ELIUM IRD-UHD Device
RS232/Network Remote Control Description

1. General

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Scope: The goal of this document is to describe how ELIUM IRD-UHD Device can be controlled through RS232 connector (RS232-RC mode) or via network TCP connection (NET-RC mode).

2. The RS232/Network attachment

One of the many features implemented in ELIUM IRD-UHD Device application is the possibility of bidirectional controlling the device through RS232 connection or via network TCP connection according to this Remote Control description.

3. Example application

ELIUM IRD-UHD Device can be controlled from your PC. Be aware that only two wires of nine are used (RX and TX) in the case of RS232-RC mode. The TCP port 26 is the default communication port in the case of NET-RC mode.

4. Working conditions

The communication can work correctly only if the following conditions are fulfilled.

For the RS232-RC mode (via RS232 connection):

- Baud: 115.200 (default)

- Parity: none

- Data Bits: 8

- Stop Bits: 1

- Flow Control: none

For the NET-RC mode (via network TCP connection):

The client (PC) connects to the server (ELIUM IRD-UHD Device) with its network address and port via TCP and fulfils the commands described below to control the device.

5. Attention:

Please mention that after switching on the unit by pushing the Power Switch, the unit is starting and during this procedure should not be disturbed. If you send anything during the starting procedure, the unit can go to Firmware update procedure. So it is recommended waiting until receive text information from application part - "#READY".

6. Note:

In certain moments ELIUM IRD-UHD Device sent other "#" lines too.
The syntax is: #?/text/?#

They give information about: Boot, Application Version etc. These lines should not be taken into account.

7. Commands without additional return value

Each command starts with "<" char and ends with ">". Immediately after ">" sign is received, command will be performed.

If command is not recognized (for example, if <ABC> command is sent), the following text should appear on your terminal window:

#COMMAND: <ABC>
#ERROR: Command not supported

If command is supported and was received correctly you should get something like:

#COMMAND : <ON>
#OK

The line "#COMMAND:" is sent before command is performed. It only indicates that certain string of chars was received by the device. After that, command is performed and, if this action is finished, the line "#OK" should be sent.

In order to simplify (from programmer point of view) the reception of responses (so called confirmations) the first sign sent from the device is always "#". So, host should wait for "#", the next letter should indicate whether everything was all right or not (#C, #E or #C, #O).

Command	Description
<REB>	Reboot device
<SIP s>	Change device network configuration s = list of string attributes separated with ";" delimiter in format: 　　　*ipaddr;netmask;gateway;dns* where 　*ipaddr*　　=　device IP-address or 　　　　　　"-" if no change; 　*netmask*　=　device network mask or 　　　　　　"-" if no change; 　*gateway*　=　network gateway IP-address or 　　　　　　"-" if no change; 　*dns*　　　=　DNS server IP-address or 　　　　　　"-" if no change; Example: #COMMAND: <SIP 10.1.1.54;-;10.1.1.1;10.1.1.1> #OK

<SDM n>	Set video display mode
	
	n = decimal code for video display mode
	Possible decimal codes for video display mode are:
	   0 PAL (analog video output via CVBS)
	   1 NTSC (analog video output via CVBS)
	   2 480i 60Hz
	   3 576i 50Hz
	   4 480p 60Hz
	   5 576p 50Hz
	   6 720p 50Hz
	   7 720p 60Hz
	   8 1080i 50Hz
	   9 1080i 60Hz
	 10 1080p 24Hz
	 11 1080p 50Hz
	 12 1080p 60Hz
	 13 2160p 50Hz 420
	 14 2160p 60Hz 420
	 15 2160p 24Hz 422
	 16 2160p 25Hz 422
	 17 2160p 30Hz 422
	
	Example:
	#COMMAND: <SDM 7>
	#OK

<SAO n>	Set audio output
	
	n = decimal code for audio output
	Possible decimal codes for audio output are:
	   0 HDMI
	   1 L/R
	
	Note: Available only for 'EL-19843 Rev.00.00' series Backend Boards where audio output is shared between HDMI and L/R. Otherwise the following error message is sent:
	#ERROR: Command not allowed
	
	Example:
	#COMMAND: <SAO 1>
	#OK

<ON>	Turn on device Note: Command should be used only in Standby mode. Otherwise the following error message is sent: #ERROR: Not in standby

<OFF>	Turn off device Note: Command should not be used in Standby mode. Otherwise the following error message is sent: #ERROR: Already in standby

<RMCC n>	Simulates an input via remote control
	
	n = remote control key code for the given key
	Possible key codes (for device remote control) are:
	  22 Key ON/OFF
	   2 Key '1'
	   5 Key '2'
	   6 Key '3'
	   9 Key '4'
	  10 Key '5'
	  13 Key '6'
	  14 Key '7'
	  17 Key '8'
	  18 Key '9'
	  21 Key '0'
	  34 Key MODE
	  37 Key RADIO/TV
	  38 Key MUTE
	  41 Key LAST
	  25 Key UP
	  26 Key DOWN
	  29 Key LEFT
	  33 Key RIGHT
	  30 Key OK
	  42 Key MENU
	  45 Key EXIT
	  58 Key Red (PVR / DVR)
	  61 Key Green (MOVIE / DVD)
	  62 Key Yellow (MUSIC / MP3/JPEG)
	  65 Key Blue (MEDIA / GAME)
	  46 Key << (rew. back)
	  49 Key PLAY/PAUSE
	  50 Key >> (rew. forward
	  53 Key |<< (go prev.)
	  54 Key REC/STOP
	  57 Key >>| (go next)
	  66 Key INFO
	  69 Key EPG
	  70 Key TIMER
	  73 Key TXT
	  74 Key PIP
	  77 Key SEARCH / FREEZE
	  78 Key TECH.INFO / ZOOM
	  81 Key AUDIO VIDEO

<RMC c>	Simulates an input via remote control
	
	Possible 'c' chars are:
	  0 Key '0'
	  1 Key '1'
	  2 Key '2'
	  3 Key '3'
	  4 Key '4'
	  5 Key '5'
	  6 Key '6'
	  7 Key '7'
	  8 Key '8'
	  9 Key '9'
	  i Key OK
	  m Key EXIT
	  b Key MENU
	  u Key UP
	  j Key DOWN
	  k Key RIGHT
	  h Key LEFT
	  e Key TXT
	  d Key EPG
	  f Key REC/STOP
	  g Key INFO
	  x Key Yellow (MUSIC / MP3/JPEG)
	  c Key Red (PVR / DVR)
	  v Key RADIO/TV
	  n Key LAST
	  t Key ON/OFF
	  a Key MUTE
	  J Key PIP
	  K Key SEARCH / FREEZE
	  L Key TECH.INFO / ZOOM
	  M Key AUDIO VIDEO
	  A Key MODE
	  B Key Green (MOVIE / DVD)
	  C Key Blue (MEDIA / GAME)
	  D Key << (rew. back)
	  E Key PLAY/PAUSE
	  F Key >> (rew. forward)
	  G Key |<< (go prev.)
	  H Key >>| (go next)
	  I Key TIMER

<DIG n>	Simulates a digit input from the remote control (n = 0..9)
<MNU>	GUI Menu request
<EXT>	GUI Exit and Leave Menu request

<CNF>	GUI Confirmation and Selection request
<NAV U>	GUI Move Up request Note: The main purpose of the <NAV U> command is the GUI navigation. Command is not assumed to be used for channels switch. <PRT U> and <PRR U> commands should be used instead.
<NAV D>	GUI Move Down request Note: The main purpose of the <NAV D> command is the GUI navigation. Command is not assumed to be used for channels switch. <PRT D> and <PRR D> commands should be used instead.
<NAV L>	GUI Move Left request
<NAV R>	GUI Move Right request
<TVL>	GUI Channellist request (activates the list of available programs)
<AVM 1> <AVM ON>	GUI Audio and Multifeed menu On request
<AVM 0> <AVM OFF>	GUI Audio and Multifeed menu Off request
<AVM U>	GUI Audio and Multifeed menu Move Up request
<AVM D>	GUI Audio and Multifeed menu Move Down request
<AVM L>	GUI Audio and Multifeed menu Move Left request
<AVM R>	GUI Audio and Multifeed menu Move Right request
<SAC n>	Set audio stream for the current channel n = audio stream ID (received with <GAC> command) Available audio streams can retrieved by <GAC> command. Command should be used only in TV/Radio program playback (when the current mode is either TV or Radio) or in Timeshifting mode (when the current mode is Time Shift). Otherwise the respective error message is sent. In the case of Timeshifting mode the command should be used only to change audio stream within the current recording and will not change the current playback.

	Example: #COMMAND: \<SAC 5406> #OK
\<REC 1> \<REC ON>	Start recording of the current program Command should be used only in TV/Radio program playback (when the current mode is either TV or Radio). The recording storage should be also available (please refer \<HDD INFO> command description). Otherwise the respective error message is sent.
\<REC 0> \<REC OFF>	Stop recording of the current program The recording should be previously started (please refer \<REC 1> command description). Otherwise the respective error message is sent. In the case of Timeshifting mode the command will also stop timeshifting.
\<REC D>	Stop recording of the current program and remove recording files The recording should be previously started (please refer \<REC 1> command description). Otherwise the respective error message is sent. In the case of Timeshifting mode the command will also stop timeshifting. Command is assumed to be used for Timeshifting mode for the case when the recordings are no more needed after timeshifting.
\<TSHFT 1> \<TSHFT ON>	Start timeshifting with the current recording Command should be used only in TV/Radio program playback (when the current mode is either TV or Radio). The recording should be previously started (please refer \<REC 1> command description). Otherwise the respective error message is sent.
\<TSHFT 0> \<TSHFT OFF>	Stop timeshifting with the current recording Command should be used only in Timeshifting mode (when the current mode is Time Shift). Otherwise the respective error message is sent. Command will not stop the the current recording.
\<MPLAY =s>	Start media player for the given media file s = media file path in format of \<GRL>/\<GML>/\<GAL> command reply (please refer \<GRL>,\<GML>,\<GAL> commands description) or custom media file path in the following format: _\<container>;\<filename>_

	where
	   The *<container>* is the one of the following:
	    HDD[1..2] = HDD connected to eSata
	   The *<filename>* is the full file path (including subfolders) to the
	   media file (using '/' char as subfolder delimiter).
	
	Examples:
	#COMMAND: <MPLAY =PVR;HDD1;N24__20171202_123001__Re.ts>
	#OK
	or
	#COMMAND: <MPLAY =MOVIE;HDD1;movie1.avi>
	#OK
	or
	#COMMAND: <MPLAY =HDD1;myaudio/mysong1.mp3>
	#OK
	or
	#COMMAND: <MPLAY =HDD1;nonexistent_file.mp4>
	#ERROR: File not available

<MPLAYLIST +=s>	Add the given media file to the media player play queue
	
	s = media file path in format of <GRL>/<GML>/<GAL> command reply
	(please refer <GRL>,<GML>,<GAL> commands description) or custom
	 media file path in the following format:
	       <container>;<filename>
	where
	   The *<container>* is the one of the following:
	    HDD[1..2] = HDD connected to eSata
	   The *<filename>* is the full file path (including subfolders) to the
	   media file (using '/' char as subfolder delimiter).
	
	Examples:
	#COMMAND: <MPLAYLIST +=PVR;HDD1;M1__20171203_162430.ts>
	#OK
	or
	#COMMAND: <MPLAYLIST +=MOVIE;HDD1;movie1.avi>
	#OK
	or
	#COMMAND: <MPLAYLIST +=HDD1;myaudio/mysong1.mp3>
	#OK
	or
	#COMMAND: <MPLAY =HDD1;nonexistent_file.mp4>
	#ERROR: File not available

<MPLAYLIST clear>	Clear the media player play queue Example: #COMMAND: <MPLAYLIST CLEAR> #OK

<MPLAY list>	Start the media player play queue The media player play queue should be previously filled up with the media files (please refer <MPLAYLIST +=s> command description). Examples: #COMMAND: <MPLAY LIST> #OK or #COMMAND: <MPLAY LIST> #ERROR: Empty playlist

<MPLAY LOOP n>	Set media player playback loop setting
	
	n = decimal code for the media player playback loop setting
	Possible decimal codes for the media player playback loop setting:
	   0 playback loop is disabled
	   1 playback loop is enabled for the current file
	   2 playback loop is enabled for the play queue

<MPSTOP> <MPLAY 0> <MPLAY OFF>	Stop media player playback Stop timeshifting with the current recording
<MPPAUSE>	Pause playback in the media player Pause timeshifting
<MPPLAY>	Resume playback in the media player Resume timeshifting
<MPFF>	Jump 5% (minimum 30 seconds) forward in the current media player playback Jump 5% (minimum 30 seconds) forward in timeshifting
<MPFF n>	Jump n minutes forward in the current media player playback Jump n minutes forward in timeshifting
<MPRW>	Jump 5% (minimum 30 seconds) backward in the current media player playback Jump 5% (minimum 30 seconds) backward in timeshifting
<MPRW n>	Jump n minutes backward in the current media player playback Jump n minutes backward in timeshifting
<MPSTA>	Jump to the start of the current media player playback Jump to the start of the current timeshifting file Jump to the previous timeshifting file (within 30 seconds from the current timeshifting file start)

<MPMID>	Jump to the middle of the current media player playback Jump to the middle of the current timeshifting file
<MPEND>	Jump to end of the current media player playback Jump to the next file in the media player play queue Jump to the end of the current timeshifting file Jump to the next timeshifting file if available

8. Commands with additional return value

Each command starts with "<" char and ends with ">". Immediately after ">" sign is received, command will be performed.

If command is not recognized (for example, if <ABC> command is sent), the following text should appear on your terminal window:

#COMMAND: <ABC>
#ERROR: Command not supported

If command is supported and was received correctly you should get something like:

#COMMAND: <GCS>
#RET: on
#OK

Command	With Return Value
<VER>	Get device firmware and hardware information Example: #COMMAND: <VER> #Mainboard: Rev.01.00 #Firmware: Ver.00.07 #S/N: 01928374657410 #OK
<FWINFO>	Get extended device firmware information Example: #COMMAND: <FWINFO> #Firmware: Ver.00.07 build 02 (01.08.2017 11:42) #OK

<UPDATE n s>	Update device firmware
	
	n = [NET | USB] - update container (firmware image container)
	s = list of parameters depending of n (see below)
	
	Possible update containers are:
	
	1. n = NET
	Update from network share (NAS, file server).
	In this case '*s*' is the list of string attributes separated with ";" delimiter in format:
	     image_file;server_ip;share_name;username;password
	where
	  image_file = relative path to firmware image file inside shared folder;
	  server_ip = IP-address of the network file server;

	share_name = network shared resource name;
	username = network file server user name or
	                "-" if empty for anonymous (guest) login;
	password = network file server user password or
	                "-" if empty (no password);
	
	2. n = USB
	Update from USD drive.
	In this case *'s'* is relative path to firmware image file inside the USB drive root filesystem.
	
	The operation progress can also be observed during the update process.
	Device sends progress information as:
	#RET: *progress_percent*
	Device sends error message if the update process fails for some reason:
	#ERROR: *error_description*
	
	Examples:
	To update from network share
	#COMMAND:
	<UPDATE NET elium_IRD-UHD_v00.07.img;10.1.1.5;Public;-;->
	#RET: 20%
	#RET: 40%
	#RET: 60%
	#RET: 80%
	#RET: 100%
	#OK
	To update from USB drive
	#COMMAND: <UPDATE USB elium_IRD-UHD_v00.07.img>
	#RET: 20%
	…
	#RET: 80%
	#RET: 100%
	#OK

<UPDATE ELIUM>	Update device firmware with the latest release via Web The operation progress can be observed during the update process. Device sends progress information as: #RET: *progress_percent* Device sends error message if the update process fails for some reason: #ERROR: *error_description* Example: #COMMAND: <UPDATE ELIUM> #RET: 20% … #RET: 80% #RET: 100% #OK

<IPC>	Get device network configuration Example: #COMMAND: <IPC> #MACADDR: 00:E0:4C:02:0B:31 #IP: 10.1.1.55 #MASK: 255.255.255.0 #GW: 10.1.1.3 #DNS: 10.1.1.3 #OK
<DISPLAY MODES>	Get all available video display modes Example: #COMMAND: <DISPLAY MODES> #RET: 0;PAL #RET: 1;NTSC #RET: 2;480i 60Hz #RET: 3;576i 50Hz #RET: 4;480p 60Hz #RET: 5;576p 50Hz #RET: 6;720p 50Hz #RET: 7;720p 60Hz #RET: 8;1080i 50Hz #RET: 9;1080i 60Hz #RET: 10;1080p 24Hz #RET: 11;1080p 50Hz #RET: 12;1080p 60Hz #RET: 13;2160p 50Hz 420 #RET: 14;2160p 60Hz 420 #RET: 15;2160p 24Hz 422 #RET: 16;2160p 25Hz 422 #RET: 17;2160p 30Hz 422 #OK

<DISPLAY MODE n>	Set video display mode (as string value)
	Get video display mode (as string value)
	
	n = [?] | [*mode_string*]
	n = ? - get current video display mode as string
	n = *mode_string* - set video mode with the string value
	Possible string values for video display mode are:
	  PAL
	  NTSC
	  480i 60Hz
	  576i 50Hz
	  480p 60Hz
	  576p 50Hz
	  720p 50Hz
	  720p 60Hz
	  1080i 50Hz

	1080i 60Hz 1080p 24Hz 1080p 50Hz 1080p 60Hz 2160p 50Hz 420 2160p 60Hz 420 2160p 24Hz 422 2160p 25Hz 422 2160p 30Hz 422 Examples: #COMMAND: <DISPLAY MODE ?> #RET: 1080p 60Hz #OK or #COMMAND: <DISPLAY MODE 720p 50Hz> #RET: 720p 50Hz #OK
<GDM>	Get video display mode (decimal code and string value) Example: #COMMAND: <GDM> #RET: 12;1080p 60Hz #OK
<AUDIO OUTS>	Get all available (selectable) audio outputs Note: Available only for 'EL-19843 Rev.00.00' series Backend Boards where audio output is shared between HDMI and L/R. Otherwise the following error message is sent: #ERROR: Command not allowed Example: #COMMAND: <AUDIO OUTS> #RET: 0;HDMI #RET: 1;L/R #OK

<AUDIO OUT n>	Set audio output (as string value)
	Get audio output (as string value)
	
	n = [?] | [*output_string*]
	n = ? - get current audio output as string
	n = *output_string* - set audio output with the string value
	
	Possible string values for audio output are:
	   HDMI
	   L/R

	Note: Available only for 'EL-19843 Rev.00.00' series Backend Boards where audio output is shared between HDMI and L/R. Otherwise the following error message is sent: #ERROR: Command not allowed Examples: #COMMAND: <AUDIO OUT ?> #RET: HDMI #OK or #COMMAND: <AUDIO OUT L/R> #RET: L/R #OK
<GAO>	Get audio output (decimal code and string value) Note: Available only for 'EL-19843 Rev.00.00' series Backend Boards where audio output is shared between HDMI and L/R. Otherwise the following error message is sent: #ERROR: Command not allowed Example: #COMMAND: <GAO> #RET: 0;HDMI #OK
<GCV>	Get current volume (mute state and volume level) Example: #COMMAND: <GCV> #RET: on;100 #OK
<VOL n>	Set/change volume (mute state or volume level) Get current volume (mute state and volume level) n = [?] | [+/-][0 .. 100] | [ON,OFF] n = ? - get current volume setting (same as <GCV> command) n = ON or OFF - turn audio on or off (on for unmute, off for mute) n = [+/-][0 .. 100] - without a leading sign sets the volume absolute, with a leading sign sets the volume relative to the current value Examples: #COMMAND: <VOL ?> #RET: on;100 #OK or #COMMAND: <VOL -10> #RET: on;90 #OK

	or #COMMAND: <VOL 50> #RET: on;50 #OK or #COMMAND: <VOL OFF> #RET: off;50 #OK
<LCK n>	Lock/Unlock Frontpanel Keys Get Lock status for Frontpanel Keys n = [?] | [ON,OFF] | [1,0] n = ? - get Lock status (on = locked, off = unlocked) n = ON or 1 - lock Frontpanel Keys n = OFF or 0 - unlock Frontpanel Keys Example: #COMMAND: <LCK ON> #RET: on #OK
<LCI n>	Lock/Unlock IR Remote Get Lock status for IR Remote n = [?] | [ON,OFF] | [1,0] n = ? - get Lock status (on = locked, off = unlocked) n = ON or 1 - lock IR Remote n = OFF or 0 - unlock IR Remote Example: #COMMAND: <LCI ?> #RET: off #OK
<VRMC n>	Enable/Disable Virtual IR Remote Control (VRMC) mode Get VRMC mode status (enabled/disabled) n = [?] | [ON,OFF] | [1,0] n = ? - get VRMC mode status (on = enabled, off = disabled) n = ON or 1 - enable VRMC mode n = OFF or 0 - disable VRMC mode Enabling VRMC mode is suitable to simulate an input via remote control within one char. There is no need to send any command to simulate the input in such case. The input simulation will be performed immediately after the respective char is received. Please refer <RMC c> command for the possible VRMC chars.

<GCS>	Get current device state (On or Standby)
	
	Possible return:
	  #RET: on device is On (active)
	  #RET: off device is in Standby

<GCM>	Get current device mode
	
	Possible return:
	  #RET: Restart device is booting up
	  #RET: Standby device is in standby
	  #RET: Idle device is in menu (idle)
	  #RET: TV TV program playback
	  #RET: Radio Radio program playback
	  #RET: Time Shift Timeshifting mode with the
	                         current recording
	  #RET: Media Player Media Player mode with the
	                         file playback
	  #RET: Search searching for the channels
	  #RET: Firmware Update updating firmware

<TTT>	Turn to TV mode Command should be used only in TV/Radio program playback (when the current mode is either TV or Radio) and when TV channels are available. Otherwise the respective error message is sent. Example: #COMMAND: <TTT> #RET: TV #OK
<TTR>	Turn to Radio mode Command should be used only in TV/Radio program playback (when the current mode is either TV or Radio) and when Radio channels are available. Otherwise the respective error message is sent. Example: #COMMAND: <TTR> #RET: Radio #OK
<PRT U>	Switch TV channel Up (current channel -1) Command should be used only in TV mode. Otherwise the respective error message is sent. Example: #COMMAND: <PRT U>

	#RET: TV;51;Sky Sport News #OK
<PRT D>	Switch TV channel Down (current channel +1) Command should be used only in TV mode. Otherwise the respective error message is sent. Example: #COMMAND: <PRT D> #RET: TV;52;tagesschau24 HD #OK
<PRR U>	Switch Radio channel Up (current channel -1) Command should be used only in Radio mode. Otherwise the respective error message is sent. Example: #COMMAND: <PRR U> #RET: Radio;25;MDR KLASSIK #OK
<PRR D>	Switch Radio channel Down (current channel +1) Command should be used only in Radio mode. Otherwise the respective error message is sent. Example: #COMMAND: <PRR D> #RET: Radio;26;NDR Kultur #OK
<PRT =pn>	Switch to TV channel whose name is equal with pn Command should be used only in TV/Radio program playback (when the current mode is either TV or Radio). Otherwise the respective error message is sent. Example: #COMMAND: <PRT =tagesschau24 HD> #RET: TV;52;tagesschau24 HD #OK
<PRT *pn>	Switch to TV channel whose name contains pn Command should be used only in TV/Radio program playback (when the current mode is either TV or Radio). Otherwise the respective error message is sent.

	Example: #COMMAND: <PRT *Sport News> #RET: TV;51;Sky Sport News #OK
<PRR =pn>	Switch to Radio channel whose name is equal with pn Command should be used only in TV/Radio program playback (when the current mode is either TV or Radio). Otherwise the respective error message is sent. Example: #COMMAND: <PRR =NDR Kultur> #RET: Radio;26;NDR Kultur #OK
<PRR *pn>	Switch to Radio channel whose name contains pn Command should be used only in TV/Radio program playback (when the current mode is either TV or Radio). Otherwise the respective error message is sent. Example: #COMMAND: <PRR *Kultur> #RET: Radio;26;NDR Kultur #OK
<PRT n>	Switch to TV channel by number (n is a number) n = channel number in TV list (received e.g. from <GCL> command) Command should be used only in TV/Radio program playback (when the current mode is either TV or Radio). Otherwise the respective error message is sent. Example: #COMMAND: <PRT 11> #RET: TV;11;Das Erste HD #OK
<PRR n>	Switch to Radio channel by number (n is a number) n = channel number in Radio list (received e.g. from <GCL> command) Command should be used only in TV/Radio program playback (when the current mode is either TV or Radio). Otherwise the respective error message is sent. Example:

	#COMMAND: <PRR 32> #RET: Radio;32;NDR Plus #OK
<GNT>	Get number of TV channels Example: #COMMAND: <GNT> #RET: 1170 #OK
<GNR>	Get number of Radio channels Example: #COMMAND: <GNR> #RET: 162 #OK
<GCC>	Get current channel (channel number) Command should be used only in TV/Radio program playback (when the current mode is either TV or Radio) or in Timeshifting mode (when the current mode is Time Shift). Otherwise the respective error message is sent. Example: #COMMAND: <GCC> #RET: 19 #OK
<GCP>	Get current program (name of program) Command should be used only in TV/Radio program playback (when the current mode is either TV or Radio) or in Timeshifting mode (when the current mode is Time Shift). Otherwise the respective error message is sent. Example: #COMMAND: <GCP> #RET: SES UHD Demo Channel #OK
<GCL>	Get channel list (list of TV and Radio programs including numbering) Each table row is sent immediately after line: '#RET: '. At the end of transmission lines '#END' and '#OK' are sent. Example: #COMMAND: <GCL>

	#RET: TV;1;tagesschau24 #RET: TV;2;ONE #RET: TV;3;arte #RET: TV;4;PHOENIX … #RET: TV;1169;Sky Sport Bundesliga 7 HD #RET: TV;1170;BBC World News Europe HD #RET: Radio;1;DKULTUR #RET: Radio;2;DLF #RET: Radio;3;DRadio Wissen … #RET: Radio;161;F. INTER #RET: Radio;162;CULTURE #END #OK
<GCLPT n m>	Get the part of the current TV channels list (including numbering) n = the program number to start from m = the total (maximum) number of programs to get from start Example: #COMMAND: <GCLPT 10 2> #RET: TV;10;ZDFinfo #RET: TV;11;Das Erste HD #END #OK
<GCLPR n m>	Get the part of the current Radio channels list (including numbering) n = the program number to start from m = the total (maximum) number of programs to get from start Example: #COMMAND: <GCLPR 161 1000> #RET: Radio;161;F. INTER #RET: Radio;162;CULTURE #END #OK

<GCPMUX>	Get current channel (including type, number, name, mux and TS info)
	
	Return format:
	      type;number;muxinfo;SID;ONID;TSID;name
	where
	  type channel type (either TV or Radio)
	  number channel number
	  muxinfo mux info string depending from delivery system
	                (please refer examples below)
	  SID service id

	ONID original network id *TSID* transport stream id *name* name of program Examples: #COMMAND: \<GCPMUX\> #RET: TV;2;DVB-S 19.2E 10744 H 22000;28722;1;1051;ONE #OK or #COMMAND: \<GCPMUX\> #RET: TV;800;DVB-C 322 QAM256 6900;28721;1;1051;tagesschau24 #OK or #COMMAND: \<GCPMUX\> #RET: TV;900;DVB-T 514000 kHz;769;8468;27136;Das Erste HD #OK
\<GCLMUX\>	Get channel list (including type, numbering, name, mux and TS info) Each table row is sent immediately after line: '#RET: '. At the end of transmission lines '#END' and '#OK' are sent. The return row format is the same as for \<GCPMUX\> command above. Example: #COMMAND: \<GCLMUX\> #RET: TV;1;DVB-S 19.2E 10744 H 22000;28721;1;1051;tagesschau24 #RET: TV;2;DVB-S 19.2E 10744 H 22000;28722;1;1051;ONE #RET: TV;3;DVB-S 19.2E 10744 H 22000;28724;1;1051;arte #RET: TV;4;DVB-S 19.2E 10744 H 22000;28725;1;1051;PHOENIX … #RET: Radio;1;DVB-S 19.2E 11954 H 27500;28012;1;1079;DKULTUR #RET: Radio;2;DVB-S 19.2E 11954 H 27500;28013;1;1079;DLF … #RET: Radio;162;DVB-S 19.2E 12363 V 27500;9158;1;1098;CULTURE #END #OK
\<GCLMUXPT n m\>	Get the part of the current TV channels list (including type, numbering, name, mux and TS info) n = the program number to start from m = the total (maximum) number of programs to get from start The return row format is the same as for \<GCPMUX\> command above. Example: #COMMAND: \<GCLMUXPT 10 2\> #RET: TV;10;DVB-S 19.2E 11954 H 27500;28011;1;1079;ZDFinfo #RET: TV;11;DVB-S 19.2E 11494 H 22000;10301;1;1019;Das Erste HD #END #OK

<GCLMUXPR n m>	Get the part of the current Radio channels list (including type, numbering, name, mux and TS info) n = the program number to start from m = the total (maximum) number of programs to get from start The return row format is the same as for <GCPMUX> command above. Example: #COMMAND: <GCLMUXPR 161 1000> #RET: Radio;161;DVB-S 19.2E 12363 V 27500;9157;1;1098;F. INTER #RET: Radio;162;DVB-S 19.2E 12363 V 27500;9158;1;1098;CULTURE #END #OK

<PRMUX s>	Switch to TV/Radio channel by mux info (including SID)
	
	s = row of the attributes (retrieved e.g. from <GCLMUX> command) separated with ";" char in the following format:
	        muxinfo;SID
	where
	    muxinfo mux info string depending from delivery system
	                (please refer <GCPMUX>, <GCLMUX> commans)
	    SID service id
	
	Command should be used only in TV/Radio program playback (when the current mode is either TV or Radio). Otherwise the respective error message is sent.
	
	Examples:
	#COMMAND: <PRMUX DVB-S 19.2E 11954 H 27500;28011>
	#RET: TV;10;ZDFinfo
	#OK
	or
	#COMMAND: <PRMUX DVB-S 19.2E 12363 V 27500;9158>
	#RET: Radio;162;CULTURE
	#OK

<PRTMUX s>	Switch to TV channel by mux info (including SID)
	
	s = row of the attributes (retrieved e.g. from <GCLMUX> command) separated with ";" char in the following format:
	        muxinfo;SID
	where
	    muxinfo mux info string depending from delivery system
	    SID service id
	Example:
	#COMMAND: <PRTMUX DVB-S 19.2E 11954 H 27500;28011>
	#RET: TV;10;ZDFinfo
	#OK

<PRRMUX s>	Switch to Radio channel by mux info (including SID)
	
	s = row of the attributes (retrieved e.g. from <GCLMUX> command) separated with ";" char in the following format:
	     muxinfo;SID
	where
	  muxinfo mux info string depending from delivery system
	  SID service id
	
	Example:
	#COMMAND: <PRRMUX DVB-S 19.2E 12363 V 27500;9158>
	#RET: Radio;162;CULTURE
	#OK

<PRTS s>	Switch to TV/Radio channel by TS info (including delivery system)
	
	s = row of the attributes (retrieved e.g. from <GCLMUX> command) separated with ";" char in the following format:
	     delsys;SID;ONID;TSID
	where
	  delsys delivery system ('DVB-S','DVB-C' or 'DVB-T')
	  SID service id
	  ONID original network id
	  TSID transport stream id
	
	Examples:
	#COMMAND: <PRTS DVB-S;28011;1;1079>
	#RET: TV;10;ZDFinfo
	#OK
	or
	#COMMAND: <PRTS DVB-S;9158;1;1098>
	#RET: Radio;162;CULTURE
	#OK

<PRTTS s>	Switch to TV channel by TS info (including delivery system)
	
	s = row of the attributes (retrieved e.g. from <GCLMUX> command) separated with ";" char in the following format:
	     delsys;SID;ONID;TSID
	where
	  delsys delivery system ('DVB-S','DVB-C' or 'DVB-T')
	  SID service id
	  ONID original network id
	  TSID transport stream id
	
	Example:
	#COMMAND: <PRTTS DVB-S;28011;1;1079>
	#RET: TV;10;ZDFinfo
	#OK

<PRRTS s>	Switch to Radio channel by TS info (including delivery system)
	
	s = row of the attributes (retrieved e.g. from <GCLMUX> command) separated with ";" char in the following format:
	        delsys;SID;ONID;TSID
	where
	   delsys delivery system ('DVB-S','DVB-C' or 'DVB-T')
	   SID service id
	   ONID original network id
	   TSID transport stream id
	
	Example:
	#COMMAND: <PRRTS DVB-S;9158;1;1098>
	#RET: Radio;162;CULTURE
	#OK

<GAC>	Get available audio streams for the current channel
	
	Each table row is sent immediately after line: '#RET: '.
	At the end of transmission lines '#END' and '#OK' are sent.
	Each return row is send in the following format:
	        apid (*aformat*) - *adesc*
	where
	   apid audio stream ID
	   aformat audio format (MPGA, AC3, AAC, AAC+, DTS etc)
	   adesc audio language or description (optional)
	
	Command should be used only in TV/Radio program playback (when the current mode is either TV or Radio) or in Timeshifting mode (when the current mode is Time Shift). Otherwise the respective error message is sent.
	
	Example:
	#COMMAND: <GAC>
	#RET: 5102 (MPGA) - German
	#RET: 5103 (MPGA) - Miscellaneous
	#RET: 5106 (AC3) - German
	#END
	#OK

<GCA>	Get current audio stream for the current channel The return row format is the same as for <GAC> command above. Example: #COMMAND: <GCA> #RET: 5102 (MPGA) - German #OK

<EVT n>	Get available EPG events for TV channel by number (n is a number) The information for each event is sent immediately after line: '#RET: '. At the end of transmission lines '#END' and '#OK' are sent. The event information for every event consists of: - channel type (TV) - channel number - name of program - Event ID - date and time of the event in format dd/mm/yy HH:MM - duration of the event (in minutes) - title of the event - FSK decimal code Note: The data for EPG events cache is taken from Transport Stream (for currently used transponder only). Therefore, host should wait some time and use channels from the same transponder before sending <EVT> command for the selected channel (typically few minutes for the next several days). Otherwise, not all EPG events may be stored in the cache. Example: #COMMAND: <EVT 3> #RET: TV;3;arte;295830206700322970;02/08/17 06:00;1440;ARTE;0 #RET: TV;3;arte;295830206700353332;02/08/17 17:40;45;Xenius;0 … #RET: TV;3;arte;295830206700353912;16/08/17 16:40;25;Journal;0 #RET: TV;3;arte;295830206700353790;16/08/17 17:05;30;360°;0 #END #OK
<EVR n>	Get available EPG events for Radio channel by number (n is a number) The answer format is the same like the above <EVT> command except that the event information for every event contains - channel type (Radio) instead of (TV). All restrictions are also the same as for <EVT> command.
<EVDESC n>	Get detailed description for the selected EPG event. n = Event ID of the selected EPG event Available events (Event IDs) can be retrieved by <EVT> or <EVR> command (please refer the description above). Example: #COMMAND: <EVDESC 286823006238237861> #RET: Sportschau #RET: Fußball - Audi Cup: SSC Neapel - FC Bayern München #RET: * Reporter: Marc Schlömer * Übertragung aus München * Moderation: Julia Scharf

	Produziert in HD #END #OK
<GSQ>	Get signal strength and quality (SSI and SQI) in percent Example: #COMMAND: <GSQ> #RET: 50;100 #OK
<GSCNR>	Get signal carrier-to-noise ratio (CNR) in dB Example: #COMMAND: <GSCNR> #RET: 12.2 dB #OK
<GSRSSI>	Get signal RSSI in dBuV Example: #COMMAND: <GSRSSI> #RET: 39.7 dBuV #OK

<GSQEXT>	Get extended info over signal strength and quality
	
	Return format:
	      SSI;SQI;RSSI;CNR
	where
	  SSI SSI (strength) in precent
	  SQI SQI (quality) in precent
	  RSSI signal RSSI in dBuV
	  CNR signal CNR in dB
	
	Example:
	#COMMAND: <GSQEXT>
	#RET: 50;100;39.7 dBuV;12.0 dB
	#OK

<REC ?>	Get current recording status Returns information for the currently running recording in the following format: #RET: on;<container>;<filename> where the <container> is the one of the following: HDD[1..2] = HDD connected to eSata

	If the recording is currently disabled the command reply will be: #RET: off Examples: #COMMAND: <REC ?> #RET: on;HDD1;ZDF_HD__20171205_170001__heute.ts #OK or #COMMAND: <REC ?> #RET: off #OK
<MPLAY LOOP ?>	Get media player playback loop setting (decimal code and string value) Examples: #COMMAND: <MPLAY LOOP ?> #RET: 0;off #OK or #COMMAND: <MPLAY LOOP ?> #RET: 1;file #OK or #COMMAND: <MPLAY LOOP ?> #RET: 2;playlist #OK
<GRL>	Get available PVR recordings list Each available recording in the list is sent in new row in the following format: #RET: PVR;<container>;<filename> At the end of transmission '#OK' line is sent. The <container> is the one of the following: HDD[1..2] = HDD connected to eSata Example: #COMMAND: <GRL> #RET: PVR;HDD1;arte__20171201_203000__News.ts #RET: PVR;HDD1;ZDF__20171202_213005__Sport.ts #OK
<GML>	Get available media player movies list Each available movie in the list is sent in new row in the following format: #RET: MOVIE;<container>;<filename> At the end of transmission '#OK' line is sent.

	The <container> is the one of the following: HDD[1..2] = HDD connected to eSata Example: #COMMAND: <GML> #RET: MOVIE;HDD1;MyMovie1.avi #RET: MOVIE;HDD1;MyMovie2.m2ts #OK
<GAL>	Get available audio files list Each available audio file in the list is sent in new row in the following format: #RET: MUSIC;<container>;<filename> At the end of transmission '#OK' line is sent. The <container> is the one of the following: HDD[1..2] = HDD connected to eSata #COMMAND: <GAL> #RET: MUSIC;HDD1;MySong1.mp3 #RET: MUSIC;HDD1;MySong2.MP3 #OK
<HDD INFO>	Get eSata HDD status information Examples: #COMMAND: <HDD INFO> #HDD1: ATA SanDisk (500GB) #PART1: NTFS;430 GB;500 GB #OK or #COMMAND: <HDD INFO> #HDD1: ATA SanDisk (500GB) #PART1: Not formatted #OK or #COMMAND: <HDD INFO> #HDD1: ATA SanDisk (500GB) #PART1: Not available #OK or #COMMAND: <HDD INFO> #HDD1: Not available #PART1: Not available #OK
<HDD FORMAT>	Format eSata HDD (perform partitioning and formatting)

<SNMP COMMUNITY n>	Set SNMP community string Get current SNMP community string n = [?] | [*STRING (SIZE (1..32))*] n = ? – get current SNMP community string n = *STRING (SIZE (1..32))* – set SNMP community string The valid characters for community string are: 'A..Z' | 'a..z' | '0..9' | '_' | '-' (string should not start with '_' and '-'). Examples: #COMMAND: <SNMP COMMUNITY ?> #RET: public #OK or #COMMAND: <SNMP COMMUNITY elium-private> #RET: elium-private #OK
<SNMP n>	Enable/Disable SNMP agent Get SNMP agent status n = [?] | [ON,OFF] n = ? – get SNMP agent status (on = enabled, off = disabled) n = ON or OFF – enable or disable SNMP agent Note: SNMP TRAP notifications still can be used when SNMP agent is disabled (please refer <SNMPTRAP n> command description).
<SNMPTRAP n>	Enable/Disable SNMP TRAP notifications Get SNMP TRAP notifications status n = [?] | [ON,OFF] n = ? – get SNMP TRAP notifications status (on/off = enabled/disabled) n = ON or OFF – turn SNMP TRAP notifications enabled or disabled Note: SNMP TRAP host IP address should be set before the SNMP TRAP notifications are turned ON (please refer <SNMPTRAP HOST n>command description).
<SNMPTRAP HOST n>	Set SNMP TRAP host IP address Get SNMP TRAP host IP address n = [?] | [*IP-ADDRESS*] n = ? – get SNMP TRAP host IP address n = *IP-ADDRESS* – set SNMP TRAP host IP address Example: #COMMAND: <SNMPTRAP HOST 10.1.1.220> #RET: 10.1.1.220 #OK

<SNMPTRAP DELAY n>	Set SNMP TRAP notifications delay value Get current SNMP TRAP notifications delay value value n = [?] | [1 .. 60] n = ? – get current SNMP TRAP notifications delay value (in minutes) n = [1 .. 60] – set SNMP TRAP notifications delay value (in minutes) SNMP TRAP notifications delay value represents the delay in minutes between two consecutive alarm notifications of the same type. Example: #COMMAND: <SNMPTRAP DELAY 5> #RET: 5 #OK
<SNMPTRAP alarmNotifications n>	Enable/Disable SNMP TRAP alarm notifications Get SNMP TRAP alarm notifications status n = [?] | [ON,OFF] n = ? – get SNMP TRAP alarm notifications status n = ON/OFF – turn SNMP TRAP alarm notifications enabled/disabled Device alarm notifications are generated continuously with respective delay (please refer <SNMPTRAP DELAY n>command description) between two consecutive notifications until alarm disappears. Command enables/disables all respective notifications at once and reports 'ON' in the case when at least one notification is enabled. To set each notification apart please use respective commands below.
<SNMPTRAP noSignal n>	Enable/Disable SNMP noSignal TRAP alarm notification Get SNMP noSignal TRAP alarm notification status n = [?] | [ON,OFF] n = ? – get SNMP noSignal TRAP status n = ON/OFF – turn SNMP noSignal TRAP enabled/disabled The notification is generated in the case when the tuner unit receives weak signal not suitable for the program playback. It indicates that the tuner cannot lock to the signal and is followed by the retune attempts. The notifications are generated continuously until the signal lock will be reached.
<SNMPTRAP noStream n>	Enable/Disable SNMP noStream TRAP alarm notification Get SNMP noStream TRAP alarm notification status n = [?] | [ON,OFF] n = ? – get SNMP noStream TRAP status n = ON/OFF – turn SNMP noStream TRAP enabled/disabled

	The notification is generated in the case when there is neither audio nor video streams found in the incoming TS. The notifications are generated continuously until the streams suitable for playback will be found.
<SNMPTRAP scrambledStream n>	Enable/Disable SNMP scrambledStream TRAP alarm notification Get SNMP scrambledStream TRAP alarm notification status n = [?] | [ON,OFF] n = ? – get SNMP scrambledStream TRAP status n = ON/OFF – turn SNMP scrambledStream TRAP enabled/disabled The notification is generated in the case when the incoming stream is scrambled or corrupted. The notifications are generated continuously until the incoming stream will be good enough for playback.
<SNMPTRAP firmwareEvents n>	Enable/Disable SNMP TRAP firmware events Get SNMP TRAP firmware events status n = [?] | [ON,OFF] n = ? – get SNMP TRAP firmware events status n = ON/OFF – turn SNMP TRAP firmware events enabled/disabled Firmware event notifications are generated once pro each event. Command enables/disables all respective notifications at once and reports 'ON' in the case when at least one notification is enabled. To set each notification apart please use respective commands below.
<SNMPTRAP firmwareReady n>	Enable/Disable SNMP firmwareReady TRAP firmware event Get SNMP firmwareReady TRAP firmware event status n = [?] | [ON,OFF] n = ? – get SNMP firmwareReady TRAP status n = ON/OFF – turn SNMP firmwareReady TRAP enabled/disabled The notification is generated after the device software startup. It notifies that the device is initialized and ready for use.
<SNMPTRAP firmwareFault n>	Enable/Disable SNMP firmwareFault TRAP firmware event Get SNMP firmwareFault TRAP firmware event status n = [?] | [ON,OFF] n = ? – get SNMP firmwareFault TRAP status n = ON/OFF – turn SNMP firmwareFault TRAP enabled/disabled The notification is generated in the case when the device software reaches hard fault and is normally followed by the software restart.

<SNMPTRAP firmwareUpdate n>	Enable/Disable SNMP firmwareUpdate TRAP firmware event Get SNMP firmwareUpdate TRAP firmware event status n = [?] | [ON,OFF] n = ? – get SNMP firmwareUpdate TRAP status n = ON/OFF – turn SNMP firmwareUpdate TRAP enabled/disabled The notification is sent when the device firmware update starts.
<SNMPTRAP fwUpdateFAIL n>	Enable/Disable SNMP fwUpdateFAIL TRAP firmware event Get SNMP fwUpdateFAIL TRAP firmware event status n = [?] | [ON,OFF] n = ? – get SNMP fwUpdateFAIL TRAP status n = ON/OFF – turn SNMP fwUpdateFAIL TRAP enabled/disabled The notification is sent in the case when the device firmware update process has failed for some reason.
<SNMPTRAP standbyEvents n>	Enable/Disable SNMP TRAP standby events Get SNMP TRAP standby events status n = [?] | [ON,OFF] n = ? – get SNMP TRAP standby events status n = ON/OFF – turn SNMP TRAP standby events enabled/disabled Standby event notifications are generated once pro each event. Command enables/disables all respective notifications at once and reports 'ON' in the case when at least one notification is enabled. To set each notification apart please use respective commands below.
<SNMPTRAP enterStandby n>	Enable/Disable SNMP enterStandby TRAP standby event Get SNMP enterStandby TRAP standby event status n = [?] | [ON,OFF] n = ? – get SNMP enterStandby TRAP status n = ON/OFF – turn SNMP enterStandby TRAP enabled/disabled The notification is sent when the device enters Standby.
<SNMPTRAP leaveStandby n>	Enable/Disable SNMP leaveStandby TRAP standby event Get SNMP leaveStandby TRAP standby event status n = [?] | [ON,OFF] n = ? – get SNMP leaveStandby TRAP status n = ON/OFF – turn SNMP leaveStandby TRAP enabled/disabled The notification is sent when the device leaves Standby.

<SNMPTRAP playbackEvents n>	Enable/Disable SNMP TRAP playback events Get SNMP TRAP playback events status n = [?] | [ON,OFF] n = ? – get SNMP TRAP playback events status n = ON/OFF – turn SNMP TRAP playback events enabled/disabled Playback event notifications are generated once pro each event. Command enables/disables all respective notifications at once and reports 'ON' in the case when at least one notification is enabled. To set each notification apart please use respective commands below.
<SNMPTRAP playbackStart n>	Enable/Disable SNMP playbackStart TRAP playback event Get SNMP playbackStart TRAP playback event status n = [?] | [ON,OFF] n = ? – get SNMP playbackStart TRAP status n = ON/OFF – turn SNMP playbackStart TRAP enabled/disabled The notification is sent when the device starts playback. It also signifies that the current playback status was changed: e.g. on playback mode change or on channel switching.
<SNMPTRAP playbackStop n>	Enable/Disable SNMP playbackStop TRAP playback event Get SNMP playbackStop TRAP playback event status n = [?] | [ON,OFF] n = ? – get SNMP playbackStop TRAP status n = ON/OFF – turn SNMP playbackStop TRAP enabled/disabled The notification is sent when the device stops playback. It can signify that the current device mode is changed: e.g. device goes into setup menu or into Standby.
<SNMPTRAP recordingEvents n>	Enable/Disable SNMP TRAP recording events Get SNMP TRAP recording events status n = [?] | [ON,OFF] n = ? – get SNMP TRAP recording events status n = ON/OFF – turn SNMP TRAP recording events enabled/disabled Recording event notifications are generated once pro each event. Command enables/disables all respective notifications at once and reports 'ON' in the case when at least one notification is enabled. To set each notification apart please use respective commands below.
<SNMPTRAP recordingStart n>	Enable/Disable SNMP recordingStart TRAP recording event Get SNMP recordingStart TRAP recording event status

	n = [?] | [ON,OFF] n = ? – get SNMP recordingStart TRAP status n = ON/OFF – turn SNMP recordingStart TRAP enabled/disabled The notification is sent when the device starts DVB recording.
<SNMPTRAP recordingStop n>	Enable/Disable SNMP recordingStop TRAP recording event Get SNMP recordingStop TRAP recording event status n = [?] | [ON,OFF] n = ? – get SNMP recordingStop TRAP status n = ON/OFF – turn SNMP recordingStop TRAP enabled/disabled The notification is sent when the device stops DVB recording.
<SNMPTRAP streamingEvents n>	Enable/Disable SNMP TRAP streaming events Get SNMP TRAP streaming events status n = [?] | [ON,OFF] n = ? – get SNMP TRAP streaming events status n = ON/OFF – turn SNMP TRAP streaming events enabled/disabled Streaming event notifications are generated once pro each event. Command enables/disables all respective notifications at once and reports 'ON' in the case when at least one notification is enabled. To set each notification apart please use respective commands below.
<SNMPTRAP streamingStart n>	Enable/Disable SNMP streamingStart TRAP streaming event Get SNMP streamingStart TRAP streaming event status n = [?] | [ON,OFF] n = ? – get SNMP streamingStart TRAP status n = ON/OFF – turn SNMP streamingStart TRAP enabled/disabled The notification is sent when the device starts IPTV streaming.
<SNMPTRAP streamingStop n>	Enable/Disable SNMP streamingStop TRAP streaming event Get SNMP streamingStop TRAP streaming event status n = [?] | [ON,OFF] n = ? – get SNMP streamingStop TRAP status n = ON/OFF – turn SNMP streamingStop TRAP enabled/disabled The notification is sent when the device stops IPTV streaming.
<CEC CONTROL n>	Enable/Disable HDMI-CEC remote control Get HDMI-CEC remote control status

	n = [?] | [ON,OFF] n = ? – get HDMI-CEC remote control status (on/off = enabled/disabled) n = ON/OFF – turn HDMI-CEC remote control enabled/disabled HDMI-CEC remote control feature enables remote control commands to be passed through HDMI from other CEC-enabled devices within the system (e.g. from TV remote control).
<CEC STANDBY n>	Enable/Disable HDMI-CEC automatic standby Get HDMI-CEC automatic standby status n = [?] | [ON,OFF] n = ? – get HDMI-CEC automatic standby status n = ON/OFF – turn HDMI-CEC automatic standby enabled/disabled HDMI-CEC automatic standby feature enables multiple CEC-enabled devices to switch to or from standby synchronously through HDMI. Turning the device on/off will also turn on/off CEC-enabled TV. The device will be turned on/off when TV will send turn-on/-off signal.