Film-Tech

This document describes how to control the DTS-ECP/6AD cinema processor externally through the use of the serial interface. All of these commands operate the same through either the RS232 or RS422 interface of the DTS-ECP/6AD. This assumes that the DTS-ECP/6AD unit is installed with software version 1.06 or greater.

These commands are designed to allow control of the DTS-ECP/6AD to facilitate the implementation of a show control interface, automation control, or remote front panel.

Connections

RS232. Connect from the port labeled RS-232 port on the back of the DTS-6AD to the control device. Refer to the manual for the required pin-out. The port is always initialized at 9600 baud 8N1 (8-bits, not parity, and 1 stop bit).

RS422 (AUTOMATION). Connect the port labeled AUTOMATION on the back of the DTS-6AD to the control device. Refer to the manual for the required pin-out. The port only operates at 9600 baud 8N1 (8-bits, not parity, and 1 stop bit). It is allowed to have more than one device connected to the automation port.

Status

A change in the status of either the format, volume or mute causes a status string to automatically be transmitted through the AUTOMATION port. (It is not transmitted through the RS-232 port.) The following is the format for the status response:

```
Response:     Vvv<CR>
              Ff<CR>
              Mm
              Ee
```

vv		Master fader value from 00 (0.0) to 99 (9.9)	
f	1	Select format assigned to the F1 key (usually Mono)	
	A	Projector input with A-type noise reduction	
	S	Projector input with SR noise reduction	
	X	External 6-channel input	
	D	DTS digital	
	N	Nonsync input	
m	+	Muted	
	–	Not muted	
e	–	No error	
	E	Error: Configuration settings lost on power-up.	

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Commands

Command Format

The software implements a simple ASCII command protocol that can be tested with a terminal program connected to a PC. Each command is terminated by 'CR'. Line feed characters are ignored.

Command response

There is a response transmitted after receiving any command terminated by 'CR'. The following table describes the general response strings which is transmitted after any command specific response.

Response	Meaning
OK	The command was accepted
E1-Invalid command	The command code is unrecognized
E2-Invalid command length	Too many or not enough characters in the command string
E3-Parameter out of range	The parameter following the command is not within the allowable range
E4-Invalid parameter	The parameter following the command is unrecognized
E5-Selection is not available	The selection is not valid

Directory

Directory listing of all of the audio reels on all installed CD-ROMS. The directory entries are numbered and the number may be used to select a specific reel to play using the Select command.

Format: `D<Cr>`

Example directory:

```
1) Drive A -- R14 SN=1045                           Trailers Reel 14
2) Drive A -- R1  SN=2117        Drowning Mona (w/ filters) - #2117
3) Drive A -- R2  SN=2117        Drowning Mona (w/ filters) - #2117
4) Drive B -- R3  SN=2117        Drowning Mona (w/ filters) - #2117
5) Drive B -- R4  SN=2117        Drowning Mona (w/ filters) - #2117
6) Drive B -- R5  SN=2117        Drowning Mona (w/ filters) - #2117
```

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Audio Format Command

Selects the specified format. Responds with the new format after the selection is applied.

Format:	F<CR>	Respond with the current format only
	Fc<CR>	Select the format defined by 'c'

Response:	Fc<CR>	

Values for c:	1	Select format assigned to the F1 key (usually Mono)
	A	Projector input with A-type noise reduction
	S	Projector input with SR noise reduction
	X	External 6-channel input
	D	DTS digital
	N	Nonsync input

Key control

Format:	Kc<CR>	Acts as a front panel a key press

Values for c:	F	Format
	M	Menu
	E	Exit
	O	OK
	1-8	F1-F8
	U	Mute

Mute command

Mute or unmute the cinema processor.

Format:	M+<CR>	Mute
	M-<CR>	Unmute

Timecode offset

This is not the timecode reader offset adjustment. This is a separate offset that can be used when the DTS timecode is not on the film but goes through a tach to timecode converter. This offset should be used to match the audio start time (DTS TC = 60) according to the timecode received.

Format:	On<CR>	Selects the offset in timecode where n = -99999 to 99999

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Select Reel

Substitute the directory entry number from the directory command (D<cr>) to play that reel selection. When a reel selection is made the reel number read from the timecode is ignored. Also there should not be a serial number in the timecode received.

Format: `Sn<CR>`   Where n= from 0 to the total number of reels on all the discs.

The command S0<CR> turns off the reel selection feature.

Trailer directory

Format: `T<CR>`

Lists the serial numbers of all trailers installed. This command is for informational purposes only.

Example trailer directory listing:

```
 1) Drive A -- R14 SN=1045
 2) Drive A -- R14 SN=4
 3) Drive A -- R14 SN=15
 4) Drive A -- R14 SN=56
 5) Drive A -- R14 SN=71
 6) Drive A -- R14 SN=257
 7) Drive A -- R14 SN=414
 8) Drive A -- R14 SN=469
 9) Drive A -- R14 SN=528
10) Drive A -- R14 SN=612
11) Drive A -- R14 SN=613
12) Drive A -- R14 SN=688
13) Drive A -- R14 SN=699
14) Drive A -- R14 SN=735
15) Drive A -- R14 SN=942
```

Volume Command

Sets or changes the master volume setting.

Format: `V<CR>`   Response only
                `V+<CR>`   Volume up
                `V-<CR>`   Volume down
                `Vnm<CR>`   Set master fader to n.m

Response: `Vnm<CR>`

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Autoswitch Command

This command is used to enable or disable the feature that automatically switches the cinema processor to DTS digital playback.

Format: W<CR>   Response only
               W+<CR>   Enable autoswitch (power-on default)
               W-<CR>   Disable autoswitch

Response: W+<CR> or W-<CR>

Version

Returns the version number for the software installed on the DTS-6AD or DTS-ECP.

Format: X<CR>

Response: CPU VERSION: 1.06<CR>
               DSP CONTROLLER: 1.03<CR>
               DSP FIRMWARE: 1.10<CR>
               E-<CR>