAddress: ""
         LocalIPAddress: "10.47.20.59:2334"
         Encryption (status=On):
           Type: AES-128
         RSVP: Off
         RSVPRate: 0
         DynamicRate: 64
         TotalPackets: 725
         PacketLoss: 0
         Jitter: 0
         PacketsDropped: 0
       Data (status=Inactive): /
     Channels 2 (type=Outgoing):
       Rate: 64
       Restrict: Off
       Encryption (status=On):
         Type: AES-128
         CheckCode: "E2957C90C5DF0649"
       Audio (status=Active):
         Protocol: G711
         Rate: 64
         RemoteIPAddress: "10.47.20.19:2334"
         LocalIPAddress: "10.47.20.59:2334"
         Encryption (status=On):
           Type: AES-128
         RSVP: Off
         RSVPRate: 0
         DynamicRate: 64
         TotalPackets: 725
         PacketLoss: 0
         Jitter: 0
       Data (status=Inactive): /
*s/end
```

Status information followed by a * will not be shown unless Detailed Level has been set to 2 – see XACLI – Special commands – xpreferences

If status = Dialing / Alerting / Proceeding / EstablOut / EstablIn / AwaitInCnf / Connected / Disconnecting / Await2ndnr / ClearOut / ClearIn / Syncing / Capex / Synced / Unframed
and type = Vtlph
and protocol = H323 / SIP
and direction = Incoming / Outgoing
and logTag = x
the following will be included:

- **CallRate:** 64 / 128 / .. / 4096
- **RemoteNumber:**
- **RemoteSubAddress:**
- **IncomingNumber:** / **IncomingSubAddress:** — Appears for incoming calls only
- **Mute:** On / Off
- **Microphone:** On / Off
- **Duration:** 0...
- **MuteOutgoing:** On / Off
- Channels [1..2] (**type =** Incoming / Outgoing):
  - If type = Incoming / Outgoing the following will be included:
    - **Rate:** 64 / .. / 4096
    - **Restrict:** On / Off
    - Encryption (**status =** Off / Negotiate / On):
      - If status = Off / Negotiate the following will be included:
        - <Nothing>
      - If status = On the following will be included:
        - **Type:** DES / AES-128
        - **CheckCode:**
    - Audio (**status =** Active / Inactive):
      - If status = Inactive the following will be included:
        - <Nothing>

Status information followed by a * will not be shown unless Detailed Level has been set to 2 – see XACLI – Special commands – xpreferences

If status = Active the following will be included:

- Protocol: **G711 / G722 / G722.1 / G728 / AAC-LD**
- Rate:
- RemoteIPAddress*:
- LocalIPAddress*:
- Encryption* (**status =** On / Off)
- If status = Off the following will be included:
  - <Nothing>
- If status = On the following will be included:
  - Type: **DES / AES-128**
- RSVP*: **On / Off**
- DynamicRate*:
- TotalPackets*:
- PacketLoss*:
- Jitter*:
- PacketsDropped*: Appears for incoming calls only

Video [1..2] (**status =** Active / Inactive):

If status = Inactive the following will be included:

- <Nothing>

If status = Active the following will be included:

- Protocol: **H261 / H263 /H263+ / H264**
- Resolution: **QCIF / SQCIF / CIF / 2CIF / 4CIF / ICIF / SIF / 4SIF /ISIF /VGA / SVGA / XGA / QVGA / 448p / 400p / w288p / w448p / w576p / w720p**
- Rate:
- RemoteIPAddress*:
- LocalIPAddress*:
- Encryption* (**status =** On / Off)
- If status = Off the following will be included:
  - <Nothing>

Status information followed by a * will not be shown unless Detailed Level has been set to 2 – see XACLI – Special commands – xpreferences

If status = On the following will be included:	
Type: **DES / AES-128**	
RSVP*: **On / Off**	
DynamicRate*:	
TotalPackets*:	
PacketLoss*:	
Jitter*:	
PacketsDropped*:	Appears for incoming calls only
Data (**status =** Active / Inactive):	
If status = Inactive the following will be included:	
<Nothing>	
If status = Active the following will be included:	
Type: **LSD/MLP**	
Protocol: **FECC**	
Rate:	
RemoteIPAddress*:	
LocalIPAddress*:	
Encryption* (**status =** On / Off)	
If status = Off the following will be included:	
<Nothing>	
If status = On the following will be included:	
Type: **DES / AES-128**	
RSVP*: **On / Off**	
DynamicRate*:	
TotalPackets*:	
PacketLoss*:	
Jitter*:	
PacketsDropped*:	Appears for incoming calls only

Status information followed by a * will not be shown unless Detailed Level has been set to 2 – see XACLI – Special commands – xpreferences

Example:

```
*s Call 1 (status=Synced, type=Vtlph, protocol=H323, direction=Incoming, logTag=6):
     CallRate: 768
     RemoteNumber: "5020019"
     IncomingNumber: "5020059"
     IncomingSubAddress: ""
     Mute: Off
     Microphone: On
     Duration: 10
     MuteOutgoing: Off
     Channels 1 (type=Incoming):
       Rate: 768
       Restrict: Off
       Encryption (status=On):
         Type: AES-128
         CheckCode: "C442803A9A470B7F"
       Audio (status=Active):
         Protocol: AAC-LD
         Rate: 64
         RemoteIPAddress: ""
         LocalIPAddress: "10.47.20.59:2334"
         Encryption (status=On):
           Type: AES-128
         RSVP: Off
         RSVPRate: 0
         DynamicRate: 64
         TotalPackets: 474
         PacketLoss: 0
         Jitter: 1
         PacketsDropped: 0
       Video 1 (status=Active):
         Protocol: H264
         Resolution: Off
         Rate: 704
         RemoteIPAddress: ""
         LocalIPAddress: "10.47.20.59:2336"
         Encryption (status=On):
           Type: AES-128
         RSVP: Off
         RSVPRate: 0
         DynamicRate: 677
```

Status information followed by a * will not be shown unless Detailed Level has been set to 2 – see XACLI – Special commands – xpreferences

```
        TotalPackets: 817
        PacketLoss: 0
        Jitter: 0
        PacketsDropped: 0
      Video 2 (status=Inactive): /
      Data (status=Inactive): /
    Channels 2 (type=Outgoing):
      Rate: 768
      Restrict: Off
      Encryption (status=On):
        Type: AES-128
        CheckCode: "C442803A9A470B7F"
      Audio (status=Active):
        Protocol: AAC-LD
        Rate: 64
        RemoteIPAddress: "10.47.20.19:2334"
        LocalIPAddress: "10.47.20.59:2334"
        Encryption (status=On):
          Type: AES-128
        RSVP: Off
        RSVPRate: 0
        DynamicRate: 63
        TotalPackets: 475
        PacketLoss: 0
        Jitter: 2
            Video 1 (status=Active):
        Protocol: H264
        Resolution: 2.5SIF
        Rate: 704
        RemoteIPAddress: "10.47.20.19:2336"
        LocalIPAddress: "10.47.20.59:2336"
        Encryption (status=On):
          Type: AES-128
        RSVP: Off
        RSVPRate: 0
        DynamicRate: 701
        TotalPackets: 936
        PacketLoss: 0
        Jitter: 6
      Video 2 (status=Inactive): /
      Data (status=Inactive): /
*s/end
```

Status information followed by a * will not be shown unless Detailed Level has been set to 2 – see XACLI – Special commands – xpreferences

Camera

Camera [1..13] (connected = True / False):
Type:
ID:
Pan:
Tilt:
Zoom:
Focus:

Example:

```
*s Camera 1 (connected=True):
     Type: WaveII
     ID: "0c0e0006"
     SoftwareID: ""
     Pan: 647
     Tilt: 172
     Zoom: 0
     Focus: 27501
*s/end
```

Status information followed by a * will not be shown unless Detailed Level has been set to 2 – see XACLI – Special commands – xpreferences

CameraSWUpgrade

CameraSWUpgrade (status = N/A):

Example:

```
*s CameraSwUpgrade (status=NA): /
*s/end
```

CameraTracking

CameraTracking (status = On / Off):

If status = On / Off the following will be included:

<Nothing>

Example:

```
*s CameraTracking (status=Off): /
*s/end

*s CameraTracking (status=On): /
*s/end
```

Conference

Conference (type = Idle / PointToPoint / PointToMultiSite / MultiSite):

If type = Idle the following will be included:

<Nothing>

Example:

```
*s Conference (type=Idle): /
*s/end
```

If type = PointToPoint the following will be included:

Calls:

CallRef [1..11]: **1..11**

DuoVideo (**status =** None / Ready / On):

If status = None / Ready the following will be included:

<Nothing>

If status = On the following will be included:

CallRef [1..11]: **0..11**

LoudestParticipant:

CallRef: **0..11**

Example:

```
*s Conference (type=PointToPoint):
     Calls:
       CallRef 1: 1
     DuoVideo (status=Ready): /
     LoudestParticipant:
       CallRef: 1
*s/end
```

If type = PointToMultiSite the following will be included:

Calls:

CallRef [1..11]: **1..11**

DuoVideo (**status =** None / Ready / On):

If status = None / Ready the following will be included:

<Nothing>

Status information followed by a * will not be shown unless Detailed Level has been set to 2 – see XACLI – Special commands – xpreferences

Conference *cont...*

If status = On the following will be included:

- CallRef [1..11]: **0..11**

LoudestParticipant:

- CallRef: **0..11**

NumberOfSites: **1..191**

MCUSiteList:

- Site [1..191]:
  - MCUID:
  - TerminalID:
  - Name:
  - CallRef:
- LocalSite:
  - Self:
    - MCUID:
    - TerminalID:
  - OnAir: **On / Off**
  - Floor: **On / Off**
  - Chair: **UnSupported**
  - View:
    - MCUID:
    - TerminalID:

Status information followed by a * will not be shown unless Detailed Level has been set to 2 – see XACLI – Special commands – xpreferences

Example:

```
*s Conference (type=PointToMultisite):
     Calls:
       CallRef 1: 1
     DuoVideo (status=None): /
     LoudestParticipant:
       CallRef: 1
     NumberOfSites: 3
MCUSiteList:
       Site 1:
         MCUID: 85
         TerminalID: 3
         Name: "Boardroom1"
         CallRef: 1
       Site 2:
         MCUID: 85
         TerminalID: 1
         Name: "Boardroom2"
         CallRef: None
       Site 3:
         MCUID: 85
         TerminalID: 2
         Name: "Boardroom3"
         CallRef: None
     LocalSite:
       Self:
         MCUID: 85
         TerminalID: 3
       OnAir: On
       Floor: Off
       Chair: UnSupported
       View:
         MCUID: 0
         TerminalID: 0
*s/end
```

If type = MultiSite the following will be included:

- Calls:
  - CallRef [1..11]: **1..11**
- DuoVideo (**status =** None / Ready / On):
  - If status = None / Ready the following will be included:
    - <Nothing>
  - If status = On the following will be included:
    - CallRef [1..11]: **0..11**
- LoudestParticipant:

Status information followed by a * will not be shown unless Detailed Level has been set to 2 – see XACLI – Special commands – xpreferences

- CallRef: 0..11
- Floor: None / FloorRequest / FloorAssign
- Current:
  - CallRef: 0..11
- Previous:
  - CallRef: 0..11
- OutgoingPicture [1..3] (name = Current / Previous / Duo):
- If name = Current / Previous / Duo the following will be included:
  - Layout (type = Full / 4Split / 5+1Split):
    - Window [1..6]:
      - Picture: LocalMain / RemoteMain
      - CallRef: 0..11
- MCUID: 1..
- CascadingMode: StandAlone / Master / Slave
- NumberOfSites: 1..191
- MCUSiteList:
  - Site [1..191]:
    - MCUID:
    - TerminalID:
    - Name:
    - CallRef:
- LocalSite:
  - Self:
    - MCUID:
    - TerminalID:
  - OnAir: On/Off
  - Floor: On/Off
  - Chair: UnSupported

Status information followed by a * will not be shown unless Detailed Level has been set to 2 – see XACLI – Special commands – xpreferences

View:

MCUID: 1..

TerminalID: 1..

Example

```
*s Conference (type=Multisite):
     Calls:
       CallRef 1: 1
       CallRef 2: 2
     DuoVideo (status=Ready): /
     LoudestParticipant:
       CallRef: 2
     Floor: None
     Current:
       CallRef: 2
     Previous:
       CallRef: 1
     OutgoingPicture 1 (name=Current):
       Layout (type=Full):
         Window 1:
           Picture: RemoteMain
           CallRef: 2
     OutgoingPicture 2 (name=Previous):
       Layout (type=Full):
         Window 1:
           Picture: RemoteMain
           CallRef: 1
     OutgoingPicture 3 (name=Duo):
       Layout (type=NA): /
     MCUID: 1
     CascadingMode: StandAlone
     NumberOfSites: 3
     MCUSiteList:
       Site 1:
         MCUID: 1
         TerminalID: 2
         Name: "john.doe"
         CallRef: 1
       Site 2:
         MCUID: 1
         TerminalID: 3
```

Continues overleaf...

Continued from the previous page:

```
          Name: "john.doe.150"
          CallRef: 2
        Site 3:
          MCUID: 1
          TerminalID: 4
          Name: "john.doe.mxp"
          CallRef: 0
      LocalSite:
        Self:
          MCUID: 1
          TerminalID: 4
        OnAir: Off
        Floor: Off
        Chair: UnSupported
        View:
          MCUID: 1
          TerminalID: 3
*s/end
```

Status information followed by a * will not be shown unless Detailed Level has been set to 2 – see XACLI – Special commands – xpreferences

Ethernet

Ethernet:	
	MacAddress:
	Speed: 10half / 10full / 100half / 100full

Example:

```
*s Ethernet:
     MacAddress: "00:50:60:01:85:F1"
     Speed: 100full
*s/end
```

Status information followed by a * will not be shown unless Detailed Level has been set to 2 – see XACLI – Special commands – xpreferences

ExternalManager

ExternalManager:
Address:
Protocol: HTTP / HTTPS
URL:

Example:

```
*s ExternalManager:
     Address: "10.47.6.75"
     Protocol: HTTP
     URL: "tms/public/external/management/SystemManagementService.asmx"
*s/end
```

ExternalNetwork

ExternalNetwork (ready = True / False):

If ready = False the following will be included:

<Nothing>

If ready = True the following will be included:

ExternalClockRate:

Channel (**status =** Idle / Calling / Answering / Proceeding / Connect / Disconnecting / Disconnected)

If status = Idle the following will be included:

<Nothing>

If status = Calling / Answering / Proceeding / Connect the following will be included:

CallingNumber:

ConnectionTime:

If status = Disconnecting / Disconnected the following will be included:

CallingNumber:

CauseLocation:

ChannelCause:

ConnectionTime:

FarEndInformation

FarEndInformation:

- FECC (**status =** On / Off)
- If status = Off the following will be included:
  - <Nothing>
  - **T140:** Off
  - **SString:** Off

Example:

```
*s FarEndInformation:
     FECC (status=Off): /
     T140: Off
     SString: Off
*s/end
```

- If status = On the following will be included:
  - **NumberOfPresets:** x
  - **NumberOfSources:** x
  - Source [1..x]:
    - **Name:**
    - **Capabilities:** “ptzfms”
  - **CurrentSource:**
  - **BroadcastSwitch:** On / Off
  - **T140:** On/Off
  - **Sstring:** On/Off

Status information followed by a * will not be shown unless Detailed Level has been set to 2 – see XACLI – Special commands – xpreferences

FarEndInformation *cont...*

Example:

```
*s FarEndInformation:
     FECC (status=On):
       NumberOfPresets: 15
       NumberOfSources: 5
       Source 1:
         Name: "main cam"
         Capabilities: "ptzfms"
       Source 2:
         Name: "aux"
         Capabilities: "ms"
       Source 3:
         Name: "doc cam"
         Capabilities: "ms"
       Source 4:
         Name: "vcr"
         Capabilities: "ms"
       Source 5:
         Name: "pc"
         Capabilities: "ms"
       CurrentSource: 1
       BroadcastSwitch: On
     T140: On
     SString: On
*s/end
```

Status information followed by a * will not be shown unless Detailed Level has been set to 2 – see XACLI – Special commands – xpreferences

Feedback

Feedback [1..3] (status = On / Off):

If status = Off the following will be included:

<Nothing>

Example:

```
*s Feedback 1 (status=Off): /
*s/end
```

If status = On the following will be included:

URL:

Expression [1..15]:

Example:

```
*s Feedback 2 (status=On):
     URL: "http://10.47.6.75/tms/public/feedback/code.aspx"
     Expression 1: "/History/Call"
     Expression 2: "/Status/Call[@status='Synced']"
     Expression 3: "/Status/SoftwareUpgrade"
     Expression 4: "/Status/BRI"
     Expression 5: "/Configuration/Conference/PictureMode"
*s/end
```

G703 (ready = True / False)		
If ready = False the following will be included:		
	Layer1Alarm: RedAlarm / YellowAlarm / BlueAlarm	
If ready = True the following will be included:		
	Channel [1..24 / 31]	**(status =** NA / Idle / Calling / Answering / Proceeding / Connect / Disconnecting / Disconnected**)**
	If status = NA / Idle the following will be included:	
		<Nothing>
	If status = Calling / Answering / Proceeding / Connect the following will be included:	
		CallingNumber:
		ConnectionTime:
	If status = Disconnecting/Disconnected the following will be included:	
		CallingNumber:
		CauseLocation:
		ChannelCause:
		ConnectionTime:
Example:		

Status information followed by a * will not be shown unless Detailed Level has been set to 2 – see XACLI – Special commands – xpreferences

H323Gatekeeper

H323Gatekeeper (status = Required / Discovering / Discovered / Authenticating / Authenticated / Registering / Registered / Rejected / Inactive)

If status = Inactive the following will be included:

- <Nothing>

Example:

```
*s H323Gatekeeper (status=Inactive): /
*s/end
```

If status = Required / Discovering / Discovered / Authenticating/ Authenticated / Registering / Registered the following will be included:

- **Alias:**
- **Address:**
- **Port:**
- **Alternates:**

Example:

```
*s H323Gatekeeper (status=Registered):
     Alias: "5584582"
     Address: "10.47.9.1"
     Port: 1719
     Alternates:
       Server 1:
         Address: "10.1.214.87"
         Port: 1719
       Server 2:
         Address: "10.1.214.88"
         Port: 1719
*s/end
```

If status = Rejected the following will be included:

- **Address:**
- **Port:**
- **Cause:**
- **Alternates:**

Example:

```
*s H323Gatekeeper (status=Rejected):
     Address: "10.47.9.1"
     Port: 0
     Cause: "Duplicate alias"
     Alternates: /
*s/end
```

Status information followed by a * will not be shown unless Detailed Level has been set to 2 – see XACLI – Special commands – xpreferences

- IP
  - Address:
  - SubnetMask:
  - Gateway:
  - V6:
    - Adress [1..2] (type = NA / IPv4 / IPv6):
  - DNS:
    - Server [1..5]:
      - Address:
    - Domain:
      - Name:

Example:

```
*s IP
     Address: "10.47.11.179"
     SubnetMask: "255.255.248.0"
     Gateway: "10.47.8.1"
     V6:
       Address 1 (type=NA): ""
       Address 2 (type=NA): ""
     DNS:
       Server 1:
         Address: "10.0.0.10"
       Server 2:
         Address: "10.0.0.2"
       Server 3:
         Address: ""
       Server 4:
         Address: ""
       Server 5:
         Address: ""
       Domain:
         Name: "eu.tandberg.int"
*s/end
```

NTP:
Address:

Example:

```
*s NTP:
     Address: "10.0.0.2"
*s/end
```

PRI

PRI (ready = True / False)

If ready = False the following will be included:

- **Layer1Alarm: RedAlarm / YellowAlarm / BlueAlarm**

Example:

```
*s PRI (ready=False):
     Layer1Alarm: RedAlarm
*s/end
```

If ready = True the following will be included:

- **Channel [1..24/31]** (type = BChannel / DChannel
  status = NA / Idle / Calling / Answering / Proceeding / Connect / Disconnecting / Disconnected)
  - If type = DChannel and status = NA the following will be included:
    - <Nothing>
  - If type = BChannel / DChannel and status = Idle the following will be included:
    - <Nothing>
  - If type = BChannel and status = Calling / Answering / Proceeding / Connect the following will be included:
    - **CallingNumber:**
    - **ConnectionTime:**
  - If type = BChannel and status = Disconnecting / Disconnected the following will be included:
    - **CallingNumber**
    - **CauseLocation**
    - **ChannelCause**
    - **ConnectionTime**

Status information followed by a * will not be shown unless Detailed Level has been set to 2 – see XACLI – Special commands – xpreferences

Example:

```
*s PRI (ready=True):
     BChannelsTotal: 8
     BChannelsFree: 8
     H0ChannelsFree: 1
     Channel 1 (type=BChannel, status=Connect):
       CallingNumber: "6700"
       ConnectionTime: 18
     Channel 2 (type=BChannel, status=Idle): /
     Channel 3 (type=BChannel, status=Disconnected):
       CallingNumber: "6700"
       CauseLocation: 1
       ChannelCause: 1
       ConnectionTime: 0
     Channel 4 (type=BChannel, status=Disconnected):
       CallingNumber: "08733"
       CauseLocation: 0
       ChannelCause: 16
       ConnectionTime: 120
     Channel 5 (type=BChannel, status=Disconnected):
       CallingNumber: "08733"
       CauseLocation: 0
       ChannelCause: 16
       ConnectionTime: 120
     Channel 6 (type=BChannel, status=Disconnected):
       CallingNumber: "08733"
       CauseLocation: 0
       ChannelCause: 16
       ConnectionTime: 120
     Channel 7 (type=BChannel, status=Disconnected):
       CallingNumber: "08733"
       CauseLocation: 0
       ChannelCause: 16
       ConnectionTime: 120
     Channel 8 (type=BChannel, status=Disconnected):
       CallingNumber: "08733"
       CauseLocation: 0
       ChannelCause: 16
       ConnectionTime: 120
     Channel 9 (type=BChannel, status=Disconnected):
       CallingNumber: "08733"
       CauseLocation: 0
       ChannelCause: 16
       ConnectionTime: 120
```

Continues overleaf

```
     Channel 10 (type=BChannel, status=Disconnected):
       CallingNumber: "08733"
       CauseLocation: 0
       ChannelCause: 16
       ConnectionTime: 120
     Channel 11 (type=BChannel, status=Disconnected):
       CallingNumber: "08733"
       CauseLocation: 0
       ChannelCause: 16
       ConnectionTime: 56
     Channel 12 (type=BChannel, status=Disconnected):
       CallingNumber: "08733"
       CauseLocation: 0
       ChannelCause: 16
       ConnectionTime: 56
     Channel 13 (type=BChannel, status=Disconnected):
       CallingNumber: "08733"
       CauseLocation: 0
       ChannelCause: 16
       ConnectionTime: 56
     Channel 14 (type=BChannel, status=Disconnected):
       CallingNumber: "08733"
       CauseLocation: 0
       ChannelCause: 16
       ConnectionTime: 56
     Channel 15 (type=BChannel, status=Disconnected):
       CallingNumber: "08733"
       CauseLocation: 0
       ChannelCause: 16
       ConnectionTime: 113
     Channel 16 (type=BChannel, status=Idle): /
     Channel 17 (type=BChannel, status=Idle): /
     Channel 18 (type=BChannel, status=Idle): /
     Channel 19 (type=BChannel, status=Connect):
       CallingNumber: "6700"
       ConnectionTime: 21
     Channel 20 (type=BChannel, status=Connect):
       CallingNumber: "6700"
       ConnectionTime: 20
     Channel 21 (type=BChannel, status=Connect):
       CallingNumber: "6700"
       ConnectionTime: 19
     Channel 22 (type=BChannel, status=Connect):
       CallingNumber: "6700"
       ConnectionTime: 19
     Channel 23 (type=BChannel, status=Connect):
       CallingNumber: "6700"
       ConnectionTime: 18
     Channel 24 (type=DChannel, status=NA): /
*s/end
```

Status information followed by a * will not be shown unless Detailed Level has been set to 2 – see XACLI – Special commands – xpreferences

RemoteSwUpgrade

RemoteSwUpgrade	(status = NA / Started / Checking / Completed / Aborted / NotValid / RestoringSettings / Failed/WrongPassword / Granted / NoDataLink / WrongFormat / ErrorWrite / WrongReleaseKey / Incompatible / FileTooLarge / Requesting)

If status = Started the following will be included:

Progress:

Example:

```
*s RemoteSwUpgrade (status=Started):
     Progress: 12
*s/end
```

If status = NA / Checking / Completed / Aborted / NotValid / RestoringSettings / Failed/WrongPassword / Granted / NoDataLink / WrongFormat / ErrorWrite / WrongReleaseKey / Incompatible / FileTooLarge / Requesting) the following will be included:

<Nothing>

Example:

```
*s RemoteSwUpgrade (status=NA): /
*s/end
```

Status information followed by a * will not be shown unless Detailed Level has been set to 2 – see XACLI – Special commands – xpreferences

Screensaver

Screensaver (status = On / Off)

If status = On the following will be included:

<Nothing>

Example:

```
*s Screensaver (status=On): /
*s/end
```

If status = Off the following will be included:

Timer:

Example:

```
*s Screensaver (status=Off):
     Timer: 37
*s/end
```

SIP		
	Server (status = Inactive / DNSFailed / Timeout / NoConnectionTCP / NoConnectionTLS / Active / Unknown)	
	If status = Inactive the following will be included:	
		<Nothing>
	If status = DNSFailed / Timeout / NoConnectionTCP / NoConnectionTLS / Active / Unknown the following will be included:	
		Address:
		Authentication: On/Off
	Registration (status = Inactive / Registering / Registered / Deregister / Failed)	
	If status = Inactive/Registering/Registered/Deregister the following will be included:	
		URI:
	If status = Failed the following will be included:	
		URI:
		Cause:

Example:

```
*s SIP:
     Server (status=Active):
       Address: "10.47.8.88"
       Authentication:
     Registration (status=Registered):
       URI: "lab2@tsip.lab"
*s/end
```

Status information followed by a * will not be shown unless Detailed Level has been set to 2 – see XACLI – Special commands – xpreferences

SoftwareUpgrade

SoftwareUpgrade (status = NA / Started / Checking / Completed / Aborted / NotValid / RestoringSettings / Failed)

If status = Started the following will be included:

Progress:

Example:

```
*s SoftwareUpgrade (status=Started):
     Progress: 12
*s/end
```

If status = NA / Checking / Completed / Aborted / NotValid / RestoringSettings / Failed the following will be included:

<Nothing>

Example:

```
*s SoftwareUpgrade (status=NA): /
*s/end
```

Switch

Switch (connected = True / False):
Input:
Format:
Sync:
Sync 1:
Sync 2:
Sync 3:
Sync 4:

Example:

```
*s Switch (connected=True):
      Input: 1
      Format: 1280X720p60
      Sync: True
      Sync 1: True
      Sync 2: True
      Sync 3: False
      Sync 4: False
*s/end
```

INFO: xstatus switch will give information about sync status for the active input, the format, and sync status for all DVI-D inputs. Active input may differ from what is given in the xconfiguration Switch Source setting. This is because an external control system may also change the input. Information about software version and ID will be given by xstatus camera 1.

SystemUnit *cont...*

- SystemUnit:
  - ProductType:
  - ProductId:
  - Uptime:
  - Software:
    - Version:
    - Name:
    - ReleaseDate:
    - Configuration:
      - Telephony:
      - VideoTelephony:
      - TotalBandwidth
      - ISDNBandwidth:
      - LANBandwidth:
      - PresenterOption: True/False
      - MultisiteOption: True/False
      - StreamingSupport: True/False
      - Encryption: True/False
    - Hardware:
      - SerialNumber:
      - MainBoard:
      - AdditionalBoard:
      - BootSoftware:
      - Configuration:
        - PRI:
        - BRI:
        - ExternalNetwork:
        - VGA:

Status information followed by a * will not be shown unless Detailed Level has been set to 2 – see XACLI – Special commands – xpreferences

SystemUnit *cont...*

DataPorts:	
AudioInputs:	
Settop:	True/False
TV-Standard:	PAL/NTSC
TemperatureCelcius:	
TemperatureFahrenheit:	

Example:

```
*s SystemUnit:
     ProductType: "TANDBERG Codec"
     ProductId: "TANDBERG 6000MXP PORTABLE"
     Uptime: 10136
     Software:
       Version: "F4.0Beta2 NTSC"
       Name: "s50000"
       ReleaseDate: "2005-11-17"
       Configuration:
         Telephony: 5
         VideoTelephony: 5
         TotalBandwidth: 6144
         ISDNBandwidth: 1920
         LANBandwidth: 4096
         PresenterOption: True
         MultisiteOption: True
         StreamingSupport: True
         Encryption: True
     Hardware:
       SerialNumber: "25A00309"
       MainBoard: "100670 rev. 05"
       AdditionalBoard: ""
       BootSoftware: "Rev. 1.12, 2005-10-13"
       Configuration:
         PRI: 1
         BRI: 6
         ExternalNetwork: 1
         VGA: 2
         DataPorts: 2
         AudioInputs: 6
         Settop: False
         TV-Standard: NTSC
     TemperatureCelcius: 55
     TemperatureFahrenheit: 131
*s/end
```

Status information followed by a * will not be shown unless Detailed Level has been set to 2 – see XACLI – Special commands – xpreferences

VirtualMonitor

VirtualMonitor [1..4]:

Layout (type = Full / 2Split / 2+1Split / 3+1Split / 4Split / 5+1Split, persistent = On/Off):

Window [1..6]:

Picture: **LocalMain / LocalDuo / Current /Previous / Duo / RemoteMain / RemoteDuo / JPEG / Still / None**

CallRef: **1..11**

Example:

```
*s VirtualMonitor 1:
     Layout (type=3+1Split, persistent=Off):
       Window 1:
         Picture: RemoteMain
         CallRef: 1
       Window 2:
         Picture: Local Main
         CallRef: 0
       Window 3:
         Picture: NA
         CallRef: 0
       Window 4:
         Picture: NA
         CallRef: 0
     PIP (status=Off): /
*s/end

*s VirtualMonitor 2:
     Layout (type=Full, persistent=Off):
       Window 1:
         Picture: RemoteDuo
         CallRef: 1
     PIP (status=Off): /
*s/end
```

Status information followed by a * will not be shown unless Detailed Level has been set to 2 – see XACLI – Special commands – xpreferences

Warning

Warning [1..10] (status = NA / Active)

If status = NA the following will be included:

<Nothing>

Example:

```
*s Warning 7 (status=NA): /
*s/end
```

If status = Active the following will be included:

ID: **101 / 102 / 131 / 132 / 133 / 134 / 161 / 191 / 192 / 193 / 201 / 202 / 203 / 204 / 205 / 206 / 207 / 208 / 301 / 1001 / 1002 / 1003**

Value: **1**

Example:

```
*s Warning 1 (status=Active):
     ID: 101
     Value: 1
*s/end
```

ID	Description
101	Warning BRI 1 Layer 1 Alarm: Line is disconnected
102	Warning BRI 2 Layer 1 Alarm: Line is disconnected
131	Warning PRI Layer 1 Red Alarm: Red alarm or Loss of signal (LOS) means that there is no signal and thus no framing information received (this has the same effect as pulling out the PRI cable)
132	Warning PRI Layer 1 Blue Alarm: Blue alarm indicates that the network on the far side of the CSU is unavailable
133	Warning PRI Layer 1 Yellow Alarm: Yellow alarm or Remote Alarm Indicator (RAI) may indicate a weak or noisy signal or a broken connector in the TX part of the system PRI cable
134	Warning PRI Layer 2 Not Active
161	Warning External Network, No Clock: If no clock is detected you will not be able to place calls
191	Warning G.703 Layer 1 Red Alarm: Red alarm or Loss of signal (LOS) means that there is no signal and thus no framing information received (this has the same effect as pulling out the PRI cable)
192	Warning G.703 Layer 1 Blue Alarm: Blue alarm indicates that the network on the far side of the CSU is unavailable
193	Warning G.703 Layer 1 Yellow Alarm: Yellow alarm or Remote Alarm Indicator (RAI) may indicate a weak or noisy signal or a broken connector in the TX part of the system PRI cable
201	Warning H.323 GateKeeper Rejected: Registration to the GateKeeper has been rejected. Please check GateKeeper setting
202	Warning H.323 GateKeeper Rejected, duplicate alias: GateKeeper registration is rejected because you try to register with an Alias, which is already registered on the GateKeeper
203	Warning H.323 GateKeeper Resources Unavailable
204	Warning H.323 GateKeeper Rejected, invalid alias: The alias you try to register with is not accepted by the GateKeeper
205	Warning H.323 GateKeeper Rejected Security Denial: The GateKeeper rejects registration because the user name and/or password is incorrect
206	Warning H.323 GateKeeper Rejected, Not Reachable
207	Warning H.323 GateKeeper Rejected, No Authenitcation Configuration
208	Warning H.323 GateKeeper Rejected, No Authenitcation Time
301	Warning IP No Net: The system does not detect any IP connection
1001	Warning High Packet Loss
1002	Warning High Jitter
1003	Warning High Packet Drop

Call

Call [1..20]	type = NA / Tlph / Vtlph protocol = NA / ISDN / H320 / H323 / SIP direction = NA / Incoming / Outgoing
If type = NA and protocol = NA and direction = NA the following will be included:	
<Nothing>	
If type = Tlph / Vtlph and protocol = ISDN / H320 /H323 / SIP and direction = Incoming / Outgoing the following will be included:	
LogTag: 1	
RemoteNumber:	
EncryptionIn: Off/DES/AES-128	
EncryptionOut: Off/DES/AES-128	
CallRate:	
DisconnectCauseValue*:	
DisconnectCause*:	
Duration:	
UptimeAtEndOfCall:	
BillingCode:	
Audio**: PacketsReceived, PacketsLost, PacketsDropped, DurationLossLevel1, DurationJitterLevel1, NumberOfLevel1Bursts, DurationLossLevel2, DurationJitterLevel2, NumberOfLevel2Bursts	
Video**: PacketsReceived, PacketsLost, PacketsDropped, DurationLossLevel1, DurationJitterLevel1, NumberOfLevel1Bursts, DurationLossLevel2, DurationJitterLevel2, NumberOfLevel2Bursts	

* Disconnect Cause Overview
The DisconnectCause indicates the reason why the call was disconnected. See DisconnectCause for an overview of the disconnect causes.
The DisconnectCauseValue contains additional information to the DisconnectCause. See DisconnectCauseValue for an overview of the disconnect cause values.

** Packet Loss Levels
Level 1: Packet loss > 5% and Jitter > 100ms
Level 2: Packet loss > 10% and Jitter > 200ms

Call - DisconnectCause

The DisconnectCause may show as a result of the xhistory Call command and indicates the reason why the call was disconnected. See Call for an overview of the xhistory Call command.

- AdaptiveBusy
- AddativeRegNotSupported
- AliasInconsisten
- BadFormatAddress
- CalledPartyNotRegistered
- CallerNotRegistered
- CallInProgress
- CapExchangeFailed
- CollectDestination
- CollectPin
- DestinationRej
- DiscoveryRequired
- DuplicateAlias
- ExceedsCallCapacity
- FacilityCallDeflection
- ForcedDrop
- FullRegistrtionRequired
- GatekeeperResources
- GatewayResources
- GenericDataReason
- IncompleteAddress
- InConf
- InsufficientResources
- InvalidAlias
- InvalidCallSignalAdr
- InvalidConferenceID
- InvalidDestinationURL
- InvalidEndpointID
- InvalidPermission
- InvalidRASAdr
- InvalidRevision
- InvalidSDP
- InvalidTerminalAlias
- InvalidTerminalName
- MasterSlaveFailed
- NeededFeatureNotSupported
- NewConnectionNeeded
- NoBandwidth
- NonStandardReason
- NoPermission
- NormalDrop
- NotAccepted
- NotBound
- NotCurrentlyRegistered
- NoUserResponding
- OutOfLocalResources
- PeerNotResponding
- PermissionDenied
- ProxyNeeded
- QoSControlNotSupported
- QoSNotSupported
- ReasonUndefined
- ReasonUnknown
- RejectedByRemote
- ReplaceWithConfInvite
- RequestDenied
- ResourceUnavaliable
- RouteCallToGk
- RouteCallToSCN
- ScurityDenied
- SecurityDenial
- SecurityError
- SystemNotReady
- TerminalExcluded
- TransportNotSupported
- TunnelledSignalingRej
- Unautorized
- UndefinedDrop
- UndefinedReason
- UnreachableDestination
- UnreachableGatekeeper

Status information followed by a * will not be shown unless Detailed Level has been set to 2 – see XACLI – Special commands – xpreferences

Call - DisconnectCauseValue (1:3)

The DisconnectCauseValue may show as a result of the xhistory Call command and contains additional information to the DisconnectCause result. See Call for an overview of the xhistory Call command.

See DisconnectCause for an overview of the disconnect causes.

Disconnect Cause Codes

You can also find the list of disconnect causes by opening a web browser and enter the IP address of the MPS followed by the filename: causecd.htm.

Example:

```
http://<ip-address>/causecd.htm
http://192.168.10.2/causecd.htm
```

Cause Codes

Cause No. 1 - Unallocated (Unassigned) Number
This cause indicates that the destination requested by the calling user cannot be reached because, although the number is in a valid format, it is not currently assigned.

Cause No. 2 - No Route To Specified Transit Network
This cause indicates that the equipment sending this cause has received a request to route the call through a particular transit network which it does not recognize. The equipment sending this cause does not recognize the transit network either because the transit network does not exist or because that particular transit network, while it does exist, does not serve the equipment which is sending this cause.

Cause No. 3 - No Route To Destination
This cause indicates that the called party cannot be reached because the network through which the call has been routed does not serve the destination desired. This cause is supported on a network dependent basis.

Cause No. 4 - Send Special Information Tone (Five One Zero NT)
This cause indicates that the called party cannot be reached for reasons that are of a long term nature and that the special information tone should be returned to the calling party.

Cause No. 5 - Misdialed Trunk Prefix
This cause indicates the erroneous inclusion of a trunk prefix in the called party number. This number is supposed to be stripped from the dialed number being sent to the network by the customer premises equipment.

Cause No. 6 - Channel Unacceptable
This cause indicates that the channel most recently identified is not acceptable to the sending party for use in this call.

Cause No. 7 - call awarded, being delivered in an established channel
This cause indicates that the user has been awarded the incoming call, and that the incoming call is being connected to a channel already established to that user for similar calls (e.g. packet-mode x.25 virtual calls).

Cause No. 8 - Preemption
This cause indicates the call is being preempted.

Cause No. 9 - Preemption - Circuit Reserved For Reuse
This cause indicates that the call is being preempted and the circuit is reserved for reuse by the preempting exchange.

Cause No. 16 - Normal Call Clearing
This cause indicates that the call is being cleared because one of the users involved in the call has requested that the call be cleared.

Cause No. 16/4 or 17 - User Busy
This cause is used when the called user has indicated the inability to accept another call. This cause code may be generated by the called user or by the network. Please note that the use equipment is compatible with the call.

Cause No. 16/3 or 18 - No User Responding
This cause is used when a called party does not respond to a call establishment message with either an alerting or connect indication within the prescribed period of time allocated (in Q.931 by the expiry of either time T303 or T310).

Cause No. 19 - No Answer From User (User Alerted)
This cause is used when a user has provided an alerting indication but has not provided a connect indication within a prescribed period of time. Note: This cause is not necessarily generated by the customer premise equipment, but may be generated by internal network timers.

Cause No. 20 - Subscriber Absent
This cause value is used when a mobile station has logged off, radio contact is not obtained with a mobile station or if a personal telecommunication user is temporarily not addressable at any user-network interface.

Cause No. 21 - Call Rejected
This cause indicates that the equipment sending this cause does not wish to accept this call, although it could have accepted the call because the equipment sending this cause is neither busy nor incompatible. This cause may also be generated by the network, indicating that the call was cleared due to a supplementary service constraint. The diagnostic field may contain additional information about the supplementary service and reason for rejection.

Cause No. 22 - Number Changed
This cause is returned to a calling party when the called party number indicated by the calling party is no longer assigned. The new called party number may optionally be included in the diagnostic field. If the network does not support this cause, cause no: 1, unallocated (unassigned) will be used instead.

Cause No. 26 - Non-Selected User Clearing
This cause indicates that the user has not been awarded the incoming call.

Cause No. 27 - Destination Out Of Order
This cause indicates that the destination cannot be reached because the interface to the destination is not functioning correctly. The signaling message was unable to be delivered due to a hardware failure.

Cause No. 28 - Invalid Number Format (Address Incomplete)
This cause indicates that the called party cannot be reached because the called party number is not in a valid format or is not complete.

Cause No. 29 - Facilities Rejected
This cause is returned when a facility requested by the user cannot be provide by the network.

Cause No. 30 - Response To Status Inquiry
This cause is included in the STATUS message when the reason for generating the STATUS message was the prior receipt of a STATUS ENQUIRY.

Call - DisconnectCauseValue (2:3)

Cause No. 31 - Normal, Unspecified
This cause is used to report a normal event only when no other cause in the normal class applies.

Cause No. 34 - No Circuit/Channel Available
This cause indicates that there is no appropriate circuit/channel presently available to handle the call. Note: If you receive this call, try another data-service, such as dropping from a 64K to 56K data rate.

Cause No. 35 - Call Queued
This cause indicates that the call has been queued for service by the next available device.

Cause No. 38 - Network Out Of Order
This cause indicates that the network is not functioning correctly and that the conditions are likely to last a relatively long period of time. A call that is attempted soon afterwards will most likely not connect successfully.

Cause No. 39 - Permanent Frame Mode Connection Out-Of-Service
This cause is included in a STATUS message to indicate that a permanently established frame mode connection is out-of-service (e.g. due to equipment or section failure) [see Annex A/Q.933].

Cause No. 40 - Permanent Frame Mode Connection Operational
This cause is included in a STATUS message to indicate that a permanently established frame mode connection is operational and capable of carrying user information. [see Annex A/Q.933].

Cause No. 41 - Temporary Failure
This cause indicates that the network is not functioning correctly and that the condition is not likely to last a very long period of time. A call that is attempted almost immediately afterwards will most likely connect successfully.

Cause No. 42 - Switching Equipment Congestion
This cause indicates that the switching equipment generating this cause is experiencing a period of high traffic.

Cause No. 43 - Access Information Discarded
This cause indicates that the network could not deliver access information, low layer compatibility, high layer compatibility, or sub-address as indicated in the diagnostic.

Cause No. 44 - Requested Circuit/Channel Not Available
This cause is returned when the circuit or channel indicated by the requesting entity cannot be provided by the other side of the interface.

Cause No. 46 - Precedence Call Blocked
This cause indicates that there are no pre-emptable circuits or that the called user is busy with a call of equal or higher pre-emptable level.

Cause No. 47 - Resource Unavailable, Unspecified
This cause is used to report a resource unavailable event only when no other cause in the resource unavailable class applies.

Cause No. 49 - Quality Of Service Not Available
This cause is used to report that the requested Quality of Service cannot be provided (delay cannot be supported).

Cause No. 50 - Requested facility not subscribed
This cause indicates that the requested supplementary service could not be provided due to user oversight. This cause code is often caused by the CPE being configured for the wrong switch type.

Cause No. 52 - Outgoing calls barred
This cause indicates that because of call screening provided by the network, the calling user is not permitted to make a call.

Cause No. 53 - Outgoing Calls Barred Within CUG
This cause indicates that although the calling party is a member of the CUG for the outgoing CUG call, outgoing calls are not allowed for this member of the CUG.

Cause No. 54 - Incoming calls barred
This cause indicates that the called user will not accept the call delivered in the SETUP message.

Cause No. 55 - Incoming Calls Barred Within CUG
This cause indicates that although the calling party is a member of the CUG for the incoming CUG call, incoming calls are not allowed for this member of the CUG.

Cause No. 57 - Bearer Capability Not Authorized
This cause indicates that the user has requested a bearer capability which is implemented by their equipment but the user is not authorized to use.

Cause No. 58 - Bearer Capability Not Presently Available
This cause indicates that the user has requested a bearer capability which is implemented by the equipment which generated this cause but which is not available at this time.

Cause No. 62 - Inconsistency In Outgoing Information Element
This cause indicates an inconsistency in the designated outgoing access information and subscriber class.

Cause No. 63 - Service Or Option Not Available, Unspecified
This cause is used to report a service or option not available event only when no other cause in the service or option not available class applies.

Cause No. 65 - Bearer Capability Not Implemented
This cause indicates that the equipment sending this cause does not support the bearer capability requested.

Cause No. 66 - Channel Type Not Implemented
This cause indicates that the equipment sending this cause does not support the channel type requested.

Cause No. 69 - Requested Facility Not Implemented
This cause indicates that the equipment sending this cause does not support the requested supplemental service.

Cause No. 70 - Only Restricted Digital Information Bearer Capability Is Available
This cause indicates that on equipment has requested an unrestricted bearer service but that the equipment sending the cause only supports the restricted version of the requested bearer capability.

Cause No. 79 - Service Or Option Not Implemented, Unspecified
This cause is used to report a service r option not implemented but only when no other cause in this class applies.

Status information followed by a * will not be shown unless Detailed Level has been set to 2 – see XACLI – Special commands – xpreferences

Call - DisconnectCauseValue (3:3)

Cause No. 81 - Invalid Call Reference Value
This cause indicates that the equipment sending this cause has received a message with a call reference which is not currently in use on the user-network interface.

Cause No. 82 - Identified Channel Does Not Exist
This cause indicates that the equipment sending this cause has received a request to use a channel not activated on the interface for a call. For example, if the user only subscribed to channels 1 to 12 and channel 13 through 23 is requested by either side, this cause is generated.

Cause No. 83 - A Suspended Call Exists, But This Call Identify Does Not
This cause indicates that a call resume has been attempted with a call identity which differs from that in use for any presently suspended call(s).

Cause No. 84 - Call Identity In Use
This cause indicates that the network has received a call resume request. The call resume request contained a call identity information element which presently does not indicate any suspended call within the domain of interfaces over which calls may be resumed.

Cause No. 85 - No Call Suspended
This cause indicates that the network has received a call resume request containing a Call identity information element which presently does not indicate any suspended call within the domain of interfaces over which calls may be resumed.

Cause No. 86 - Call Having The Requested Call Identity Has Been Cleared
This cause indicates that the network has received a call resume request. The request contained a call identity information element which once indicated a suspended call, however, that the call was cleared while suspended (either a network time-out or remote user).

Cause No. 87 - User Not A Member Of CUG
This cause indicates that the called user for the incoming CUG call is not a member of the specified CUG or that the calling user is an ordinary subscriber calling a CUG subscriber.

Cause No. 88 - Incompatible Destination
This cause indicates that the equipment sending this cause has received a request to establish a call which has low layer compatibility, high layer compatibility, or other compatibility attributes (e.g. data rate) which cannot be accommodated.

Cause No. 90 - Non-Existent CUG
This cause indicates that the specified CUG does not exist.

Cause No. 91 - Invalid Transit Network Selection
This cause indicates that a transit network identification was received which is of an incorrect format as defined in Annex C/Q.931

Cause No. 95 - Invalid Message, Unspecified
This cause is used to report an invalid message event only when no other cause in the invalid class applies.

Cause No, 96 - Mandatory Information Element Is Missing
This cause indicates that the equipment sending this cause has received a message which is missing an information element which must be present in the message before that message can be processed.

Cause No. 97 - Message Type Non-Existent Or Not Implemented
This cause indicates that the equipment sending this cause has received a message with a message type it does not recognize either because this is a message not defined of defined but not implemented by the equipment sending this cause.

Cause No. 98 - Message Not Compatible With Call State Or Message Type Non-Existent Or Not Implemented
This cause indicates that the equipment sending this cause has received a message such that the procedures do not indicate that this is a permissible message to receive while in the call state, or a STATUS message was received indicating an incompatible call state.

Cause No. 99 - Information Element / Parameter Non-Existent Or Not Implemented
This cause indicates that the equipment sending this cause has received a message which includes information element(s)/parameter(s) not recognized because the information element(s)/parameter name(s) are not defined or are defined but not implemented by the equipment sending the cause. This cause indicates that the information element(s)/parameter(s) were discarded. However, the information element is not required to be present in the message in order for the equipment sending the cause to process the message.

Cause No. 100 - Invalid Information Element Contents
This cause indicates that the equipment sending this cause has received and information element which it has implemented; however, one or more fields in the information elements are coded in such a way which has not been implemented by the equipment sending this cause.

Cause No. 101 - Message Not Compatible With Call State
This cause indicates that a message has been received which is incompatible with the call state.

Cause No. 102 - Recovery On Timer Expiry
This cause indicates that a procedure has been initiated by the expiry of a timer in association with Q.931 error handling procedures.

Cause No. 103 - Parameter Non-Existent Or Not Implemented - Passed On
This cause indicates that the equipment sending this cause has received a message which includes parameters not recognized because the parameters are not defined or are defined but not implemented by the equipment sending this cause.

Cause No. 110 - Message With Unrecognized Parameter Discarded
This cause indicates that the equipment sending this cause has discarded a received message which includes a parameter that is not recognized.

Cause No. 111 - Protocol Error, Unspecified
This cause is used to report a protocol error event only when no other cause in the protocol error class applies.

Cause No. 127 - Interworking, Unspecified
This cause indicates that there has been interworking which does not provide causes for actions. The precise cause for a message being sent is not known.

AuthenticationFailure

AuthenticationFailure
Service:
RemoteIPAddress:
Uptime:

Example:

```
Polling:

*e AuthenticationFailure:
     Service: /
     RemoteIPAddress: /
     Uptime: /
*e/end

Feedback:

*e AuthenticationFailure:
     Service: FTP
     RemoteIPAddress: "10.47.11.82:1459"
     Uptime: 417490
*e/end
```

CallDisconnected

CallDisconnected:

- CallRef:
- LogTag:

Example:

```
Polling:
*e CallDisconnected:
     CallRef: /
     LogTag: /
*e/end

Feedback:

*e CallDisconnected:
     CallRef: 2
     LogTag: 11
*e/end
```

CallSuccessful

- CallSuccessful:
  - CallRef:
  - LogTag:
  - Protocol:
  - Direction:
  - CallRate:
  - RemoteNumber:
  - Encryption:
    - Incoming:
    - Outgoing:

Example:

```
Polling:

*e CallSuccessful:
     CallRef: /
     LogTag: /
     Protocol: /
     Direction: /
     CallRate: /
     RemoteNumber: /
     Encryption:
       Incoming: /
       Outgoing: /
*e/end

Feedback:

*e CallSuccessful:
     CallRef: 1
     LogTag: 12
     Protocol: H323
     Direction: Outgoing
     CallRate: 768
     RemoteNumber: "558458"
     Encryption:
       Incoming: Off
       Outgoing: Off
*e/end
```

DownspeedingFinished:

- CallRef:
- LogTag:
- Rate:

Example:

```
Polling:

*e DownspeedingFinished:
     CallRef: /
     LogTag: /
     Rate: /
*e/end

Feedback:

*e DownspeedingFinished:
     CallRef: 3
     LogTag: 7
     Rate: 384
*e/end
```

MessageBoxResult

MessageBoxResult:

Button:

Example:

```
Polling:

*e MessageBoxResult:
     Button: /
*e/end

Feedback:

*e MessageBoxResult:
     Button: 1
*e/end
```

PacketlossDownSpeed

PacketlossDownSpeed:

- CallRef:
- LogTag:

Example:

```
Polling:

*e PacketlossDownSpeed:
     CallRef: /
     LogTag: /
*e/end
```

Status information followed by a * will not be shown unless Detailed Level has been set to 2 – see XACLI – Special commands – xpreferences

SString:

Example:

```
Polling:

*e SString: /
*e/end

Feedback:

*e SString: "Testing SString"
*e/end
```

SystemActivity:
Service:
RemoteIPAddress:
Uptime:
Description:

Example:

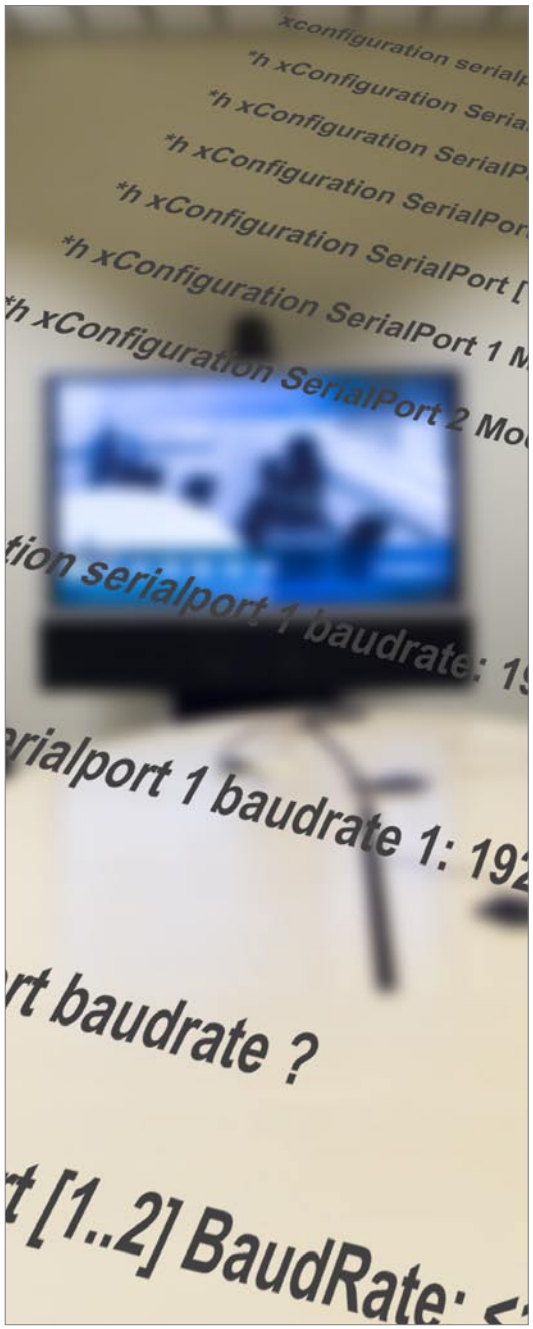
```
Polling:
*e SystemActivity:
     Service: /
     RemoteIPAddress: /
     Uptime: /
     Description: /
*e/end

Feedback:

*e SystemActivity:
     Service: FTP
     RemoteIPAddress: "Unknown"
     Uptime: 417995
     Description: "get all.prm"
*e/end
```

Startup Scripts

We recommend that you check out the TANDBERG web site regularly for updated versions of this manual:

http://www.tandberg.com/docs

A startup script runs automatically when starting up the codec. With startup scripts you can configure the codec individually as well as implement a standard corporate setup for all codecs.



How to create and run a startup script

When you want the codec to startup with the same configuration for one or more settings you can create startup script. The script runs automatically when rebooting the codec.

There may be more than one startup script on the codec. To ensure the script isn't run too early during the startup procedure, use the following name on the file startup2.prm

Create a startup script

1. Open Notepad and save the file as `startup2.prm`
2. Enter the text starting with `*P` <`the command`> follow by a page return, example:

```
*P xconfiguration audio volume: 16
<enter a page return>
```

3. Save and close the file

Upload the file to the codec

- Open a DOS prompt and go to the folder where you saved the script file named `startup2.prm`.
- Type ftp <ip address of the TANDBERG MXP system> for example 'ftp 10.0.8.77'
- Type `cd user` to go this folder
- Type `put startup2.prm` and press Enter. The script file will now be uploaded to the TANDBERG MXP system.
- Type `dir` to verify the upload of the file
- Exit the DOS window.

Run the startup script

- Restart the TANDBERG MXP system to run the startup script.

Example 1

```
*P xconfiguration audio volume: 10
*P xconfiguration autoanswer mode: mute
*P xconfiguration duovideosource: 5
```

NOTE! Make sure you remember to end the list of commands with a page return.

Example 2

```
*P xcommand dial number:12345 callrate:768 netprofile:3
```

You can also use xCommand instructions in the startup script.

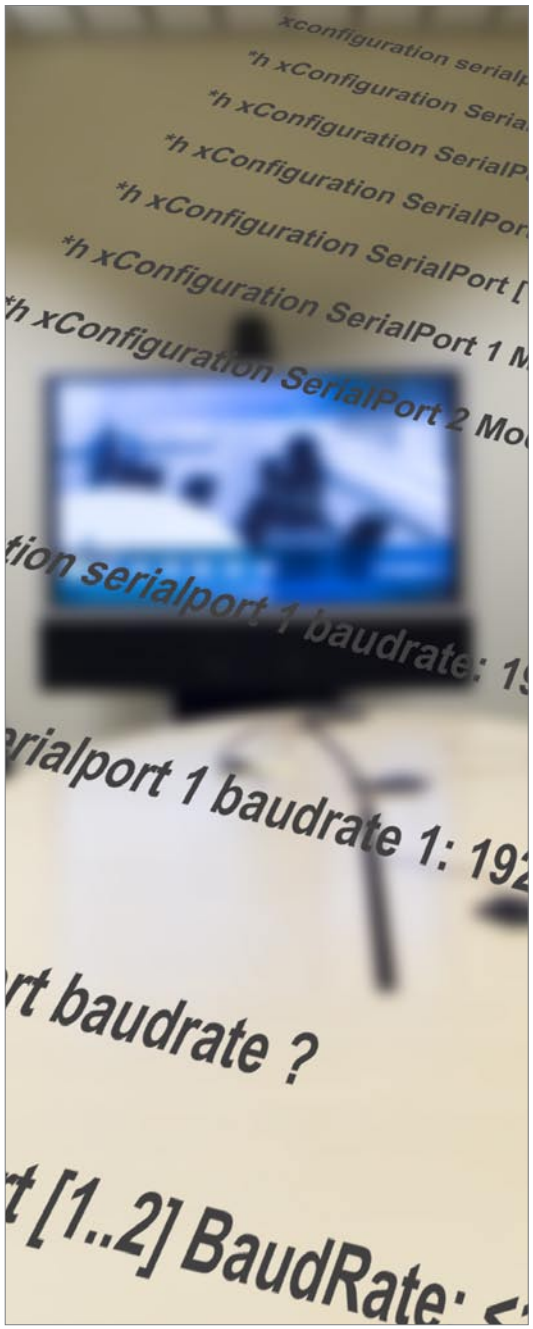
Controlling External Cameras

We recommend that you check out the TANDBERG web site regularly for updated versions of this manual:

http://www.tandberg.com/docs

Assume you have your cameras connected to an external control system, and that you want to be able to control these cameras using the TANDBERG remote or from the remote site using FECC (Far End Camera Control). To do this you will need to make use of the Extcam Protocol.

This section of the Reference User Guide explains Extcam Protocol Basics as well as how to interface to the TANDBERG WAVE II camera and the TANDBERG Precision HD camera.



Extcam Protocol Basics

Assume you have your cameras connected to an external control system, and that you want to be able to control these cameras using the TANDBERG remote or from the remote site using FECC (Far End Camera Control).

The control system issues the following command on a telnet session or on a serial port connection:

```
extcam on
```

Now, when you select a video input with no codec controllable camera connected, the following commands will be output to the telnet/serial port when you attempt to control the camera with the TANDBERG remote:

```
*C <direction> start
*C <direction> stop
```

where <direction> is

- `le` for left
- `ri` for right
- `up` for up
- `do` for down
- `z+` for zoom in
- `z-` for zoom out

These commands can be parsed by the control system and passed on to external cameras as needed.

NOTE! For all practical purposes, a start will always be followed by a stop before a new movement is allowed.

Far End Video Source Switching

Things get slightly more complicated if you need to control all types of video switching in the codec. The control system does this easily for the local end, but what about video switch requests from the far end in a call? If you are not running extcam, or just issued an `extcam on` command, a far end video switch will cause the codec to change video source.

So, how can we route far end video switch commands to the control system? The control system does this by passing the `source=<0..9>` option to the extcam command:

Example: `extcam on source=4`

This tells the far end that your control system has four sources. If a far end video switch command is received, it will be routed to the telnet/serial port as follows:

```
*C vs 1 m
```

Meaning that the far end wants to switch to video source 1, with m – motion video.

Note! The source option affects video switch commands received over FECC only. `xConfiguration MainVideoSource` etc. commands are not affected by this, so you are still able to do local switching as you want.

Far End Preset Switching

The far end may also request that a preset should be displayed or stored. Since activating a codec preset can trigger a video switch, the preset commands can also be routed to the telnet/serial port. Use the `pres=<0..15>` option to specify this. This option can be combined with the source option.

Example: `extcam on pres=6`

This tells the far end that you have 6 selectable presets. If a far end preset command is received, it will be routed to the telnet/serial port:

```
*C pa 1
```

Meaning that far end wants to activate preset 1 . If the command is ps it wants to store a preset at the given position.

Note! The pres option affects preset commands received over FECC only. `xCommand PresetActivate, PresetStore, PresetClear` etc. commands are not affected by this.

The extcap and the extname

When you make a call, the codec will send out a camera/video source capset consisting of video source names as specified by the vidname command and capabilities as detected by the internal camera driver. If you have started extcam with the `source=<n>` option, these capabilities and names will probably not match with what you have in your control system.

So, when you use the `source=<n>` option, the names and capabilities specified by the extname and extcap commands will be used instead.

Readers of the original documentation† may recall that it stated that `extcap` and `extname` will output the normal codec settings if `extcam` is off, ie. `extname` will function as `vidname`. **This is not correct!**

However, the list will be limited to the number of entries given the last time you started `extcam` with the source option. This is not very obvious. To keep the control system compatible with different software versions, it is recommended to start extcam first with the number of sources you need, then specify names and capabilities.

Example: We have three external video sources/cameras:

```
extcam on source=3
```

We give them custom names:

```
extname 1 "Front"
extname 2 "Document"
extname 3 "DVD"
```

And correct capabilities. `"Front"` is a full featured camera. `"Document"` is a document camera with only zoom. `"DVD"` is a DVD player.

```
extcap 1 ptzfms
extcap 2 zms
extcap 3 ms
```

If you make a call, the far end should only list three possible video sources, with names as specified. If you select the second video source, far end should not allow any movement other than zoom.

Note! Do not rely on this. The control system may still receive movement commands, even if you have no movement specified in the capset. Be sure to ignore commands that you don't expect!

The extswitch

The `extswitch` is used to inform the far end that you have switched video source with your control system. Extcam must be started with the `source=<n>` option for this to be meaningful.

Example: Assume you have two sources connected to your control system:

```
extcam on source=2
```

You do a local switch to the 2nd source on your control system, and we inform the far end so it can show information about the selected source and use correct capabilities:

```
extswitch 2
```

The `extswitch` is also used to confirm that a far end video switch command has been properly executed. Failure to reply to a FECC video switch with an `extswitch` means that the far end will probably assume that no video switch was executed, and continue to use the same capabilities and name as the previously selected source.

Example: Assuming same setup as under extcap/extname and that the far end requests a video change to the DVD source:

```
* C vs 3 m
```

We change video source in our control system and confirm the change:

```
extswitch 3
```

The far end will now know that we are using the DVD source, and should not send any movement commands. The far end may elect to display the source name too.

† The original documentation is the TANDBERG 770-8000MXP Dataport User Guide, which is available separately.

Interfacing to the TANDBERG WAVE II Camera

The TANDBERG WAVE II camera uses a RS-232 control interface that resembles the Sony VISCA protocol.

RS232 Parameters

The communication parameters for the RS232 interface must be set to:

- 9600 bits per second
- 8 databits
- No parity
- 1 stopbit
- No hardware flow control
- No software flow control

These parameters are fixed, and are not user configurable. All databytes are pure binary information, i.e. the data is not ASCII-encoded.

Message Format

Commands are initiated from the host (i.e. the codec or any other external controller) to the camera. After a camera has been issued a command, the camera will generate a response. Commands and responses (messages) have the following format:

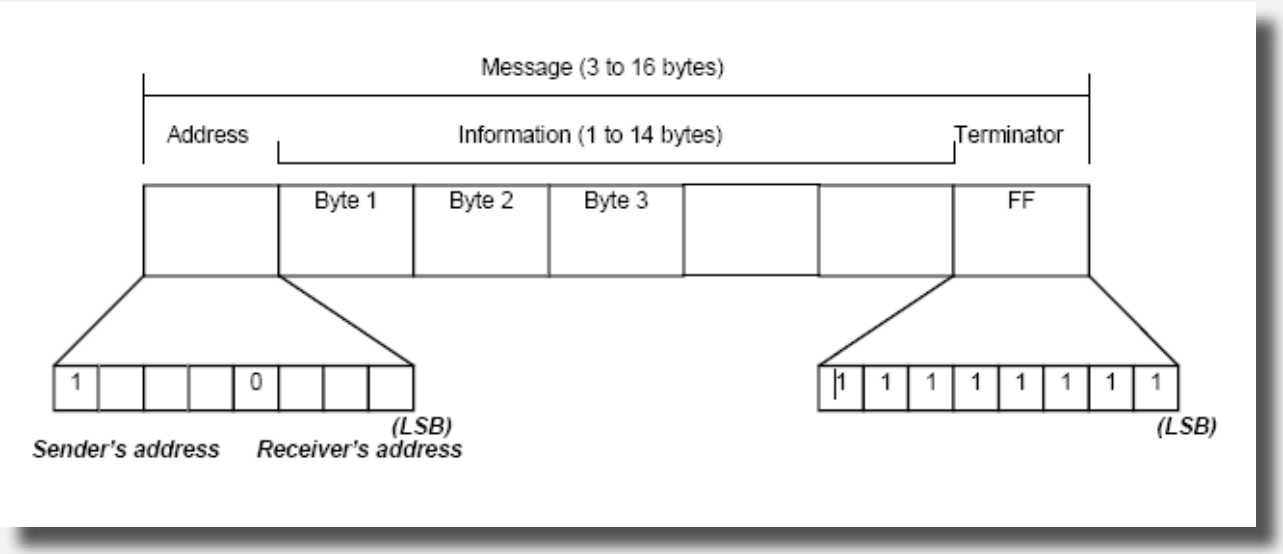
Address byte (1) - Information bytes (1..14) - Terminating byte (1)

The minimum length of any command or response is 3 bytes.

1. Address byte: Let us assume there is one host, i.e. the Codec (the host is the unit controlling the camera). The host has address 0. The four least significant bits of the address byte contain the address of the receiver. In the case of a broadcast message, the receiver address should be set to 8. When we are operating a single camera, the address is 1. Hence, address bytes in messages from the host are 0x81, and messages from the camera to the host are 0x90 (the protocol allows for up to 7 cameras).

2. Message bytes: Any number of bytes containing the actual message information. Bytes may have any value in the range 0...254. The value 255 (i.e. hexadecimal FF) is reserved for the terminating byte.

3. Terminating byte: All messages must be terminated with a byte containing all 1's, i.e. decimal 255 (or hexadecimal FF).



Command and Response Exchange Sequence

When the camera receives a command, it responds with either an ACKNOWLEDGE response, a COMPLETION response or an ERROR response:

- ACK message: 90-4Y-FF
  Returned by camera when it receives the command. No ACK is returned for inquiries.
- Completion message: 90-5Y-FF (commands) & 90-5Y-…-FF (inquiries)
  Returned by the camera when execution of commands and inquiries are completed.
- Error packets: 90-6Y-…-FF
  When command or inquiry failed to be executed.
- Y = socket number
  Camera contains two buffers so that two commands, including the commands being executed, can be received.

There are of course exceptions to these rules:

- An Initialize message will respond as indicated in the table below (this message is in fact a broadcast message, and any unit other than the host receiving a broadcast message must pass it on).

Commands

Command	Message	Comment
Autofocus on	81 01 04 38 02 FF	
Manual focus on	81 01 04 38 03 FF	
Focus in start	81 01 04 08 02 FF	
Focus out start	81 01 04 08 03 FF	
Focus stop	81 01 04 08 00 FF	
Focus direct	81 01 04 48 0p 0q 0r 0s FF	pqrs: focus position, far 4096 –near 40960
Focus inquiry	81 09 04 48 FF	Response: 90 50 0p 0q 0r 0s FF pqrs: focus position
Zoom in start	81 01 04 07 3p FF	p: speed parameter, low 0 - high 7
Zoom out start	81 01 04 07 2p FF	p: speed parameter, low 0 - high 7
Zoom stop	81 01 04 07 00 FF	
Zoom direct	81 01 04 47 00 0q 0r 0s FF	qrs: zoom position, 0 – max 1023
Dzoom off	81 01 04 06 03 FF	
Zoom inquiry	81 09 04 47 FF	Response: 90 50 00 0q 0r 0s FF qrs: zoom posistion
Tilt up start	81 01 06 01 0p 0t 03 01 FF	p: pan speed, t: tilt speed, low 0 – high 7
Tilt down start	81 01 06 01 0p 0t 03 02 FF	
Pan left start	81 01 06 01 0p 0t 01 03 FF	
Pan right start	81 01 06 01 0p 0t 02 03 FF	
Pan/tilt stop	81 01 06 01 03 03 03 03 FF	
Pan/tilt direct	81 01 06 02 0p 0t 00 0x 0y 0z 00 00 0u 0v FF	p: pan speed, t: tilt speed xyz: pan position, left 1295 - centre 647 - right 0 uv: tilt position, up 248 - centre 172 - down 0
Pan/tilt home	81 01 06 04 FF	
Pan/tilt inquiry	81 09 06 12 FF	Response: 90 50 00 0x 0y 0z 00 00 0u 0v FF, xyz: pan posistion uv: tilt position
Preset store	81 01 04 3F 01 0p FF	p: preset number, 1-15
Preset activate	81 01 04 3F 02 0p FF	p: preset number, 1-15
Preset inquiry	81 09 10 0p FF	Response: 90 50 00 0x 0y 0z 00 00 0u 0v 00 0q 0r 0s FF, p: preset numer, xyz: pan position, uv: tilt position, qrs: zoom position
AE auto	81 01 04 39 00 FF	AE: Automatic Exposure
AE manual	81 01 04 39 03 FF	

Commands *cont...*

Command	Message	Comment
Bright exp on	81 01 04 3E 02 FF	
Bright exp off	81 01 04 3E 03 FF	
Bright exp inc	81 01 04 0E 02 FF	
Bright exp dec	81 01 04 0E 03 FF	
Bright exp reset	81 01 04 0E 00 FF	
WB auto	81 01 04 35 00 FF	WB: White Balance
WB manual	81 01 04 35 05 FF	
WB one push	81 01 04 10 05 FF	
Backlight on	81 01 04 33 02 FF	
Backlight off	81 01 04 33 03 FF	
Shutter Reset	81 01 04 0A 00 FF	
Shutter Up	81 01 04 0A 02 FF	
Shutter Down	81 01 04 0A 03 FF	
Gain Reset	81 01 04 0B 00 FF	
Gain Up	81 01 04 0B 02 FF	
Gain Down	81 01 04 0B 03 FF	
Bright Reset	81 01 04 0D 00 FF	
Bright Up	81 01 04 0D 02 FF	
Bright Down	81 01 04 0D 03 FF	
IR on	81 01 06 08 02 FF	
IR off	81 01 06 08 03 FF	
LED on	81 01 33 01 01 FF	
LED off	81 01 33 01 00 FF	
ID Inquiry	81 09 04 22 FF	Response: 90 50 zz xx 00 yy FF zz xx=camera rev, yy=firmware rev
Network initialize	88 30 01 FF Response: 88 30 xx FF	xx=(1+number) of cameras in chain
IF clear	88 01 00 01 FF	Clears buffer & cancels current command

Interfacing to the Precision HD Camera

This document describes how to communicate with the Precision HD camera using the VISCA protocol. The Wave 2 interface was specified on the previous pages. The Precision HD camera uses the same interface, with the major differences specified below.

Connecting to the Camera

If you intend to use the HDMI output of the camera only, you can use the normal RJ45 connector to communicate with the camera using VISCA.

In most cases, however, you probably want to use the high speed serial connection for best image quality. When the camera is operated in this mode, you cannot separate the control pins for use in an external control system, since the codec will send important video control commands as VISCA messages over this connection.

To overcome this problem, you can convert the daisy chain RJ11 connector on the camera to an extra VISCA control port with the following command:

```
xconfiguration Camera 1 DualVisca: On
```

The RJ11 connector will then provide a full featured VISCA interface.

Differences from the Wave II Camera

Ranges

Pan range is 0..816.

Tilt range is 0..89.

Zoom range is 0..2768.

Focus range is 4096..4246.

Movement Speed

The camera **does not** automatically adjust movement speed depending on zoom level. It is suggested that you use the following speed values when moving the camera:

Zoom Level	Pan Speed	Tilt Speed
0..922	6	7
923..1845	3	5
1846..2768	1	3

Identification

The Wave 2 identification command, `CAM _ Id _ Inq`, is supported by the camera. Byte 2 in the reply, counting from 0, will be `0x0f` if this is a PrecisionHD camera.

To find out which software the camera is running, use the `CAM _ Swid _ Inq` inquiry command. Note that this inquiry can produce a reply up to 128 bytes long.

Focus

Autofocus will automatically be disabled when it locks. So you have to issue a new “Autofocus on” command each time you start a pan/tilt/zoom move. For best results, also issue an “Autofocus on” when you stop a move, in case autofocus was locked while moving.

Presets

Preset commands are currently not supported. The camera will not store or activate any presets.

Use the `CAM _ PTZF _ Set` command to directly set the position in one operation.

Brightness, Iris, Gain

Directly changing the gain value is currently not supported.

Use the new `CAM _ Bright _ Direct` command to select a certain Iris/Gain combination when brightness is in manual mode.

Whitebalance

Whitebalance supports auto and manual settings. Currently one push mode and direct r/b-gain settings are not supported.

Manual mode is enabled by issuing the `CAM _ WB _ Man` command. The `CAM _ WB _ Direct` command is used to set the value.

Gamma

You may specify which gamma table to use by issuing the `CAM _ Gamma _ Set` command.

Other

The camera may be rebooted by issuing a `CAM _ Boot` command.

New Commands and Inquiries

Command/Inquiry	Packet	Result/Comments
CAM_Id_Inq	8x 09 04 22 FF	Result: y0 50 pp qq 00 rr FF pp qq= camera rev rr= firmware rev pp = 0x0f for PrecisionHD
CAM_Swid_Inq	8x 09 04 48 FF	Result: y0 50 [max 125 bytes of ascii text] ff
CAM_PTZF_Set	8x 01 37 0p 0q 0r 0s 0t 0u 0v 0w 0x 0y 0z 0a ff	pqr = pan, st = tilt, uvw= zoom, xyza=focus
CAM_Bright_Direct	8x 01 04 4d 0p 0q 0r 0s ff	pqrs = brightness value, range 0..31
CAM_WB_Man	8x 01 04 35 05 FF	Set manual whitebalance mode. Specify value with CAM_WB_Direct.
CAM_WB_Direct	8x 01 04 75 0p 0q 0r 0s ff	pqrs = whitebalance value, range 0..16
CAM_Gamma_Set	8x 01 3a 0p 0q 0r 0s ff	pqrs = gamma table to use, range 0..7
CAM_Boot	81 01 42 ff	Reboot the camera.

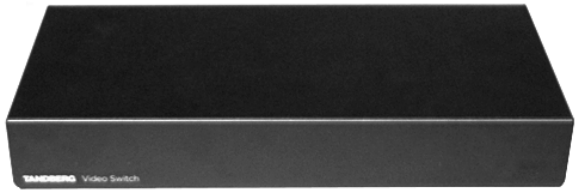
TANDBERG Video Switch

We recommend that you check out the TANDBERG web site regularly for updated versions of this manual:

http://www.tandberg.com/docs

The TANDBERG Video Switch (TVS) is a rack-mountable hardware option for TANDBERG 6000 MXP and 3000 MXP codecs that delivers the ability to daisy chain multiple HD cameras and provides support for third party HD cameras.

This section of the Reference User Guide explains the TANDBERG Video Switch basics as well as how to set up different daisy chained solutions.



Unpacking the Video Switch

The TANDBERG Video Switch set contains:

1 Video Switch Unit
4 Rubber Feet
1 HD Camera cable (1 m) for 6000MXP Codec
1 HD Camera cable (1 m) for 3000MXP Codec
1 Power supply kit incl. cables for Video Switch
1 Power supply kit incl. cables for existing camera
1 Rack ear set (left and right)
1 Control cable (6.5 m) for Video Switch to Precision HD camera
1 HDMI cable (6.5 m) for Video Switch to precision HD camera
1 TRC4 TANDBERG Remote Control

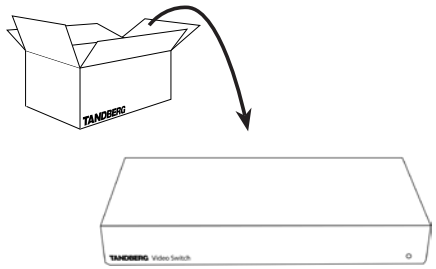
Please report any discrepancies immediately.

Cameras

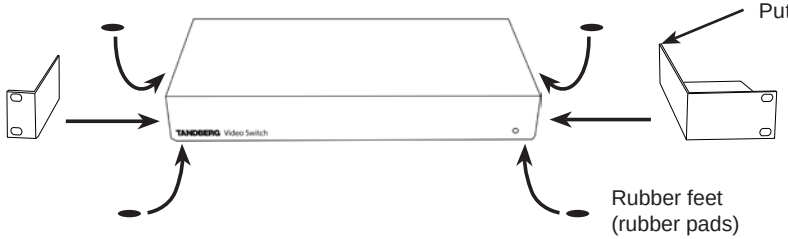
You may combine TANDBERG HD Precision cameras with analog sources equipped with component video outputs. Just add them to the chain of cameras in the diagram shown overleaf, but make sure the added sources appear after the TANDBERG HD Precision cameras in the chain (i.e. after camera 4 in the diagram overleaf).

Consequently, up to four TANDBERG HD Precision cameras may be combined with up to two analog component video sources and up to three TANDBERG WAVE II cameras, bringing the maximum number of video sources (which in many cases will be all cameras) up to nine!

1 Unpack the unit.

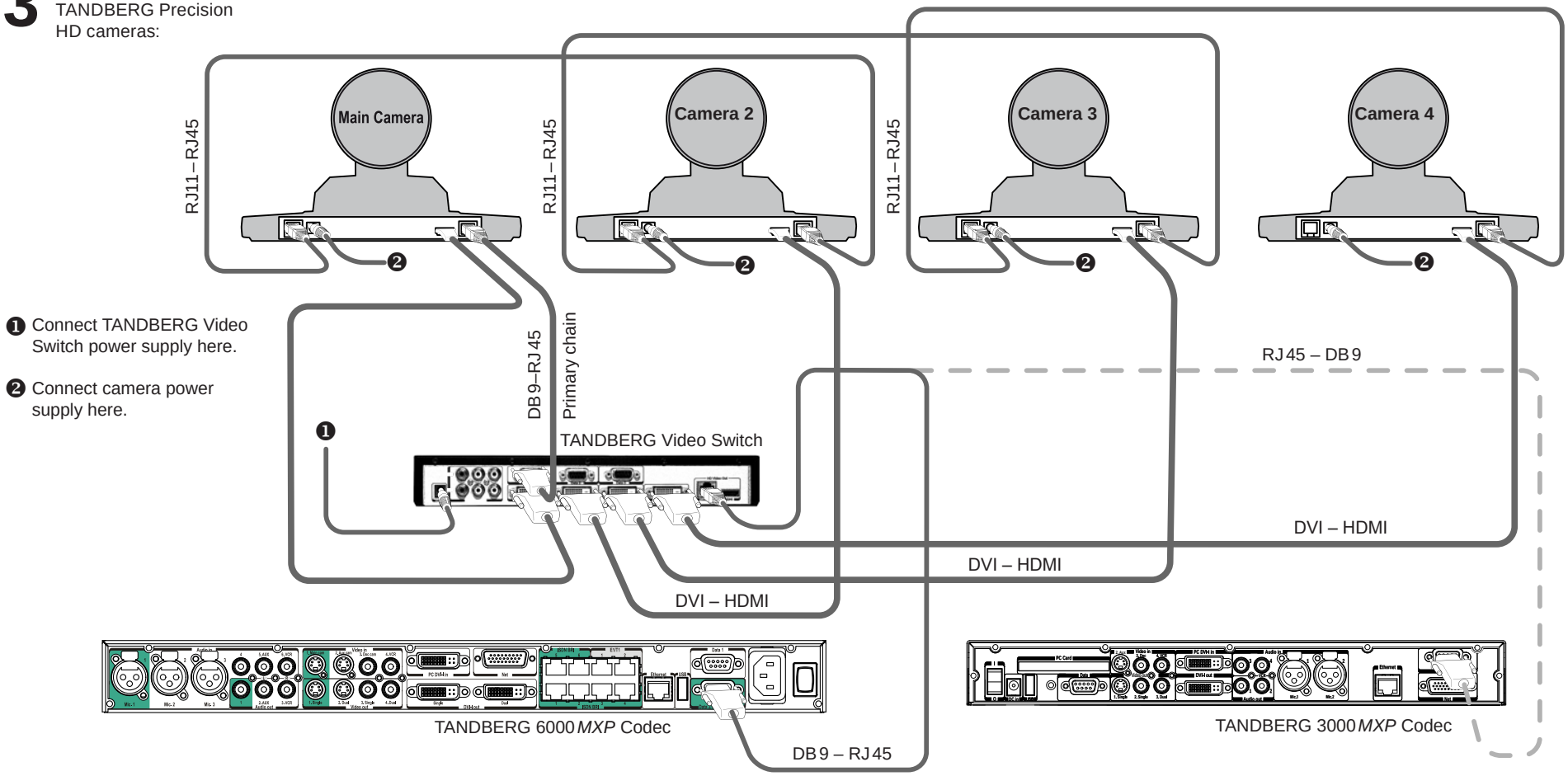


2 Mount the rack ears and/or rubber feet and mount it in the rack, if applicable.



Connecting the Video Switch (I)

3 Connecting up to four TANDBERG Precision HD cameras:



The Codec must be equipped with software version F6.1 or higher to support the use of the Video Switch.

RJ45–DB9 pinout is described in Camera Socket sections for Codec 3000 MXP and Codec 6000 MXP.

RJ11-RJ45 is described on the next page.

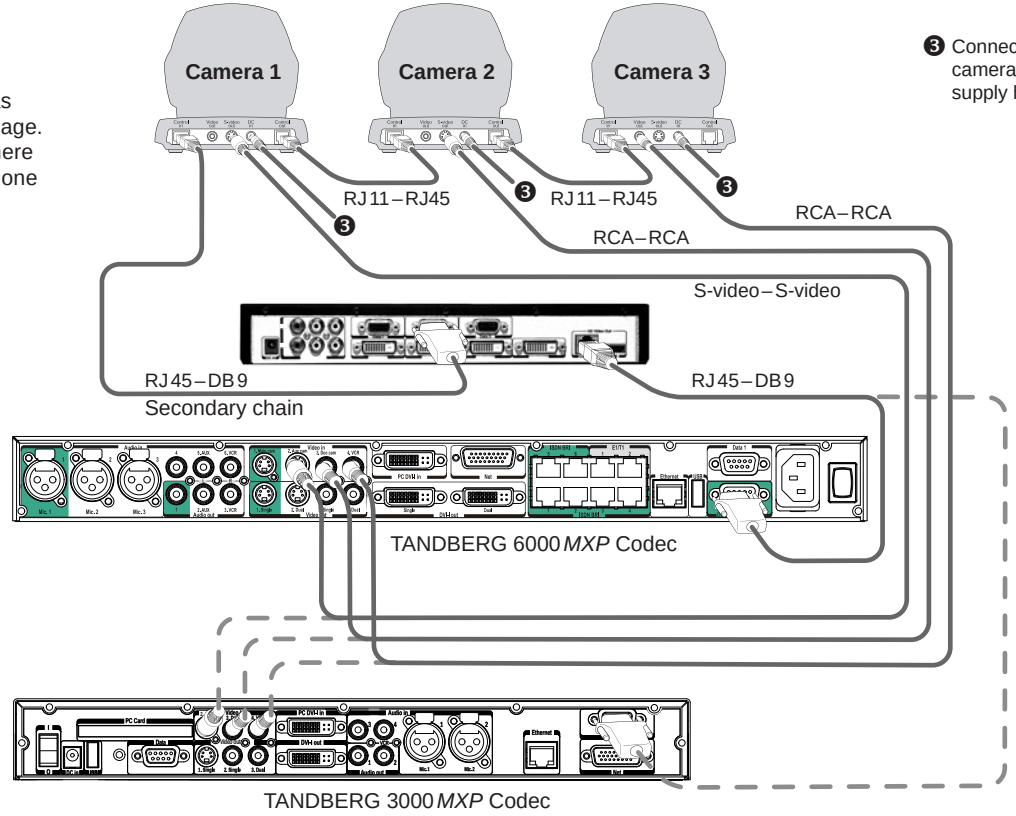
To upgrade the software of the Precision HD camera, connect the camera directly to the main camera socket of the Codec (the socket that otherwise is used when connecting the Video Switch to the Codec).

Power the units and the upgrade will start automatically. The status will be shown on the video system's monitor.

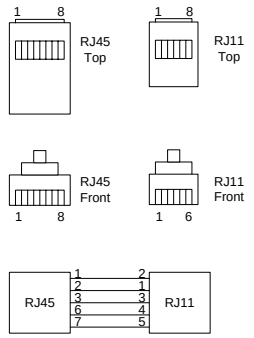
Connecting the Video Switch (II)

4 This diagram shows the additional connections needed to expand from using up to four TANDBERG Precision HD cameras (see previous page) to also include up to three TANDBERG WAVE II cameras (i.e. up to seven cameras in total). Connect Video Switch power supply as shown overleaf.

Note!
Start by connecting the Precision HD cameras as shown on the previous page. The connection shown here comes in addition to the one on previous page!



TANDBERG RJ45–RJ11

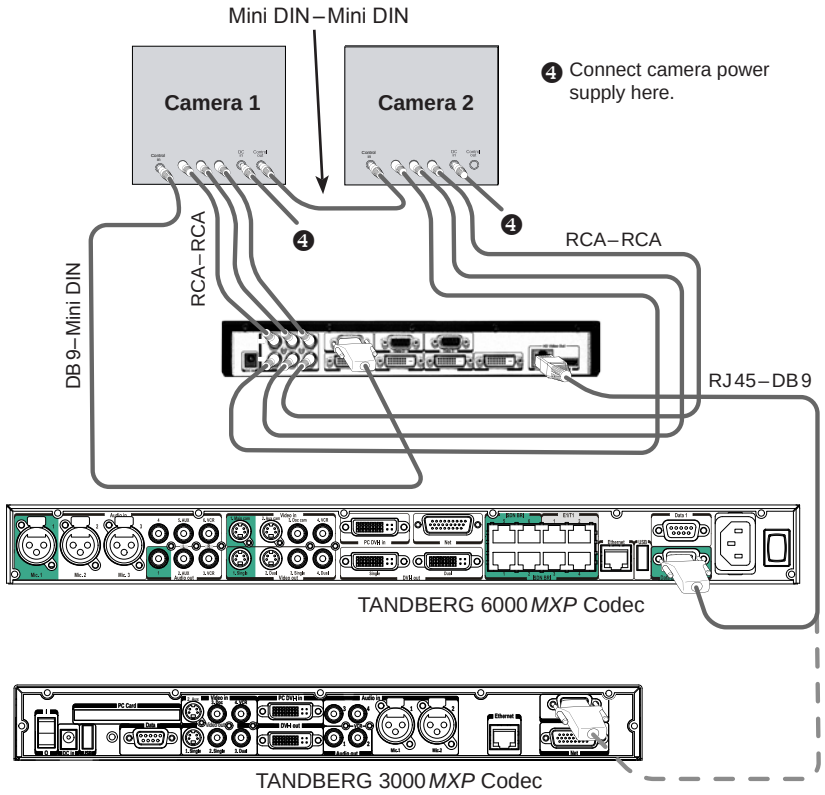


The Codec must be equipped with software version F6.1 or higher to support the use of the Video Switch.

RJ45–DB9 pinout is described in Camera Socket sections for Codec 3000 MXP and Codec 6000 MXP.

Connecting the Video Switch (III)

5 This diagram shows the connections needed to use a maximum of two analog sources equipped with component video outputs. Connection diagram uses Sony EVI-HD1 cameras as example. System supports 1280X720p50, 1280X720p59,94, and 1280X720p60 only. For full VISCA control Sony EV1-HDI cameras or true compatibles must be used. Other units may or may not be partly or fully controllable. Connect Video Switch power supply as shown overleaf.



SONY Mini DIN	Precision HD RJ11
1 DTR	1 GND
2 DSR	2 Not Used
3 TXD	3 TXD
4 GND	4 RXD
5 RXD	5 GND
6 GND	6 GND

The Codec must be equipped with software version F6.1 or higher to support the use of the Video Switch.

RJ45–DB9 pinout is described in Camera Socket sections for Codec 3000 MXP and Codec 6000 MXP.

SONY Part Numbers:

DB9–Mini DIN cable
SONY part number RC893

Mini DIN–Mini DIN chain cable
SONY part number RC815

Basic Functionality

Physical inputs refer to explicit codec input and explicit switch input. These can only be controlled from the command interface. The commands xconfiguration MainVideoSource, vidin and xconfiguration Switch Source always control the inputs directly.

Example: To select physical input 3 on the codec, use xconfiguration MainVideoSource: 3, as usual. To see inputs on the switch, select codec input 1 with xconfiguration MainVideoSource: 1 and select switch input with xconfiguration Switch Source <1..6>.

Logical inputs are used when accessing inputs from the menu, remote control and FECC. There are five input buttons on the top of the TRC4 remote control, and these can be remapped to any switch input you wish. The same five buttons are visible in the Presentation/Main Video menu, and these will be remapped in the same manner. If the switch is connected with no special configuration, selecting "main cam" in the menu will give the current input on the switch.

Example: There are two cameras connected to the switch, which we want to access from the menu and remote using the "main cam" and "aux" buttons:

xconfiguration Switch LogicalInput 1 Mode: On
xconfiguration Switch LogicalInput 1 Map: 1
xconfiguration Switch LogicalInput 2 Mode: On
xconfiguration Switch LogicalInput 2 Map: 2

You can rename the inputs using the standard xconfiguration Video Inputs Source <1..6> Name or video name:

xconfiguration Video Inputs Source 1 Name: "HD Camera 1"
xconfiguration Video Inputs Source 2 Name: "HD Camera 2"

Note: If you select a switch input that has no mapping from the command interface, it will be called Switch-<1..6>. If you select a codec input that has been remapped to the switch from the command interface, it will be called Codec-<1..5>.

Command Interface – Configurations

Important: All camera configurations will get new ranges, Camera [1..13] instead of Camera [1..4]. These will behave as follows if a switch is connected:

- 1 will be the switch.
- 2..7 will be cameras connected to secondary chain (chain originating from Data port 2 of the switch).
- 8..13 will be cameras connected to the primary chain (chain originating from Data port 1 of the switch).

Since the switch is the first entry in both chains, there is a max of 6 cameras per chain. This numbering scheme will be as compatible as possible with existing camera support. We open up for the possibility to chain more cameras than 4 in the secondary chain. This will also be possible when the switch is not connected.

xconfiguration Preset [1..15] SwitchVideoSource <0..6>

Will switch the TANDBERG Video Switch to the given input when the preset is activated.

xconfiguration MainVideoSource/DuoVideoSource <1..6>

Will not be changed. 1 will mean current input on the switch.

xconfiguration switch source: <1..6>

Specify which input source to use on the switch. This will only cause a visible change if MainVideoSource is 1.

xconfiguration switch config primary: <on/off>

Default is on. If off, the codec will only do a basic setup of the primary chain and report what kind of cameras are connected. The codec will not set up brightness, whitebalance, gamma etc. for each camera. Turn it off if an external control system handles all the configuration.

xconfiguration switch config secondary: <on/off>

Default is on. If off, the codec will only do a basic setup of the secondary chain and report what kind of cameras are connected. The codec will not set up brightness, whitebalance, gamma etc. for each camera. Turn it off if an external control system handles all the configuration.

xConfiguration Switch LogicalInput [1..5] Mode: <On/Off>
xConfiguration Switch LogicalInput [1..5] Map: <1..6>

Default is LogicalInput [1..5] Mode: Off.

1. Main cam
2. Aux
3. Doc cam
4. VCR
5. PC

Remaps the source buttons on top of the extended remote control. Will also remap inputs selected from the menu, and change FECC accordingly. If mode for a key is on, the table entry will be used to specify which input on the switch to activate.

Command Interface – New Commands

Important: All camera commands will get new ranges, Camera [1..13] instead of Camera [1..4] . This will work as specified in the section above.

The new commands below are also useful if there is no switch connected.

xcommand CameraReconfigure

Re-configures all cameras connected to the switch or codec. This may be useful if you connect new cameras without turning the power off, since the switch does not auto detect such changes.

xcommand CameraUpgrade <1..13> <filename>

Upgrade camera or switch with new software. The software must be put on either /tmp or /user. Camera software files are named s01692.pkg. Switch software files are named s51200.pkg. Currently only upgrading of the first camera/switch is supported.

New Status

xstatus switch

Information about software version and ID will be given by xstatus camera 1. xstatus switch will give information about sync status for the active input, the format, and sync status for all DVI-D inputs.

xstatus switch

*s Switch (connected=True):
Input: 1
Format: 1280X720p60
Sync: True
Sync 1: True
Sync 2: True
Sync 3: False
Sync 4: False

Active input may differ from what is given in the xconfiguration Switch Source setting. This is because an external control system may also change the input.

Communicating Using VISCA

NOTE! This section applies only to users wanting to control the switch directly from an external control system connected to Data port 3 on the switch.

The following describes how to communicate with the TANDBERG Video Switch using the VISCA protocol. For details about the protocol implementation, refer to the System Integrators Guide – Interfacing to the TANDBERG Wave 2 Camera.

VISCA Interface Basics

The TANDBERG Video Switch (TVS) uses a RS-232 control interface that resembles the Sony VISCA protocol.

TVS is configured in exactly the same way as a VISCA camera. TVS will always be located first in the camera chain(s).

The main jobs of the VISCA interface in the TVS are:

- Select which video source to use
- Route VISCA messages to the connected cameras
- Control picture resolutions sent to the codec

Cameras chained to the switch will start with id 2. The codec will automatically recognize this and map the cameras accordingly.

VISCA Serial Ports

The switch has a total of 4 serial ports that communicate using the VISCA protocol.

- Port 0, on the THSI interface, is always connected to the codec.
- Port 1 is the primary VISCA chain for cameras connected to the Switch.
- Port 2 is the secondary VISCA chain for the cameras that normally are connected to codec video inputs 2-5. See the section on Enhanced VISCA below.
- Port 3 is intended for external control systems, and works in the same way as port 0, but with some limitations on available commands. It is comparable to running the daisy port on a TANDBERG Precision HD Camera in dualvisca mode.

This article covers the use of port 3 as the control port for the switch. You *may* use port 0 if you do not intend to use the THSI interface, but only use HDMI out.

Enhanced VISCA

Since the switch has two possible camera chains, all normally formatted commands will be sent to the primary chain. To access the secondary chain, you must first turn Enhanced VISCA on with the **SW_eVisca** command.

Commands going to the secondary chain must be prefixed with **FE 01**. Replies from the secondary chain will also be prefixed with **FE 01**. You will only receive push messages from the secondary chain if Enhanced VISCA is turned on.

Important: Since the switch can receive VISCA from either the codec or an external control system, and since there are two possible camera chains, there are limitations on how commands are issued and answered:

- Only one command can be processed at a time
- Sending a new command when you receive an ACK from a Sony camera is not allowed. ACK messages will be thrown away by the switch
- Reply will always go to the source that issued the command.
- Sony push messages will be sent to both sources.

If this is not expected behaviour, an external control system may, of course, be setw to control all connected cameras directly via VISCA.

VISCA Messages

Commands that are prefixed with SW_ are new for the switch. The CAM_ prefix is used for commands that are copied from TANDBERG Precision HD Camera, or are standard VISCA messages.

VISCA Standard Commands

Command	Command Packet	Comments
CAM_IF_Clear	8x 01 00 01 ff	Clear command buffer. Stop any current operation in progress.
CAM_Address_Set	8x 30 0p ff	p = address for this device. If x=8 (broadcast), increase p with 1 before sending to chain.
CAM_Command_Cancel	8x 2p ff	p = Socket ID. Not supported in TVS
CAM_Power	8x 01 04 00 0p ff	p = 2: Power on. p = 3: Power off.

VISCA Standard Inquiries

Command	Command Packet	Comments
IF_DeviceType_Inq	8x 09 00 02 ff	y0 50 gg gg hh hh jj jj kk ff gggg = Vendor ID hhhh = Model ID jjjj = ROM Revision kk = Max sockets **(No support for this in the TANDBERG Video Switch. Ignore it.)**
CAM_Power_Inq	8x 09 04 00 ff	y0 50 0p ff p = 2: Power on. p = 3: Power off.

VISCA Standard Push Messages

Command	Command Packet	Comments
CAM_Network_Change	x0 38 ff	This indicates that cameras have been added to or removed from the camera chain. To avoid issues with (some) Sony cameras, the control system or codec should delay 9 seconds before reconfiguring the chain.

Configuration Commands

Messages starting with 8x-01-40-<00..1f> are configuration commands.

Command	Command Packet	Comments
SW_Port_0_Cfg	8x 01 40 00 ... ff	Currently not in use.
SW_Port_1_Cfg	8x 01 40 01 ... ff	Currently not in use.
SW_Port_2_Cfg	8x 01 40 02 0p ff	p=0: Disable this port p=1: Enable this port as a secondary VISCA chain port for cameras usually connected to codec input 2-5 (default). p=2: Use this port as a debug port.
SW_Port_3_Cfg	8x 01 40 03 0p ff	p=0: Disable this port p=1: Enable this port as a dual visca port (default). p=2: Use this port as a debug port.
SW_Port_x_ Push_Cfg	8x 01 40 04 0p 0q 0r ff	Configure which push messages to send for given port. p=0/3: Configure port 0 or 3. qr bit 0: Enable/disable SW_Input_Push. qr bit 1: Enable/disable SW_Sync_Push. qr bit 2: Enable/disable Enhanced VISCA. qr = 00 is default for both ports.

Switch control commands

Messages starting with 8x-01-40-<20..3f> are switch control commands.

Command	Command Packet	Comments
SW_Input_Set	8x 01 40 20 0p ff	Sets which input to use. p=0..5 This will generate a **SW_Input_Push** on the THSI Visca port if issued from the dual visca port and vice versa.

Misc.

Command	Command Packet	Comments
CAM_Boot	8x 01 42 ff	Reboot the switch. This will also reset serial speed to 9600.

Inquiries

Messages starting with 8x-09...

Command set	Command Packet	Reply and comments
CAM_ID_Inq	8x 09 04 22 FF	Reply: 90 50 zz xx 00 yy FF zz xx = switch rev, zz=0x40 for TVS yy = firmware rev
CAM_SWID_Inq	8x 09 04 23 ff	Reply: x0 50 [1-125 bytes SWID] ff.
SW_Input_Inq	8x 09 40 20 ff	Reply 90 50 0p ff p=Active input, 0..5
SW_Sync_Inq	8x 09 40 e0 0p ff	Input: p=Input 0..5 Reply: 90 50 0p ff p=2: Input has sync p=3: No sync on input
SW_InputFormat_ Inq	8x 09 40 e1 ff	Reply: 90 50 0p 0q ff pq = Format for active input. 0 = 720p60 1 = 720p59.94 2 = 720p50

Push Messages

Command set	Push Message	Comments
SW_Input_Push	x0 01 40 20 0p ff	The input has been changed. p = the new input source
SW_Sync_Push	x0 01 40 e0 0p 0q ff	Sync state has changed on an input. This one will also be sent if the format is changed, so if sync is on, send a SW_Format_Inq. p = source 0..5 q = state: 2 = sync, 3 = no sync

Disclaimer and Safety Instructions

Disclaimer

The information in this document is furnished for informational purposes only, is subject to change without prior notice, and should not be construed as a commitment by TANDBERG.

TANDBERG reserves the right to amend any of the information given in this document in order to take account of new developments.

Every effort has been made to supply complete and accurate information, however, TANDBERG assumes no responsibility or liability for any errors or inaccuracies that may appear in this document, nor for any infringements of patents or other rights of third parties resulting from its use. No license is granted under any patents or patent rights of TANDBERG.

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.
- 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.
- Unplug the apparatus from communication lines 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 mains 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 it's power source.
- Always use the power supply (AC–DC adapter) provided with this product.
- Replace only with power supply (AC–DC adapter) specified by TANDBERG.
- Never connect the attached power supply (AC–DC adapter) to other products.

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.

A 级声明(A Class product declaration)

本产品为 A 级 ITE，在其使用说明,铭牌等显著位置中已包含如下内容的声明(We declare here that the subject product is A Class ITE product, and the following statement is clearly marked in the user manual and nameplate ：

声　明

此为 A 级产品，在生活环境中，该产品可能会造成无线电干扰。在这种情况下，可能需要用户对其干扰采取切实可行的措施。

WARNING:

This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

声明所在位置 Position of the Declaration：

公司 Company Name：

TANDBERG Telecom AS

签字/盖章 Signature/ Stamp：

TANDBERG

Philip Pedersens vei 20, 1366 Lysaker, Norway
Telephone: +47 67 125 125
Fax: +47 67 125 234
Video: +47 67 117 777
E-mail: tandberg@tandberg.com