

# **VISION 5000/2500/800 - Dataport User Guide**

**Software version C4**

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TANDBERG

D11586 Rev 04

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# 1. Introduction

In addition to the ability to transmit audio and video over ISDN and other networks, the VISION 5000/2500/800 supports data transmission (for example the transmission of text files or control sequences to equipment at the remote side of a videoconference). The VISION 5000/2500/800 supports two methods for data transmission:

- Tandberg Dynamic Data Channel (DDC)
- ITU standard data communication Protocol (T.120)

The Dataport User Guide contains guidelines on the use of the VISION 5000/2500/800's Dataport for the following purposes:

- Diagnostics/self-test
- File transfer/transparent data transmission (using programs such as Microsoft NetMeeting™ or a Terminal program).
- Control of the VISION 5000/2500/800.
- Remote access to the dataport command interface by using Telnet.

The VISION 5000/2500/800 has two dataports, Dataport 1 and Dataport 2. In addition it has a LAN port. Dataport 1 may be used for file/data transfer to another Tandberg unit or any T.120 compatible unit at the other end of a videoconference. In addition Dataport 1 may also be used to control the VISION 5000/2500/800. Dataport 2 provides access for control of the VISION 5000/2500/800, in addition it is used to control the VISION 5000/2500 Camera Unit or an additional camera using the VISCA protocol such as Sony EVI D70/D71 (**VISION 5000/2500 only**). For the remainder of this document the word *Dataport* should be understood to relate to Dataport 1 unless otherwise stated.

To transfer data across the network the VISION 5000/2500/800 uses some of its video capacity. In normal operating modes any reduction in video is imperceptible. It should be noted that the data channel (in DDC mode) borrows capacity from video only when required i.e. **not** permanently. As a result, although equipment may be connected to the *Dataport*, the video will only be influenced when data is actually being transmitted.

Since the VISION 5000/2500/800's *Dataport* is multi-purpose, its "mode of operation" is selectable via on screen menus. The default mode is **Modem**, which permits control of the VISION 5000/2500/800 when the unit is not connected to another videoconferencing<sup>1</sup> unit and provides a channel for the transparent transmission of data to the remote unit immediately after a connection to this unit has been established. The T.120 mode will be automatically activated when the VISION 5000/2500/800 connects to a remote unit that supports the T.120 protocol<sup>2</sup>. This is also the recommended mode to use when operating the VISION 5000/2500/800 in conjunction with T.120 PC applications.

To obtain a data channel that is transparent at all times during a videoconference, but that does not revert to control outside of a conference, you should select **Data** mode for the *Dataport*. This is the recommended mode to use in file transfer and remote control applications.

With either of the two previous modes selected all information sent to the local VISION 5000/2500/800's *Dataport* during a videoconference will automatically be transmitted to the *Dataport* of the remotely connected videoconferencing unit. If the intention is to control the

<sup>1</sup> Transmission of data to a remote videoconferencing unit is only possible if the remote unit supports the industry standard T.120 protocol or if the remote unit is another Tandberg videoconferencing system. This statement should be understood to apply throughout this document where reference is made to transmission of data to a remote unit via the Dataport.

<sup>2</sup> To make use of this feature the VISION 5000/2500/800 must be pre-set to T.120 mode

VISION 5000/2500/800 via the *Dataport*, rather than via the handheld remote control, you should select **Control** mode from the Dataport menu. Control via the *Dataport* is easily accomplished using a PC. Control mode provides access to all those functions selectable from the remote control and more. In control mode however, no data is transmitted via the Dataport to the remote unit. Control mode does however provide a significant level of feedback and in this mode it is possible to determine the current configuration of the VISION 5000/2500/800 by querying its individual parameters.

For local control or the transfer of data files, almost any terminal emulation program such as Microsoft Windows Terminal®, Hyper Terminal™, ProComm Plus®, Telix®, etc. may be used. For data sharing, data conferencing programs such as Intel Proshare Premier™, VideoWriter®, Databeam Farsite™, NetMeeting 2.1, etc. may be used. Tandberg recommend Microsoft NetMeeting™ version 2.1 for T.120 data-conferencing applications.

Modem and Data mode are used in conjunction with DDC. The T.120 mode essentially operates in the same manner as Modem mode. However, upon connection of the VISION 5000/2500/800 to a remote unit that supports T.120, the T.120 protocol will be used for data transmission.

If, after reading this manual, you require additional information concerning the use of the Dataport, please contact your local Tandberg dealer who may be able to supply you with relevant information for special applications.

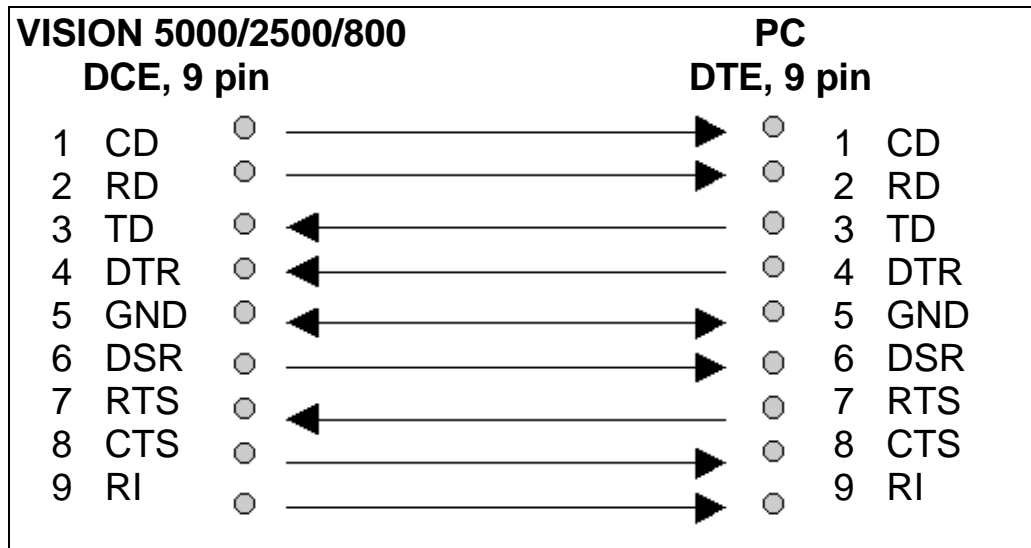
## 2. Connecting equipment to the Dataport

### 2.1. Hardware and Cabling

The pinouts for Dataports 1 and 2 are similar and are defined in the following table. The DTE could be a PC or other device capable of serial communication. On Dataport 2, pin four is set to constant +12V to provide power to the standard Tandberg Camera (**VISION 5000/2500 only**).

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

The Dataport on the VISION 5000/2500/800 is a conveniently located, 9-pin, female, D-sub connector, supporting RS-232 protocol and configured as a DCE. **A straight through cable should be used between the VISION 5000/2500/800's Dataport and the COM port on your PC** as shown below. The figure below illustrates the recommended cable-wiring scheme:



The implementation of the RS-232 port on the VISION 5000/2500/800 has the following features:

- DTR is ignored<sup>3</sup> (data terminal ready)
- RTS is ignored (ready to send)
- DSR is always set (data set ready)
- RI is asserted on an incoming call and resets once CD has been set (ring indication)
- CD (carrier detect) is high during a call

<sup>3</sup> Unless call is initiated using the ATD command (via a PC application for example) in which case toggling DTR will disconnect the call.

- Commands issued to the Dataport must be followed by Carriage Return.
- CTS is asserted when the codec is ready to receive data.

## 2.2. Configuring the Dataports from the menu

Pressing MENU on the VISION 5000/2500/800's remote control displays the unit's Main Menu. The Dataports' configuration settings are available through the Terminal Settings menu. Within the Terminal Settings Menu are entries for Dataport 1 and Dataport 2.

**Dataport 2** is dedicated to Control of the VISION 5000/2500 camera, and so therefore you can only switch between 2 modes; Auto and VISCA. The VISCA mode is intended to be used with external cameras supporting the VISCA protocol such as the Sony cameras EVI D70/D71, and makes it possible to control this camera with the standard TANDBERG remote control. The auto mode should be used when a Tandberg camera or a PC is connected to the Dataport.

On the VISION 800 the Dataport 2 is dedicated to control only.

To configure the *Dataport* select either "Dataport 1" or "Dataport 2" and a menu listing the available settings for that Dataport will be displayed. The available settings are:

Baudrate, Parity, Databits, Stopbits, Mode.

**Dataport 1:** The Mode sub-menu of Dataport 1 lists the 4 options: **Data , Control , Modem** and **T.120**. The default configuration for Dataport 1 is "Modem" which enables local control when not in a call, but allows the transmission of data to a remote unit during a call.

### Data mode:

To use the Dataport to transmit and receive data, select **Data** mode. A transparent data channel via the *Dataport* will be available whenever a call is established.

### Modem mode:

To use the Dataport both to control the VISION 5000/2500/800 outside of a call and then to enable transmission of data during a call; select **Modem** mode. This mode of operation is very similar to that used when operating a Hayes® compatible modem.

**When not in a call**, all data sent to the VISION 5000/2500/800 through the Dataport will be interpreted by the command interface.

**When a call is established** the VISION 5000/2500/800 automatically provides a transparent data channel and all data sent to the local VISION 5000/2500/800's Dataport will appear at the remote unit's Dataport<sup>4</sup>. To return the VISION 5000/2500/800's Dataport to control mode during a call the **escape sequence** '+++<sup>4</sup>' may be used. To switch back to data mode the command 'ATO' may be used.

### Control mode:

To control the VISION 5000/2500/800 using the *Dataport*, select **Control** mode. With Control mode selected all data sent to the VISION 5000/2500/800 through the Dataport will be interpreted by the command interface at all times.

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<sup>4</sup> Provided the remote unit is a Tandberg unit and has it's Dataport set to Data or Modem mode with both sides have set matching parameters.

### **T.120 mode:**

When using a T.120 application running on a PC or other device that supports serial communications, select **T.120** mode. This mode of operation is very similar to that used when operating a Hayes® compatible modem.

**When not in a call**, all data sent to the VISION 5000/2500/800 through the Dataport will be interpreted by the command interface.

**When a call is established** the VISION 5000/2500/800 automatically provides a data channel using the T.120 protocol and data sent to the local VISION 5000/2500/800's Dataport will appear at the remote unit's Dataport<sup>5</sup>. Control over the VISION 5000/2500/800 can be retained by the attached T.120 application.

To make use of the VISION 5000/2500/800's T.120 ability, it is necessary to use a PC application that supports the T.120 PSTN stack (i.e. a PC application for T.120 communication via modem).

## **2.3. Troubleshooting**

*If communication cannot be established between the PC/terminal and the VISION 5000/2500/800's Dataport we recommend the following be checked:*

- Confirm that the cable pinouts are according to the specification set out in the *Hardware and Cabling* section of this document. (A straight-through 9-pin to 9-pin cable should be used).
- Confirm that the PC/terminal Dataport parameters match those of the VISION 5000/2500/800's *Dataport*. Hardware flow control (RTS/CTS) should be set to ON on the PC and the correct serial port should be selected.
- Confirm that the VISION 5000/2500/800's *Dataport* is set to the correct mode (Data/Modem/Control). If a connection has been established, 'OK' will appear on the PC/terminal's screen when switching from 'Data ' to 'Modem' in the VISION 5000/2500/800's *Dataport* Mode menu.
- Verify that the PC/terminal Dataport is working properly by connecting it back-to-back to another PC/terminal and send characters in both directions<sup>6</sup>.

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<sup>5</sup> Provided the remote unit supports the T.120 data communication protocol and both Dataports have matching parameters. Data must be T.120 PSTN stack packets

<sup>6</sup> You will need a null-modem cable to perform this test

## 3. VISION 5000/2500/800 Dataport Commands

### 3.1. Hayes Standard AT Commands

All Hayes Standard AT Commands must begin with the two letters **AT**. The *AT* prefix may be followed by one or more commands. The string of commands is limited to 80 characters including the **AT** prefix and any control characters. The commands may be entered in either upper or lower case and should be terminated with a carriage return. The command syntax is as follows:

AT<command(s)><CR>

The only exception to this syntax is the 'Repeat Last' command and the 'escape code' command, in both cases the AT prefix is not used.

#### Repeat Last Command

A/ Repeat the previously entered command (without <Carriage return>).  
The command is most frequently used to automatically redial a number that was reported as busy.

#### Escape Code Command

+++ Escape sequence '+++'.  
The VISION 5000/2500/800 will only recognise this command when it is in the **On-Line State**, i.e. once a call has been established. This command is used to change from the On-Line State to the Local Command State without interrupting the call. The command is valid only when the following conditions are fulfilled:

- No data must be sent from the DTE to the VISION 5000/2500/800 for at least one second.
- The VISION 5000/2500/800 must receive three '+' escape characters within the next second.
- Another second must then elapse before any data is sent from the DTE to the VISION 5000/2500/800.

**The 2 seconds of delay surrounding the escape sequence is known as the guard time and its purpose is to protect the escape characters. The length of the guard time and the ASCII value of the escape characters can be changed using registers S2 and S12.**

#### Standard Commands

A Answer Immediately, instructs the VISION 5000/2500/800 to go off hook. If the command is issued when there is no incoming call an ERROR result code will be returned. This command may be used to answer an incoming call. If the command string containing this command is terminated with a ';' character prior to the carriage return, the VISION 5000/2500/800 will remain in Local Command State after call-set-up (the default is to revert directly to the On-Line State). The VISION 5000/2500/800 ignores all commands following this command in the same command string.

D xx Set up call to remote terminal with subscriber number xx. The number is transferred as a parameter. If a semicolon (;) suffixes the D command the VISION 5000/2500/800 will not go to the On-Line State after call set-up but will remain in Local Command State. Commands that follow this command in the same command string are ignored.

### Dial commands

Commands associated with the Dial Commands are summarised in the table below. With the exception of the semicolon they do not elicit any action and are only included to accommodate Hayes Smartcom™ Software.

#### *Command Description*

- , **Pause.**
- ;  
**Return to Command mode after dialling. The command is always placed at the end of a string of commands. Example: ATD76767373; <CR>**
- R Reverse mode. Used to call an "originate only modem" such as an acoustic coupler. The command is always placed at the end of a string of commands. Example: ATD 04 878700 R <CR>.**
- T Forces touch-tone dialling.**
- P Forces pulse dialling.**

### In the following list, all values shown in parenthesis are the default settings:

- En Echo mode  
**This command instructs the VISION 5000/2500/800 whether or not to echo those characters received from the DTE when in the Local Command State.**
- 0 : no echo**
  - (1): echo mode enabled [default].**
- H In Local Command State: clear a connected call. [default]  
Commands that follow this command in the same command string are ignored.
- O Return to the On-Line State during a call. [default]  
Commands which follows this command in the same command string are ignored
- In Product Identification. This command reports the product code.
- (0): Display Software version number [default] (e.g. C1.0)**
  - 1 : Display Network version (e.g. Network version ETSI Euro-ISDN/X.21).**
  - 2 : Display last change date.**
  - 3 : Display file name (e.g. s0520110)**
  - 4 : Display HW serial number of the VISION 5000/2500/800**
  - 5 : Line Processor/Video Processor information**

- Qn** Result Code Display. This command instructs the VISION 5000/2500/800 whether or not to send result codes to the DTE.  
**(0): result messages sent to the connected DTE.[default]**  
**1 : no result messages sent.**
- Vn** Result Code Form. This command instructs the VISION 5000/2500/800 which result code format to use, either words (default) or numbers..  
**0: messages in numerical form.**  
**(1): messages in plain language. [default]**
- Xn** Result Code Set/Call Progress. This command enables various result code sets.  
**(0): Incoming Call ID displayed together with RING. Baudrate is not displayed together with CONNECT [default]**  
**1: Incoming Call ID is not displayed. Baudrate is not displayed together with CONNECT.**  
**2: Incoming Call ID is displayed together with RING. Baudrate is displayed together with CONNECT.**  
**3: Incoming Call ID is not displayed. Baudrate is displayed together with CONNECT.**  
**4: Same as 3.**
- Z** Recall Factory Settings. This command resets the configuration of the AT Command Interface to factory settings.
- ?** Display AT Hayes Command list.
- Sr?** Output register **r** in decimal form. ( r = [1..16, 88])
- Sr=n** Change register **r** to value **n**. (r = [1..16, 88], n = [0..255]).

**Registers implemented:**

Register S0:	Automatic call answering S0=0: OFF [default] S0=1: ON <sup>7</sup> (The number specifies the number of rings that must be received before the VISION 5000/2500/800 will answer.)
Register S1:	Ring count.
Register S2:	Escape code sequence character [default: ASCII '+'= 043]
Register S3:	Carriage Return character [default: ASCII <CR>=013]
Register S4:	Line feed character [default: ASCII <LF>=010]
Register S5:	Backspace character [default: ASCII <BS>=008]
Register S6:	Wait time for dial tone [default: seconds 2]. <b>NOT USED!</b>
Register S7:	Time between sending of a message connection request and the reply from the remote DTE. [default: seconds 30]. <b>NOT USED!</b>
Register S8:	Pause time [default: seconds 2]. <b>NOT USED!</b>
Register S9:	Carrier detector response time. <b>NOT USED!</b>
Register S10:	Hang up delay time [default: seconds 1]. <b>NOT USED!</b>
Register S11:	DTMF dialling speed [default: ms 100]. <b>NOT USED!</b>
Register S12:	Escape code time [default: 1/50 seconds * 50]
Register S13:	UART Status. Bit Oriented Register: <b>NOT USED!</b>
Register S14:	Option Register. Bit oriented Register: <b>NOT USED!</b>
Register S15:	Flag Register <b>NOT USED!</b>
Register S16:	Loop Back Test <b>NOT USED!</b>
Register S88:	Detailed Result Code <b>NOT USED!</b>

**Response Only Commands**

The following commands will be accepted by the VISION 5000/2500/800 and **OK** will be returned to the DTE. These commands do not elicit any action and are included to accommodate Hayes Smartcom™ Communication Software.

Bn	Bell/CCITT Mode Selection
Wn	Enable ISDN carrier and PROTOCOL Result Codes.
Ln	Speaker Volume.
Mn	Speaker Control
Fn	Set Communication Mode: (half-duplex/full duplex)
Cn	Carrier Signal Control
P	Pulse tone dial
T	Touch tone dial
&Gn	Guard Tone selection
&Jn	Telephone Jack Selection
&Ln	Line Selection
&Pn	Make/Break Pulse Ratio
&Sn	Data Set Ready options
&Xn	Synchronous Mode Transmit Clock
&Kn	Flow Control
&Mn	Async/Sync Mode Selection
&Yn	Profile Selection
&Z	Store Telephone Number
&F	Fetch S register from EPROM for factory default
&Tn	Deactivate test Loop
&Cn	Data Carrier Detect Options

<sup>7</sup> The setting of ATSO acts independently of the VISION 5000/2500/800's autoanswer function. Even if autoans is set to Off having ATSO=1 will cause VISION 5000/2500/800 to automatically answer a call.

&Dn           Data Terminal Ready Options  
 &Rn           RTS-CTS  
 &V            List configuration both active and stored.

### **Messages output by the VISION 5000/2500/800 to a connected DTE:**

<u>Text</u>	<u>Numerical</u>	<u>Description</u>
OK	0	Valid command
CONNECT	1	Call is set up.
RING xx	2	Incoming call from remote terminal with number xx
NO CARRIER	3	Carrier was not detected or was lost.
ERROR	4	Invalid command
*2ND DIAL	5	
*2ND REJECT	6	
*2ND OK	7	

## **3.2. Tandberg Dataport Commands**

When the Dataport is set up in **Modem**, **Control** or **T.120** mode and a call is not established, typing '?' or 'help' on your PC/Terminal will result in a list of the User Commands being displayed at your terminal.

The Tandberg User Commands control most of the functions of the VISION 5000/2500/800. The VISION 5000/2500/800 does not distinguish between upper and lower case for this command set.

The arguments marked with < > are mandatory. The arguments marked with [ ] are optional.

When dialling a number with a subaddress, two numbers, restricted bandwidth or when dialling with a call profile, please use the following arguments (all examples are shown dialling with a telephone number 12345678):

- \* sub**                   e.g. 1234545678\*123, where 123 is the subaddress.
- \*\* 2nd number**       e.g. 1234545678\*\*87654321, where 87654321 is the second number address.  
# restricted call<sup>8</sup>. e.g. 1234545678#.
- #6\***                    dialling using call profile e.g. #6\*1234545678, where #6\* is the call profile.

Wherever the phrase *number* is mentioned you may assume the arguments above.

There are 4 basic formats for issuing commands via the Dataport:

### **1. Argument**

This format requires an argument upon which the VISION 5000/2500/800 will operate.

e.g. *dial 12345*

The VISION 5000/2500/800's response is a simple *OK* if the argument is acceptable or *ERROR* if it is not

### **2. Syntax Query**

This format takes a ? as the argument or parameter for a command.

e.g. *dial ?*

The VISION 5000/2500/800 will respond by listing the syntax for the queried command, in this case

*usage: dial <number> [\*\*2nd number]*

<sup>8</sup> A restricted call is a call to a 56 kbit network.

### 3. Set Parameter

This format requires a parameter upon which the VISION 5000/2500/800 will act.

e.g. *autoans on*

The VISION 5000/2500's response<sup>9</sup> will be a confirmation of the command being set and the new parameter. In this case the response will be *\*P autoans on*. If the parameter supplied is incorrect a response of *ERROR* will be given.

### 4. Parameter Query

This format requires no parameter.

e.g. *autoans*

The VISION 5000/2500/800's response will be to return the command being queried along with its current setting. In this case the response will be *\*P autoans on*, to indicate that this parameter was currently set to *on*.

### **VISION 5000/2500/800 Dataport Commands, Standard:**

2dial*	alrtvol	audioagc	audioin	audiolevel
audiomix	audioout	autoans	autocall	autopip
autostill	boot*	camtrack	chanstat	defcall
defvalues*	dial*	directory	dirsrt	disable
disc*	dispparam*	disptxt*	dltxt*	donotdist
downspeed	dualmon	dumph221*	echoctrl	enable*
extcam	extcap	extname	extswitch*	fallback
fecc	feedback <sup>10</sup>	feinfo	fevidsrc	freeze*
h243	help*	hf	hotline*	imagefilter
imuxoffset	imuxprefix	ipaddress	ipassign	ippassword
irctrl	isdntrace	key*	language	localdn
los-duration	los-inhibit	los-initial	los-polarity	los-polarity
mculine	mic	mode	msn	netclock
netctrl	netisdn	netpri	nettype	pardial
pip	preset-activate*	preset-store*	presmode	pressource
protect	rinfo*	rstring*	selfview*	sendnum
snmp	spid	spkr	sport	statformat
statin	statout	status*	still*	sub
systemname	t1cable <sup>x</sup>	t1diag <sup>x</sup>	t1highch	t1lowch
t1number <sup>x</sup>	t1maxchan <sup>x</sup>	t1search	teltone	test
vidin	vidmode	vidname	vidqual	vidtone
vol	spid			

### **NOTE:**

The VISION 5000/2500/800 is available with different network configurations which will affect some of the dataport commands. To determine your systems configuration, see 'Power up and System Info' or the system boot-up text.

<sup>9</sup> The VISION 5000/2500 will only make a response if the dataport command *feedback* has been set to On. The command Feedback is not available on the VISION 800.

\* Parameter Query not applicable to this command.

<sup>10</sup> This command is not available on the Vision 800.

<sup>x</sup> Only available on VISION 5000.

## **Dataport Command Reference**

All commands are shown underlined with their associated syntax. Valid arguments are shown in **bold**.

2dial enters the number of the second channel. Only valid after on-screen prompt (and Dataport prompt \* 2ND DIAL) requesting the entry of a 2nd number.

**2dial <number>**

alrtvol sets the ringing tone volume as per the following:

**alrtvol <0..15/test>**

**0** Volume 0 (off)

**15** Volume 15(max.)

**test** Test volume

audioagc sets the Automatic Gain Control (AGC) for all audio inputs as well as for the received audio.

### **VISION 5000:**

**audioagc [a/b/c/rx] <on/off>**

**a** Mic1-3, Audio4

**b** Audio5

**c** Audio6

**rx** Received Audio

### **VISION 2500/800:**

**audioagc [a/b/c/rx] <on/off>**

**a** Mic1-2

**b** Audio3

**c** Audio4

**rx** Received Audio

audioin selects which of the audio inputs should be active inputs<sup>11</sup>.

### **VISION 5000:**

**audioin [1/2/3/4/5/6] <on/off>**

**1** Microphone 1 (XLR connector)

**2** Microphone 2 (XLR connector)

**3** Microphone 3 (XLR connector)

**4** AudioIn 4 (line level)

**5** AudioIn 5 (line level)

**6** AudioIn 6 (line level)

audioin on, or audioin off turns all audio inputs on/off.

<sup>11</sup> A set of active inputs will be stored with each system preset. Selecting a pre-stored preset may affect the ON/OFF status of the audio inputs.

**VISION 2500/800:****audioin [1/2/3/4] <on/off>**

- 1** Microphone 1 (XLR connector)
- 2** Microphone 2 (XLR connector)
- 3** AudioIn 3 (line level)
- 4** AudioIn 4 (line level)

audioin on, or audioin off turns all audio inputs on/off.

**audiolevel**

sets the audio input and output levels:

**VISION 5000:****audiolevel <i1/i2/i3/i4/i5/i6/o1/o2/o3> <1..16>**

- i1** Microphone 1 (XLR connector)
- i2** Microphone 2 (XLR connector)
- i3** Microphone 3 (XLR connector)
- i4** Audio4
- i5** Audio5
- i6** Audio6
- o1** Output1
- o2** Output2
- o3** Output3

**VISION 2500/800:****audiolevel <i1/i2/i3/i4/o1/o2/o3> <1..16>**

- i1** Microphone 1 (XLR connector)
- i2** Microphone 2 (XLR connector)
- i3** Audio3
- i4** Audio4
- o1** Output1
- o2** Output2
- o3** Output3

**audiomix****audiomix <fixed/auto>**

- fixed** When fixed is selected, all inputs are always active. This may increase the background noise.
- auto** When auto is selected, the audio levels from the four microphone inputs are mixed automatically. If the channel level is below an estimated noise floor the channel will not be active.

**audioout**

sets the audio outputs to either ON or OFF.

**audioout [1/2/3] <on/off>**

If no specific output is identified all audio outputs will be set to ON (or OFF).

**autoans**specifies whether the Codec should automatically answer an incoming call<sup>12</sup>.**autoans <on/off>**

- on** incoming call is answered after 1 ring
- off** incoming call must be manually answered by user

<sup>12</sup> This command acts independently of the ATSO setting described in the Hayes compatible section of this user guide.

**autocall** sets the “autocall” mode to either ON or OFF.

**autocall <on> [[number] [attempts] [delay]]**

**autocall <off>**

When setting “autocall”, you may enter any or all of the following.

[parameter] indicates the default setting:

- function On/Off [Off]
- the number to dial [None]
- the number of attempts. Valid range 1 to 9 [5]
- the delay, in seconds, between attempts. Valid range 1 to 60 [30]

If a telephone number is entered it will be stored in directory entry (01), else the command will use the number already stored in position 01. When ‘autocall’ is set to ON, connecting together the RTS and CTS lines on Dataport 2 will initiate an outgoing call to the number stored at location (01) in the directory.

**Example:**

**autocall on 1234567890 2 15** (number to be dialled is 1234567890, with 2 attempts and a 15 second delay between attempts)

For more information on the ‘autocall’ feature request Tandberg document D10114, ‘Automatic Call-up Description’.

**autopip** automatically produces a PIP on the monitor whenever the Main Camera is operated or whenever a new video source is selected.

**autopip <on/off>**

**autostill** automatically displays a still image from a remote videoconferencing unit whenever it is received. The resolution of the received image will default to the highest available based on the video algorithm being used and the capability of the remote system.

**autostill <on/off>**

**boot** causes the codec to re-boot and produces the following output to the Dataport after re-boot.

**boot**

System boot.

Hardware Serial No:.....

**camtrack** selects automatic camera tracking mode. There are three modes *slow*, *norm*, *fast*. Note! Presets 7 and 8 for the Vision 800/2500 and presets 7,8 and 9 for the Vision 5000 must be stored before automatic camera tracking will function. The camera position stored at P7 relates to Mic1, P8 relates to Mic 2 and P9 relates to Mic 3 (Vision 5000 only).

**camtrack <on/off> [slow/norm/fast]**

- slow** the camera will include people in the picture at once they have spoken for approx. 1 sec, but they will normally not be excluded until they have been silent for approx. 50-60 sec (provided that others are speaking). This mode is suitable when overview images are preferred over close-ups.
- norm** the camera will include people in the picture at once they have spoken for approx. 1 sec, but they will normally not be excluded until they have been silent for approx. 25-30 sec (provided that others are speaking). This is the mode to use in regular meetings.
- fast** the camera will frequently move back and forth and for most of the time film only the person currently speaking. Intensity of speech has no influence on time-out periods. This mode is suitable when close-ups are preferred over overview images.

### chanstat

displays the channel status of all channels in use by the Codec<sup>13</sup>. When External Network is selected the status of NET1 (channel 1) and NET2 (channel 2) is displayed. When PRI is selected the status of B-channels 1-23 is displayed. When ISDN is selected the status of BRI 1 (channels 1 &2), BRI 2 (channels 3&4) , BRI 3 (channels 5&6) and BRI 4 (channels 7&8) is displayed.

#### **Example (ISDN):**

**chanstat <1/2/3/4/5/6/7/8>**

If no channel argument is specified, call status will be provided for all available channels.

Response to the command is:

```
*s chanstat {Channel-Id}{Channel-status}{Calling-number/Called-number}{Connection-Time}
```

**Channel-Id values are from 1 to 8.** When calling or answering the Channel-id will be the BRI id, where 1/2 is BRI 1, 3/4 is BRI 2, 5/6 is BRI 3 and 7/8 is BRI 4.

```
chanstat 1/2 calling/answering 1234 0Sec
chanstat 3/4 calling/answering 1236 0Sec
chanstat 5/6 calling/answering 1238 0Sec
chanstat 7/8 calling/answering 1240 0Sec
```

#### **Channel-status values are:**

***idle, calling, answering, connect, disconnecting and disconnected***

If channel status is *disconnecting* or *disconnected* an ISDN cause value will be displayed together with channel status. The ISDN cause values will be according to ITU Q.931, where the first number indicates Location and second the Cause Value.

**E.g. chanstat 2 disconnected[0:16] 1234 38Sec**

**where 0 identifies the Location and 16 the Cause Value.**

<sup>13</sup> BRI 4 and PRI examples for this command are applicable only to the VISION 5000.

*Calling-number* will be displayed on outgoing calls, and the number called from will be displayed on incoming calls<sup>14</sup>.

*Connection-Time* values are in seconds, and represents the time from channel status connect to channel status disconnected.

When a new call starts all channels are set to:  
 “chanstat 1/2/3/4/5/6/7/8 idle xxx 0Sec”.

When a call is disconnected the channel status information will be stored until next call starts.

E.g.: Command: chanstat 4  
 Response: \*s chanstat 4 disconnected[0:16] 28Sec

Chanstat examples:

Command: chanstat  
 Response: \*s chanstat 1 idle xxx 0Sec  
 \*s chanstat 2 connect 1234 10Sec  
 \*s chanstat 3/4 calling 1236 0Sec  
 \*s chanstat 3/4 calling 1236 0Sec  
 \*s chanstat 5 idle xxx 0Sec  
 \*s chanstat 5/6 calling 1238 0Sec  
 \*s chanstat 7/8 calling 1240 0Sec

Command: chanstat  
 Response: \*s chanstat 1 disconnecting[1:16] 1238 107Sec  
 \*s chanstat 2 disconnected[0:16] 1234 145Sec  
 \*s chanstat 3 disconnecting[0:16] 1235 142Sec  
 \*s chanstat 4 disconnected[0:16] 1236 125Sec  
 \*s chanstat 5 idle xxx 0Sec  
 \*s chanstat 6 disconnected[0:16] 1237 121Sec  
 \*s chanstat 7 disconnected[0:16] 1239 115Sec  
 \*s chanstat 8 disconnected[0:16] 1240 112Sec

**defcall** sets the default call profile and prefix to be used.

See the VISION 5000/2500/800 User Guide for list of valid prefixes.

**defcall <calltype>**

**<calltype>** = #x\*p for x channels with prefix p, or

**#x\*** for x channels, or

**p** for prefix p

**defvalues** restores the factory default settings.

**defvalues set [all/audio]**

**defvalues set**

This command will not affect the network settings, language, or SPID<sup>15</sup> settings. To reset all values, except of IP settings, to factory defaults you should use the following syntax:

<sup>14</sup> Display of the main ISDN number of the system calling into the local unit is dependent on information passed to the local Codec by the Network during call setup.

**defvalues set all**

To reset audio settings to factory default levels use the following syntax:

**defvalues set audio**dial

dials the number specified.

**dial <number> [\*\*number]**

directory

creates an entry in the pre-stored number list. Can also be used to overwrite existing entries.

**directory <1..99> [number] [\*\*number] [name]**

or

**directory add [number] [\*\*number] [name]**

**1..99 add to directory 1..99**

**add add to next available entry**

to remove an entry from the directory list use:

**directory <id>“ “**

to retrieve a directory entry to the Dataport use:

**directory <id>**

dirsort

turns alphabetic sorting of the directory either ON or OFF.

**dirsort <on/off>**

disable

disables certain functions available via the keys on the VISION 5000/2500/800 remote control, see also the “enable” command.

**disable <keycode> [keycode]**

**DK** Dialling keys 0-9, #, ★

**DI** Directory key

**DE** Delete Key

**SE** Send Key

**HF** Accept/End Call key

**ME** Menu key

**HE** Help Key

**VS** Video Source key

**SS** Services key

**MM** Microphone on/off key

**VK** Volume key

**SV** Selfview key

**FP** Graphics Freeze key

**FE** Far End Camera Control key

<sup>15</sup> Service Profile Identifier (SPID) is only applicable for North American software versions

<b>PM</b>	Pip Move key
<b>CK</b>	Up, Down, Left, Right keys
<b>OK</b>	OK key
<b>CC</b>	Camera Control key <sup>16</sup>
<b>ZK</b>	Zoom +/- key
<b>FK</b>	Focus +/- key
<b>ST</b>	Store key
<b>PK</b>	Preset keys
*	All keys
<b>Menu</b>	On-Screen Menus, Overlays and Status Line <sup>17</sup>

disc disconnects a call in progress.

**disc**

dispparam displays the parameters currently set in the local Codec

**dispparam**

disptxt displays text in the lower portion of any display device connected to video outputs 1,2 or 3.

**disptxt [1/2/3] [string]**

**1** Line 12

**2** Line 13

**3** Line 14

**string** Text of max. 38 characters. Encapsulate with "" if string contains a "Space".

dltxt removes text that has been displayed using the disptxt command.

**dltxt [1/2/3]**

**1** Line 12

**2** Line 13

**3** Line 14

donotdist when 'do not disturb' 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.

Do not disturb will be turned off if the codec receives any IR signal from the handheld remote control.

**donotdist <on/off>**

<sup>16</sup> Disables the use of the OK key to switch between Camera Control modes

<sup>17</sup> Disabling the Menu will result in all on screen feedback being suppressed, i.e. Menus, Text Overlays and Status Line information.

downspeed selects downspeed mode.

**downspeed <on/off>**

When set to ON “downspeed” will allow the Codec to automatically adjust the bandwidth of a call depending on the available number of ISDN channels and the capabilities of the remote system. The “downspeed” feature is effective both during call set-up and during a call and will even allow fallback to a voice only call if the dialled number is that of an analogue telephony device.

dualmon sets the Codec’s monitor mode. When set to ON the Codec will provide a video output of received/sent still images on video outputs 4 & 5. The video signal on these 2 outputs can be toggled between Selfview and Graphics view by pressing the Selfview key on the remote control or by issuing the KEY command (see later in this document).

**dualmon <on/off>**

dumph221 dumps the H221 log of the last call. Data will be dumped to the Dataport to which this command was issued.

**dumph221**

echoctrl **VISION 5000:**  
selects the echo control mode for each of the first four audio inputs. Audio inputs 5 and 6 do not have echo cancellation.

**echoctrl <1/2/3/4> <on/off/hf>**

**1** Mic1

**2** Mic2

**3** Mic3

**4** Audio4

**on** echo control enabled

**off** echo control disabled

**hf**<sup>18</sup> humfilter (reduces low frequency and background noise)

**VISION 2500/800:**

selects the echo control mode for each of the first two audio inputs. Audio input 3 and 4 do not have echo cancellation.

**echoctrl <1/2> <on/off/hf>**

**1** Mic1

**2** Mic2

**on** echo control enabled

**off** echo control disabled

**hf**<sup>19</sup> humfilter (reduces low frequency and background noise)

<sup>18</sup> In addition to the engaging the humfilter the setting ‘hf’ also turns echo control ON

<sup>19</sup> In addition to the engaging the humfilter the setting ‘hf’ also turns echo control ON

**enable**

enables certain functions available via the VISION 5000/2500/800 remote control, see also the “disable” command.

**enable <keycode> [keycode]**

**DK** Dialling keys 0-9, #, ★

**DI** Directory key

**DE** Delete Key

**SE** Send Key

**HF** Accept/End Call key

**ME** Menu key

**HE** Help Key

**VS** Video Source key

**SS** Services key

**MM** Microphone on/off key

**VK** Volume key

**SV** Selfview key

**FP** Graphics Freeze key

**FE** Far End Camera Control key

**PM** Pip Move key

**CK** Up, Down, Left, Right keys

**OK** OK key

**CC** Camera Control key<sup>20</sup>

**ZK** Zoom +/- key

**FK** Focus +/- key

**ST** Store key

**PK** Preset keys

**\*** All keys

**Menu** On-Screen Menus, Overlays and Status Line

**extcam**

enables or disables the external camera mode.

**extcam <on/off> [pres=*n*] [source=*n*]**

e.g.: Command: `extcam on pres=4 source=3`

This will define 3 external camera sources for the Codec and allow 4 presets.

If the first argument is ‘ON’, the other two optional arguments may be specified. If the first argument is ‘OFF’, using *pres* and *source* arguments will result in an ERROR being returned by the Codec.

<sup>20</sup> Enables the use of the OK key to switch between Camera Control modes

The *pres* argument enables external control equipment to inform the Codec how many external camera presets is available. If this argument is omitted, the Codec handles preset switching internally using 15 presets<sup>21</sup>.

External control equipment can specify how many external video sources are available using the *source* argument. If this argument is omitted, the Codec handles video source switching internally using its 5 video sources. The legal range for the *source* argument is 0 to 9.

The command provides feedback. If the *pres=n* argument is not displayed as part of the feedback then internal preset switching is active. If the *source=n* argument is not displayed as part of the feedback then internal video source switching is enabled.

When “extcam” is set ON and far end camera control commands (FECC) are received from a remote videoconferencing system, the Codec will output Camera Control feedback to the Dataport in the form:

*\*C direction operation*

**e.g.:** Remote unit requests local camera to start moving left

\*C le start

Remote unit requests local camera to stop moving left

\*C le stop

Other feedback movements are:

ri up do f+ f- z+ z-

#### **NOTE:**

1. If “extcam” is ‘on’ the “vidin” command is not disabled. It is therefore still possible to use the Codec’s internal video matrix to switch between video sources physically attached to the Codec.
2. If “source=xx” is specified, and the Tandberg Codec receives a FECC request to change video source it must respond with the “extswitch” command. This command confirms to the remote Codec that the Tandberg Codec has switched video sources. If this is not done subsequent FECC commands (from the remote Codec) may not work.
3. FECC feedback will not appear if the Tandberg Camera is connected to the Codec and this camera is the active video source, instead the camera will respond to FECC pan , tilt, zoom, and focus commands. However, when another physical video input is selected (i.e. using “vidin”) FECC feedback will appear. Therefore it is possible to use the Tandberg Camera alongside other cameras and maintain FECC control.

<sup>21</sup> See the ‘preset-act’ and preset-store’ commands later in this document

**extcap** specifies the capabilities to be associated with the external video sources

**extcap** <n> <caps>

**n** the number of the video source, defined using the extcam command, to which the following capabilities apply

**caps** p=pan, t=tilt, z=zoom, f=focus, m=motion video, s=still video

e.g.: Command: `extcap 1 ptzfm`  
defines capabilities for external camera source 1

Command: `extcap 2 ms`  
defines capabilities for external camera source 2

“extcap” provides parameter query type feedback. If the video source is omitted in the parameter query, feedback will be provided for all sources. If “extcam” is set ‘off’ an “extcap” parameter query will return the caps associated with the 5 physical video inputs on the Codec.

**extname** defines the name associated with each external video source.

**extname** <n> <name>

**n** the number of the video source, defined using the extcam command, to which the following name applies

**name** max. 16 characters

**NOTE:** encapsulate the name with “” if it contains spaces

“extname” provides parameter query type feedback. If the video source is omitted in the parameter query, feedback will be provided for all sources. If “extcam” is set OFF an “extname” parameter query will return the names associated with the 5 physical video inputs on the Codec.

**extswitch** informs a remotely connected Codec that a new video source has been selected and is now the active source.

**extswitch** <n>

**n** the number of the video source, defined using the extcam command, that is now the active source

**NOTE:**

The “extswitch” command ensures that the remote Codec will use the predefined capabilities associated with the identified video source. This command has no feedback.

**fallback** enables or disables fallback to telephony. This command should be used for faultfinding only. Disabling fallback to telephony will allow the ISDN cause code to be seen in the event that a videocall is unsuccessful. With fallback enabled the codec will switch to telephone call mode and overwrite the ISDN cause code.

**fallback** [telephone] <on/off>

**on** the codec will fallback to telephone if a videocall is unsuccessful.

**off** the codec will not fallback to telephone if a videocall is unsuccessful.

fecc sends far end camera control commands to a remotely connected Codec.

**fecc** <on/off/le/ri/up/do/z+/z-/f+/f-/vs *n*/pa *n*/ps *n*/se *n*>

- on** enables remote unit to control local camera
- off** disables far end control of local camera<sup>22</sup>
- le** moves far end camera left
- ri** moves far end camera right
- up** moves far end camera up
- do** moves far end camera down
- z+/-** zooms far end camera in/out
- f+/-** focuses far end camera in/out
- vs *n*** select far end video source number *n*
- pa *n*** select far end preset number *n*
- ps *n*** Store far end preset *n*<sup>23</sup>
- se [*n*]** Request far end stillimage [from source *n*]

feedback **VISION 5000/2500 only:**  
provides feedback via the Dataport identifying changes that occur to the current state of the VISION 5000/2500.

**feedback** <on/off>

Feedback via the Dataport will always be prefixed with a \* and a letter signifying the type of feedback:

- C** Camera control information (see extcam command)
- F** Far End Camera information
- M** Multipoint Control Unit
- P** Parameter setting
- S** Channel information (see chanstat command)

feinfo returns information identifying a remote system's far end camera control capabilities and the currently active video source.

**feinfo**

fevidsrc returns information identifying the current active video source of a remotely connected Codec.

**fevidsrc**

Example:

**\*F vidsrc 1**

<sup>22</sup> Local unit is still able to control remote camera provided this feature is supported and has not been turned off as well

<sup>23</sup> Although the command to "store" presets on the far end system is supported by Tandberg systems a remote Tandberg system will not accept an FECC request to store a preset.

- freeze** freezes and unfreezes the outgoing picture. Only valid when connected in a video call.  
**freeze <on/off>**
- h243** issues MCU specific commands, see the section at the end of this User Guide for more details.  
**h243 <command> [[<mcu#,>]site#>]**
- help** displays the User Command list shown earlier. Typing '?' has the same effect.  
**help**
- hf** activates the hands-free function. Has the same effect as pressing the accept/end call button on the hand-held remote control.  
**hf <on/off>**  
 This command provides parameter query feedback.
- hotline** activates/deactivates the automatic dial up function. When activated, placing the unit off-hook automatically dials the number stored in directory entry 01 in the directory list.  
**hotline <on> [number]**  
**hotline <off>**  
 When setting "hotline", you may enter any or all of the following.  
 [parameter] indicates the default setting:  
 - function On/Off [Off]  
 - the number to dial [None]  
 If a telephone number is entered it will be stored in directory entry (01), else the command will use the number already stored in position 01.
- imagefilter** filters a received still image to stabilise and remove flicker.  
**imagefilter <on/off>**
- imuxoffset** specifies the IMUX restrict offset on the VISION 5000/2500/800  
**imuxoffset <offset>**  
**offset** default offset or "" to delete.  
 When entering # as a suffix to the dialled number to indicate a restricted call (i.e. 56 kbit/s per channel), the system will add an **offset** to any call profile prefix entered (or to the default prefix if no prefix was used). Tandberg recommend this value is set to 10 when using the call profiles supplied by Tandberg for your IMUX.  
 to remove the value of the offset use:  
**imuxoffset ""**

**imuxprefix** specifies the default IMUX prefix used by the VISION 5000/2500/800 when placing calls dialled without a prefix.

**imuxprefix [1/2] <prefix>**

**1/2** prefix applied to NET1/NET2

**prefix** default dial prefix or "" to delete.

When entering a number without a call prefix, the default **prefix** specified will be added to the front of the dialled number. Tandberg recommend that "imuxprefix" is set to #001 for both NET1 and NET2. When using call profiles supplied by Tandberg for your IMUX this prefix will ensure a 64 kbit/s per channel, 2B, H.221 call is placed as standard for all calls dialled without prefixes of their own.

**ipassign** activate changes to the TCP/IP parameters previously set using the command 'ipaddress'. Also selects between DHCP (Dynamic Host Configuration Protocol) and Static IP addressing.

**ipassign <d/s>**

**d** selects DHCP.

**s** selects static IP addressing and activates changes made to the TCP/IP parameters.

When DHCP is selected the codec will automatically receive all the necessary information from the DHCP server. This function should be used when the codec is connected to a LAN using DHCP. When using this mode IP-address and IP-subnet mask are not used because these parameters are supplied by the DHCP server. The gateway address provided by the DHCP server can be overridden by giving the codec an IP address using the command '*ipaddress g <addr>*'.

The active IP address can be found either by issuing the command '*ipaddress d*', by looking on the boot-up text or by selecting 'test network' in the utilities/diagnostics menu.

**ipaddress** used to configure the codecs IP parameters.

**ipaddress <s/m/g/d> <addr>**

**s** sets the static IP address

**m** sets the IP subnetmask

**g** sets the IP address to the gateway

**d** displays the TCP/IP address given by the DHCP server

**NOTE:**

After addresses have been changed, use 'ipassign s' or 'ipassign d' to activate the new settings

**Examples:**

**ipaddress s 192.9.222.12** This example sets the static IP address to 192.9.222.12. This command has no effect if the codec is set to DHCP.

**ipaddress m 255.255.255.0** This address is only used in static mode and the *m* variable defines the class of network. 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. This command has no effect if the codec is set to DHCP.

**ipaddress g 192.9.200.21** If a gateway is located on the LAN and the codec needs to reach nodes through this gateway, the gateway address can be set using the **g** variable (the IP address of the gateway may be set automatically if the codec is in DHCP mode, if so it will be overridden if this command is issued).

**ipaddress d** By issuing this command the codec will display the IP address given by the DHCP server.

**ipaddress s ""** deletes the static IP address

**ippassword** sets a password to restrict access to the codec's webbrowser, telnet and ftp resources. If the password is forgotten it can only be deleted using the command **ippassword ""**

**ippassword <password>**

Example:

<b>ippassword 'Tandberg'</b>	Sets the IP password to Tandberg
<b>ippassword ""</b>	Deletes the IP password.

**Note:**

The password is case sensitive.

**irctrl** turns the system IR sensors either ON or OFF.

**irctrl [int] <on/off>**

**int** - internal IR sensor mounted in the Codec

Unless the *int* argument is used it is the IR receiver in the camera that will be affected by this command.

**isdntrace** causes D-channel information (layer 2 and 3) for the specified ISDN lines to be output to the Dataport to which this command was issued. If no line number is specified and ISDN is the selected network, D-channel information will be output for all ISDN lines simultaneously.

If PRI (VISION 5000 only) is the selected network, information will be output for all 23 channels simultaneously.

**VISION 5000:**

**isdntrace [1/2/3/4/pri] <on/off>**

**VISION 2500/800:**

**isdntrace [1/2/3] <on/off>**

The information will be output with a \*T prefix, in real time, to the Dataport to which the command was issued.

key

emulates key presses from the VISION 5000/2500/800 remote control. All keystrokes possible from the remote control can be emulated using this command.

**key [keycode] [keycode] .....**

<b>SV</b>	Selfview/PIP key	<b>DI</b>	Directory key
<b>FP</b>	Graphics freeze key	<b>UP</b>	Cursor up key
<b>HE</b>	Help key	<b>DO</b>	Cursor down key
<b>ME</b>	Menu key	<b>LE</b>	Cursor left key
<b>DE</b>	Delete key	<b>RI</b>	Cursor right key)
<b>SE</b>	Send key	<b>OK</b>	Cursor select key
<b>HF</b>	Accept/end call	<b>VS</b>	Video source
<b>MM</b>	Microphone off/on key	<b>FE</b>	Far end Camera key
<b>ST</b>	Preset store	<b>SS</b>	MCU services
<b>AF</b>	Autofocus toggle	<b>PM</b>	Pip move
<b>V+</b>	Volume up key	<b>V-</b>	Volume down key
<b>F+</b>	Focus in	<b>Z+</b>	Zoom tele
<b>F-</b>	Focus out	<b>Z-</b>	Zoom wide
<b>P0-14</b>	Preset activate		
<b>#/★</b>		<b>1/2/3/4/5/6/7/8/9/0</b>	

language

selects the language to be used in the onscreen menus.

**language <english/german/french/norwegian/swedish/spanish>**

localdn

stores the local directory number for the associated ISDN line.

**VISION 5000:**

**localdn [1/2/3/4] [B1/B2] <number>**

**1/2/3/4** identifies the BRI

**B1/B2** identifies the channel

**number** the number associated with the specified channel or "" to delete

or

**localdn [1/2/3/4] <on/off>**

**on** enables an ISDN line

**off** disables an ISDN line

**VISION 2500/800:****localdn [1/2/3] [B1/B2] <number>****1/2/3** identifies the BRI**B1/B2** identifies the channel**number** the number associated with the specified channel or "" to delete

or

**localdn [1/2/3] <on/off>****on** enables an ISDN line**off** disables an ISDN linelos-duration Set loose pulse duration.  
**los-duration <exponent> <offset(ms)>**los-inhibit Set LOS inhibit time in seconds.  
**los-inhibit <sec>**los-initial Set los pulse polarity.  
**los-polarity <1/0>**los-retry Set los retry time in seconds.  
**los-retry <sec>**mculine enables and disables display of the MCU status line.  
**mculine <on/off>**mic mutes and un-mutes the VISION 5000/2500/800's audio inputs.  
**mic <on/off>**mode selects a combination of the call quality modes (see also the 'vidqual' command later in this document).**mode [channels][audio][video mode][video resolution]****channels** 1B/2B<sup>24</sup>**audio** auoff/G711/G722/G728/auauto**video mode** vidoff/h261/h263/vidauto**video resolution** qcif/cifmsn enables/disables the use of MSN (Multiple Subscriber Number)  
**msn <on/off>**netclock specifies the external network clocking type to be used when the VISION 5000/2500/800 is operating in External Network mode.**netclock <dual/single>****dual** V35/RS449 compatible**single** X21 compatible<sup>24</sup> Only applicable for H.221 calls

netctrl

specifies the external network control type to be used when the VISION 5000/2500/800 is operating in External Network mode.

**netctrl** <rs366/leased/data/manual>

**rs366** RS-366 call control protocol

**leased** leased line signalling

**data** data triggered mode

**manual** manual control

netisdn

specifies the ISDN switch type to be used when the VISION 5000/2500/800 is operating in ISDN mode.

**netisdn** <ni/att/etsi/japan/australia/1tr6>

netpri

**VISION 5000 only:**

selects PRI network type.

**netpri** <att/ni>

**ni** National ISDN

**att** AT&T

nettype

selects network type.

**nettype** <t1/isdn/external>

**t1** PRI

**isdn** BRI

**external** Net 1 & Net 2

pardial

sets parallel dial mode for use in BONDING calls.

**pardial** <on/off>

If pardial is set to OFF the VISION 5000/2500/800 will set-up BONDING calls by dialling all channels in a sequential manner, i.e. the system will wait for a connection on the current channel before attempting to connect to the next.

pip

turns the PIP on or off.

**pip** <on/off>

preset-act

selects one of the fifteen presets<sup>25</sup> (audio & video combinations).

**preset-act** <p0-p14>

preset-store

stores the current audio and video selections to one of the fifteen preset positions.

**preset-store** <p0-p14>

presmode

sets the presentation mode to be used by the VISION 5000/2500/800.

**presmode** <n/p>

**n** Normal – a still image will be sent immediately the graphics freeze key is pressed.

<sup>25</sup> Although only 10 presets (0 to 9) are available via the handheld remote control, the Codec is actually capable of storing up to 15 video/audio source, combination presets.

- p** Presentation – the image to be sent will first be displayed on the dual monitor (video outputs 4 & 5) and will not be sent as a still image until the graphics freeze key is pressed for a second time.

pressource defines from which video source the VISION 5000/2500/800 will send a graphics image.

**pressource** <c/1/2/3/4/5>

- c** Current– the current video source image will be sent
- 1../5** Video Source – the specified video source will always be used when a still image is sent

protect protects the system’s network settings, when “protect” is set to ON. These settings will remain inaccessible (both via the Dataport and via the on screen menu system) until “protect” is set to OFF. If a password is used when setting “protect” to ON, the same password must be used in order to set “protect” to OFF. Using the ‘defvalues set all’ command will not affect the current setting for “protect”.

**protect** <on/off> [password]

rinfo returns information concerning a remote Tandberg unit.

**rinfo** <sw/hw/lp/vc/param>

Argument	Information returned	Example
<b>sw</b>	Software version and info	A1.0 1 4 10
<b>hw</b>	Hardware serial number	00908967
<b>lp</b>	Line processor board type and rev.	M00400 rev. 0x01
<b>vc</b>	Video Coder board and rev.	M00410 rev. 0x01
<b>param</b>	Current parameter set	All menu settings options and info

rstring causes a text string (max. length 70 characters) to be output on Dataport 2 of a remotely connected Tandberg unit, unless “feedback” is set ON for Dataport 1 at the remotely connected Tandberg unit in which case the string will appear on Dataport 1 instead. “rstring” is intended to be used for control of devices (other than the Tandberg Camera Unit) which are connected to Dataport 2 of a remote Tandberg Codec

**rstring** <string>

**NOTE:**

Encapsulate the text string with “” if it contains spaces.

The transmission rate for “rstring” can vary between 25 and 50 characters per second. Tandberg does not recommend that “rstring” be used for transferring large amounts of data.

selfview turns on/off full-screen Selfview.

**selfview** <on/off>

**sendnum** enables/disables the broadcast of the local unit's number during the set-up of a call<sup>26</sup>

**sendnum <on/off>**

**snmp** Configure snmp parameters:

**snmp <cn/hi/sc/sl>**

**cn** Communityname. The SNMP host must match this parameter to query SNMP data from the codec.

**sc** System contact

**sl** Systemlocation

These 3 parameters are ASCII strings used for SNMP messages.

**hi** Host IP address.

**Note! For more information about SNMP please read the TANDBERG SNMP application note.**

**spid** stores the spid number associated with each ISDN channel. Only valid for North American networks.

**spid <1/2/3/4> [b1/b2] <number>**

to remove a SPID number, enter:

**spid <1/2/3/4> [b1/b2] ""**

**spkr** sets the internal alert speaker to either ON or OFF.

**spkr <on/off>**

**sport** configures the Codec's Dataports.

**sport <port> [baud] [parity] [databits] [stopbits] [camera/mode]**

Parameter	Valid arguments
<b>port</b>	data1/data2
<b>baud</b>	1200/2400/4800/9600/19200/38400
<b>parity</b>	n/o/e {none, odd or even}
<b>databits</b>	7/8
<b>stopbits</b>	1/2
<b>mode</b>	d/m/c/t {data, modem, control or T.120 (data1 only)}, v/a {visca or auto camera mode (data2 only. Only available on VISION 5000/2500)}

**statformat** determines the format of the call quality status line and the LED's in front of the codec

**statformat <b/a> {basic/advanced}**

- a** The call quality status line will be set to advanced, and the LED's in front of the codec which shows the status of the ISDN lines will be activated.

<sup>26</sup> The transfer of the local number to a remote Codec or the prevention thereof is dependent on the feature set supported by the network or networks used to establish a connection between the 2 endpoints in a call.

- b** The call quality status line will be set to basic, and the LED's in front of the codec which shows the status of the ISDN lines will be deactivated.

statin

returns details of the current call status with respect to incoming information.

**statin**

Response format:

**Call direction, Call state, Restrict, Channels, Audio, Vidmode, Vidres**

Response values:

**Call direction** nocall,outgoing,incoming

**Call state** idle,speech,syncing,capex1,unframed,disconn,capex2,synced

**Restrict** idle/norestrict/restrict

**Chan** idle/speech, h221-1/2B, h221-384 (H0 call if PRI/BRI ISDN), h221-128/./768 (transfer rate on external networks), bonding-1/2/3/4/5/6/8/..12B).

**Audio** idle, g711, g722, g728, auoff

**Vidmode** vidoff, h261, h263

**Vidres** -/cif/qcif/sqcif

statout

returns details of the current call status with respect to outgoing information.

**statout**

Response format:

**Call direction, Call state, Restrict, Channels, Audio, Vidmode, Vidres**

Response values:

**Call direction** nocall,outgoing,incoming

**Call state** idle,speech,syncing,capex1,unframed,disconn,capex2,synced

**Restrict** idle/norestrict/restrict

**Chan** idle/speech, h221-1/2B, h221-384 (H0 call if PRI/BRI ISDN), h221-128/./768 (transfer rate on external networks), bonding-1/2/3/4/5/6/8/..12B).

**Audio** idle,g711,g722,g728,auoff

**Vidmode** vidoff,h261,h263

**Vidres** -/cif/qcif

status

returns details of the current call status.

**status****Feedback**

Status:incoming

Restricted:no

Initial channel:synced

FAW1:yes

A1:yes

Second channel:idle

FAW2:no

**Meaning**

Direction of call

no=64kbit, yes=56kbit

channel sync status

local frame alignment status (Ch1)

far end frame alignment status (Ch1)

channel sync status

local frame alignment status (Ch2)

A2:no	far end frame alignment status (Ch2)
Aligned2:no	2 <sup>nd</sup> Ch. alignment with Ch1 status
Outgoing txf:384	data rate <sup>27</sup>
Outgoing audio:G.722,m2/U7	audio algorithm
Outgoing video:h261	video coding algorithm
Outgoing data:LSDoff	LSD channel status
Outgoing MLP:MLPoff	MLP channel status
Outgoing T120:off	T.120 status
Outgoing H224:off	H.224 status
Outgoing 6BH0:not6BH0	6B H0 status
Incoming txf:384	data rate
Incoming audio:G.722,m2/U7	audio algorithm
Incoming video:h261	video coding algorithm
Incoming data:-	LSD channel status
Incoming MLP:MLPoff	MLP channel status
Incoming T120:off	T.120 status
Incoming H224:off	H.224 status
Incoming 6BH0:-	6B-H0 status
Speakers:active	audio output status

**still**

controls the transmission, receipt and display of graphics images. The resolution of the received image will default to the highest available dependent on the video algorithm currently being used and the capability of the remote system.

**still <send [n]/req [n]/on/off>**

<b>argument</b>	<b>meaning</b>
<b>send</b>	sends a still graphics image to the remote unit
<b>req</b>	requests a still graphics image from the remote unit
<b>on/off</b>	displays the last sent/requested graphics image/live video from remote site.
<b>n</b>	an identified video source <sup>28</sup> . If not specified the default source specified by "pressource" will be used.

**sub**

specifies an ISDN Subaddress for the VISION 5000/2500/800. The subaddress will be the same for all ISDN channels.

**sub <subaddress>**

to remove the subaddress use

**sub " "**

**systemame**

Sets systemname for use with MCU, telnet and the webinterface.

**systemame <systemname>**

**t1cable**

**VISION 5000 ONLY:**

specifies the length of the T1 cable used between the codec's T1/PRI interface and the T1 CSU/Previous codec and the cable length between this codec and the next codec.

<sup>27</sup> The reported data rate will always be shown as a multiple of 64. If a call has been established using 56 kbits per channel then the "restricted" field will be set to "yes".

<sup>28</sup> The VISION 5000/2500/800 supports 5 video sources for sending still images. When communicating with a non-Tandberg system it may not be possible to request a still image and if it is, *n* may be limited to less than 5

**t1cable [a/b] <1/2/3/4/5>****a** - PRI/T1 1 interface**b** - PRI/T1 2 interface**1** - 0 - 133 feet (0 - 40m)**2** - 133 - 266 feet (40-80m)**3** - 266 - 399 feet (80-120m)**4** - 399 - 533 feet (120-660m)**5** - 533 - 655 feet (660-200m)**t1diag****VISION 5000 ONLY:**

starts diagnostic functions on the T1/PRI interface.

**t1diag <llb/plb/lboff>****llb** Line loopback**plb** Payload loopback**lboff** Loopback off**t1highch****VISION 5000 ONLY:**

used together with *t1lowch* to define line hunting strategy. The codec will search for available channels between *t1lowch* and *t1highch*. This way other devices can reserve the channels outside *t1lowch* and *t1highch*. When there is no value specified by *t1lowch* and *t1highch* they automatically use their default values 1 (*t1lowch*) and 23 (*t1highch*).

**t1highch <1,2,3,...23>**

- t1lowch**     **VISION 5000 ONLY:**  
 used together with *t1highch* to define line hunting strategy. The codec will search for available channels between *t1lowch* and *t1highch*. This way other devices can reserve the channels outside *t1lowch* and *t1highch*. When there is no value specified by *t1lowch* and *t1highch* they automatically use their default values 1 (*t1lowch*) and 23 (*t1highch*).  
**t1lowch <1,2,3,...23>**
- t1maxchan**   **VISION 5000 ONLY:**  
 sets a limit on the number of channels that will be available for incoming calls. This parameter can be used to limit the number of channels used for incoming calls.  
**t1maxchan <2/4/6/8/12>**
- t1number**    **VISION 5000 ONLY:**  
 specifies the phone number of the T1/PRI line that you wish to associate with this system.  
**t1number <number>**
- t1search**     **VISION 5000 ONLY:**  
 specifies the search strategy the codec should use when searching for available channels. Uses the initial limit set by *t1lowch* or *t1highch*.  
**t1search <high/low>**
- teltone**      selects the ringing tone used by the VISION 5000/2500/800 to indicate when a telephone call is received.  
**teltone <A/B/C/D/E/F/test>**
- A**     Standard tone  
**B**     Tone B  
**C**     Tone C  
**D**     Tone D  
**E**     Tone E  
**F**     Tone F  
**test**   Test tone
- test**         tests the different modules of the Codec.  
**Test <all/audio/video/network>**
- all**            completes a self test of all hardware modules in the VISION 5000/2500/800's Codec.
- The response if no faults are present will be:**  
*Status A000:     No errors*  
*Status E000:     No errors*  
*Status D000:     No errors*  
*Please wait! Performing test*

**OK**

*Selected video source is PAL (or NTSC)*

**If network selected is ISDN**

*Line 1 is active*

*Line 2 is active*

*Line 3 is active*

*Line 4 is active (VISION 5000 only)*

*camera ID is <camera ID number> on data port 2*

**If network selected is External Network**

*Line is active*

**If network selected is ISDN-PRI/T1  
(VISION 5000 only)**

*Line is active*

**audio** completes a self test of the VISION 5000/2500/800 audio system.

**The response if no faults are present will be:**

*Status A000: No errors*

**video** completes a self test of the VISION 5000/2500/800 video encoder, decoder and camera.

**The response if no faults are present:**

*Status E000: No errors*

*Status D000: No errors*

*Please wait! Performing test.*

**OK**

*Selected video source is PAL (or NTSC)*

*Camera ID is <camera ID number> on data port 2*

**or**

*Camera is not connected*

**network** completes a self test of the VISION 5000/2500/800 network interface and reports the status of the ISDN connections.

**The response if no faults are present:**

*Please wait! Performing test*

**OK**

**If network selected is ISDN-PRI/T1** *Line is active*

**If network selected is ISDN***Line 1 is active**Line 2 is active**Line 3 is active**Line 4 is active (VISION 5000 only)***If network selected is External Network***Line is active (external clock rate will be reported)*

vidin selects the active Video input source.

**vidin** <1/2/3/4/5>

vidmode select the type of video output mode used by the VISION 5000/2500/800.

**vidmode** [a/b] <i/n>

**a** Video Out 1,2 & 3

**b** Video Out 4 & 5

**i** Interlaced mode.

**n** Non-Interlaced mode.

vidname records a name in the video source menu to be associated with the identified physical video input.

**vidname** <1/2/3/4/5/> <name>

to remove a name, use:

**vidname** <1/2/3/4/5> “ ”

vidtone selects the ringing tone used by VISION 5000/2500/800 to indicate an incoming video call.

**vidtone** <A/B/C/D/E/F/test>

**A** Standard tone

**B** Tone B

**C** Tone C

**D** Tone D

**E** Tone E

**F** Tone F

**test** Test tone

vidqual biases the video compression mechanism used by the Codec.

**vidqual** <m/a/s>

**m** motion maintains fluid motion – may reduce image clarity slightly.

**a** auto maintains optimum balance between clarity and motion [default]

**s** sharpness maintains image clarity – may reduce fluidity of motion slightly

**The effects of “vidqual” are more obvious at lower bandwidths.**

vol selects the volume level output by VISION 5000/2500/800.  
**vol <0..15>**



**Example of dialling with a call profile for a 6BH0 connection:**

The call profile number is = #81\*

**Note: This example applies only for the US PRI version of the VISION 5000**

**Dial #81\*12345678**

## 5. Accessing the command interface using Telnet

When running C3.0 software or higher every Vision 800/2500 and Vision 5000 equipped with an Ethernet port can be accessed using Telnet. The Telnet client within the codec provides access to the dataport command interface through a 10 base T network interface supporting the TCP/IP protocol.

To check if your unit has an Ethernet card, look at the back of the codec to see if it has a LAN port.

### To access the Telnet client

Start a MS-DOS session on your computer and type:

**telnet <ipaddress/name>**

If the codec has a name defined by a DNS server this name can be used in place of an IP address e.g.

**telnet vision800 or**

**telnet 192.9.200.245**

Once connected to the codec a connect message similar to the following will be received:

```
TANDBERG system S/N: 00441098
```

```
Software Version C3.0 PAL
```

```
OK
```

You are now connected to the telnet client. Type 'help' or '?' to view the list of available dataport commands.

### NOTE:

If the codec is protected by an IP password you will be prompted to enter this password before you can access the command interface.

## 6. H243 command reference

The Tandberg h243 command and  $\epsilon^*M$  feedback can be used to control and monitor an MCU conference.

The Tandberg h243 commands should, if the action they request is implemented in the host MCU, allow considerable control throughout a Multipoint conference.

### 6.1 H243 command set

The list below defines the Tandberg h243 commands implemented in the VISION 5000/2500/800 Dataport command set:

Tandberg Command	ITU defined Command	Command Description
<b>MCV</b>	MCV	<i>Multipoint command visualisation-forcing</i> – Transmitted by a terminal to force an associated MCU to broadcast its video signal used to transmit the picture of a chairman or VIP, alternatively to hold a picture source during the transmission of graphics.
<b>MCVoff</b>	Cancel-MCV	<i>Multipoint command visualisation-forcing</i> – Transmitted by a terminal to force an associated MCU to broadcast its video signal used to transmit the picture of a chairman or VIP, alternatively to hold a picture source during the transmission of graphics.
<b>TIF</b>	TIF*	<i>Terminal Indicate Floor-request</i> – Transmitted by a terminal to its MCU; shall be followed by <M> <T> – when forwarded from one MCU to another <T> is that of the terminal requesting the floor; when transmitted by the terminal itself <0> <0> shall follow.
<b>CCA</b>	CCA	<i>Chair Command Acquire</i> – Transmitted by a terminal or MCU to claim a chair-control token.
<b>CIS</b>	CIS	<i>Chair Indicate Stopped-using-token</i> – Transmitted by a terminal holding the chair token to release it.
<b>VCB</b> <[mcu#],[site#]>	VCB*	<i>Video Command Broadcast</i> – Transmitted by a chair-control terminal or an MCU to an MCU to cause broadcasting of the video from the terminal whose identity number follows VCB.
<b>VCE</b>	Cancel-VCB	<i>Cancel Video Command Broadcasting</i> – Returns the conference to voice-activated video switching.
<b>VCS</b> <[mcu#],[site#]>	VCS*	<i>Video Command Select</i> – Transmitted by a terminal to an MCU to cause transmission to itself of the video from the terminal whose identity number follows VCS, if this requirement does not conflict with a VCB requirement.
<b>VCSoff</b>	Cancel-VCS	Transmitted by a terminal to return to automatic video switching at the MCU.
<b>CCD</b> <[mcu#],[site#]>	CCD*	<i>Chair Command Disconnect</i> – Transmitted by a chair-control terminal to an MCU to cause dropping of the terminal whose identity number follows;
<b>CCK</b>	CCK	<i>Chair Command Kill</i> – Transmitted by a chair-control terminal to drop all terminals from the conference.
<b>TCU</b>	TCU	<i>Terminal Command Update</i> – Transmitted by a terminal or MCU to an MCU to request an updated list of terminals connected.

Tandberg commands that take arguments use the *terminal identity number* format which is used to identify a participant by a combination of their MCU number and site number. The *terminal identity number* has the following format:

<[**mcu#**,]**site#**>

The **mcu#** portion of the argument (denoted by *M* in the table descriptions below) is optional however, in a multi-MCU conference it can be used to specify an individual participant on an MCU other than the one the Codec issuing the Tandberg h243 command is connected to.

**site#**

Identifies the number of that particular participants site on the specified MCU, or the local MCU if no **mcu#** is given. The TCU command can be used to provide a list of all participants and their associated MCUs (**site#** is denoted by *T* in the table descriptions below).

## 6.1 MCU, H243 command feedback

### VISION 800/2500 ONLY:

MCU feedback is provided both in response to the issue of the commands listed above and also as a result of some actions initiated by the MCU itself.

The following list identifies the feedback that is available on the Dataport if **feedback** is set to **On**. All MCU feedback is prefixed with **\*M**.

<b>Tandberg Feedback</b>	<b>ITU defined Command</b>	<b>Feedback Description</b>
<b>MCC</b>	MCC	<i>Multipoint command conference</i> – Transmitted by an MCU. An endpoint receiving MCC shall make its outgoing transfer rate equal to its incoming transfer rate, and its outgoing audio rate equal to its incoming audio rate.  NOTE – The command could also be used to invoke an on-screen user indication.
<b>MCCoff</b>	Cancel-MCC	Indicates that communication is no longer taking place in an MCU conference environment.
<b>TIE</b>	TIE	<i>Terminal Indicate End_of_Listing</i> - sent by an MCU when it has completed the transmission of a series of complementary TIL messages.
<b>MIJ</b>	MIJ	<i>Multipoint Indicate Joined_Real_Conference</i> : sent by an MCU to a terminal to indicate that the terminal has joined an actual conference, and that any terminal numbers or identifiers previously transmitted are no longer valid.
<b>MIZ</b>	MIZ	<i>Multipoint indication zero-communication</i> – Transmitted by an MCU to a terminal for information, with the meaning that no other terminals are yet connected to the MCU.
<b>MIZoff</b>	Cancel-MIZ	Indicates that this Codec is no longer the only participant in the conference.
<b>MIV</b>	MIV	<i>Multipoint indication visualisation</i> – Transmitted by an MCU to indicate to a terminal that its video signal is being seen by other terminals (otherwise known as “On-air” indication).
<b>MIVoff</b>	Cancel-MIV	Indicates that this Codec’s video signal is no longer being broadcast to all other participants.
<b>MIS</b>	MIS	<i>Multipoint indication secondary-status</i> – Transmitted by an MCU to a terminal for information, with the meaning that since other terminals of higher capability are participating in the conference-call, this terminal will not necessarily receive all the signals that are sent to those other terminals (see Recommendation H.200/AV.243).
<b>MISoff</b>	Cancel-MIS	Indicates that this Codec now has the capability to fully participate in the conference.

<b>Tandberg Feedback</b>	<b>ITU defined Command</b>	<b>Feedback Description</b>
<b>VCR</b>	VCR	Transmitted by an MCU when it cannot comply with the commands VCB or VCS, for whatever reason.
<b>CIR</b>	CIR	<i>Chair Indicate Release/refuse</i> – Transmitted by an MCU when it cannot comply with the command CCD.
<b>CIT</b>	CIT	<i>Chair Indicate Token</i> – Used by an MCU to pass the chair-control token.
<b>CCR</b>	CCR	<i>Chair Command Release/refuse</i> – Used by an MCU to withdraw/refuse assignment of chair-control token.
<b>VIN</b> <mcu#,site#>	VIN*	<i>Video Indicate Number</i> – Transmitted by an MCU to indicate the source (terminal identity number) of the video in the signal; shall be followed by <M> <T>.
<b>TIF</b> <mcu#,site#>	TIF*	<i>Terminal Indicate Floor-request</i> – Transmitted by a terminal to its MCU; shall be followed by <M> <T> – when forwarded from one MCU to another <T> is that of the terminal requesting the floor; when transmitted by the terminal itself <0> <0> shall follow.
<b>TIA</b> <mcu#,site#>	TIA*	<i>Terminal Indicate Assignment</i> – Used by an MCU to transmit the assigned terminal number to another MCU or to a terminal; shall be followed by <M> <T>.
<b>TIN</b> <mcu#,site#>	TIN*	<i>Terminal Indicate Number</i> – Used to pass information concerning terminal number assignments made; shall be followed by <M> <T>.
<b>TID</b> <mcu#,site#>	TID*	<i>Terminal Indicate Dropped</i> – Used to pass information concerning any terminal number no longer effective; shall be followed by <M><T>.
<b>TIL</b> <mcu#,site#>	TIL	<i>Terminal Indicate List</i> – MBE message used to transmit list of terminal numbers currently added into the conference; the message is a list of the form:<M>,<T> [<M>,<T>] where <M> is a one-byte number assigned to an MCU, and <T> is a one-byte value assigned to a terminal by its local MCU. One such list will be sent for each MCU participating.