

TANDBERG 1000/550 for Cisco CallManager API (Dataport User Guide)

Software version H1/I1

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1 Introduction

This document contains guidelines on how to use the textual command interface supported by the TANDBERG video endpoint for Cisco CallManager. The API 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 *Dataport* (ref. Chapter 2). The API Guide contains guidelines on the use of the TANDBERG endpoints Dataport for the following purposes:

- Diagnostics/self-test
- Control of the TANDBERG endpoint.
- Remote access to the dataport commands interface by using Telnet.

For local control, almost any terminal emulation program such as Microsoft Windows Terminal®, Hyper Terminal™, ProComm Plus®, Telix®, etc. may be used.

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

2 Connecting Equipment To The Dataport

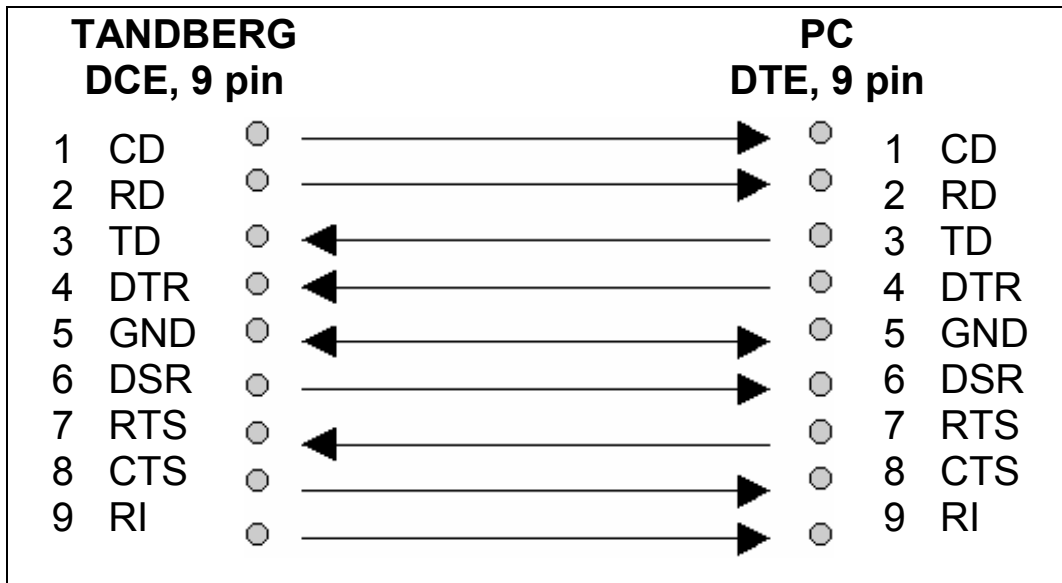
The RS-232 port is a 9-pin, female, D-sub connector located on the back of the TANDBERG endpoint. The port is configured as a DCE (Data Communications Equipment). The RS-232 port is default set to 9600 baud, 8 databits, none parity and 1 stopbit from factory.

2.1 Hardware And Cabling

The pin outs for the Dataport 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

A straight through cable should be used between the TANDBERG endpoints Dataport and the COM port on your PC as shown below. The figure below illustrates the recommended cable-wiring scheme for connecting the TANDBERG video endpoint to a PC through RS-232:



The implementation of the RS-232 port on the TANDBERG video endpoint for Cisco CallManager has the following features:

- DTR is ignored² (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
- CTS is asserted when the codec is ready to receive data.
- Carriage Return must follow commands issued to the Dataport.

2.2 Configuring The Dataports From The Menu

Pressing MENU on the TANDBERG remote control displays the unit's Main Menu. The Dataport configuration settings are available through the Settings menu. Within the Terminal Settings Menu is an entry for the Dataport. To configure the *Dataport*, select Data port settings and a menu listing the available settings for that Dataport will be displayed. The available settings are:

Baudrate, Parity, Databits and Stopbits.

² Unless a call is initiated using the ATD command (via a PC application for example) in which case toggling DTR will disconnect the call.

2.3 Troubleshooting

If communication cannot be established between the PC/terminal and the TANDBERG endpoints Dataport we recommend the following be checked:

- Confirm that the cable pin outs 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 TANDBERG endpoint *Dataport*. Hardware flow control (RTS/CTS) should be set to ON on the PC, and the correct serial port should be selected.
- Verify that the PC/terminal Dataport is working properly by connecting it back-to-back to another PC/terminal and send characters in both directions³.

3 Connecting to the API using Telnet

The TANDBERG endpoints Telnet server provides access to the API Command Interface through a 10/100 base T network interface supporting the TCP/IP protocol.

When connected to the TANDBERG endpoint, the Telnet client will receive a welcome message similar to the following:

```
Welcome to TANDBERG
TANDBERG Codec Release H1.0
SW Release Date: 2003-12-30
```

NOTE! If the TANDBERG endpoint is protected by an IP password you will be prompted to enter this password before you can access the API Command Interface via Telnet. The default password for accessing a TANDBERG endpoint through telnet is TANDBERG.

³ You will need a null-modem cable to perform this test

4 TANDBERG Dataport Commands

4.1 Introduction to API commands

Typing '?' or 'help' when connected to the API Command Interface will return a list of valid *API commands*. The API commands are used to control the functions of the TANDBERG endpoint. A command may be followed by a set of *parameters* and *sub-commands*. This chapter gives a description of the valid commands for the TANDBERG video endpoints for Cisco CallManager.

4.1.1 Command format

Typing '?' or 'help' after a command will result in a *usage text* 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).

ipaddress ?

```
usage: ipaddress <s/m/g> <addr>
or: ipaddress active
s/m/g - static IP address, subnet mask or gateway address
addr  - format n.n.n.n, where n is 0..255
        use "" to remove entry
active - feedback on active IP, mask and gateway address
```

Parameters are arguments upon which the command will operate. Required parameters are denoted by: <>, while optional parameters are denoted by: []. The possible values for a given parameter are separated with slashes (/). For some parameters, only the parameter name is supplied within the brackets. In these cases a specific parameter value is to be substituted for the parameter name. The possible values to be substituted for a parameter name are often supplied below if it is not obvious what the possible values are.

NOTE! The API Command Interface is not case sensitive

4.1.2 Command types

The commands are divided into five groups:

- System configuration commands
- Status commands
- Debug commands
- Special commands
- Hidden commands

4.2 The API commands

4.2.1 System configuration commands

Command	Usage	Description
alrtvol	alrtvol [vol] - vol – 0..15 / test	Sets ringing tone volume. 'test' plays the ringing tone at the current volume.
camsettings	camsettings [id] <brightness> <auto/manual> [level] - id – camera number 1..5 level – 0..15 (valid for manual mode only)	Sets brightness of Wave camera. Note! Currently only one camera available.
dns	dns server <serverid> <ipaddr> or dns domain <domainname> - serverid - 1..5 domainname - max 60 characters	Sets dns parameters like server ip-addresses and/or domain name. Typing 'dns' with no parameters will display current settings.
ipaddress	ipaddress s <ipaddress> or ipaddress m <ipaddress> or ipaddress g <ipaddress> or ipaddress active - s – static, m – subnetmask, g – gateway active – shows active IP, mask and gateway addr.	Sets static IP address, subnet mask or gateway address if static address allocation.
ipassignment	ipassignment <dhcp/static> or ipassignment speed <ipspeed> - speed – auto / 10half / 10full / 100half / 100full	Selects DHCP or static IP address allocation.
ipconflictcheck	ipconflictcheck	Checks for conflict on LAN
ippassword	ippassword <password> - password – max 16 chars (use "" to remove)	Sets password for telnet, ftp and HTTP access.
monitor	monitor brightness <level> - level – 0..16	Set monitor brightness. Note! Available for the TANDBERG 1000 only.
sport	sport [baudrate] [parity] [databits] [stopbits] - baudrate – 1200/2400/4800/9600/19200/38400 parity – none/odd/even databits – 7/8 stopbits – 1/2	Configures the serial port.
systemname	systemname <name>	Sets system name.
tftp	tftp alternate <on / off> or tftp server <serverid> <ipaddr> - serverid – 1..2	Configures alternate tftp server.
vidtone	vidtone <tone> - tone – a / b / c / d / e / f / test	Selects the ring tone. 'test' will play the currently selected ring tone.
vol	vol <level> - level – 0..15	Sets the volume level output.

4.2.2 Status commands

Command	Usage	Description
callmanagers	callmanagers [id] - id- 1..5	Shows the status of the call manager with number 'id'. If 'id' is omitted, all call managers will be listed.
dispparam	dispparam	Displays all parameter settings with exception of dataport settings.
ipstat	ipstat Response: ipstat <ip addr> <subn. mask addr> <gateway addr> <MAC addr> <ipspeed> - ipspeed - down/10half/10full/100half/100full	Gives LAN interface information
statin	statin [callid] Response: statin <callid> <call-state> <audio> <vidmode> <vidres> - callid - 1..4 call-state - offhook/onhook/ringout/ringin/connected/ busy/congestion/hold/callwaiting/ calltransfer /callpark/proceed/ callremotemultiline audio - unknown / idle / g711 / auoff vidmode - unknown / vidoff / h261 / h263 vidres - unknown / cif	Gives status for an incoming call. If 'statin' is written without arguments all calls will be listed.
statout	statout [callid] Response: statout <callid> <call-state> <audio> <vidmode> <vidres> - callid - 1..4 call-state - offhook/onhook/ringout/ringin/connected/ busy/congestion/hold/callwaiting/ calltransfer /callpark/proceed/ callremotemultiline audio: unknown / idle / g711 / auoff vidmode: unknown / vidoff / h261 / h263 vidres: unknown / cif /	Gives status for an outgoing call. If 'statout' is written without arguments all calls will be listed.

4.2.3 Debug commands

Command	Usage	Description
eventlog	eventlog [n/all] - n – number of lines from end of event log to dump all – dump entire event log	Shows all system events and exceptions since unit was switched on.
syslog	syslog <on/off>	Turn system log on or off. When on, all messages between the unit and CallManager will be displayed.

4.2.4 Special commands

Command	Usage	Description
boot	boot	Reboots the system.
dispparam	dispparam	Shows all parameter settings.
help	help	Displays the help menu.
netstat	netstat	Prints network connections and routing tables.
key	key <keycode> - keycode: 0/1/2/3/4/5/6/7/8/9/*/# maincam Main camera key aux Aux camera key doc Doc camera key vcr Vcr camera key pc PC key sv Selfview key fp Snapshot/Freeze key fe Far End key pip Pip key z+/z- Zoom key v+/v- Volume Up/Down key mm Microphone Off key up Up key do Down key le Left key ri Right key ok OK key conn Connect key disc Disconnect di Directory key me Menu key de Delete key st Store key preset Preset key f1 Softkey 1 f2 Softkey 2 f3 Softkey 3 p0-p14 Preset keys grab Remote Control pickup	Emulates pressing a key on the remote control.
ping	ping <ipaddress>	Standard ping command. Used to check if a unit on the network is reachable.
selfview	selfview <on / off>	Toggles selfview on and off.
traceroute	traceroute <ipaddress>	Standard traceroute command. Used to find routing information to specified IP address.

4.2.5 Hidden commands

Command	Usage	Description
?	?	Displays the help menu – same as 'help'
ati	ati <x> - x – 1..8	Displays product identification. 1 - sw version 2 - system text 3 - sw date 4 - sw text 5 - serial no 6 - hw info 7 - hw cfg. info 8 – copyright statements
ate	ate <x> - x – 0/1 (off/on)	Turns echo on serial port on/off.
lines	lines	Displays the unit's currently configured line numbers.

4.3 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 is the 'Repeat Last' command and the 'escape code' command, in both cases the AT prefix is not used.

4.3.1 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.

4.3.2 Escape Code Command

+++ Escape sequence '+++'.
The TANDBERG endpoint 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 TANDBERG endpoint for at least one second.

- The TANDBERG endpoint must receive three '+' escape characters within the next second.
- Another second must then elapse before any data is sent from the DTE to the TANDBERG endpoint.

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.

4.3.3 Standard Commands

- A Answer Immediately, instructs the TANDBERG endpoint 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 TANDBERG endpoint will remain in Local Command State after call-set-up (the default is to revert directly to the On-Line State). The TANDBERG endpoint 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 TANDBERG endpoint will not go to the On-Line State after call set-up but will remain in Local Command State. Commands that follow in the same command string are ignored.

4.3.4 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 TANDBERG endpoint 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 follow this command in the same command string, are ignored
- In** Product Identification. This command reports the product code.
(0): Display software version number and software ID[default] (e.g. H1.1)
1: Displays codec version and options installed
2: Display last change date.
3: Display file name (e.g. s08601)
4: Display HW serial number of the TANDBERG endpoint
5: Main board, boot sw release and additional board information
6: Print out a hardware configuration string in format: HWcfg: BRI= number of BRIs; PRI = number of PRIs; Ext = numext; VGA = has VGA; Settop = is settop; AudiIn = number of audio inputs; DPrt = number of dataports.
- Qn** Result Code Display. This command instructs the TANDBERG endpoint 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 TANDBERG endpoint which result code format to use, either words (default) or numbers.
0: messages in numerical form.
(1): messages in plain language [default].

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