

TANDBERG 3G GW

Data port Command Interface User Guide

Software version R2
D1320202

TANDBERG

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1. Introduction

The *TANDBERG GW Data port Command Interface User Guide* contains guidelines on how to use the textual command interface supported by the GW. The Data port Command Interface can be accessed through Telnet via the LAN interface or through RS-232 by connecting a serial cable to the serial interface connector, referred to as the *Data port* (ref. chapter 2). Three Telnet sessions can be connected to the GW at the same time in addition to the RS-232 connection.

If, after reading this manual, you require additional information concerning the use of the *TANDBERG GW Data port Command Interface*, please contact your local TANDBERG dealer who will be able to supply you with relevant information for special applications.

2. Connecting to the Data port Command Interface through the RS-232 port.

The RS-232 port is a 9-pin, female, D-sub connector located on the front of the GW. The port is configured as a DCE (Data Communications Equipment). The RS-232 port is default set to 115200 baud, 8 data bits, none parity and 1 stop bit from factory. The RS-232 port is also referred to as *the Data port*.

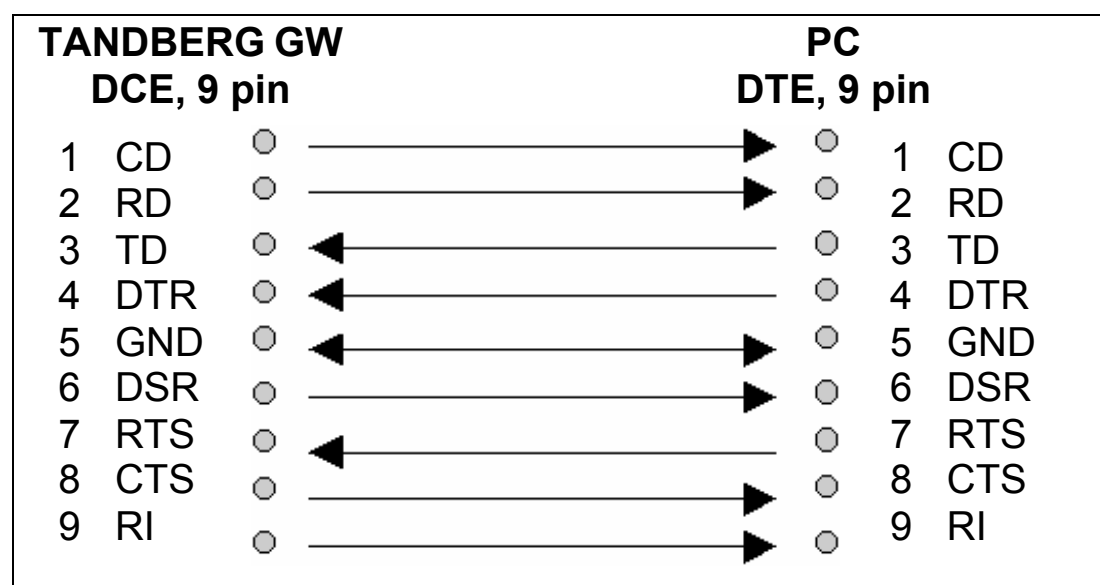
2.1. Hardware and Cabling

The pin outs for the RS-232 are defined in the following table (the DTE, Data Terminal Equipment, could be a PC or other device capable of serial communication).

Pin no	Signal	Description	Direction
1	CD	Carrier detect	To DTE
2	RD	Receive data	To DTE
3	TD	Transmit data	From DTE
4	DTR	Data terminal ready	From DTE
5		Ground	
6	DSR	Data set ready	To DTE
7	RTS	Ready to send	From DTE
8	CTS	Clear to send	To DTE
9	RI	Ring indicator	To DTE

NOTE! A straight through cable should be used between the TANDBERG GW's RS-232 port and the DTE.

The figure below illustrates the recommended cable-wiring scheme for connecting the GW to a PC through RS-232.



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

2.2. Troubleshooting

If communication cannot be established between the PC/terminal and the TANDBERG GW's Data port 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 RS-232 port is identical to the configuration of the TANDBERG GW RS-232 port.
- Verify that the PC/terminal's serial RS-232 port is working properly by connecting it back-to-back to another PC/terminal and send characters in both directions¹.

¹ It requires a null-modem cable to perform this test

3. Connecting to the Data port Command Interface using Telnet

The TANDBERG 3GW has one LAN port.

The GW's Telnet server provides access to the Data port Command Interface through a 10/100 base T network interface supporting the TCP/IP protocol.

When connected to the 3G Gateway, type tsh to start a t-shell from the command line. The Telnet client will receive a welcome message similar to the following:

```
Welcome to TANDBERG
TANDBERG 3G Gateway Release R2.0 customer
SW Release Date: 2006-03-28
```

NOTE! If the TANDBERG 3GW is protected by an IP password you will be prompted to enter this password before you can access the Data port Command Interface via Telnet.

4. The TANDBERG 3G Gateway Commands

4.1. Introduction

Typing '?' or **help** when connected to the Data Port Command Interface will return a list of valid *commands*. The commands are used to control the functions of the 3G Gateway. A command may be followed by a set of *parameters* and *sub-commands*. This chapter gives a description of all valid commands for the 3G Gateway.

4.1.1. Command format

Typing '?' or **help** after a command will result in a *usage text* (*h of help response) being displayed. Usage text gives information about the command format, i.e. valid parameters, sub-commands etc. An example is shown below (the user input is shown in bold).

Xconf Gateway Service 1 ServiceType ?

```
*h xConfiguration Gateway Service [1..100] ServiceType:
<None/DiD/IVR/Phonebook>
```

Numbers 1-100 and None/DiD/IVR/Phonebook are parameters of the configuration (Xconf) command. *Parameters* are arguments upon which the command will operate. Required parameters are denoted by: <>, while optional parameters are denoted by: []. All possible values for given parameters are separated with slashes (/). For some parameters, only their names are supplied within the brackets. In these cases specific parameter values need to be substituted for the parameter names. Allowed parameter values, unless obvious, are provided when the commands are discussed.

Sub-commands are commands grouped together within a command. Different sub-commands within a command may have different parameter sets. In the example below: **Address** and **Authentication** are sub-commands to the command **H323Gatekeeper**. In the same sense **Mode**, **ID** and **Password** are sub commands of H323Gatekeeper Authentication.

xconf H323Gatekeeper ?

```
*h xConfiguration H323Gatekeeper Address: <IPAddr>
```

```
*h xConfiguration H323Gatekeeper Authentication Mode: <Auto/Off>
```

```
*h xConfiguration H323Gatekeeper Authentication ID: <S: 0, 50>
```

```
*h xConfiguration H323Gatekeeper Authentication Password: <S: 0, 50>
```

NOTE! The Data port Command Interface is not case sensitive.

4.1.2. Command types

The commands can be divided into two major classes:

- Parameter Configuration Commands, Xconf.
- Status Commands, Xstat.

- User Commands, Xcom.

Parameter Configuration Commands are commands that set a system parameter to a specific value. E.g.: The command **Xconf telnet mode: "on"** enables telnet access on the gateway. If the command is syntactically correct the GW returns **OK**, otherwise the GW returns **ERROR**. When the parameter is successfully changed, the GW will return the command with the new value. An example is shown below (the user input is shown in bold).

Xconf telnet mode: "on"

OK

*c xConfiguration Telnet Mode: On

When issuing a Parameter Setting Command without a parameter, the GW will return the command with the current setting. E.g.:

Xconf telnet mode

*c xConfiguration Telnet Mode: On

OK

Status Commands are commands that list different sets of system parameters. Status commands are automatically called when corresponding parameters are being changed.

4.2. The commands

The commands are divided into five groups: System Configuration Commands, General GW Commands, System Status Commands, Debug Commands and Special Commands.

4.2.1. System Configuration Commands

Command:	Description:
H323Gatekeeper	<p>Sets gatekeeper parameters. <i>NOTE! H.323 services must be set before the GW can be registered to a gatekeeper.</i></p> <p>H323Gatekeeper Address <IPAddr> or H323Gatekeeper Authentication Mode <Auto/off> or H323Gatekeeper Authentication ID: <S: 0, 50> Or H323Gatekeeper Authentication Password: <S: 0, 50> ---</p> <p><u>sub-commands:</u></p> <ul style="list-style-type: none"> • Authentication Mode configures the use of authentication against a gatekeeper. • Authentication ID Configures the user name used within an authentication challenge • Authentication Password sets the password used within the authentication process. <p><i>NOTE! Authentication Password is write only.</i></p> <p><u>Example of H323Gatekeeper feedback:</u> Xconf H323Gatekeeper Authentication *c xConfiguration H323Gatekeeper Authentication Mode: Off *c xConfiguration H323Gatekeeper Authentication ID: ""</p>
H323CallSetup	<p>Configures for direct or via gatekeeper calling</p> <p>H323CallSetup Mode: <Direct/Gatekeeper> --</p> <p><u>Example of H323CallSetup feedback:</u> *c xConfiguration H323CallSetup Mode: Direct</p>
IP	<p>Configures the LAN interfaces when static IP address allocation is used.</p> <p><i>NOTE! The GW needs to reboot before the changes will take effect.</i></p> <p>IP Assignment: <DHCP/Static> or IP Address <IPAddr> or IP Address Subnetmask <Subnetmask> or IP Address Gateway <IPAddr> or IP Address DNS Server [1..5] Address <IPAddr> or IP Address DNS Domain Name <S: 0, 64> ---</p> <p><u>parameters:</u></p>

	<ul style="list-style-type: none"> • DNS Server: Number identifying one of 5 DNS servers which can be configured. If this parameter is omitted the command applies to the first configuration (1). <p><u>sub-commands:</u></p> <ul style="list-style-type: none"> • Assignment: Selects between DHCP (Dynamic Host Configuration Protocol) or static IP address allocation. When DHCP is selected the GW will automatically receive all the necessary information from the DHCP server. This function should be used when the GW is connected to a LAN using DHCP. When using this mode, IP-address and IP-subnet mask are not used because the DHCP server supplies these parameters. • Address: Sets the static IP address for the given LAN interface. • Subnetmask: Sets the subnet mask variable. Subnet mask defines the network class. If the setting is 255.255.255.0 the local network will support up to 256 nodes, denoting a class C network. If the setting is 255.255.0.0 the local network is a class B network with 65536 addressable nodes. • Gateway: Sets the gateway IP address. If a gateway is located on the LAN and the GW needs to reach nodes through this gateway, the gateway address can be set using the gateway variable (the IP address of the gateway will be set automatically if the GW is in DHCP mode) • Domain Name: Sets the domain name string of which the gateway is part of. Minimum 0, maximum 64 characters. <p><u>Example of IP Address feedback:</u> *c xConfiguration IP Address: "127.0.0.1"</p>
Ethernet	<p>Sets LAN port speed. <i>NOTE! The GW needs to reboot before the changes will apply.</i></p> <p>Ethernet <speed> ---</p> <p><u>parameters:</u></p> <ul style="list-style-type: none"> • speed: auto/10half/10full/100half/100full. The speed is either set to auto or manually from 10mb half duplex to 100mb full duplex. When set to auto the GW will automatically negotiate with the network and use the best available setting. <p><u>Example of Ethernet feedback:</u> *c xConfiguration Ethernet Speed: Auto</p>
ISDN	<p>Defines various ISDN protocol settings.</p> <p>ISDN IncomingBearerCapability: <UDI/All> or ISDN OutgoingBearerCapability: <H324m/UDI> or ISDN BRI SwitchType: <NI/ATT/Euro/Japan> or ISDN PRI SwitchType: <NI/ATT/Euro/Japan> or ISDN PRI Interface LowChannel: <1..31> ---</p> <p><u>Parameters:</u></p> <p><u>sub-commands:</u></p>

	<p>Within ISDN different bearer capabilities are used to signal the type of data (Voice, Data, H320, H324M), which is used by switches and other equipment to determine what to do with the data or the call (compand neglect etc).</p> <ul style="list-style-type: none"> • IncomingBearerCapability: sets the ISDN bearer capability of the incoming 3G calls. In some situations the non correct UDI bearer is used in stead of the right H324M capability. This setting makes it possible to accept incoming 3G calls both situations.. • OutgoingBearerCapability: sets the ISDN bearer capability for the outgoing 3G calls. In some situations the switch does not accept calls which use the correct H324M capability. This setting makes it possible to use the gateway in these situations (UDI). • BRI SwitchType: Sets the switch type of the gateway in case of a BRI version. • PRI SwitchType: Sets the switch type of the gateway in case of a PRI version. • PRI Interface LowChannel: This parameter sets the lowest channel to start with when making outgoing call (to 3G handsets) <p><u>Example of ISDN feedback:</u> <i>*c xConfiguration ISDN IncomingBearerCapability: All</i> <i>*c xConfiguration ISDN OutgoingBearerCapability: UDI</i> <i>*c xConfiguration ISDN BRI SwitchType: Euro</i> <i>*c xConfiguration ISDN PRI SwitchType: Euro</i> <i>*c xConfiguration ISDN PRI Interface LowChannel: 1</i></p>
E1	<p>E1 is the configuration of CRC4 for the ISDN PRI lines.</p> <p>E1 Interface CRC4: <On/Off></p> <hr/> <p>Example of E1 feedback: <i>*c xConfiguration E1 Interface CRC4: Off</i></p>
HTTPS	<p>Enables or disables access to HTTPS services. <i>NOTE! Changes become effective after reboot</i></p> <p>HTTPS Mode <On/Off></p> <p><u>Example of HTTPS feedback:</u> <i>*c xConfiguration HTTPS Mode: Off</i></p>
HTTP	<p>Enables or disables access to HTTP services. <i>NOTE! Changes become effective after reboot.</i></p> <p>HTTP Mode <On/Off></p> <p><u>Example of HTTP feedback:</u> <i>*c xConfiguration HTTP Mode: On</i></p>
SNMP	<p>Configures the SNMPmib. <i>Note! For more information about SNMP please read the TANDBERG SNMP application note.</i></p> <p>SNMP Mode < On/Off/ReadOnly/TrapsOnly > or SNMP CommunityName: <S: 0, 16> or SNMP SystemContact: <S: 0, 70> or</p>

	<p>SNMP SystemLocation: <S: 0, 70> or SNMP HostIPAddr [1..3]: <IPAddr> ---</p> <p><u>parameters:</u></p> <ul style="list-style-type: none"> • Mode: < On/Off/ReadOnly/TrapsOnly > • Community Name: Text string of maximum 16 characters. • System Contact: Text string of maximum 70 characters • System Location: Text string of maximum 70 characters • Host IP Addr: The IP addresses of max 3 SNMP trap hosts <p><u>sub-commands:</u></p> <ul style="list-style-type: none"> • Mode enables or sets the mode of SNMP support • Community Name is used to authenticate SNMP requests. SNMP requests must have this 'password' in order to receive a response from the SNMP agent in the gateway. • System Contact, Used to identify the system contact via SNMP tools such as HPOpenView or TANDBERG Management Suite • System Location Used to identify system location via SNMP tools such as HPOpenView or TANDBERG Management Suite • Host IP Addr identifies the IP-address of the SNMP manager. Up to three different SNMP Trap Hosts can be defined. Your LAN administrator should provide the correct values for these fields <p><u>Example of SNMP feedback:</u> <i>*c xConfiguration SNMP Mode: On</i> <i>*c xConfiguration SNMP CommunityName: "public"</i> <i>*c xConfiguration SNMP SystemContact: ""</i> <i>*c xConfiguration SNMP SystemLocation: ""</i> <i>*c xConfiguration SNMP HostIPAddr 1: "127.0.0.1"</i> <i>*c xConfiguration SNMP HostIPAddr 2: "127.0.0.1"</i> <i>*c xConfiguration SNMP HostIPAddr 3: "127.0.0.1"</i></p>
SSH	<p>Enables or disables SSH interface on the 3G GW</p> <p>SSH Mode: <On/Off> ---</p> <p><u>Example of SSH feedback:</u> <i>*c xConfiguration SSH Mode: On</i></p>
TELNET	<p>Enables or disables telnet interface on the 3G GW</p> <p>Telnet Mode: <On/Off> ---</p> <p><u>Example of TELNET feedback:</u> <i>*c xConfiguration Telnet Mode: On</i></p>
SystemUnit	<p>Sets the 3G GW name and password</p> <p>SystemUnit Name: <S: 0, 50> or SystemUnit Password: <S: 0, 16> ---</p> <p><u>Parameters:</u></p> <ul style="list-style-type: none"> • Name: Text string of maximum 50 characters • Password: Text string of maximum 16 characters

	<p>sub-commands</p> <ul style="list-style-type: none">• Name, sets the name of the 3G Gateway• Password, sets the password of the 3G gateway <p><u>Example of SystemUnit feedback:</u> *c xConfiguration SystemUnit Name: ""</p>
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4.2.2. General GW Commands

Command:	Description:
Gateway	<p>This command is used to configure the 3G gateway dialling rules, like for example direct inward dialling, H323 call prefixes and dial in numbers. It is possible to define 100 services, each with the parameters:</p> <ul style="list-style-type: none"> • Description indicates the user applied name of the service • InNetType indicates the dial in for this particular service configuration. • OutNetType indicates the dial out for this particular service configuration • InPrefix will be used for matching the incoming called number/address and is used to register with the gatekeeper in case call type is H323 • InPostfix is the part of the dialed number that will be removed/replaced. • ServiceType indicates whether this service is a direct inward dialing, a phonebook or an IVR service is. • OutPrefix and OutPostfix will be used to construct the number/address that will be called (if applicable) using this service. <p> Service [1..100] Description: <S: 0, 30> or Service [1..100] InNetType: <H324m/3G/H323 > or Service [1..100] OutNetType: <H324m/3G/H323 > or Service [1.. 100] InPrefix: <S: 0, 30> or Service [1.. 100] InPostfix: <S: 0, 30> or Service [1.. 100] ServiceType: <None/DiD/IVR/Phonebook > or Service [1.. 100] OutPrefix: <S: 0, 30> or Service [1.. 100] OutPostfix: <S: 0, 30> or LoadLimit: <0..100> --- </p> <p>Parameters:</p> <p><u>sub-commands:</u></p> <ul style="list-style-type: none"> • Description: This is a friendly name for the service configured like for example 3G to H323 and 3G hotline to H323 • InNetType. • OutNetType • InPrefix. • InPostfix • ServiceType • OutPrefix • OutPostfix • LoadLimit The GW will signal busy to the gatekeeper when the current load on the GW reaches this limit. The current system load can be monitored by the status command <i>SystemLoad</i>

	<p><u>Example of Gateway feedback:</u></p> <pre>*c xConfiguration Gateway Service 1 Description: "" *c xConfiguration Gateway Service 1 ServiceType: DiD *c xConfiguration Gateway Service 1 InNetType: H324m/3G *c xConfiguration Gateway Service 1 InPrefix: 6789"" *c xConfiguration Gateway Service 1 InPostfix: "" *c xConfiguration Gateway Service 1 OutNetType: H324m/3G *c xConfiguration Gateway Service 1 OutPrefix: "5" *c xConfiguration Gateway Service 1 OutPostfix: "" *c xConfiguration Gateway LoadLimit: 100</pre> <p><i>When dialling the number 67890000 there will be a match with "0000" as the significant number. The H.323 number to call is: 50000 (construction: prefix + significant numbers + postfix). When dialling number 67894321 this will match with "4321" as the significant number. The H.323 number to call is: 54321 (construction: prefix + significant numbers + postfix)</i></p>
ExternalManager	<p>This command sets the path and address of TMS server.</p> <p>ExternalManager Path: <S: 0, 255> or ExternalManager Address: <IPAddr> --</p> <p><u>sub-commands:</u></p> <ul style="list-style-type: none"> • Path • Address, the IP address of the manager <p>Example of ExternalManager feedback *c xConfiguration ExternalManager Path: "tms/public/external/management/SystemManagementService.asmx" *c xConfiguration ExternalManager Address: ""</p>
CorporateDirectory	<p>This command sets the path and address of the Corporate Directory (phonebook) server.</p> <p>CorporateDirectory Address: <IP Addr> or CorporateDirectory Path: <S: 0, 255> --</p> <p><u>sub-commands:</u></p> <ul style="list-style-type: none"> • Path, the path of the HTTP request • Address, the IP address of the manager <p>Example of Corporate Directory feedback *c xConfiguration CorporateDirectory Path: "tms/public/external/phonebook/PhoneBookService.asmx" *c xConfiguration CorporateDirectory Address: ""</p>
NTP	<p>This command sets the address of the NTP server.</p> <p>NTP Address: <IP Addr> --</p> <p><u>sub-commands:</u></p> <ul style="list-style-type: none"> • Address, the IP address of the server <p>Example of NTP feedback *c xConfiguration NTP Address: "131.188.3.220"</p>
Options	View and adapt option keys

	<p><i>NOTE! The GW needs to reboot before the changes will take effect.</i></p> <p>Options [1 .. 64] Key: <S: 0, 90></p> <p>---</p> <p><u>sub-commands:</u></p> <ul style="list-style-type: none"> • Key: Option key for e.g. BRI, PRI or SS7 trunks. <p><u>Example of Options feedback:</u></p> <p><i>*c xConfiguration Options 1 Key: "115201SS7-1-55C3EBB7"</i></p> <p><i>*c xConfiguration Options 2 Key: "115201P1-1-6A96DAA4"</i></p> <p><i>*c xConfiguration Options 3 Key: "115201P1-2-1811D4FA"</i></p> <p><i>*c xConfiguration Options 4 Key: "115201P1-3-79828C53"</i></p> <p><i>*c xConfiguration Options 5 Key: "115201P1-4-B5E5BD4A"</i></p>
SIP	<p>Configures the SIP Proxy Mode and Address settings.</p> <p>Mode <On/Off> or Proxy Address <IPAddr> or Proxy Port: <1 .. 65534></p> <p>---</p> <p><u>sub-commands:</u></p> <ul style="list-style-type: none"> • Mode: If Mode = On the 3G Gateway is registered with the Proxy server • Address: IP address of the Proxy server the 3G Gateway is to be registered to. • Port: Port number of the Proxy server. <p><u>Example of SIP feedback:</u></p> <p><i>*c xConfiguration SIP Proxy Mode: Off</i></p> <p><i>*c xConfiguration SIP Proxy Address: "127.0.0.1"</i></p> <p><i>*c xConfiguration SIP Proxy Port: 5060</i></p>
SS7	<p>Configures the SS7 Signalling for all 3G Gateway trunks</p> <p><i>NOTE! The GW needs to reboot before the changes will take effect.</i></p> <p>OPC: <0 .. 16383></p> <p>NetworkIndicator: <International0/International1/National0/National1></p> <p>Law: <ALaw/ULaw></p> <p>LinkSet [1 .. 2] Mode: <On/Off></p> <p>LinkSet [1 .. 2] DPC: <0 .. 16383></p> <p>LinkSet [1 .. 2] Link [1 .. 2] Mode: <On/Off></p> <p>LinkSet [1 .. 2] Link [1 .. 2] Trunk: <1 .. 4></p>

	<p>LinkSet [1 .. 2] Link [1 .. 2] Timeslot: <1 .. 31></p> <p>LinkSet [1 .. 2] Link [1 .. 2] SLC: <0 .. 15></p> <p>Trunk [1 .. 4] Mode: <On/Off></p> <p>Trunk [1 .. 4] DPC: <0 .. 16383></p> <p>Trunk [1 .. 4] CircuitIdentificationCode: <0 .. 16383></p> <p>Route [1 .. 8] DPC: <0 .. 16383></p> <p>Route [1 .. 8] Priority: <1 .. 4></p> <p>Route [1 .. 8] LinkSet: <Off/1/2></p> <p>---</p> <p><u>sub-commands:</u></p> <ul style="list-style-type: none"> • OPC: A number between 0-2¹⁴, which uniquely identifies a signaling point, in this case the 3G Gateway, within a telephone network. This number consists of three parts, i.e. a network, cluster and member number, and will be provided by the network operator. • NetworkIndicator: A two bit data field within the Service Information Octet of the Message Signal Unit that permits discrimination between national and international messages. • Law: audio standard: Either ALAW or ULAW. An a-law algorithm is a standard companding, i.e. compressing and expanding, algorithm, used in European digital communication systems to optimize, i.e. modify, the dynamic range of an analog signal for digitizing. The μ-law algorithm is similar to a-law and used in North American and Japanese systems. • LinkSet Mode: Enable or disable linksets. • LinkSet DPC: Uniquely identifies the destination signaling point of the link. This can differ from the DPC of the trunk, e.g. the DPC of a Signaling Transfer Point (STP), see example 2 below. • LinkSet Link Mode: Enable a link in a link set. • LinkSet Link Trunk: Number of the trunk (1 - 4) in which a time slot is reserved for signaling. • LinkSet Link Timeslot: Number of the time slot, within aforementioned trunk, reserved for signaling. • LinkSet Link SLC: A Signaling Link Code is a unique link number provided by the network operator to identify a link. • Trunk Mode: Enable or disable a trunk. • Trunk DPC: Uniquely identifies the destination signaling point of the trunk. It will be provided by the network operator. • Trunk CircuitIdentificationCode: The Circuit Identification Code is a unique identifier for a data time slot in a cable (trunk). In this case the CIC acts as base address and can be defined for each SS7 trunk and sets the first time-slot number of the respective SS7 trunk. • Route DPC: Unique identifier indicating the destination signaling point of a trunk. • Route Priority: Priority level of the route to the destination signaling point. Fail-over signaling paths will be followed according to this priority. • Route LinkSet: Indicates the link to the destination signaling point according to the above mentioned priority setting. <p>For more details on the sub-commands please read the chapter about SS7</p>
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in the 3G Gateway User Manual.Example of SS7 feedback:

**c xConfiguration SS7 OPC: 0*

**c xConfiguration SS7 NetworkIndicator: National0*

**c xConfiguration SS7 Law: ALaw*

**c xConfiguration SS7 LinkSet 1 Mode: Off*

**c xConfiguration SS7 LinkSet 1 DPC: 0*

**c xConfiguration SS7 LinkSet 1 Link 1 Mode: Off*

**c xConfiguration SS7 LinkSet 1 Link 1 Trunk: 0*

**c xConfiguration SS7 LinkSet 1 Link 1 Timeslot: 0*

**c xConfiguration SS7 LinkSet 1 Link 1 SLC: 0*

**c xConfiguration SS7 LinkSet 1 Link 2 Mode: Off*

**c xConfiguration SS7 LinkSet 1 Link 2 Trunk: 0*

**c xConfiguration SS7 LinkSet 1 Link 2 Timeslot: 0*

**c xConfiguration SS7 LinkSet 1 Link 2 SLC: 0*

**c xConfiguration SS7 LinkSet 2 Mode: Off*

**c xConfiguration SS7 LinkSet 2 DPC: 0*

**c xConfiguration SS7 LinkSet 2 Link 1 Mode: Off*

**c xConfiguration SS7 LinkSet 2 Link 1 Trunk: 0*

**c xConfiguration SS7 LinkSet 2 Link 1 Timeslot: 0*

**c xConfiguration SS7 LinkSet 2 Link 1 SLC: 0*

**c xConfiguration SS7 LinkSet 2 Link 2 Mode: Off*

**c xConfiguration SS7 LinkSet 2 Link 2 Trunk: 0*

**c xConfiguration SS7 LinkSet 2 Link 2 Timeslot: 0*

**c xConfiguration SS7 LinkSet 2 Link 2 SLC: 0*

**c xConfiguration SS7 Trunk 1 Mode: Off*

**c xConfiguration SS7 Trunk 1 DPC: 0*

**c xConfiguration SS7 Trunk 1 CircuitIdentificationCode: 0*

**c xConfiguration SS7 Trunk 2 Mode: Off*

**c xConfiguration SS7 Trunk 2 DPC: 0*

**c xConfiguration SS7 Trunk 2 CircuitIdentificationCode: 0*

<p><i>*c xConfiguration SS7 Trunk 3 Mode: Off</i></p> <p><i>*c xConfiguration SS7 Trunk 3 DPC: 0</i></p> <p><i>*c xConfiguration SS7 Trunk 3 CircuitIdentificationCode: 0</i></p> <p><i>*c xConfiguration SS7 Trunk 4 Mode: Off</i></p> <p><i>*c xConfiguration SS7 Trunk 4 DPC: 0</i></p> <p><i>*c xConfiguration SS7 Trunk 4 CircuitIdentificationCode: 0</i></p> <p><i>*c xConfiguration SS7 Route 1 DPC: 0</i></p> <p><i>*c xConfiguration SS7 Route 1 Priority: 0</i></p> <p><i>*c xConfiguration SS7 Route 1 LinkSet: Off</i></p> <p><i>*c xConfiguration SS7 Route 2 DPC: 0</i></p> <p><i>*c xConfiguration SS7 Route 2 Priority: 0</i></p> <p><i>*c xConfiguration SS7 Route 2 LinkSet: Off</i></p> <p><i>*c xConfiguration SS7 Route 3 DPC: 0</i></p> <p><i>*c xConfiguration SS7 Route 3 Priority: 0</i></p> <p><i>*c xConfiguration SS7 Route 3 LinkSet: Off</i></p> <p><i>*c xConfiguration SS7 Route 4 DPC: 0</i></p> <p><i>*c xConfiguration SS7 Route 4 Priority: 0</i></p> <p><i>*c xConfiguration SS7 Route 4 LinkSet: Off</i></p> <p><i>*c xConfiguration SS7 Route 5 DPC: 0</i></p> <p><i>*c xConfiguration SS7 Route 5 Priority: 0</i></p> <p><i>*c xConfiguration SS7 Route 5 LinkSet: Off</i></p> <p><i>*c xConfiguration SS7 Route 6 DPC: 0</i></p> <p><i>*c xConfiguration SS7 Route 6 Priority: 0</i></p> <p><i>*c xConfiguration SS7 Route 6 LinkSet: Off</i></p> <p><i>*c xConfiguration SS7 Route 7 DPC: 0</i></p> <p><i>*c xConfiguration SS7 Route 7 Priority: 0</i></p> <p><i>*c xConfiguration SS7 Route 7 LinkSet: Off</i></p> <p><i>*c xConfiguration SS7 Route 8 DPC: 0</i></p> <p><i>*c xConfiguration SS7 Route 8 Priority: 0</i></p> <p><i>*c xConfiguration SS7 Route 8 LinkSet: Off</i></p>

VideoPortal	<p>Registers the 3G Gateway with the VideoPortal</p> <p><i>NOTE! The GW needs to reboot before the changes will take effect.</i></p> <p>Mode <On/Off> or System [1 .. 2] IP Address <IPAddr></p> <p>---</p> <p><u>sub-commands:</u></p> <ul style="list-style-type: none">• Mode: If Mode = On the 3G Gateway is registered with 1 or 2 video portals• Address: IP address of the Video Portal the 3G Gateway is to be registered to. <p><u>Example of VideoPortal feedback:</u></p> <p><i>*c xConfiguration VideoPortal Mode: On</i></p> <p><i>*c xConfiguration VideoPortal System 1 Address: "10.31.1.8"</i></p> <p><i>*c xConfiguration VideoPortal System 2 Address: "127.0.0.1"</i></p>
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4.2.3. System Status Commands

Command:	Description:
SystemUnit	<p>Displays information regarding the physical system</p> <p>SystemUnit</p> <p>Status format: <ProductType> <Uptime> <Software Version> Name> ReleaseDate> Configuration Telephony:> VideoTelephony:></p> <p><Hardware : Version> SerialNumber> MainBoard> AdditionalBoard> Configuration: PRI> TemperatureCelcius> TemperatureFahrenheit></p> <p>---</p> <p><u>Parameters:</u></p> <ul style="list-style-type: none"> • ProductType, the name of the product, e.g. 3G Gateway • Uptime, the time the system is running since the last reboot in seconds • Software <ul style="list-style-type: none"> ○ Version, the unique name of the software ○ Name, ○ ReleaseDate, the time and date of the build of this software ○ Configuration <ul style="list-style-type: none"> • Telephony, the amount of supported voice channels • VideoTelephony, the amount of supported video channels • Hardware <ul style="list-style-type: none"> ○ Version, software ID ○ SerialNumber, software serial number ○ MainBoard, the ID of the main board ○ AdditionalBoard, indicates extra boards in the box ○ Configuration: <ul style="list-style-type: none"> • PRI, the amount of PRIs in the target system • BRI, the amount of BRIs in the target system • TemperatureCelcius, temperature of the main board in Celcius • TemperatureFahrenheit, temperature of the main board in Fahrenheit <p><u>Example of SystemUnit feedback:</u> *s SystemUnit: ProductType: "TANDBERG 3G Gateway" Uptime: 15123 Software: Version: "R2.0Beta8 (TEST SW)" Name: "test" ReleaseDate: "2006-04-21, 17:54, rsc" Configuration:</p>

	<pre> Telephony: 0 VideoTelephony: 0 Hardware: Version: "3GW 1.0" SerialNumber: "43A00001" MainBoard: "" AdditionalBoard: "" Configuration: PRI:41 TemperatureCelcius: NA TemperatureFahrenheit: NA *s/end </pre>
Ethernet	<p>Displays the configuration of the Ethernet interface</p> <p>Ethernet</p> <p>Status format: < MacAddress> < Speed> ---</p> <p><u>Parameters:</u></p> <ul style="list-style-type: none"> • MacAddress, The mac address of the Ethernet interface • Speed, The speed of the interface, possible values are Auto/10half/10full/100half/100full. <p>Example of Ethernet feedback *s Ethernet: MacAddress: "00:0E:0C:5C:B5:7D" Speed: 100full *s/end</p>
IP	<p>Displays the IP configuration of the gateway</p> <p>IP</p> <p>Status format: < Address> < SubnetMask> < Gateway> < DNS:</p> <p style="padding-left: 40px;">Server 1: Address></p> <p style="padding-left: 40px;">Server 2: Address></p> <p style="padding-left: 40px;">Server 3: Address></p> <p style="padding-left: 40px;">Server 4: Address></p> <p style="padding-left: 40px;">Server 5: Address></p> <p style="padding-left: 40px;">Domain: Name></p> <p>---</p> <p><u>Parameters:</u></p> <ul style="list-style-type: none"> • Address, the IP address of the gateway • SubnetMask, the subnetmask used for the connected network • Gateway, the gateway to route traffic to an IP number outside the connected network

	<ul style="list-style-type: none"> • DNS Server [1.. 5] Address, the IP numbers of maximum 5 DNS servers • Domain, the name of the domain the gateway is part of. <p>Example of IP feedback: <i>*s IP:</i> <i>Address: "10.31.0.5"</i> <i>SubnetMask: "255.255.248.0"</i> <i>Gateway: "10.31.0.1"</i> <i>DNS:</i> <i>Server 1:</i> <i>Address: "127.0.0.1"</i> <i>Server 2:</i> <i>Address: "127.0.0.1"</i> <i>Server 3:</i> <i>Address: "127.0.0.1"</i> <i>Server 4:</i> <i>Address: "127.0.0.1"</i> <i>Server 5:</i> <i>Address: "0.0.0.0"</i> <i>Domain:</i> <i>Name: ""</i> <i>*s/end</i></p>
H323Gatekeeper	<p>Displays the status of the connection with the gatekeeper.</p> <p>H323Gatekeeper</p> <p>Status format: <Status> <Address> <Port> ---</p> <p>Parameters:</p> <ul style="list-style-type: none"> • Status, indicates whether the 3G Gateway is registered with the gatekeeper • Address, the IP address of the connected gatekeeper • Port, the gatekeeper port the gateway is connected with <p>Example of H323Gatekeeper feedback: <i>*s H323Gatekeeper (status=Registered):</i> <i>Address: "10.47.9.1"</i> <i>Port: 1719</i> <i>*s/end</i></p>
ExternalManager	<p>Displays the configuration of the external management system (e.g. TMS). ExternalManager:</p> <p>Status format: <Address> <Protocol> <URL> ---</p> <p>Parameters:</p> <ul style="list-style-type: none"> • Address, The IP address of the external management system • Protocol, the protocol used to access the management system • URL, the URL on the management system that should be opened by the gateway in case of status updates

	<p>Example of ExternalManager feedback: <i>*s ExternalManager:</i> <i>Address: ""</i> <i>Protocol: HTTP</i> <i>URL: "tms/public/external/management/SystemManagementService.asmx"</i> <i>*s/end</i></p>
BRI [1..4]	<p>Displays the status of the BRI lines</p> <p>BRI</p> <p><u>Parameters:</u></p> <ul style="list-style-type: none"> • BRI [1..4] indicating the status of the different BRI lines <p>Example of BRI feedback:</p> <p><i>*s BRI 1 (ready=False):</i> <i>Layer1Alarm: On</i> <i>Layer2Alarm: On</i> <i>*s/end</i></p> <p><i>*s BRI 2 (ready=False):</i> <i>Layer1Alarm: On</i> <i>Layer2Alarm: On</i> <i>*s/end</i></p> <p><i>*s BRI 3 (ready=False):</i> <i>Layer1Alarm: On</i> <i>Layer2Alarm: On</i> <i>*s/end</i></p> <p><i>*s BRI 4 (ready=True):</i> <i>Channel 1 (type=BChannel, status=Idle): /</i> <i>Channel 2 (type=BChannel, status=Idle): /</i> <i>*s/end</i></p>
PRI [1..4]	<p>Displays the status of the PRI line</p> <p>PRI</p> <p><u>Parameters:</u></p> <ul style="list-style-type: none"> • PRI [1..4] indicating the status of the different PRI lines <p>Example of PRI feedback</p> <p><i>*s PRI 1 (ready=True):</i> <i>BChannelsTotal: 30</i> <i>BChannelsFree: 30</i> <i>Channel 1 (type=BChannel, status=Idle): /</i> <i>Channel 2 (type=BChannel, status=Idle): /</i> <i>Channel 3 (type=BChannel, status=Idle): /</i> <i>Channel 4 (type=BChannel, status=Idle): /</i> <i>Channel 5 (type=BChannel, status=Idle): /</i> <i>Channel 6 (type=BChannel, status=Idle): /</i> <i>Channel 7 (type=BChannel, status=Idle): /</i> <i>Channel 8 (type=BChannel, status=Idle): /</i> <i>Channel 9 (type=BChannel, status=Idle): /</i> <i>Channel 10 (type=BChannel, status=Idle): /</i> <i>Channel 11 (type=BChannel, status=Idle): /</i> <i>Channel 12 (type=BChannel, status=Idle): /</i> <i>Channel 13 (type=BChannel, status=Idle): /</i> <i>Channel 14 (type=BChannel, status=Idle): /</i></p>

	<pre> Channel 15 (type=BChannel, status=Idle): / Channel 16 (type=DChannel, status=NA): / Channel 17 (type=BChannel, status=Idle): / Channel 18 (type=BChannel, status=Idle): / Channel 19 (type=BChannel, status=Idle): / Channel 20 (type=BChannel, status=Idle): / Channel 21 (type=BChannel, status=Idle): / Channel 22 (type=BChannel, status=Idle): / Channel 23 (type=BChannel, status=Idle): / Channel 24 (type=BChannel, status=Idle): / Channel 25 (type=BChannel, status=Idle): / Channel 26 (type=BChannel, status=Idle): / Channel 27 (type=BChannel, status=Idle): / Channel 28 (type=BChannel, status=Idle): / Channel 29 (type=BChannel, status=Idle): / Channel 30 (type=BChannel, status=Idle): / Channel 31 (type=BChannel, status=Idle): / *s/end </pre>
Feedback [1.. 3]	<p>Lists the URL and feedback expressions registered for the given Feedback ID</p> <p>Feedback</p> <p><u>Parameters:</u></p> <ul style="list-style-type: none"> status: on/off Indicates if there is HTTP feedback registered for a given Feedback ID, ref. command <i>FeedbackRegister</i>. <p>Example of feedback:</p> <pre> *s Feedback 1 (status=Off): / *s/end *s Feedback 1 (status=On): URL: "http://10.47.14.185:8000/" Expression: "status/call[@status="Synced"]" Expression: "" Expression: "" Expression: "" Expression: "" Expression: "" Expression: "" Expression: "" Expression: "" Expression: "" Expression: "" Expression: "" Expression: "" Expression: "" Expression: "" Expression: "" Expression: "" Expression: "" Expression: "" *s/end </pre>
GatewayCall [1 .. 120]	<p>Displays the status of the different ISDN lines</p> <p>GatewayCall</p> <p>Status format: <Status></p> <p>Parameters:</p> <ul style="list-style-type: none"> Status [1..100], the status of the ISDN line

	<p>Example of GatewayCall feedback:</p> <pre>*s GatewayCall 1 (status=Inactive): / *s/end OK *s GatewayCall 1 (status=Active): CallRef 1: 1 CallRef 2: 2 *s/end OK xstat gatewaycall 1 *s GatewayCall 1 (status=Active): CallRef 1: 1 CallRef 2: 3 *s/end OK</pre>
SystemLoad	<p>Returns the current system load in percentage.</p> <p>SystemLoad</p> <p>Status format: SystemLoad <1..100></p>
Call [1 .. 360]	<p>Displays the session legs within gateway calls. Every session can have a maximum of three legs: calling and called party and the phonebook or IVR menu.</p> <p>Call</p> <p>Parameters:</p> <ul style="list-style-type: none"> • Status [1 .. 360], the status of the different session legs.
NTP	<p>Returns the IP address of the NTP server.</p> <p>Status format: <Status> <Address> <Port> <Last Update> <Last Correction> ---</p> <p>Parameters:</p> <ul style="list-style-type: none"> • Status, indicates whether the NTP server is active or not. • Address, the IP address of the NTP server. • Port, is default 123. • LastUpdate, indicates the last update date and time. • Last Correction, the time correction in seconds. <p>Example of NTP feedback:</p> <pre>*s NTP (status=Active): Address: "131.188.3.220" Port: 123 LastUpdate: "2006-04-10 15:21:14"</pre>

	LastCorrection: 1 *s/end
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4.2.4. Debug Commands

Command:	Description:
Syslog	<p>Enables a real-time log of Bonding, H.221 and H.323, H324m, ISDN, RTSP, IVider, SIP and IVider Engine activity.</p> <p>Note! Logging via the serial port is limited by the speed of the serial port, which might result in loss of logging data. Therefore, it is advised to use Telnet instead.</p> <p>Syslog <Level> <Mask></p> <p>Level [0..3]: no logging when level = 0</p> <p>Mask: With this Mask the logging of different components can be turned on. The mask has to be used as a bit mask.</p> <p>FREYALOGH324m 1 FREYALOGH323 2 FREYALOGISDN 4 FREYALOGRTSP 8 FREYALOGIVID 16 FREYALOGSIP 32 FREYALOGENGI 64</p> <p>For instance to view the logging of the H324m, SIP and IVider components, the mask value equals $1 + 16 + 32 = 49$</p>

4.2.5. Special Commands

Command:	Description:
Boot	<p>Reboots the system.</p> <p>xCommand Boot</p>
DefaultValuesSet	<p>This command is used to restore factory default settings. Issuing this command with no parameters will restore all settings except network settings and option keys.</p> <p>DefaultValuesSet Level: <1 .. 3></p> <p>Example (restore all default factory setting):</p> <p>xCommand DefaultValuesSet</p> <p>*r Result (status=OK): / *r/end</p> <p>OK</p>
FeedbackRegister	<p>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</p>

	<p>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.</p> <p>Parameters:</p> <ul style="list-style-type: none"> • 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 <p>OK Result parameters:</p> <ul style="list-style-type: none"> • ID: <1 .. 3> <p>ERROR Result parameters:</p> <ul style="list-style-type: none"> • Cause: <1...> Cause code specifying why the command was not accepted by the system • Description Textual description of the cause code. <p>Example: xCommand feedbackregister url:http://10.47.14.185:8000 expression.1:status/call expression.2:status/conference</p> <p>*r Result (status=OK): ID: 2 *r/end</p> <p>OK</p>
FeedbackDeregister	<p>Command used to deregister XML feedback over HTTP(S).</p> <p>Parameters:</p> <ul style="list-style-type: none"> • ID: <1 .. 3> ID for the registration to deregister. <p>OK Result parameters:</p> <ul style="list-style-type: none"> • ID: <1 .. 3> <p>ERROR Result parameters:</p> <ul style="list-style-type: none"> • Cause: <1...> Cause code specifying why the command was not accepted by the system • Description Textual description of the cause code. <p>Example: xCommand feedbackderegister id:1 *r Result (status=OK): ID: 2 *r/end</p> <p>OK</p>
OptionKeyAdd	<p>Command used to set new option keys.</p> <p>Parameters:</p> <ul style="list-style-type: none"> • Key(r): <S: 0, 90> option key <p>NOTE! Always reboot the system after adding option keys, for the option key to take effect.</p>

	<p>Example: Xcommand OptionKeyAdd 115201P1-1-6A96DAA4</p> <p>*r Result (status=OK): / *r/end</p> <p>OK</p>
OptionKeyDelete	<p>Command used to delete option keys.</p> <p>Parameters:</p> <ul style="list-style-type: none"> • Key(r): <S: 0, 90> option key <p>Example (Delete Option Key nr. 1): xCommand OptionKeyDelete 1</p> <p>*r Result (status=OK): / *r/end</p> <p>OK</p>
ServiceEntryDelete	<p>Command used to delete services from the 3G Gateway.</p> <p>Parameters:</p> <ul style="list-style-type: none"> • ServiceEntryNumber(r): <1..100> <p>Example (Delete Service nr. 10): xCommand ServiceEntryDelete 10</p> <p>*r Result (status=OK): / *r/end</p> <p>OK</p>
ServiceEntrySwap	<p>Command used to swap service numbers.</p> <p>Parameters:</p> <ul style="list-style-type: none"> • ServiceEntryNumber(r): <1..100> • ServiceEntryNumber2(r): <1..100> <p>Example (Swap Service nr. 10 & 11): xCommand ServiceEntrySwap ServiceEntryNumber: 10 ServiceEntryNumber2: 11</p> <p>*r Result (status=OK): / *r/end</p> <p>OK</p>
Help or ?	<p>Displays the help menu.</p> <p>help</p>
Xfeedback	<p>The special command <i>xfeedback</i> lets the user register user defined XPath expressions (with possible <i>exposure options</i>) to monitor changes in the 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 session.</p> <p>xfeedback ? usage: xfeedback register <XPathExpression> or: xfeedback deregister <index></p>

	<p>or: xfeedback list</p> <p>-</p> <p>(note: deregistration with index=0 will deregister all registered expressions)</p> <p>Examples: "xfeedback register status/call" - to monitor call changes "xfeedback register status/call--" - to monitor only call state changes "xfeedback register configuration" - to monitor all configuration changes</p>
Xhistory	<p>The special command <i>xhistory</i> presents the status of the last 255 calls, made to or from the 3G Gateway, via a cyclic buffer mechanism.</p> <p><i>NOTE! If the 3G Gateway is registered with a Video Portal, the call history can only be shown on the respective Video Portal.</i></p> <p>xhistory ? usage: xhistory call [1 .. 255]</p> <p>-</p> <p>Examples: xhistory call 1</p> <p>*1 Call 1 (type=Vt1ph, protocol=H323, direction=Incoming): LogTag: 1 GatewayCallLogTag: 0 RemoteNumber: "9047123456789" Q931Rate: 64 DisconnectCauseValue: 16 Duration: 67 */end</p> <p>OK</p>

4.3. Index Commands

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